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Metaphorical Competence in an EFL Context

– the mental lexicon and metaphorical competence

of Japanese EFL students –

Masumi Azuma

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for the degree of Doctor of Philosophy

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ABSTRACT

This thesis on metaphor and metaphor study covers theoretical and practical issues in the past and the present both in the occidental and oriental worlds. Metaphor in rhetoric, cognitive and applied linguistics is described briefly, mostly as a theoretical issue. It states that metaphor was treated as part of rhetoric in the past, however, recently it has developed more broadly into a facet of human cognition. As a practical issue, professional studies assessing metaphorical competence are highlighted, which inform the measurement of metaphorical competence of Japanese learners of English (Japanese EFL students, hereafter).

The author developed her original measurement instruments (tests and evaluations of metaphorical competence) to assess the receptive and productive metaphorical abilities of Japanese EFL students. The tests aims to measure Japanese EFL students' metaphorical competence and discover the answers to what factors affect their comprehension and use of English metaphorical expressions and what kinds of metaphorical expressions are salient or opaque for them. This study showed that the Japanese EFL students' receptive ability was better than their productive ability. It further indicated that the size of their mental lexicons, the elasticity of their linguistic ability, the degree of semantic expansion, and their cognitive flexibility (e.g. analogical reasoning, mapping and networking) were important factors affecting their ability to handle metaphorical expressions. Another important discovery was that L1 transfer might play an ambivalent role.

As for the salience and opacity of metaphorical expressions, the degree of clarity of expressions was an important element. For example, the expressions with images easy to visualise were the easiest for the Japanese EFL students to understand and use metaphorically. The highly conventional idioms involving metaphorical meanings were problematic for them to understand and especially to use.

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My research into metaphorical competence was a voyage into a vast ocean. At first it seemed hard to find the appropriate route for the voyage. However, my voyage into metaphor research was guarded and protected from the high winds and heavy storms by excellent pilots and those who supported me. Eventually my voyage ended in a sheltered harbour. In retrospect, the voyage was thrilling and interesting.

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CHAPTER 1

INTRODUCTION

This research aims to study metaphor research in applied linguistics, especially in an EFL context, and to fill the gaps in our research knowledge by applying ideas from cognitive and applied linguistics. In cognitive linguistics, Langacker (1991) has been influential in Japan, especially in grammar relating metaphors (Yamanashi, 1995; Sugimoto, 2000). For example, prepositions are discussed as metaphorical extension. However, research on metaphor study in education has not yet been as abundant as research on other areas in applied linguistics. The research has been increasing since Lakoff and Johnson (1981), Lakoff (1987) and Johnson (1987) proposed Idealized Cognitive Models or ICMs, conceptual metaphors, for example, metaphors of ANGER and JOURNEY.

It is understandable why cognitive linguistics draws such attention. It studies language from the perspective of human cognition based upon cognitive science and cognitive psychology, and it attempts to investigate mechanisms in the process of comprehension and communication. It also attempts to investigate human faculties which may assist in creating concrete images from objects or events, expanding them to other objects or events, having multi-perspectives on objects or events, identifying similarities between objects or events (this concerns metaphor), and relating objects or events in contiguity (this concerns metonymy). It is also noteworthy that conceptual metaphors involve schemas and/or image schemas, therefore, these mechanisms may promote language acquisition in any language learning environment.

In an EFL situation, vocabulary knowledge (size and depth) has an important role to play in understanding and using a target language. Expressions sometimes convey just literal or overt meanings but imply deeper or covert meanings hidden under the surface meanings. The hidden, figurative or metaphorical meanings are sometimes hard for foreign language learners to understand and use. This is a reason why I intend to investigate aspects of Japanese EFL students' metaphorical understanding and use in their target language, i.e. English. A more direct reason results from my past experience in teaching English, where I found EFL students' awareness of metaphorical expressions weak. A small experiment (29 subjects) on how many *anger* expressions they knew revealed that they only knew a straight forward expression 'I'm angry' and some swear words.

What will be explored and investigated in this thesis is as follows. Chapter 2 consists

of three parts. Part 1 will explore the history of metaphor. In the occidental world metaphor was rooted in rhetoric, of which Aristotle clarified its theory and effects. He weighed metaphors by analogy. There had been repeated rises and falls in use of rhetoric until early 19th century. And the 20th century saw the flourishing study of metaphor in the occidental world initiated by I. A. Richards (1936). Since then, metaphor has been studied in linguistics, semantics, psychology, anthropology and other fields. In Japan, we may be able to trace the roots of figurative expressions to Man-yo-shu in a literary form or even earlier. The Meiji Era was an epoch-making period importing objects and ideas from the occidental world. Literary figures in the Meiji Era (Dairoku Kikuchi, 1879; Sanae Takata, 1889; Shoyo Tsubouchi, 1893; Hogetsu Shimamura, 1902, to name just a few) may have contributed to defining notions and adopting suitable terms of rhetoric, among which metaphor might have been included. Since Lakoff and Johnson's views and theories on metaphor were issued, Japanese scholars have paid more attention to metaphor and cite their publications.

In educational arenas, research on metaphor is not yet abundant. This pointed me in the direction of research on metaphor study in education. The specific aim of my research was to investigate how well non-native speakers (Japanese) understand and use metaphorical expressions in another language (English). This main focus will be examined in the relationship between EFL students' linguistic ability and metaphorical competence. To explore this topic, we need sufficient background knowledge. Therefore, Parts 2 and 3 will be devoted to the exploration of the necessary background knowledge for investigating and conducting the study of metaphor. The notions and functions of schemas, image schemas, network and mapping in connection with metaphorical understanding and use will be focussed upon.

To investigate learners' metaphorical competence, we need some measurement instruments. To search for or to establish measurements, the following hypotheses for an investigation are taken into account.

- 1) vocabulary knowledge may be a main factor in metaphorical understanding and use,
- 2) idiomatic and cultural aspects of the language may be other factors. L1 transfer to their understanding and use of metaphorical expressions in English may have ambivalent effects and
- 3) there may be some characteristics or aspects of EFL students' schemas, image schemas, semantic fields and/or mapping/network in metaphorical understanding and manipulation.

Chapters 3 and 4 will delineate the development of preparatory and pilot metaphorical

tests and search for index tests with which the results of metaphorical tests can be contrasted. The studies will focus upon the receptive (i.e. comprehension) and the productive (i.e. use) abilities of metaphorical competence.

Chapters 5 and 6 will address the main tests to investigate the key features of Japanese EFL students' metaphorical competence, and analyse and discuss the results of the tests in more quantitative and qualitative detail. The chapters also suggest the practicability and feasibility of the tests of the metaphorical competence.

Chapter 7 concludes the thesis, addressing the importance of metaphorical competence in an EFL situation. It discusses the reasons for the enhancement of vocabulary, polysemy, schemas, image schemas, network and mapping, and the expansion of semantic fields. It will report some experiences and propose suggestions for lessons to deal with metaphorical expressions.

CHAPTER 2

LITERATURE REVIEW

Chapter 2 consists of three parts, presenting reviews of studies of metaphor from a historical perspective to a pedagogical viewpoint and discusses points relevant to my research.

Part I describes a brief historical development of metaphor dating from around the end of the early rhetoric ages to the flourishing rhetoric ages, when metaphor had not yet been treated independently, then to the time when metaphor came to be independently treated per se; Part II addresses metaphor from a contemporary viewpoint, where metaphor is studied not just as a figure of speech as treated in rhetoric, but more broadly as a mechanism of human cognition; Part III addresses metaphor in the pedagogical field, where several disciplines (especially applied linguistics) are focussed upon.

PART I: HISTORICAL DEVELOPMENT OF METAPHOR

Part 1 describes the characteristics of Japanese language and 'hiyu' as a brief overview on metaphor in Japanese language, and addresses the historical development of metaphor and metaphor study in Japan and in the occidental world.

Specific focuses are on (1) what characteristics Japanese 'hiyu' has, (2) when the term 'metaphor' was introduced in Japan and how it developed at the time of its introduction and thereafter, and (3) the historical development of metaphor and metaphor study in the occidental world.

It was not until around the middle of the 20th century that metaphor was viewed from the holistic human cognition (Ortony, et. al, 1979/1994; 1985; Honeck and Hoffman, 1980; Lakoff and Johnson, 1981, to name just a few). In the traditional view, metaphor had been treated as one of the figures of speech. Part I describes the historical development of metaphor study ranging from the traditional view to a new development in the middle of the 20th century. Further contemporary metaphor theories/views will be discussed in Part II.

2. 1. OVERVIEW OF THE CHARACTERISTICS OF THE JAPANESE LANGUAGE AND THE ENGLISH LANGUAGE

2. 1-1. OVERVIEW

The English and Japanese languages are quite different in many linguistic aspects, phonetically, morphologically and syntactically, and even so in use of metaphors. English is one of the Indo-European languages, while Japanese is classified as one of the Altaic languages. There is some debate about its classification, but lexical and other linguistic resemblances have been pointed out between Japanese and other East Asian languages and language families, e.g. Austronesian.

Japanese EFL learners face several fundamental linguistic differences when they first encounter English. Some learners overcome these differences, while others are overwhelmed and defeated by them. When they first encounter English, they tend to be either annoyed by or interested in the phonetic differences. In English, each word consists of one, two or more letters of the alphabet, which produces a certain syllabic sound (phoneme) quite different from that of their native language. Some phonemes are similar to those of Japanese which can be transcribed into 'katakana', but it is not exactly the same as English. The annoyance in the earlier stages of learning lies in the difficulty of English pronunciations. Later some students have difficulty with spellings, vocabulary and the meanings of particular words.

Another characteristic is the syntactic, which is more complicated than the phonetic characteristic. Generally speaking, the word order of an English sentence is subject-verb, while, in Japanese, a predicate comes at the end of a sentence. This difference causes a great many problems for Japanese learners of English when composing sentences. Parts of speech are quite different, too, though both languages share some similarity in nouns, pronouns, verbs and adjectives.

In the written language, Japanese consists of 48 syllabic and phonogramic 'kana' (48 'hirakana' and 'katakana' respectively) and ideographical 'kanji' (Chinese characters). The kanji have their own meanings together with phonemes. In spoken language, both 'kana' and 'kanji' are pronounced as sounds (phonemes).

In the several centuries after the Japanese adopted 'kanji' from Chinese, they used classical written Chinese as their formal written language. Through the process of using the characters, the 'on' and 'kun' of every 'kanji' gradually became established. The 'kun' of a 'kanji' is an indigenous Japanese word, but retains meanings similar to the original Chinese, however, the pronunciations mostly differ. In brief, every 'kanji' usually has two (or more) readings: one is the 'kun', which is indigenous Japanese; the other the 'on', which is an old Chinese loan morpheme. These two readings are closely associated with each other and alternate freely in word formation, for example,

Keio Daigaku "Keio University" is abbreviated to Kei-dai, using the original 'on' reading; whereas Waseda Daigaku "Waseda University" becomes So-dai, formed from the 'on' reading for the indigenous Japanese word "wase" in Waseda. "Wase," which means "early-ripening variety of rice," is shown by a combination of two Chinese characters meaning "early" and "rice," respectively. The 'on' reading of the character meaning "early" is "so," hence So-dai. (Britannica, 1990, Volume 26: 753)

Syntactically, Japanese is an agglutinative language, in which 'joshi' (a post positional word) functions as an auxiliary to a main word (such as 'wa', 'ga', 'o', 'ni', etc.), amalgamates a word to a word, for example,

Watashi-wa / kino / igirisu-ni / kimashita. (私は昨日イギリスに来ました)

I / yesterday/ England-to (or in) /came or arrived.

('wa'/'ga' is a subject or topic marker of a sentence)

Another characteristic of the Japanese language is onomatopoeia. Some of its features are

described in the following section.

2. 1-2.ONOMATOPOEIA

Onomatopoeia represents another unique characteristic of the Japanese language. It is usually written in 'katakana', which entertains hearers/readers by phonogram. Onomatopoeia in English is the mimicry of sound(s) or voice(s) which describes things, manners, movements, etc. by using sounds or voices, such as bow-wow, chit-chat, cuckoo, ding-dong in English. The Japanese equivalents to the above are 'wan-wan', 'pecha-kucha', 'kokekokko', 'jan-jan' or 'goon-goon' (depending on the size of the bell and what material the bell is made of); and 'bun-bun', as used in describing the sounds of bees. These examples are known as 'gion-go' in Japanese, and the example of 'gisei-go' is 'zei-zei' as in breathing on account of 'wheezing'.

There is another similar expression called 'gitai-go' in Japanese. 'Gion', or 'gisei' describes mimicry of sound or voice ('gi' is similarity or resemblance and 'go' is word). As 'gitai' means mimesis in English, it sensorially describes the mimicry of appearance, posture and condition or state, for example, 'niya-niya warau' (grin as in "what are you grinning at?" The word 'warau' means to grin or smile). The Japanese often use these two kinds of word in daily conversation, stories and/or in cartoons seriously and/or entertainingly.

At the time of the Japanese Bubble Economy, such cryptology (underground words) as 'dobun' and 'zabun' prevailed among workers for Nippon Ginko (Bank of Japan). These onomatopoeia were used ironically even in cartoons. 'Dobun' and 'zabun' onomatopoeically describe the sounds made when a person or an object jumps into water, but here they are comically and ironically used to describe the amount of bribery. When he/she jumps into shallow water, it sounds 'zabun', while it sounds heavier 'dobun' when jumping into deeper water. According to the news article (*The Asahi*, March 14, 1998), 'dobun' is worthy of about ¥50,000 bribery or entertainment, and 'zabun' ¥10,000. The explosive /d/ is stronger than the fricative /z/ sound, which probably explains the differences in the sums of money.

Onomatopoeia in Japanese is usually used in combination with other words, especially with verb(s), except for their ellipsis. It stimulates our imagination when used in combination with words which trigger the transfer of meaning. In this sense, onomatopoeia can be used metaphorically.

Onomatopoeia ('gion-go' and 'gitai-go' in the case of Japanese) stimulates our senses through the sounds or voices which describe how things are (what they look/sound like) or how people are doing things, and entertains our ears, at the same time. Onomatopoeia may

be an interesting research topic (see Kakei and Mito, 1981; Kakei and Tamori, 1993). However, my present studies focus on figurative expressions (or more specifically metaphorical expressions) which illustrate transfers of meanings in English and in Japanese.

2. 1-3. FIGURATIVE LANGUAGE

There are a variety of figures of speech in English, such as simile, metaphor, metonymy, synecdoche, onomatopoeia, and so on, as there are in Japanese, though they do not exactly coincide with their English counterparts. My discussion will concentrate on metaphors (in English terms) which convey a transfer of meaning inside the language and expression, though some other figurative language will be touched upon. The following are popular examples of simile and metaphor in English from Aristotle's *The Arts of Rhetoric* (translated by H.C. Lawson-Tancred, 1991: 224) :

a. *like a lion leap*

b. *a lion leapt*

The example a. *like a lion leap* is a simile (ibid.) and the example b. *a lion leapt* is a metaphor (ibid.). He spoke of Achilles by the metaphor of the lion. The commentary written by Cope (1877) explicates

‘the simile too is a metaphor, the difference between them being slight: for when he (Homer) says of (his, or the great) Achilles “and as a lion he rushed on”, it is a simile, but when, “he rushed on, a (very) lion”, a metaphor: for (in the latter) because they are both brave, he transferred to Achilles the appellation of lion.’
(Cope, 1877: 48)

As is stated in *The Arts of Rhetoric*, metaphors are more powerful than similes because they are more condensed. The following quotation from *The Arts of Rhetoric* may explain metonymy:

c. if the *goblet* is the *shield* of Dionysus, then it would also be apt to call the *shield* the *goblet* of Ares. (*The Arts of Rhetoric*, translated by H.C. Lawson-Tancred, 1991: 225)

2. 1-4. METAPHOR AND ‘HIYU’

In English, until recently metaphor had been treated as one of the figures of speech

originating in rhetoric.

There seems to have been no single terminology in Japanese referring to metaphor as designated by the English term until recently. I consulted a Japanese dictionary (the 5th version of Kojien, 1987, the reliable Japanese lexicon) to see if it contained the word 'metaphor' in it. There was no such lexis included in its entry. However, there is one in CD-ROM (1998), which indicates that it means 'in-yu,' meaning "hidden connotation." Even if the word 'metaphor' itself had not been included in a dictionary for a long time, a similar concept has existed. From time immemorial, the Japanese have used figurative language, though the term "metaphor" or indeed any other term was not applied.

The oldest script that abounded with figurative expressions is probably *Man-yo-shu* (万葉集, the collection of poems composed in the years of 313-795). There are many figurative expressions in it, however, only a few examples are quoted below:

- a. an expression in a poem from *Man-yo-shu* as an example of metonymy and metaphor:

thought is burning in one's heart (omohi-zo yakuru, 思ひぞ焼くる)(*Man-yo-shu* Poem No.5, 万葉集 5)¹

- b. a poem in *Man-yo-shu* as an example of a metaphorical expression:

Seeing the dawn coming up in the eastern field, looking back at it, the moon sinking. (Himugashi-no no-ni gagirohi-no tatsu-miete kaherimi-sureba tsukikatabukinu, 東の野にかぎろひの立つ見えてかへりみすれば月傾きぬ (*Man-yo-shu* Poem No.48, 万葉集 48)

The poem a. sang a traveller's nostalgic thoughts of his wife left behind at home. He watched women divers burn salt on the beach, the sight of which excited his nostalgia even more. Then his imagination mapped his emotion, singing his *fiery thought* of his beloved one. There is also a play on words or sliding of words in this poem between burn salt and burn thought. The former is treated chemically by a high temperature; the latter emotionally.

The poem b. delineates an atmospheric scene on its surface, but the poem as a whole sang the departing scene of the lovers after spending a night together.

The Tale of Genji written by Lady Murasaki in the 11th century (源氏物語、?1001-1008?) also abounds with figurative expressions such as metonymy/synecdoche and metaphor. The following examples are simile and 'gitai-go' (onomatopoeia) from the chapter of 'Wakamurasaki'.²

- c-1. Her hair ...spread out *like an unfolded fan* (kami ha afugi wo hirogetaru yauni, 髪は扇をひろげたるやうに)³: simile
- c-2. (her hair ...) *wavy* (yura yura toshite, ゆらゆらとして)⁴ : gitai-go

Another examples are synecdoche (d-1; d-2) and metonymy (d-3) from the chapter of 'Kiritsubo' (see 2.3-1. for the distinction between metonymy and synecdoche). Example d-1 describes the status of the court ladies using the title of their service to the Emperor, i.e. assisting the Emperor to change his clothes; d-2 describes a political hierarchy in terms of the position it occupied, right or left (e.g. the Minister of the Left, which was superior to the Right those days); d-3 refers to a ceremony for a three-year-old boy by describing the clothes he wore. He changed from baby clothes to an infant hakama or trousers when he became three years old. All these examples are generated from contiguity.

- d-1. the gentlewomen of the *Wardrobe* (ko-i, 更衣)
- d-2. The Minister of the *Right* (udaijin, 右大臣)
- d-3. *The Putting on of the Trousers* was performed (onhakamagi no koto, 御袴着のこと ... imijiu sesasetamafu いみじうせさせ給ふ)

In describing Kiritsubo, the mother of Genji, in the very first chapter in *The Tale of Genji*, there are the following expressions,⁵

- e. though she was not *of very high rank* (ito yamugotonaki kiwa niha aranuga, いと、やむことなき際にはあらぬが)
- f. who (though she was not of very high rank) was *favoured far beyond* all the rest (sugurete tokimeki tamafu, すぐれて時めき給ふ)

The word 'kiwa' in 'yamugotonaki kiwa' means border, edge and/or end, hence, it meant the social status or class to which one belonged. Therefore, the whole phrase metaphorically means (of) a very high rank using a metonymy of 'kiwa.' 'Tokimeku' was translated into 'favoured far beyond,' but the original Japanese means to be 'prosperous in the current of the time.' It is a metaphorical expression.

2. 1-5. JAPANESE FIGURATIVE LANGUAGE

Though the word 'metaphor' is not included in the 5th version of Kojien, 'Aya' and 'Hiyu' are. The former is used as in 'kotoba no aya' (nuance/implication of word/language).

It means the skillful and beautiful elaboration of expressions. The original meaning of 'aya' in Japanese is patterns of lines and/or shapes woven diagonally across the surface of paper or cloth, i.e. texture. By the same token, 'aya' connotes meanings woven in words, sentences or whole texts. Therefore when 'aya' is used in a rhetorical sense, it turns out to be figurative.

In a rhetorical point of view, there is 'aya' in word/sentence levels and at thought levels, as well. In English, too, metaphors are used in words, sentences, and at thought levels. It is generally known that metaphors exist in the whole of a text as in Aesop's fables, and in phrases such as sour grapes, as well.

In a broader sense and in everyday use in Japanese is the common term 'hiyu' to express one's idea figuratively. It broadly covers such figurative language as the simile, metaphor and metonymy and so on, as the same in English figurative language. 'Hi' in 'hi-yu' implies 'comparison' or 'likeness'; 'yu' an example or word(s), or it also implies admonishment, therefore 'hi-yu' transfers meanings, usually through comparison, association and/or resemblance, and is used to describe one thing in terms of another, as is shown below in the order of simile, metonymy and metaphor.

a. simile:

as white as snow; white like snow (yuki no yoni shiroi, 雪のように白い)

b-1. metonymy & metaphor (conventional idiom/stereotyped dead metaphor):

iridescent/-ce (tamamushi (buprestid) iro, 玉虫色)

b-2. metonymy: (a straw raincoat and a straw hat in the following poem):

In spring rain,

Walking, talking side by side

A straw raincoat and a straw hat. (Buson, 1716-1783)

(Harusame-ya monogatari-yuku mino-to-kasa, 春雨やものがたりゆく蓑と傘)

c. metaphor: the following poem describes the bitterness of the world

metaphorically:

(My) tender skin

Bathed in a spring

Coming out of it

What touches my skin is

the garment of this earthly world. (Untidy Hair, Yosano Akiko, 1878-1942)

(Yuami-shite izumi-wo-ideshi yawahadani fururuha-tsuraki hitono-yonokinu, ゆあみして泉を出し柔肌にふるるはつらき人の世のきぬ)(Midaregami, 乱れ髪)

Among the above examples, the example a. 'as white as snow' or 'white like snow' is the same as in English. The example b-1. 'iridescent/-ce' is used in such a sentence as "The Prime Minister stated his idea iridescently," meaning he stated his opinion unclearly so that he could avoid further criticism from his opponents, and in the example b-2. a straw raincoat and a straw hat are metonymy signifying two people (walking, talking side by side). The whole poem symbolically delineates the scene in which they were walking, talking in the quiet spring rain. In the example c., the metonymy is exploited as in the case of b-2., but at the same time, a metaphorical interpretation of the whole poem is truer to her implication. Those who know that Akiko Yosano ran after a married poet (Hiroshi Yosano) can make sense of the metaphorical delineation of her bitter experience. She was actually accused by society of usurping someone else's husband whom she worshipped as her master of poetry.

2. 1-6. JAPANESE 'HIYU'

In a broader sense, metaphor can be translated into 'hiyu' in Japanese. Here is a brief history of 'hiyu.' 'Hiyu' was introduced by Shoyo Tsubouchi and others in the Meiji Era from the Chinese *Rules of Sentence*, or Rhetoric Book (Wen Zhe, 文則, 1729) which was written by Chen Kui in the 12th century. Tsubouchi took Simile, Metaphor, Synecdoche and Allusion from this book and put them into Japanese, 'choku-yu', 'in-yu', 'kan-yu'/'tei-yu' and 'in-yu' respectively (Homma, et. al., 1977). The second and fourth terms (both are 'in-yu') sound the same in romaji, but when written, they have different kanji, therefore, there is no confusion in Japanese: the former 'in' means 'hidden', while the latter 'in' means 'draw', 'quote' or 'quotation.' His translation of the first two words ('choku-yu' and 'in-yu') seems to be ideal, because they coincide with the occidental rhetoric terms and notions. The last one (i.e. 'in-yu') means a quotation. My interpretation is that Tsubouchi used the same word in the original book. The 'in-yu' in the latter sense is outside of my focus. My focus is on the 'in-yu,' metaphor, in the former sense, however, the figures of speech such as 'choku-yu' (simile) and 'kan-yu'/'tei-yu' (metonymy/synecdoche) will be touched upon to some extent.

2. 1-7. 'CHOKU-YU' AND 'IN-YU'

There are usually debates about which figures of speech should be classified into certain categories, though in classical rhetoric, 'choku-yu' (sometimes called 'mei-yu') and 'kan-yu'/'tei-yu' were classified within the range of 'ten-gi' (transfer or trope). According to Sato (1992; 1997), there is no transfer in the meaning of the words/phrases in

simile ('choku-yu') (X is like Y), therefore simile is not included in 'ten-gi' (trope).

'Choku' (direct) and 'mei' (clear or overt) mean unhidden, while the 'in' of 'in-yu' connotes hidden, covert and/or implicit. The expression conveyed by 'in-yu' transfers the hidden (covert) meaning to the overt one through phraseology which stimulates human cognition. It represents an object or an idea in terms of similarity (ibid.). The important point is that it involves a transfer of meaning. The 'kan' in 'kan-yu' means to replace or replacing. It replaces a word or an expression in terms of relationships such as closeness/neighbouring and/or solidarity. Sato (1997) distinguishes synecdoche from metonymy: metonymy is based upon contiguity while synecdoche is based upon semantic categorical inclusion.

In brief, in both the occidental and oriental worlds, rhetoric has been ubiquitous since Aristotle's age in the former and the age of *Man-yo-shu* or earlier in the latter. In this sense, human eloquence shared its nature in the both worlds, although language realisations differed.

2. 2. METAPHOR IN RHETORIC

It was stated in the section 2. 1-6 that the term 'hiyu' was introduced in the Meiji Era by Shoyo Tsubouchi and other literary figures. The following two sections will look at how the occidental rhetoric theory took root in Japan.

2. 2-1. TRADITIONAL VIEW

The occidental theory of rhetoric was brought to Japan in the Meiji Era (the latter half of 19th century), it was initially studied as rhetoric. Studying classical rhetoric provided the stylistic techniques of effective, beautiful, decorative and impressive dictions and methods of persuasion. These categorizations eventually stimulated new conceptions. They stimulated and produced new models of spoken and written creativity. Therefore those who studied classical rhetoric in its cradle age in Japan unconsciously and unintentionally studied the conceptual images underlying human consciousness.

At the time when the occidental world progressed into the Age of Science and turned to rationalism, the interest in Rhetoric and Humanism had already declined. Then in the Meiji Era in Japan, the nominations and the contents of the technique of the occidental concepts of classical rhetoric were introduced. There were some pursuers, among whom was Yukio Ozaki, who started his career as a journalist, and who introduced the occidental theory of rhetoric to Japan as public oratory in (the Year of) Meiji 10 (1877). Later he became a politician nicknamed 'the god of constitution' and then a novelist (Koyo Ozaki). He put emphasis on stylistic technique, giving the name 'Polite Literature' ('ka bungaku',

華文学).

In Meiji 13 (1880), Dairoku Kikuchi translated Du Marsais *L'Encyclopedie* into Japanese as *Rhetoric and Belles Lettres* (see 2.3-2.). This translation greatly contributed to the public use of rhetoric. Kikuchi's translation emphasized art and literature more than the persuasive technique emphasised by his predecessor Ozaki.

In Meiji 15 (1882), Shuroku Kuroiwa translated part of the theory of figures of speech in *Advanced Course of Composition and Rhetoric* (1855, 1875) by G.P. Quackenbos into Japanese as *Oratorical and Elaborate Stylistic Writing* (雄弁美辭法). Kuroiwa also started his career as a journalist, and later he became a well known translator of Alexandre Dumas' *Le Comte de Monte-Cristo* and Victor Hugo's *Les Miserables*.

Then, in Meiji 22 (1889), Sanae Takata, Yuzo (later Shoyo) Tsubouchi and Koson Aeba systemized rhetoric theory, claiming that there had existed a theory of rhetoric and the term figures of speech in the Orient. They used the term 'biji gaku' (beautification of writing or flowery languages) to describe the pre-existing theory. They alternated the term rhetoric to 'biji gaku' (美辭学). Tsubouchi (1859-1935) (professor at Waseda University, who specialized in Shakespeare) claimed that 'hi-yu' abounded and was best exploited in Shakespeare. He classified various kinds of rhetoric methods into three categories: Resemblance, Association and Contrast. He placed Simile, Metaphor, Personification and Allegory in the category of Resemblance; Synecdoche, Metonymy, Hyperbole and Allusion in Association; Antithesis, Climax, Epigram, Interrogation and Exclamation and Irony in Contrast in *Figures of Sentences* (*Bun-no Sugata*, 文のすがた, 1977). Its first impression was in Meiji 26, i.e. in 1893. He suggests Onomatopoeia be included in the category of Association.

Hogetsu Shimamura, the successor to the above scholars, stated in his book entitled '*New Ways of Beautifying Writing*' (新美辭学) (Meiji 35, i.e. 1902) that 'biji gaku' (美辭学) is his interpretation of figures of speech or rhetoric. Tsubouchi and Shimamura alluded in their writings to Chen Kui's *Rules of Sentence* or Rhetoric Book (*Wen Zhe*, 文則). Therefore as far as the origin is concerned, as stated earlier, we can trace it back to Chen Kui's *Wen Zhe* in the 12th century.

The late 19th century was when the Japanese were ever more attracted by occidental civilization and culture(s). They accumulated occidental concepts not only in rhetoric but in all human activities and gave them names or nominations by using 'katakana'. 'Katakana' sometimes represented the concepts, or names using similar sounds to the original occidental sounds, at other times, new wordings or terms suitable or similar to the originals were invented (though there are some wordings or terms quite unique and far from the original). Ever since then, the number of occidental loan words or terms

described by 'katakana' (or sometimes by original alphabets) has been increasing. The most recent ones include the 'hai-tekū' (high technology), 'conpu-ta' (computer) and 'si-dhi-romu' (CD-ROM).

2. 2-2. APPEARANCE OF THE TERM 'METAPHOR' IN JAPANESE

The earliest appearance of 'metaphor' (and 'metonymy') in Japanese was the one taken from *Rhetoric and Belles Lettres*, part of Du Marsais' *L'Encyclopedie* (百科全書)(Sato, 1992; 1997). Later it was discovered that this might have originated in The Champles' *Information for the People*. It was translated by Dairoku Kikuchi and published by the Ministry of Education or Mombusho in Meiji 13 (1880). The term for metaphor in the Japanese version at this time was 'metaforu' ('sho-yu', 象喩) written in 'kanji' with 'katakana' ruby type (furigana) on it. It must have been the spelling pronunciation of 'metaphor.' The one for metonymy was 'metonimi' ('kan-go', 換語) also with ruby type (furigana) on it. The word 'sho' (象) refers to form and/or statue. The word 'kan' refers to replacing. They allocated the term 'sho-yu', but it disappeared shortly afterwards, probably because it was not familiarised by users. 'Choku-yu' took the place of 'sho-yu' and 'kan-yu' the place of 'kan-go'. What we should take notice of here is that in Kikuchi's translated version, 'metaforu' was placed with the term 'hi-yu' (comparison, 比喩) in the same line, and that 'metonimi' comes with 'jo-kyo' (circumstances, 情況) and 'chaku-shoku' (colouring or picturesque, 着色). For an example of metaphor in this translation, the breathing of animals is 'the blow of wind,' and for an example of metonymy 'Cromwell summoned members of the Parliament with one touch of his pen and dissolved it with one breadth of his.' As stated earlier, Hogetsu (Takitaro) Shimamura (Meiji 35, i.e. 1902: 312) determined the translation of 'metaphor' to be 'in-yu.' To be more faithful to his script, he states that 'in-yu' is called 'metaphor' in English (ibid.). He clarifies the quality of metaphor: explicitness, wording effect and the avoidance of overuse. Tracing back this development of metaphor in Japan is a noteworthy discovery in my present study.

2. 2-3. CONTEMPORARY METAPHOR STUDY

Nowadays in Japan, a considerable number of researchers and scholars research rhetoric, semantics, cognitive linguistics and studies of related areas, and there are also a considerable number of studies of 'hiyu' or metaphors. Studies of metaphors are increasing, but such systemization as Lakoff and Johnson (1981; 1987) did and such studies as effects of etymological or cultural learning of figurative idioms (Boers, 2001, Boers; Demecheleer, 2001; Boers, Demecheleer and Eyckmans, 2004) have yet to come out more in the field of

applied linguistics, especially in relation of the study of metaphors/idioms in its pedagogical applications to TEFL. A pedagogical application of contemporary metaphor study to a non-native speakers' situation (i.e. an EFL situation) is one of the aims of my study. Further contemporary metaphor study is discussed in PART II.

In sum, it was in the Meiji Era when the occidental theory of rhetoric introduced to Japan. However, part of the original idea of rhetoric could trace back to Chinese *Rhetoric Book* in the 12th Century. In the Meiji Era, the scholars or literary figures such as Kikuchi and Tsubouchi were attracted by the occidental idea of rhetoric. Kikuchi (Meiji 13, i.e. 1880) adopted the term 'metaforu' from 'Rhetoric and Belles Lettres.' At first it was translated as 'sho-yu' (象喻) by Kikuchi, but later Shimamura (Meiji 35, i.e. 1902) changed it to 'in-yu' (隱喻). Since the Meiji Era, the term 'in-yu' has been used, however, recently the term 'metafa' in Japanese or 'metaphor' in English tends to be used especially when metaphors or metaphorical expressions are discussed in academic arenas.

2. 3. METAPHOR IN THE OCCIDENTAL WORLD

The following is a brief summary of the history of metaphor in the occidental world. This will be a prelude to the earlier sections of Part II.

2. 3-1. TRADITIONAL VIEW

In archaic Greek society, rhetorical excellence was praised. The age of the arts of rhetoric stretched from about 400 to 320 B.C., close to Homer's age. Excellence in rhetoric, such as the ability to persuade, debate and show one's talent in public eloquence guaranteed social prestige in the Greek world. Not only metaphor but also other rhetorical techniques were employed in speeches. We can find a theory of rhetoric and metaphor in Aristotle's *Poetics* and *The Art of Rhetoric*, the texts of which defined the academic syllabus for the ordinary educated Greek and Roman (H. C. Lawson-Tancred, 1991).

Aristotle justified the importance of poetry and rhetoric, the former of which has been related to art and the latter to oratory since his time. His views on rhetoric and metaphor have been very influential in traditional theories of metaphor and its interpretation and production. He treated metaphor as one of the rhetorical techniques ('techne'). We can see his views on rhetoric and metaphor in *The Art of Rhetoric* and *Poetics*. He defines metaphor in *Poetics* as follows:

Metaphor is the application of a noun which properly applies to something else.

The transfer may be from genus to species, from species to genus, from species to

species, or by analogy (*Poetics*, translated by Heath, 1996: 34).

Nowadays we know that metaphor exploitation is not limited only to nouns. Aristotle gives the following explanations of species and genus,

- (i) By a transfer from genus to species I mean (e.g.) 'Here stands my ship'; lying at anchor is one kind of standing.
- (ii) From species to genus: 'Odysseus has in truth performed ten thousand noble deeds'; ten thousand is a large number, and is used in place of many.
- (iii) Species to species: e.g. 'drawing off' means cutting, and 'cutting' means drawing off -- each is a kind of removal.
- (iv) By analogy I mean cases where B stands in a similar relation to A as D does to C; one can then mention D instead of B, and vice versa. Sometimes the thing which the noun replaced stands in relation is expressed; I mean (e.g.) a cup stands in a similar relation to Dionysus as a shield does to Ares; so one may call a cup the 'shield of Dionysus,' or a shield the 'cup of Ares' (ibid.: 34-35).

For some other examples of the phrases used by analogy, he explains as follows: old age to life is evening to the day, evening is the old age of the day; old age is the evening of life or life's twilight. He states that if there is no existing noun for one term of the analogy, it can be expressed. For example, scattering seed is 'sowing', but there is no noun for the scattering of fire from the sun. If we take a similar view towards the sun as we do to the scattering of seed, he suggests the expression of 'sowing the god-created fire.' He provides a further way of using the analogical metaphor:

One may refer to something using the transferred noun, and negate some of its proper attributes; e.g. one might call a shield not 'the cup of Ares' but 'the wineless cup' (ibid.).

Aristotle valued analogy, saying that metaphors by analogy are the most celebrated (*The Arts of Rhetoric*, translated by Lawson-Tancred, 1991: 236). In part of his comment on the qualities of poetic style, he implies,

the most important thing is to be good at using metaphor. This is the one thing that cannot be learnt from someone else, and it is a sign of natural talent; for the successful use of metaphor is a matter of perceiving similarities (*Poetics*, translated by Heath, 1996: 37).

For the elements of style, Aristotle treated metaphor as a major figure of speech and weighed analogy. Gibbs' (1994: 211) summary of Aristotle's preachment in this line is noteworthy. He summarises that metaphors are implied analogies or elliptical similes.

As time went by, rhetorical study began to be controlled by the clergy. The church authorities began training in logic and theology. The examples were the curriculum designed by Thomas Aquinas (a theological curriculum) and Peter of Spain (later Pope John XXI (the general or "arts" curriculum)).

2. 3-2. THE RISE AND FALL OF RHETORIC

Ever since, rhetoric had taken its pride of place in the sophisticated system, at the same time, the system became too refined and fell into self-contradiction, because it became less flexible, though flexibility was its merit at its beginning. After the golden ages of Rhetoric in Greek and Latin, at the time of the Renaissance (as elocution and pronunciation were highly regarded in the Renaissance), rhetoric played an important role as a subject in general education.

Another revival after the Renaissance came in the 18th century. The late 18th and early 19th centuries saw the revival of rhetoric and reached the peak of its theory. The French scholar who made a great contribution to rhetoric theory was Cesar Chesneau Du Marsais. He defined metalepsis to be a kind of metonymy in *Des Tropes* (1729-30). It was during those days that his theory was the standard resource of figures of speech.

Then, in the late 18th century, Hugh Blair wrote a similar theory on metalepsis in *Lectures on Rhetoric and Belles Lettres* (1783; 1839). His theory had an influence on the metaphor study after its publication, therefore, we will look at his remarks in his book a little further.

The following is Blair's remark on metalepsis: when the trope is founded on the relation between an antecedent and a consequent, or what goes before and immediately follows, it is then called a metalepsis; as in the Roman phrase of "fuit," or "vixit," to express that one was dead. "Fuit Ilium et ingens gloria Dardanidum," signifies, that the glory of Troy is now no more (Blair, 1839: 184). This explanation indicates metalepsis is a kind of trope.

Blair (1839: 171-198) explicated figurative language and metaphor respectively in his 14th and 15th lectures. In the 14th lecture, he, alluding to the origin and nature of figures, explicates the characteristics of words or languages which expand or abridge their meanings and relate them to other terms, i.e. tropes. He gives an example of the

expansion of a preposition *in* as *in* the wood to *in* health, etc (ibid.: 175).

Concerning metonymy and synecdoche, his explanations are as follows.

Metonymy:

To tropes, founded on these several relations, of cause and effect, container and contained, sign and thing signified, is given the name of metonymy.(ibid.: 183)

Synecdoche:

When the whole is put for a part, or a part for the whole; a genus for a species, or species for a genus; the singular for the plural, or the plural for the singular number; in general when anything less, or anything more, is put for the precise object meant; the figure is then called a synecdoche. (ibid.: 184)

In the 15th lecture, Blair explicates metaphor, which requires more particular attention:

This is a figure founded entirely on the resemblance which one object bears to another. Hence, it is much allied to simile, or comparison; and is indeed no other than a comparison, expressed in an abridged form. When I say of some great minister, “that he upholds the state, like a pillar which supports the weight of a whole edifice,” I fairly make a comparison; but when I say of such minister, “that he is the pillar of the state,” it is now become [sic.] a metaphor. (ibid.: 185)

Though all metaphor imports comparison, and therefore is, in that respect, a figure of thought; yet, as the words in a metaphor are not taken literally, but changed from their proper to a figurative sense, the metaphor is commonly ranked among tropes or figures of words. But, provided the nature of it be well understood, it signifies very little whether we call it a figure or a trope. (ibid.: 185)

Blair remarks in addition that

the word metaphor is sometimes used in a looser and more extended sense; for the application of a term in any figurative signification, whether the figure he founded on resemblance, or on some other relation which two objects bear to each other. (ibid.: 186)

He also suggests that Aristotle uses metaphor in this extended sense in his poetics, for any figurative meaning imposed upon a word; as a whole put for the part, or a part for the whole; a species for the genus, or a genus for the species. (ibid.)

In sum, in the long history of the rise and fall of rhetoric, again in the early 19th century, rhetoric theory reached its peak. Pierre Fontanier published *Les figures du discours* (1821-27). He stated that the parts of speech which could be used metaphorically were nouns, adjectives, participles, verbs but rarely adverbs (*Les figures du discours*, Vol.1, Part 1, Chap.3). There had been a variety of theories which said that figurative language should be classified as 'trope.' Simile, metonymy and metaphor were grouped in 'trope' in classical rhetoric.

In the 20th century when "elocution" flourished in speech, "rhetoric" was referred to as the principles of "belles lettres," but then, "belletristic" was thought to be pejorative in academic circles. However, when language became a subject of scholarly concern in the 20th century, scholars turned to classical theories of rhetoric again, though modern rhetoric was far more than just "a collection of terms borrowed from classical rhetoricians" (Britannica, 1990, Vol. 26: 803). By this time, rhetoricians had become aware of rhetoric being affected by the audience. Modern rhetoric became involved both with the process of interpretation (or analysis) and with that of creation (or genesis). Rhetoric, "having shifted its focus from the communicator to the communicant and having been profoundly influenced by the temper of modern intellectual movements," (ibid.: 803) has come to the point in which rhetoric was not merely a body of theory or artificial technique but "integral component of all human discourse" (Britannica, 1990, Vol. 26: 804). It can be said that the fall of rhetoric (the use of figures of speech) had resulted from the tendency to treat and view rhetoric as merely a technique. Figurative speech should have been treated and viewed from the perspective of cognition of language and thought.

2. 4. CONCLUSION

Part I has described that language has its own characteristics, however, as far as figurative language or metaphor is concerned, their origins are rooted in time immemorial. The roots of the theories of figurative languages in the occidental world can trace back to Plato or Aristotle in the 4th century B.C. On the other hand, in Japan, by the time the literary works, for example, *Man-yo-shu* were made public, there must have been figurative languages, too. It is quite possible that such ways of expressions might have been generated with the developments of languages. Part I has also described that there had been the rises and falls of rhetoric, but ironically the prosperity or decline also gave rise to the study of figures of speech, including metaphor. Eloquence has been thought to be an advantage for those who make a sophisticated speech in public in the occidental society and so is it in Japan nowadays. One of the ways to be good speakers is to use some figurative

languages or metaphors to make their speech more attractive. We quite often encounter them in our daily discourse. Metaphor, one of the figures of speech, is highlighted nowadays from the perspective of holistic human cognition. This concludes Part I and we will look at metaphor, focussing on its contemporary theories and/or views in Part II.

Part II: METAPHOR IN CONTEMPORARY THEORIES/VIEWS

2. 1. CONTEMPORARY VIEWS

Traditionally metaphor was viewed as a matter of language or a set of figurative linguistic expressions as stated in Part I. However, in the past several decades, there has been a radical change in the study and treatment of metaphor. Metaphor received attention from specialists in linguistics, philosophy, psychology, sciences (especially, cognitive science) and anthropology, to name just a few related disciplines. Among various studies in the middle of the 20th century was that of I. A. Richards' (1936) momentous revitalising study of rhetoric. The 1970's were another epoch-making period (Ortony et al., 1979/1994; Searle, 1979/1994, etc.). Since then metaphor has come to be viewed from the perspective of holistic human cognition. Especially, in the 1980's and thereafter, studies of metaphor have been highlighted (Ortony et al., 1985; Honeck and Hoffman et al., 1980; Lakoff and Johnson, 1981; Tourangeau and Sternberg, 1981; Sperber and Wilson, 1995; Kittay, 1987; Lakoff, 1987; Gentner and Clements, 1988; Gentner, 1989; Gibbs, 1994; Cameron and Low, 1999a and so on).

In Part II, a brief chronological summary of some of the influential trends in metaphor studies is given, after which recent studies of metaphor will be discussed thematically with a view to applying metaphor theories to pedagogical use, specifically focusing on EFL learners' metaphor understanding and use.

In brief, one of the research questions in Part II is to investigate how metaphor is viewed in contemporary metaphor research. This is discussed chronologically and thematically. The other question is how metaphor is viewed in applied linguistics. This investigates key researchers' implications for metaphor studies.

This thesis follows the conventions used in metaphor research for the indications of conceptual metaphor and linguistic metaphor. A conceptual metaphor is presented in large capitals, for example, LIFE IS A JOURNEY, and a linguistic metaphor or a linguistic realisation of metaphor in small italics, for example, *the road he's travelled has taken many twists and turns*.

2. 1-1. FROM CLASSICAL THEORIES TO NEW PERSPECTIVES

A handy resource to help find a lexical meaning of the word 'metaphor' is an encyclopaedia. The word 'metaphor' in Britannica is placed under the entries of metaphor (a short entry), speech and rhetoric (1990, Vol.8: 61-62; Vol.26: 803-810). In the item 'metaphor', it is briefly defined as follows:

metaphor, figure of speech that implies comparison between two unlike entities,

as distinguished from simile, as explicit comparison signaled by the words “like” or “as.” The distinction is not simple. The metaphor makes a qualitative leap from a reasonable, perhaps prosaic comparison, to an identification or fusion of two objects, to make one new entity partaking of the characteristics of both. Many critics regard the making of metaphors as a system of thought antedating or bypassing logic (ibid. Vol. 8: 61).

As is read in the above quotation, the Britannica’s explanation of metaphor follows the traditional views to some degree but they also include contemporary views as shown in the last part of the quotation: many critics regard the making of metaphors as a system of thought antedating or bypassing logic (ibid.). It is a fair definition. All of the entries concerning metaphor in the Britannica classify it as a figure of speech, and the item of rhetoric explains that metaphor had been treated as one of the rhetorical elements. The Britannica further explains that ancient rhetoricians made a functional distinction between trope (like metaphor, a textual effect) and scheme (like allegory, a structural principle). To the former category belonged such figures as metaphor, simile, personification, irony, hyperbole or understatement and metonymy, while to the latter category belonged other figures (ibid.: 804).

The beneficial legacy of the ancient rhetoricians is the clarification of a “functional distinction between trope (like metaphor, a textual effect) and scheme (like allegory, a structural principle)” as in the entry of rhetoric in Britannica, although the border between trope and scheme becomes fuzzy because a fusion of structure and texture takes place.

There have been several views of metaphor which are still rooted in classical theories some time in the 20th century. One of them is the “comparison or substitution view,” which is based upon analogy or similarity (as in Aristotle) and replacement respectively. In this view, metaphor was treated as linguistic phenomena. However, nowadays metaphor is considered to be deeply rooted in our conceptual thought according to the cognitive paradigm, as we will read in the following sections. The recent origin of this thought can be traced back to I.A.Richards (1936). Black (1962/1994) follows on from Richards’ view and proposes the interaction view. Succeeding Black, in the 1980’s and after, a detailed version of the conceptual view was developed by such authors as Lakoff and Johnson (1981), Johnson (1987) and Lakoff (1987), and cognitive linguists also took a similar view.

In the following sections, we will look at the views proposed by Richards and Black first, followed by recent theories and views.

I. A. Richards’ view

Richards (1936) postulates that metaphor is not limited to verbal phenomena but related to

thought as shown below:

The traditional theory noticed only a few of the modes of metaphor, and limited its application of the term metaphor to a few of them only. And thereby it made metaphor seem to be a verbal matter, a shifting and displacement of words, whereas fundamentally it is a borrowing between and intercourse of thoughts, a transaction between contexts. Thought is metaphorical, and proceeds by comparison, and the metaphor of language derives there from (ibid.: 94).

His point is that metaphor is not only a verbal phenomena but also a phenomena of thought. He also alludes to how verbal metaphor is understood: the process of metaphor in language, the transactions of the meanings of words which we understand in explicit verbal metaphors, are super-imposed upon a perceived world which is itself a product of earlier or unwitting metaphor (ibid.: 109). He did not use the term “map” here, but the word “super-impose” seems to have the similar connotation as the term “map” that recent researchers often use. Black praises the I. A. Richards’ achievement to be a valuable insight into metaphor treatment, which leads him to the “interaction view” (Black, 1962, 1994). It claims that metaphorical meaning is a result of an interaction between the metaphorical expression, i.e. “focus” and the surrounding literal “frame.” The same idea is delivered in his later publication, stating that “a metaphorical statement has two distinct subjects to be identified as the primary and the secondary subjects” (Black, 1994). In a sense, he amended I.A.Richards’ idea of the secondary subject (from “things” or “ideas” to “systems”).

Black’s interaction view

Black states the merits of the interaction view which is indebted to Richards’ insights, and criticises the traditional “substitution view” and “comparison view.” He is critical of the both views.

... the substitution view regards “the entire sentence that is the locus of the metaphor as replacing some set of literal sentences”; while the comparison view takes the imputed literal paraphrase to be statement of some similarity or analogy, and so takes every metaphor to be a condensed or elliptic simile (Black, 1994: 27).

Black’s (1994) claims of his interaction view can be summarised as follows:

(1) A metaphorical statement has two distinct subjects, to be identified as the “primary”

subject and the “secondary” one. In *Metaphor* [1962], he spoke instead of the “principal” and “subsidiary” subjects. The duality of reference is marked by the contrast between the metaphorical statement’s *focus* (the word or words used non-literally) and the surrounding literal *frame*.

(2) The secondary subject is to be regarded as a system rather than an individual thing. Here Black (1994: 27) emphasises the “systems” rather than “things” or “ideas” (as is emphasised by Richards) referring to his earlier term as the “primary subject.” He explains how a metaphorical utterance works: it works by “projecting upon” the primary subject a set of “associated implications,” comprised in the implicative complex, that are predictable of the secondary subject (ibid.: 28). “The crux” of his interaction view is,

... in the context of a particular metaphorical statement, the two subjects “interact” in the following ways: (a) the presence of the primary subject incites the hearer to select some of the secondary subject’s properties; and (b) invites him to construct a parallel implication-complex that can fit the primary subject; and (c) reciprocally induces parallel changes in the secondary subject. (ibid.: 28).

The point of his interaction view of metaphor is that the meaning of a metaphor is generated from the interaction of primary and secondary subjects. It is a broader idea than the Lakoff and Johnson’s earlier mapping theory, in which the meaning is mapped from the source to the target domains (they amended their idea later in 1987).

Thus Black rejects the theory of a one-way transfer from one entity to another and proposes a mental process where something associated with both of the two entities (the Topic and the Vehicle) interact and map each other.

Black classifies the relations between the meanings of the corresponding key words of the two implication complexes as (a) identity, (b) extension, typically ad hoc, (c) similarity, (d) analogy, or (e) what might be called “metaphorical coupling” (where, as often happens, the original metaphor implicates subordinate metaphors) (ibid.: 29). If his interaction view is applied in an interpretation of the metaphor *Juliet is the sun*, the implication associated with the sun is projected to the implication associated with Juliet and these implications interact each other.

2. 1-2. MOVING TOWARD CONCEPTUAL VIEWS

Reddy’s (1979) proposal of the CONDUIT METAPHOR has shed light on a new way of looking at metaphors. It gave rise to Lakoff and Johnson’s conceptual metaphor theory.

The conduit metaphor and the systematicity of metaphor

Reddy (1979) points out the following features of language for structuring metaphors:

IDEAS (or MEANINGS) ARE OBJECTS.

LINGUISTIC EXPRESSIONS ARE CONTAINERS.

COMMUNICATION IS SENDING.

Ideas (objects) are put into words (containers) and sent (through a conduit) to a receiver and the receiver takes the idea (objects) out of the words (containers). We must consider the context in which the metaphor is used, as indicated in Lakoff and Johnson's comments on the CONDUIT METAPHOR: it [the conduit metaphor] does not fit cases where context is required to determine whether the sentence has any meaning at all, and if so, what meaning it has (Lakoff and Johnson, 1981: 12).

Lakoff and Johnson (1981) proposed their theory of metaphor based upon their cognitive linguistic perspective and Reddy's earlier work. They redefined the concept of metaphor in their *Metaphors We Live By* (1981):

Metaphor is for most people a device of the poetic imagination and the rhetorical flourish – a matter of extraordinary rather than ordinary language.

Moreover, metaphor is typically viewed as characteristic of language alone, a matter of words rather than thought or action. For this reason, most people think they can get along perfectly well without metaphor. We have found, on the contrary, that metaphor is pervasive in everyday life, not just in language but in thought and action. Our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature (ibid.: 3).

Their contribution to the view on metaphor is their emphasis not only on expressions but also on a way of conceptualization and they state that the metaphorical concept is systematic, so the language we use to talk about that aspect of the concept is also systematic. They explain the systematicity of metaphorical concepts, offering a great number of examples. One of the examples is ARGUMENT IS WAR⁶ (ibid.: 7). An expression *he is defeated by his opponent in their argument* comes from our conceptual network of battle that characterises the concept of an argument.

Idealized Cognitive Models or ICMs and domains

Lakoff (1987: 417) postulates a view that our knowledge is organised by means of structure called 'idealized cognitive models' (ICMs) and that metaphor can be viewed as an experientially based mapping from an ICM to one domain to an ICM in another domain. Concerning ICMs, Lakoff (1987: 68) gives this name to the structure by which our knowledge is organised and further

states that category structures and prototype effects are by-products of that organisation. The ideas about cognitive models have been developed within cognitive linguistics and owe to Fillmore's frame semantics (Fillmore, 1982), Lakoff and Johnson's theory of metaphor and metonymy (1981), Langacker's cognitive grammar (1986), and Fauconnier's theory of mental spaces (Fauconnier, 1985). Fillmore's frame semantics is similar to schema theory (Rumelhart, 1980) and scripts (Schank and Abelson, 1977). Schema theory will be looked at later in this chapter.

In both Lakoff and Johnson (1981) and Lakoff (1987), the term 'domain' does not seem to be sufficiently clear. It was clarified by Langacker (1991). Domains can be construed as any kind of conceptualisation as Langacker explains as follows. Langacker (1991: 2) put it in linguistic semantics, because meaning is equated with conceptualization which includes novel conceptions as well as fixed concepts; sensory, kinesthetic, and emotive experience; recognition of immediate context (social, physical, and linguistic); and so on. He also states that semantic structures ("predications") are characterized relative to "cognitive domains," where a domain can be any sort of conceptualization, for example, a perceptual experience, a concept, a conceptual complex, an elaborate knowledge system, etc. He further explicates that domains consist of "basic domains" irreducible to other domains and "abstract domains" which are at a higher level than the former.

In other words, so-called 'cognitive domains' can be classified into further two domains: "basic domains," of which characteristics are based upon our physical or bodily experiences and "experiential domains," of which characteristics are based upon our social and cultural experiences. In a sense, they are similar to cognition through schemas as Lakoff (1987) states.

Categorisation of metaphors

Lakoff and Johnson (1981) categorise conceptual metaphors using such terms as structural, orientational, ontological and container metaphors. Structural metaphors are cases where one concept is metaphorically structured in terms of another, as in ANGER IS WAR. Orientational metaphors are ones that do not structure one concept in terms of another but instead organise a whole system of concepts with respect to one another. The majority have to do with spatial orientation: for example, up-down, in-out, front-back, on-off, deep-shallow, central-peripheral. Orientational metaphors give a concept a spatial orientation, too: for example, HAPPY IS UP: I'm feeling *up* now (1981: 14). Ontological metaphors originate in our experience of physical objects (especially our own bodies) and relate to ways of viewing events, activities, emotions, ideas, and so on, as entities and substances, for example, INFLATION IS AN ENTITY: *Inflation is lowering our standard of living* (1981: 26). Part of ontological metaphors provide categories of Container metaphors and Personification. Each of us has/sees a body as a container (physical and mental). We know we have a tendency to view objects (e.g. vessels) as containers. For example, we move from room (container) to room (another container) and we move *out of* one

room and *into* another. Lakoff and Johnson give an example of ‘land areas’ (There’s a lot of land *in* Kansas) (ibid.: 30), where Kansas is an area, i.e. container and the word *in* indicates a boundary. The visual field is also conceptualised as a container as in the expression “The ship is coming *into* view.”

Lakoff and Johnson (1981: 33) postulate that the most obvious ontological metaphors are those where a physical object is specified as being a person. We comprehend experiences with nonhuman entities in terms of human motivations, characteristics, and activities, for example, “*Inflation is eating into* our profits” or “Our biggest *enemy* right now *is* inflation.” Personification is a general category that covers a very wide range of metaphors, each picking out different aspects of a person or ways of looking at a person (ibid.).

Lakoff and Johnson (1981) regard metaphor as a way of thinking or a matter of mind not just a matter of words. This new view of metaphor as concept received great attention and it has given a great influence on the study of metaphor ever since.

Gibbs (1994) also stands on similar ground. He demonstrates that human cognition is deeply poetic in *The Poetics of Mind* (1994). He states further that figurative language is ubiquitous in our daily speech and that figurative schemes of thought come from our ordinary and conceptual understanding of experience. Later in Section 4, I will come back to his theory and take up his (six) “guidelines for research” (Gibbs, 1999a).

Before concluding this section, I will examine another argument proposed by Grady (1997). He and his colleagues propose a notion of primary and complex metaphors.

Primary and complex metaphors

The arguments proposed by Grady, et al. (1996) and Grady (1997) result from the problems residing in the theory of metaphors such as THEORIES ARE BUILDINGS, LOVE IS A JOURNEY, IDEAS ARE FOOD outlined in *Metaphor We Live By* (Lakoff and Johnson, 1981): “poverty of mappings”, “lack of experiential basis” and “independence of submappings” or “inefficiency of analysis.” They support their position by providing several examples of these problems. In terms of poverty of mappings, “the important aspects of buildings which fail to map” in THEORIES ARE BUILDINGS “are *parts* like floors, walls, ceiling; any important human *occupants* of the building; and the *functions* of buildings ...” (ibid.:178). Concerning the lack of experiential basis, “it is easy to list correlations in experience between having *more* of objects or substances, and seeing the level of those objects or substances *rise*” in the metaphor MORE IS UP; however, many metaphors (e.g. THEORIES ARE BUILDINGS or LOVE IS A JOURNEY) cannot be discussed in terms of such “straightforward correlations” (ibid.). The pairing of domains in these metaphors does not seem to have such salient experiential correlations as in MORE IS UP. The

third problem involves a “misleading conception of the relationships between certain sets of metaphorical data and between certain metaphorical mappings” (ibid.). Based upon these arguments, they propose the ideas of the “primary (or primitive) metaphor” and the “complex (or compound) metaphor”. The metaphors are defined as follows:

- a) A primitive is a metaphorical mapping for which there is an independent and direct experiential basis and independent linguistic evidence.
- b) A compound is a self-consistent metaphorical complex composed of more than one primitive. (ibid.: 181)

In brief, their contribution to metaphor theory is that they placed more weight on experiential motivation in the term of a primary (or primitive) metaphor which relates to the sensorimotor effects on metaphorical mappings. The notion of a primary metaphor premises our experience. In MORE IS UP, although there is no initial resemblance between the source and target domains, the increase of quantity (MORE) is experientially understood as the increase of amount (UP). The sensorimotor effects on metaphorical mappings can be seen in understanding synesthetic metaphors where sensorimotor experiences co-occur, for example, in “soft voice” the kinesthetic and auditory senses are combined. This suggestion stimulates my idea of metaphorical tests in this thesis.

In sum, modern linguists look to linguistic regulations to find systems in conceptual structure (Lakoff and Johnson, 1981; Jackendoff, 1983; Lakoff, 1987; Johnson, 1987), and contemporary metaphor theories owe very much to cognitive linguistics (Langacker's cognitive grammar & Gibb's psychological effects of language and thought) and cognitive semantics (the views/theories presented by Johnson (1987), Lakoff (1987), Turner (1998), Sweetser (1990), to name but a few) and other related disciplines, such as cognitive science.

So far I have briefly traced the shifts of studies of metaphor from traditional views to cognitive approaches. In the following rest of the sections, further details in contemporary metaphor studies will be discussed, focussing more on the fields of cognitive and applied linguistics.

2. 2. CONTEMPORARY VIEWS ON METAPHOR

Contemporary views of metaphor, theoretical issues and contemporary research are summarised and discussed here. Representative contemporary theories can be grouped into three fields: (1) cognitive linguistics/psychology; (2) disciplines other than the group (1); (3) applied linguistics. The main focus in this thesis is on metaphor studies in applied linguistics (i.e. the third group), however, some key theories/issues from the groups which are strongly relevant to

research on metaphorical competence in this thesis are considered.

Group (1): cognitive linguistics/psychology

It comprises the following theories: i) conceptual metaphor theory (Lakoff, 1987; Lakoff & Johnson, 1981; Gibbs, 1994); ii) salience-imbalance theory (Ortony, 1994; Ortony et al., 1985); iii) domain-interaction theory (Tourangeau & Sternberg, 1982); iv) structure-mapping theory (Gentner, 1989; Gentner, D. and C. Clements. 1988). The main focus is on (i), in order to investigate what conceptual metaphor is meant to be.

Group (2): disciplines other than the group (1)

It includes the following theories: i) semantic-field theory (Kittay, 1987); ii) speech act theory (socio-cultural and semantics) (Searle, 1994); iii) relevance theory (Sperber & Wilson, 1995). The primary focus is on (i), in order to investigate the content of semantic field theory and whether or not it is related to the function of network and/or mapping. The secondary foci are on (ii) and (iii) in order to investigate a pragmatics view on metaphor.

Group (3): applied linguistics

This includes views on and pedagogical suggestions for metaphor proposed by Carter (1998), McCarthy (2001), Deignan (1997), Cameron & Low (1999a; 1999b), Boers (2000), Littlemore (2001a, 2001b) and Chateris-Black (2002). Although there may be some other theoretical issues and research in metaphor studies in applied linguistics, only major theoretical issues and research are included here.

2. 2-1. METAPHOR RESEARCH IN COGNITIVE LINGUISTICS/COGNITIVE PSYCHOLOGY

Conceptual metaphor theory

The key publications of the conceptual metaphor theory were issued by Lakoff & Johnson (1981), Lakoff (1987) and Gibbs (1994). Their contribution to metaphor study is the categorisations of metaphors (more than a dozen categorisations illustrated in *Metaphor We Live By*, 1981), and the clarification of the systematicity of metaphors, some of which have been described earlier.

Another contribution of Lakoff & Johnson (1981) and Lakoff (1987) to metaphor study is the proposition of the category of conceptual metaphor. Here is one of the examples (ANGER IS WAR) to explain how our concept of argument is structured by the two elements, anger and war.

The essence of metaphor is understanding and experiencing one kind of thing in terms of another. Arguments and wars are different kinds of things ... and the actions performed are different kinds of actions. But ARGUMENT is partially structured, understood, performed, and talked about in terms of WAR (ibid.: 5).

In the metaphor ARGUMENT IS WAR, we associate the words 'war' (and 'argument') through imagination with other words and concepts. This way conceptual networks expand. The conceptual network of war or battle (partially at least) characterises the concept of an argument and connects it to the expression.

Lakoff and Johnson state that metaphorical expressions in everyday language provide us with insight into the metaphorical nature of the concepts that structure our everyday activities. They give an example of the metaphorical concept TIME IS MONEY: You're *wasting* my time. As we waste money, so we waste time. In this metaphor, time is considered to be a valuable commodity and money is also valuable and its resources are limited. This way the conceptualisation of time is connected to that of money and we understand its meaning. They also state here and elsewhere that our concept is deeply rooted in our experience.

Gibbs (1994: 7) gives an example of conceptual metaphor which originates in people's experiences in cultures, in his case, in Western cultures. He explains how Western people's conceptual mapping of anger onto understanding takes place in ANGER IS HEATED FLUID IN A CONTAINER. Their understanding of anger (the source domain) as heated fluid in a container (the target domain) stimulates several entailments.

... when the intensity of anger increases, the fluid rises (*His pent-up anger welled up inside him*). We also know that intense heat produces steam and exerts pressure on the container (*Bill is getting hot under the collar* and *Jim's just blowing off steam*). Likewise, intense anger produces pressure in the container (*He was bursting with anger*). When the pressure in the container becomes too high, the container explodes (*She blew up at me*). Each of these metaphorical entailments is a direct result of the conceptual mapping of anger onto our understanding of heated fluid in a container (Gibbs, 1994: 7).

As is explained in the above metaphorical expressions, the expressions of 'anger' can be conceptualised by a container metaphor and understood as such, but it is also understood as phenomena of our metabolism. Conceptualisation may be shared with different languages but sometimes may not. The following is one of the examples which shows a difference. In Japanese, we use body part words such as head or abdomen, though not limbs, in anger expressions. A head or abdomen function as container (both for physical and mental phenomena) and at the same time they function as the organs of metabolism. Here we may notice that there is a slight difference between English and Japanese, for example, in 'hara ga

tatsu' in Japanese which means to 'get angry.' In this expression, the word 'hara,' a metonymy in this case, refers to an abdomen (an area of stomach and intestines, i.e. a container) and the 'ga' is a nominative marker. The word 'tatsu,' a predicate, has a special meaning other than the meaning of the ordinary to 'stand' (an intransitive verb) in this expression. It means to 'intensify effects' (an transitive verb) (Shinmura, et al., 1987) as in 'tatsu' used in 'ki ga tatsu' meaning 'become nervous or irritated.' The slight difference here comes from the meaning of 'tatsu.' The 'tatsu' in Japanese includes a transition from a static state to an emotional (i.e. angry) one. The linguistic representation is thus slightly different, but the metabolism excited by this emotion is a similar one. A cross cultural comparison tested by Deignan, et al. (1997: 353) also suggests that some conceptual metaphors are common across cultures but not all linguistic or conceptual metaphors may be shared by any two languages.

Lakoff and Johnson (1981) repeatedly state that many of our experiences and activities are metaphorical in nature and that much of our conceptual system is structured by metaphor. There are similarities in terms of the categories of our conceptual system, from which result conventional metaphors. Some of them are Orientational metaphors, for example, MORE IS UP; ontological metaphors, for example, TIME IS A SUBSTANCE; structural metaphors, for example, THE IDEAS ARE FOOD. These metaphors induce similarities. However, they differentiate their theory from the comparison theory, although they accept its basic insight claiming that the only similarities relevant to metaphor are similarities as experienced by people. They also claim that conceptual metaphors are grounded in correlation within our experience. These experiential correlations may be of two types: experiential co-occurrence (e.g. MORE IS UP, where there is no experiential similarity) and experiential similarity (e.g. LIFE IS A GAMBLING GAME, where one can experience actions in life as gambles) (ibid.: 155).

The systematicity and conceptualisation of metaphors postulated by Lakoff and Johnson (1981) are persuasive. And we owe a great deal to their study, especially to the theory of conceptual metaphors. However, not all metaphors can be categorised according to their classifications, nor can they be reduced to a conceptual pattern X is Y. As Cameron and Steen (1999: 13) point out, there are limitations to a Topic-Vehicle approach in describing metaphor. Therefore, I must look for some additional classifications for the test items and analyses of the test results to employ in this study. I used Lakoff and Johnson's classifications but at the same time, other classifications, such as analogical reasoning, for analysing the test results.

2. 2-2. METAPHOR RESEARCH IN DISCIPLINES OTHER THAN COGNITIVE LINGUISTICS/PSYCHOLOGY

This section explores semantic field theory and pragmatics' viewpoints with a view to

investigating metaphorical transfer, network and/or mapping.

Semantic field theory

Kittay's (1987) contribution to metaphor study is noteworthy from a pragmatic point of view. She constructed a relational theory of meaning from a pragmatic view, called Semantic Field Theory. She applied it to a theory of metaphor identification and interpretation. She claims that the interpretation of a metaphor involves the transfer of relations between the semantic field of the Vehicle and that of the Topic. Kittay (1987: 36) characterises metaphorical transfer as semantic field theory:

metaphorical transfers of meaning are transfers from the field of the vehicle to the field of the topic of the relations of affinity and opposition that the vehicle term(s) bears to other terms in its field. More precisely, in metaphor what is transferred are the relations which pertain within one semantic field to a second, distinct content domain.

Kittay uses poems (Wordsworth's 'Venetian Republic' and John Donne's 'The Bait') to show that the transference of meaning is a process and explicates how semantic fields expand and connect more clearly in the poems as extended metaphors. In this process the structure of one semantic field induces a structure on another content domain. The extended metaphors, in contrast to an isolated metaphor (a single phrase or clause without a surrounding context), supply most of the terms of the relevant fields and provide a structure sufficiently rich to allow us to explore the shifts of meaning and thought that characterize metaphor (ibid.: 258).

As for the terminology of vehicle and topic, the semantic field of the vehicle is referred to as the 'vehicle field' and the content domain of the topic as the 'topic domain' (ibid.). Her point is that metaphor involves a transfer of relations across semantic fields. She maintains the position that metaphor involves at least one semantic field and another distinct content domain, and often two distinct semantic fields. Semantic fields overlap, intersect, and are embedded in one another – they are rarely completely disjointed (ibid.: 291).

She proves that there are syntagmatic and paradigmatic relations of the semantic field of fishing, using the structure in Donne's poem 'The Bait' as an example of the extended metaphor (ibid.: 263) (see Note 7 for her further explication of The Bait in terms of metaphor).

Here is a brief summary of semantic field, network and mapping. What Kittay called a 'semantic field' is called a 'network,' that is, the 'system of association' by Black, and it is equivalent to 'mapping' as named by Lakoff and Johnson. In the metaphor 'Love is a journey,'

“love” is the target and “journey” is the source. These two domains (target and source) are part of a whole network of related meanings. Black’s term ‘network’ is the system of “associated implications,” comprised in the implicative complex (Black, 1994). Kittay (1987) called it a semantic field. Lakoff and Johnson (1981) call it ‘mapping’. “Love” is part of a network that includes concepts such as “lovers,” “passion,” and so forth. A ‘love’ network can be extended to other words of attributive meanings of ‘love.’ The source, “journey,” is also part of a network of concepts. The network of the expression elicits “start,” “obstacle,” and so on. All of these include denotative and connotative meanings. The networks are not limited to words or concepts. Love may in fact have ambivalent aspects: good or happy and bad or unhappy emotion. Similar reasoning can apply to a journey. Kittay states that the network is thus a category as shown in Lakoff.

Summary of the terms used referring to components of a metaphor

Before introducing a new topic, the two elements, i.e. the components of a metaphor (X is Y) are summarised in Table 2-1. A metaphor user would often use a pattern of X is Y to say one thing and mean another. The two elements are called in different terms according to the thinkers’ views on metaphor. (As we know, not all metaphors have these two elements.) The terms used and the indications intended by the authors and the words for X and Y interaction are summarised in the table. The table also includes the terms used by Lakoff and Johnson and Kittay and the words for the X and Y interaction.

Table 2-1 The authors and the terms used referring to X and Y

Elements/Terms			
Authors	X: one of the elements or a first element in a metaphor	Y: the other or a second element to be conveyed or referred to the first element in a metaphor	Word for interaction between X and Y
I.A. Richrads (1936/1965)	the referent of the underlying comparison =topic/ "tenor"	the relatum="vehicle"	transfer
Max Black (1962/1979)	the primary subject the argument or the function ="focus"	the subsidiary/secondary subject the argument of the referent="frame"	network
Lakoff and Johnson (1981/1999)	ICM: the target domain	ICM: the source domain	mapping
Kittay (1987)	topic domain	vehicle field	transfer

Searle’s principles of metaphorical interpretation

Searle’s (1994: 83-4) main concern is the relationship between an utterance and its metaphorical meaning and how metaphor works. He argues that the problem of explaining how metaphors work is a special case of the general problem of explaining how a speaker’s meaning and a sentence or word meaning come apart. It is a special case of the problem of

how it is possible to say one thing and mean something else. To help answer the question as to how we understand metaphors, he asks a question,

How is it possible for the speaker to say metaphorically “S is P” and mean “S is R,” when P plainly does not mean R; furthermore, How is it possible for the hearer who hears the utterance “S is P” to know that the speaker means “S is R”? (ibid.: 102).

His answer is that if the hearer notices there is a problem in literal interpretation of an utterance “S is P,” that hearer looks for another different meaning “S is R.” To the question how metaphors work, he posits that this question is the same as how one thing reminds us of another. There is no single answer to either question, however,

metaphors are restricted and systematic; restricted in the sense that not every way that one thing can remind us of something else will provide a basis for metaphor, and systematic in the sense that metaphors must be communicable from speaker to hearer in virtue of a shared system of principles (ibid.).

He proposes eight principles for the understanding of metaphors from the hearer’s point of view, highlighting the shared systems between the speaker and the hearer. The eight principles (ibid.: 104-8; see Note 8 for details) are briefly as follows: interpretations by definition, property or attribute, belief, association, condition, similarity in meaning, inference and metonymy and synecdoche. The first principle, “P are by definition R,” e.g. *Sam is a giant*, is understood well, because giants are by definition big; the second principle, “P is contingently R,” e.g. *Sam is a pig*, is also understood well, because the property of R is property of P things. These metaphors can go through the “like” test. The third principle, “P are said or believed to be R,” e.g. *Richard is a gorilla*, is understood in a belief shared between the speaker and the hearer. The fourth principle, “P are not R,” e.g. *Sally is a block of ice*, is understood by the association with P and R properties. The fifth principle (e.g. *You have become an aristocrat*) is understood by the condition of being P (*an aristocrat*). The sixth principle is understood by the similarity in meaning, e.g. *This soufflé is addled*. The seventh principle, the application of principles from 1 to 6 (e.g. *The ship ploughs the sea*), is understood by the inference of a relation such that “P-relations are by definition R-relations.” The eighth principle is metonymy and synecdoche as a special case of metaphor, for example, the British monarch is expressed as “the Crown.”

In brief, Searle’s contribution to the study of metaphor is that he focused on the meaning of

utterances from a pragmatic point of view and paid attention to the potential for the hearer's own inference.

Sperber and Wilson's Relevance Principle

Sperber and Wilson (1986/1995) also take a pragmatic point of view and present a new approach to the study of human communication. This new approach is applied in metaphor interpretation. As read in the following quotation, the Relevance Principle is an economical way of communication.

Human cognitive processes are geared to achieving the greatest possible cognitive effect for the smallest possible processing effort. To achieve this, individuals must focus their attention on what seems to them to be the most relevant (Sperber and Wilson, 1995: vii).

Sperber and Wilson postulate, in any utterance, an involvement of at least two relationships: a relationship between its propositional form and a thought of the speaker's. In the case of metaphor, it involves an interpretive relation between the propositional form of an utterance and the thought it represents (ibid.: 231). They further explicate metaphor referring to the following examples: (a) *This room is a pigsty* and (b) *Robert is a bulldozer*.

(a) is a standardised metaphor and is processed by an encyclopedic schema, where if pigsties are processed stereotypically, its ordinary interpretation is that the room is filthy or untidy. However, the speaker "must have intended to convey something more than this if the relative indirectness of the utterance is to be justified" (ibid.: 236). In such a case, the filthiness or untidiness may be beyond a normal condition. This is a suggestion to indicate that even this kind of standardised metaphor cannot be paraphrased without loss.

(b) is a conventional metaphor. The relevance of (b) will be established by finding a range of contextual effects which can be retained as weak or strong implicatures. In this case, a single strong implicature may not automatically come to a hearer's mind, because the hearer needs to interpret by him-/herself. Sperber and Wilson postulate that the wider the range of potential implicatures and the greater the hearer's responsibility for constructing them, the more poetic the effect, the more creative the metaphor. Sperber and Wilson take such an approach or view of metaphor that metaphor and a variety of tropes are creative exploitations of a general dimension of language use. Metaphor requires no special

interpretive abilities or procedures: it is a natural outcome of some very general abilities and procedures used in verbal communication. The search for optimal

relevance leads the speaker to adopt a more or less faithful interpretation of his/her thoughts (ibid.: 237).

In summary, these pragmaticians view metaphor in analyses of utterances. Searle posits how it is possible to say one thing to mean something else and views it from the principle of the P and R relationship. He proposes 8 principles, though the relationship between P and R does not seem to be sufficiently clear.

Sperber and Wilson's view on metaphor is that metaphors are not exceptional representations of utterances but general dimensions of language use. For example, if a literal utterance is thought to exceed our processing labour, that is, if the utterance is not relevant to its labour, a speaker may choose to say it metaphorically. Metaphorical utterance can be attained through optimal relevance undertaken by a speaker and a hearer. Their relevance for my study is that I should pay attention to the intentions of metaphor users (examinees in my study) and the optimal strategies that they employ in interpretation and manipulation of metaphorical expressions.

2. 2-3. METAPHOR RESEARCH IN APPLIED LINGUISTICS

Key scholars' implications for metaphor research are discussed in the following sections.

Gibbs (1999a: 47) posits, from a cognitive scientist's view, that metaphor is one of the most complicated topics in the intertwined domain of language and thought. This suggests an interdisciplinary study may be worthwhile. How metaphor influences learning, thinking and linguistic behaviour may be an interesting topic.

Cameron (1999a) discusses how an applied linguistic perspective (views and research methods) on metaphor is different from other types of disciplines. Cameron (ibid.) emphasises that applied linguistics focuses on linguistic forms, discourse content and what goes on in the mind. By contrast, cognitive science focuses on what goes on in the mind. Most of my present study resorts to the former point of view. Research into metaphor, for example, in SLA has been still limited as Cameron and Low (1999b) point out. Cameron and Low (ibid.: 91) emphasise several reasons for taking metaphor research into applied linguistics: metaphor is ubiquitous and takes various forms; it has a large number of functions, cognitive, social, affective, rhetorical and interaction-management; and it is crucial to knowledge of, and performance in, a language, therefore, crucial to acquiring a language.

Now, we will look at implications for metaphor research on theoretical points of view suggested by Gibbs (1999a) and practical suggestions made by Cameron and Low (1999a, 1999b), Carter (1998) and McCarthy (2001).

Gibbs' implications for research on metaphor

Gibbs' (1999a: 30-47) suggestion for research on metaphor is noteworthy: there are a variety of views on metaphor and its diversity may impose some problems upon metaphor researchers. He proposes six guidelines (or distinctions): 1) to distinguish different kinds of metaphor in language; 2) to distinguish metaphor from metonymy; 3) to distinguish between the processes and products of metaphor; 4) to distinguish metaphor processing from metaphoric processing; 5) to distinguish how metaphor in language and thought interact; 6) to recognise the embodied motivation for metaphor in thought and language. I will briefly look at these guidelines.

Item 1 states that metaphor is not as simple as statements such as A is like B or A is B. There is a diversity of metaphoric forms and it should be recognised that "a particular theoretical account for one aspect of metaphor may not apply to other forms of metaphorical language" (ibid.: 31). Gibbs makes comments on proverbial expressions (sometimes called 'xyz' metaphors) citing from Turner (1991: 200) that readers must understand the conjunction between 'x' and 'z', which is interpreted in terms of a conceptual domain containing 'y'. More specifically, readers must find some 'w' in their conceptual knowledge that stands in a relation to 'y', which can be referred to conventionally by the phrase 'y' of 'w', and must then map the relation of 'y' and 'w' onto the conjunction of 'x' and 'z' (ibid.).

He further mentions that metaphor in literary texts "involves not the mapping of concepts from one domain onto another, but the mapping of images, called image metaphors. Image metaphors reflect the mapping of mental images from one source of knowledge onto the mental images from another" (ibid.: 32).

Item 2, the suggestion of distinguishing metaphor from metonymy, is a general piece of advice to help distinguish one figure of speech from others. Metaphor and metonymy are different tropes. The key difference, according to Gibbs, is that in metaphor, there are two conceptual domains, and one is understood in terms of another, usually very different knowledge domain. Metonymy involves only one conceptual domain, in that the mapping or connection between two things is within the same domain (ibid.: 36). Metonymy is based upon contiguity, while metaphor is based upon similarity as stated by many key researchers (Lakoff, 1994; Gibbs, 1994; Kusumi, 1994; Todd and Clarke, 1999; Deignan, 1999a; Cameron and Low, 1999b; Carter, 2004, to name a few). A convenient way of distinguishing the two kinds of figurative trope is to apply the 'is like' test. In an example of 'Achilles is like a lion,' the *lion* is a metonymy and the portion *like a lion* is simile.

Item 3, his suggestion for distinguishing processes from the products of metaphor, results from the difference in interest between people from different disciplines. For example, philosophers or linguists are interested in understanding of metaphor where metaphor is a product and they try to discover something about the processes of metaphor comprehension. On

the contrary, psychologists or psycholinguists are interested in comprehension processes for the purpose of explicating something about the products of metaphor interpretation and recognition (i.e. what metaphors mean). Metaphor scholars wish to explain both processes and products, but this requires different kinds of methodological analyses and theoretical descriptions. In order to investigate how people comprehend metaphors, we need a methodology by which we can investigate mental events occurring in our mind. In contrast, determining aesthetic values, i.e. the poetic appreciation of metaphor, requires a different methodology. Gibbs suggests four moments of metaphor understanding: linguistic comprehension, recognition, interpretation and appreciation (ibid.: 39-41). Comprehension refers to “the immediate, moment-by-moment process of creating meanings for utterances” (ibid.: 39). These processes are “unconscious and involve the analysis of different linguistic information (e.g. phonology, lexical access, syntax)” (ibid.). They are combined with context and real-world knowledge enabling understanding of metaphorical expressions. The recognition refers to the conscious identification of the products of comprehension as types. In this case, the meaning is recognised “as being metaphorical.” “The interpretation refers to analysis of the early products of comprehension as tokens. Interpretative processes operate at a later point in time than comprehension processes (perhaps understanding a particular set of entailments). They usually require conscious reflection about what a text or speaker means” (ibid.: 39). The appreciation refers to some aesthetic judgement placed on a product either as a type or token.

Gibbs quotes from Gerrig & Healey (1983) that psychological evidence shows that metaphor comprehension and appreciation refer to distinct types of mental process. His point is that the (usually rapid) process of understanding metaphor or metaphorical expressions take a process of awareness—identification—interpretation— appreciation.

Item 4 is the distinguishing of metaphoric processing from processing metaphor. Metaphoric processing is a general mode of understanding that can be applied to any kind of situation or language. It is different from the processing of metaphoric language. An example given by Gibbs is children’s metaphorical understanding of a story. If children, for example, hear or read *Moby Dick* and understand an allegorical character in it metaphorically, they can best appreciate it. “Metaphoric processing, as opposed to processing metaphoric language,

may be distinguished as an intentionally selected strategy of reading. When readers adopt such strategies, the process that occur is metaphoric, even though there is no special linguistic or textual material that is either metaphoric or motivated by metaphoric modes of thought. In this way, metaphor might legitimately be viewed as one type of cognitive strategy that colours people’s imaginative understanding of texts and real-world situations” (Gibbs, 1999a: 41).

Cameron and Low (1999b) throw a doubt onto the assumption proposed in cognitive metaphor theory in which conceptual metaphors are standardly used in the production and interpretation of linguistic metaphor (Steen, 1994; Gibbs, 1994, 1999; Cameron 1999a). They quote from Steen's (1994) reference to the idea of distinguishing metaphor processing from metaphoric processing:

Steen distinguishes *metaphor processing* (or less confusedly, *processing metaphor*), which refers to the processing of potentially metaphorical language – generally rapidly and automatically, such that the processor may well envisage it as literal or conventional – from *metaphoric processing* (actively looking for metaphorical meanings) (Cameron and Low, 1999b: 81).

There is an allusion to both terms in Cameron and Low (*ibid.*). Cameron (1999b: 8) gives the label *process metaphors* to “linguistic expressions which are processed metaphorically (i.e. through transfer of meaning across distinct domains).” There she provides an example of children's interpretation of the words (e.g. a *hot spell*) which have no metaphorical intention but which are interpreted metaphorically by them. The children interpreted it as “magic” not as a description of the weather (*ibid.*: 82).

Item 5 in Gibbs' six guidelines distinguishes the interactions of metaphor in language from those of thought, and discusses the differences in views between cognitive linguists and cognitive psychologists. In treating a love metaphor, such as *We're at a crossroads*, the cognitive linguists “metaphorically conceptualise their love experiences in terms of their concrete knowledge of physical journeys and consequently speak metaphorically about aspects of the source-to-target domain mapping” (Cameron, 1999a: 42). On the contrary, cognitive psychologists doubt “whether metaphor is part of human cognition and not just one, mostly ornamental, aspect of a language” (*ibid.*: 42). Gibbs proposes four possible hypotheses on the interaction of metaphoric thought and language. Hypothesis 1: metaphoric thought may change the meanings of words and expressions over time. According to him, this is supported by linguistic studies on the role of metaphor in semantic change, for example, by Sweetser (1990). Hypothesis 2: metaphoric thought might motivate the linguistic meanings shared among linguistic communities. The supporters Gibbs draws upon for this are Lakoff & Johnson (1981) and Lakoff (1987). Hypothesis 3: metaphoric thought might motivate individual speakers' use and understanding of various words and expressions given meaning by them. Hypothesis 4: metaphoric thought might function automatically and interactively in people's on-line use and understanding of linguistic meaning. According to Gibbs, many

psycholinguistic experiments support this hypothesis.

Item 6, the issue of recognising the embodied motivation for metaphor in thought and language, is closely related to our experiences. To the question of why certain conceptual metaphors are used in discussing abstract concepts, he answers that a “great deal of linguistic evidence suggests that much metaphorical thinking arises from our embodied experiences (Johnson, 1987; Lakoff, 1987, 1994), for example, ANGER IS HEATED FLUID IN A CONTAINER is the embodied experience of containment (ibid.: 44). In the state of anger, there are physical phenomena, such as the increase of body temperature, body filled with liquids, (e.g. stomach fluids, the rise of speed of blood circulation and sweating). These bodily experiences “give rise to the development of an experiential *gestalt*, called an image schema, for CONTAINMENT (Johnson, 1987: 45).”

Cameron and Low’s implications for research on metaphor

Cameron and Low (1999b: 79) warn that we should know the distinction between *conceptual metaphor* and *linguistic metaphor*. Conceptual metaphor refers to abstract notions such as LOVE IS A JOURNEY, while linguistic metaphors are actual linguistic realisations such as *our relationship is at a cross-road*. Conceptual metaphors must have target and source domains, however, linguistic metaphors do not always necessitate both (i.e. topic and vehicle). In some cases, the vehicle is hidden or indirect, but a hint or clue can be found in the expression. The forms linguistic metaphors take are nouns, verbs, prepositions and particles. There are forms of metaphor that Japanese metaphors share with English to some extent, but there are exceptions such as prepositions and other parts of speech.

Another noteworthy implication for conceptual and linguistic metaphors can be found in cognitive linguistics (Steen and Gibbs, 1999:1-2), which claims that metaphor is “a two-way affair: it can go from linguistic metaphor to conceptual metaphor, or from conceptual metaphor to linguistic metaphor.” Steen and Gibbs (ibid.) further relate that “cognitive linguists have used the abundant and systematic presence of metaphors in language as a basis for postulating the existence of conceptual metaphors, which illustrates the move from language to thought.”

Although in this thesis, I investigate how EFL students comprehend and use words or expressions metaphorically – that is, I use linguistic metaphor as primary data, and analyse their metaphorical understanding and manipulation – this does not mean that metaphor is exemplified only in language. There is nonlinguistic metaphor, such as pictorial metaphor, as well.

Carter’s implications for literariness, figurativeness and associate bonding

Two noteworthy points among others from Carter (1998) are the theoretical and practical implications for metaphor research: literariness and figurativeness for the former and associate

bonding for the latter. The former concerns the quality of metaphor and understanding and the use of metaphor, and the latter relates to vocabulary teaching and learning.

He alludes to Lakoff and Johnson's (1981) contributions of a whole range of examples which illustrate how our conceptual system (i.e. a standard Western cultural system) is as a whole structured by metaphors which are capable of generating related metaphors and images across whole areas of discourse (Carter, 1998: 138). Metaphorical analogy ARGUMENT IS WAR is represented as a standard usage in *Your claims are indefensible*. Other examples are 'time is treated as a valuable commodity,' 'love as a journey,' or 'theories are buildings.' He further states

the systematic and pervasive nature of such metaphorical 'models' shows the extent to which, in a 'literary' way, one area of experience is regularly structured and analogized in terms of another. Such metaphors are often so deeply impregnated in language and culture that they are not noticed as such indicates the automatized and conventionalized role they occupy. This raises two further questions. One concerns the appropriate modes of analysis of deautomatized metaphors, that is, those that are immediately perceived as striking and original. The other concerns the linguistic nature of the process underlying such perception. These questions are necessarily connected with the issues of lexis and literariness. (ibid.: 138)

Carter (1998: 139) cautions us to take note of the lexico-semantic constituents and relations involved in metaphor, the basis of which is a distinction between 'tenor' and 'vehicle' in metaphor (also referred to as the metaphorical 'frame' and 'focus').

The basic assumption here is that metaphor involves a deviant use of language (the vehicle) which is in some way semantically foregrounded against literal norms of language (the tenor). In such instances 'literal' usually has the sense of reasonable claim on truth as generally perceived and understood so that metaphoric uses involve non-literal or non-true statements, which it is the task of a reader or hearer to interpret in such a way as to rescue their falsity.

He argues about falsity quoting from Leech (1969) and using Leech's term that the reader looks for a 'ground of likeness' between 'tenor' and 'vehicle' to infer its true meaning. This involves selecting certain common features in these domains. The example given is *Encyclopaedias are gold mines*. In this statement, our normal rules of lexical selection rendering

encyclopaedias and gold mines are semantically incompatible. So the statement is rescued from falsity and the meaning understood metaphorically. Another example of his is culture bound. The metaphor, such as *Americans are petrol alcoholics*, can be interpreted in a conventional literary context based upon our knowledge of the world. In contexts not conventionally signalled to be 'literary,' our interpretation of metaphor may stop after looking for some grounds to help understand the meanings. From this, he concludes that literariness in metaphor may be as much a matter of the beliefs of the reader about the world or the conventions of what readers should or can do in reading than it is a matter of linguistic organization (ibid.: 141).

Following the study by Nattinger (1988), Carter (ibid.: 219) suggests we should teach vocabulary in terms of associative bonding. He proposes semantic associative ways of teaching words using, for example, grids. Associations generated by and across words in a semantic network may increase and strengthen learners' vocabulary. This is applicable in teaching metaphors, that is, teaching lexical items and ideas or concepts of a source and a target as an associative metaphor set.

McCarthy's implications for metaphorical extensions of words

McCarthy (2001: 27) emphasises the importance of metaphorical extensions of words: metaphor, as a device for creating and expanding meaning, is very important in the study of vocabulary. He states that we construct the meaning of a metaphor by analogy, from our linguistic knowledge of the words involved (their semantic features and associations) and from pragmatic clues. He uses his original (i.e. unconventional) metaphor *Alcoholism is a juggernaut with a learner driver* to allude to native speakers' lexical competence. They have, as part of their lexical competence, the ability to recognize conventional and unconventional metaphors and to understand or construct possible interpretations of both (ibid.: 29). He introduces several tasks in his book to practice metaphorical interpretations, which are usable in an EFL situation. He proposes 4 challenges for L2 learners to practice: 1) recognizing metaphors; 2) delimiting their boundaries in text; 3) distinguishing conventional and creative metaphors and 4) identifying relevant or prominent features of the entities compared in order to get at an interpretation.

In brief, Gibbs' suggestions are on which figurative language we make research, and Gibbs, Cameron and Low, and others indicate the importance of the distinction between processes and products of metaphor. Carter cautions us about lexico-semantic constituents and relations involved in metaphor on the theoretical side and associate bonding on the practical side. The latter relates to McCarthy's metaphorical extensions of words. These

scholars' points should be kept in mind when we conduct metaphor research.

2. 3. RECENT METAPHOR RESEARCH IN JAPAN

Before concluding Part II, let me add some issues of metaphor study after the post-Meiji Era in Japan.

2. 3-1. RECENT DEVELOPMENT IN JAPAN AND SOME PROBLEMS

In Part I, I traced the history of rhetoric study in Japan, where I stated that the first appearance of the term 'metaphor' was in the Meiji Era. Here is a brief history of metaphor after the Meiji Era. Waseda University has a long history of rhetoric study, which includes metaphor study, and provides much of the information in this study.

As stated earlier, the Meiji Era was a flourishing time of rhetoric. Since then the study of rhetoric has declined to some extent. However, Waseda University, the mecca of rhetoric, preserved the tradition of studying it, offering courses and lectures under the name of 'biji gaku' or Beautifying Writing until 1965. Since 1965 it continues to offer a course on stylistics (<http://verno.info.waseda.ac.jp>). As in other pedagogical arenas, we can find the syllabi of the University of Tokyo (<http://opac.dl.itc.u-tokyo.ac.jp>), the University of Kyoto (<http://kual.archives.kyoto-u.ac.jp>) and the University of Osaka (<http://www.lang.osaka-u.ac.jp>), in which figures of speech, including metaphor, are dealt with in cognitive linguistics. Recently studies on figures of language, among which are metonymy, synecdoche and metaphors and so forth, have received more attention in Japan, especially in cognitive linguistics (Kawakami, 1996; Seto, 2000; Yamanashi, 2000; Tsuji, 2002, to name a few), though not as much as in the occidental world, owing to the development of information technology which allows us to access resources wherever we are. Most of them were/are dealt with in cognitive linguistics, cognitive grammar and/or as part of semantics or rhetoric, while a very few involved in the study of metaphor itself (Sato, 1992/1996, 1997; Haga and Koyasu, 1990; Higuchi, 1995). Systematic studies on comprehension and the use of metaphors/metaphorical expressions in an EFL situation have been an under-researched area in Japan. Therefore, this thesis intends to be a first step to develop research on this issue in an EFL pedagogical field and focuses especially on measuring the metaphorical competence of Japanese EFL students.

Since the Meiji Era, and especially after the Second World War, information spreads throughout the world very rapidly. Publications are available more quickly than ever before, for example, through Internet. The occidental studies in any fields spread their influence to researchers on the other side of the globe. Metaphor study is not an exception. There seem to be more researchers and publications on figurative language and metaphor.

However, metaphor research is no easy study as Gibbs and Cameron suggest. A primary

problem is a distinction between simile and metaphor. Most often used in daily discourse are similes ('choku-yu'). The 'choku' in 'choku-yu' means direct, overt or unhidden and the 'yu' means word or implication. Similes in Japanese are overtly expressed using such markers as '... yo-na' or '...mitaina' equivalent to 'like' or 'as if' in English, for example, 'yamano yo-na shigoto' means 'work piled like a mountain.' On the other hand, metaphor may not be overtly expressed in an utterance but covertly expressed in an uttered implication. This may be one of the reasons for metaphor having been translated into 'in-yu' (hidden word or connotation). Japanese researchers suggest along with Gibbs, Low and Cameron, etc. that it is necessary to be careful in making the distinction between simile and metaphor.

Further problems are the distinction between metaphor and metonymy and between metonymy and synecdoche. Since this thesis focuses on metaphor, a detailed discussion of metonymy and synecdoche is to be covered elsewhere; however, it may be necessary to briefly look at the recent views on metaphor, metonymy and synecdoche.

Regarding the distinction between metaphor and metonymy, occidental and oriental researchers share similar views to some extent, as we have seen so far: traditionally, metaphor is thought to be based on similarity, for example, *Lovers are travellers*, and metonymy to be based on contiguity, for example, *The kettle is boiling or He bought Shakespeare*.

In brief, metaphor is an extension process, which involves a mapping or blending across domains and metonymy is a mapping of one element onto another in a single domain. We must note here, however, that there is a fuzzy element or an interaction between metaphor and metonymy (Goossens, 1990; Radden and Kovecses, 1999; Barcelona, 2000). Goossens (ibid.) gives this phenomenon the term 'metaphonymy,' Radden and Kovecses (ibid.) propose a conceptual framework of metonymy as a cognitive process, and Barcelona (ibid.) highlights the phenomenon of interaction in terms of 'metaphor-metonymy interaction.' As the title of the book *Metaphor and Metonymy at the Crossroads*, edited by Barcelona (ibid.), indicates, he focused upon the cognitive theory of metaphor and metonymy, CTMM. According to him, metaphor is "the cognitive mechanism whereby one experiential domain is particularly 'mapped,' i.e. projected, onto a different domain, so that the second domain is particularly understood in terms of the first one. The domain that is mapped is called the *source* or *donor domain*, and the domain onto which the source is mapped is called the *target* or *recipient domain*" (ibid.:3); "metonymy is a conceptual projection whereby one experiential domain (the target) is partially understood in terms of another experiential domain (the source) included in the same common experiential domain" (ibid. 4). He postulates that this is a similar view to that held by Lakoff and Johnson (1981) and other cognitive linguists until the blending theory appeared.

With regard to interaction, Goossens (ibid.) examined expressions from British database and found there were two predominant types of interaction between metaphor and metonymy:

metaphor from metonymy and metonymy within metaphor. In her example: "Oh dear," she *giggled*, "I'd quite forgotten," she suggests that this expression can be taken in two ways: one is in a synecdochic relationship, where it is interpreted as 'she said this *while* giggling; the other as a crossing of domain boundaries as in metaphor, where it is interpreted as 'she said this *as if* giggling. The term Goossens gives to this is 'metaphor from metonymy' (ibid. 328). An example of metonymy within metaphor is *shoot one's mouth off*, meaning 'to talk foolishly about what one does not know about or should not talk about' (ibid. 334). In this case *mouth* is a metonymy for the faculty of speech, and the expression is understood by the integration of *mouth* into a scene relating to the use of weapon. Thus, she attempted to show there is an interaction between metaphor and metonymy; however, she also suggests that the boundary between them is fuzzy.

Still another problem is the distinction between metonymy and synecdoche. Taniguchi (2003:124) argues that Lakoff and Johnson (1981) include a part-whole relation in metonymy. Lakoff and Johnson (ibid.: 35), providing such examples as 'The *ham sandwich* is waiting for his check,' broadly define metonymy as using one entity to refer to another that is related to it. Lakoff and Johnson (ibid.: 37-39) also claim that metonymic concepts are systematic, and they list the following representative groups for metonymy: THE PART FOR THE WHOLE, PRODUCER FOR PRODUCT, OBJECTS USED FOR USER, CONTROLLER FOR CONTROLLED, INSTITUTION FOR PEOPLE RESPONSIBLE, THE PLACE FOR THE INSTITUTION and PLACE FOR THE EVENT. Let me take up one example from THE PART FOR THE WHOLE: 'There are a lot of *good heads* in the university,' in which the *good heads* means *intelligent people*.

Japanese researchers, for example, Seto (1997; 1999), Yamanashi (1995/1997) and Taniguchi (2003) have a slightly different view of the distinction between metonymy and synecdoche from Lakoff and Johnson (1981). Some metonymies in Lakoff and Johnson are classified as synecdoche by the Japanese researchers. Judging from Taniguchi's example of synecdoche: *We need hands*, the above example of a metonymy from Lakoff and Johnson: 'There are a lot of *good heads* in the university' can be classified as synecdoche. She and other Japanese researchers claim that in this example, what we need is not just hands but human help, and that this constitutes a part-whole relation. Thus, they argue that Lakoff and Johnson (1981) do not distinguish one from the other as clearly as the Japanese researchers. They propose to separate synecdoche from metonymy. Seto's (1999: 91-92) distinction seems to be clearer than others, therefore, my discussion resorts to his distinction: metonymy is a referential transfer phenomenon based on the spatio-temporal contiguity as conceived by the speaker between an entity and another in the (real) world.

He further posits that metonymy is an E(ntity)-related transfer and that synecdoche is a C(ategory)-related transfer. Synecdoche is a conceptual transfer phenomenon based on the semantic inclusion between a more comprehensive and a less comprehensive category. At the same time, he points out that there is an ambiguity of 'whole' and 'part.' He suggests that this

causes Lakoff and Johnson's ambiguity, and argues that the ambiguity of the whole-part relation has been recognised in terms of taxonomy and parthood (meronymy) referring to several researchers (i.e. Tversky and Hemenway, 1984; Cruise, 1979, 1986; Tversky, 1990). Furthermore, Seto (ibid.: 93) describes the situation as follows: taxonomy is a 'kind-of' relation and parthood is a 'part-of' relation. In other words, taxonomy is the relation between a more comprehensive category and a less comprehensive one, while parthood is the relation between an entity and its part. His example for taxonomy (C-relation) is a tree-fir relation and one for parthood (E-relation) is a body-arm relation. Then, he suggests that the uncertainty in defining metonymy (e.g. the part-whole relation) may be resolved if a clear distinction between the referential relation and the categorical relation is made (ibid.: 95). However, the whole problem has not yet been solved. A probable cause of the problem of metonymy-synecdoche differentiation is that there is an ambiguity in the terms 'whole' and 'part.' The part-whole problems concern kind-of and part-of relationships.

Seto (1999:116) stresses that "a category and an entity are cognitively two different things" and warns that "taxonomies ('kind of' relations) tend to be equated with parthonomies ('part of' relations)." For example, the relationship between a 'kind-of' and a 'part-of' in the phrase 'Hana-mi ni iku' involves a subtle problem as Seto (1997) himself suggests. The word 'hana' is a flower or blossom in general, the 'hana-mi' means to go flower/blossom viewing and the 'iku' means to go. In this phrase, the word 'hana' in 'hana-mi' specifically refers to cherry blossoms; therefore, the whole phrase means 'to go cherry blossom viewing.' Cherry blossoms are a 'kind of' blossom (i.e. synecdoche), and at the same time, the cherry blossoms in the word 'hana' of 'hana-mi' can be taken as a 'part of' blossoms in the sense that the meaning of the cherry blossoms includes characteristics of this specific blossom (i.e. metonymy): a celebration of the vernal advent with songs and feasts under the cherry trees in bloom. This is one of the complex features found between kind-of and part-of relations. All in all, it seems to be hard to draw a line between metonymy and synecdoche in some cases, and sometimes it may also be hard to draw a line between metaphor and metonymy.

The last but not the least important issue is the categorisation or classification of metaphors. It is a difficult task to perform in the sense that metaphors take various forms or types. There has been no overall study on categorisations or classification of Japanese metaphors. Some research concerns certain conceptual metaphors, for example, ANGER and others concern orientational and/or ontological metaphors using prepositions. We can resort to Seto's (2001) classification. He proposes two large categories for metaphor classification: metaphor based upon our physical perception and metaphor based upon universal commonality. However, this does not seem to cover all metaphors. There are a large number of linguistic realisations going on, therefore, it may be too difficult to classify all metaphors. In this sense, the contribution made by Lakoff and

Johnson in categorisations/classifications of metaphors is beneficial for metaphor research. At least we can utilise their categorisations/classifications of metaphor. These circumstances lead me to speculate on what test items should be included in the tests of metaphorical competence. The best choice may be to measure competence using the sentence patterns of the conceptual metaphor and the metaphorical expressions embedded in context. This will be further explicated in Chapters 3 and 4.

2. 4. CONCLUSION

Part II traced the transition of views on metaphor in contemporary metaphor research and those in applied linguistics. In a traditional view, metaphor was treated as rhetoric. The first transition was brought in by I.A. Richards (1936), who claimed metaphor is related to thought. Black (1962/1994) took over his theory and proposed his interaction view. In the interaction view, he claimed that the meaning of a metaphor is generated from the interaction of primary and secondary subjects in an expression. Black's idea, going through Reddy (1979), gave rise to the conceptual metaphor theory proposed by Lakoff and Johnson (1981). They established idealised cognitive models, ICMs. They regard metaphor as a way of thinking or a matter of mind. This idea made possible the conceptualisation of metaphors. Gibbs (1994; 1999a), a psychologist, stands on the same ground. Cognitive linguists also share this idea.

Among several contemporary views on metaphor, conceptual metaphor theory (e.g. Lakoff and Johnson, 1981; Gibbs, 1994), semantic-field theory (Kittay, 1987), relevance theory (Sperber and Wilson, 1995) and metaphor research in applied linguistics (e.g. Carter, 1998; McCarthy, 2001; Cameron and Low, 1999a; 1999b) provide substantial implications for metaphor research for metaphorical competence in this study. Conceptual metaphor theory supplies the idea of how metaphor functions, semantic-field theory provides me with the knowledge of mapping and network, relevance theory with a view from pragmatics, and finally views of metaphor in relation to applied linguistics suggests ways of studying metaphor in language education. These implications stimulate my ideas for further study. Part III will further focus on this and several other issues in metaphor in education in connection with applied linguistics.

Part III: METAPHOR IN EDUCATION

Metaphor research comparing native with non-native languages (e.g. English) for educational purposes has abounded more in the occidental than in the oriental world. This is because of the degree to which learners are exposed to metaphors in the target languages and their levels of language proficiency. In an ESL situation, where learners live in the environment of using a target language (i.e. English in this study), exposure is high and intensive, and consequently linguistic levels are high. In an EFL situation, learners' accessibility to English is limited, therefore, their levels of English proficiency vary from low to high. However, in both situations, adequate understanding and use (if possible) of metaphorical expressions are desirable language competences for learners to enable understanding of the delicate and subtle nuances of expressions in English.

This thesis aims to investigate EFL students' metaphorical competence. Part III investigates the following issues: (1) past study on metaphorical competence and the definition of metaphorical competence, (2) past study on metaphor in education and (3) a necessary background knowledge for investigation of metaphorical understanding and use, such as schema, image schema, mapping, network and analogical reasoning. These elements may affect metaphorical competence.

2. 1. METAPHORICAL COMPETENCE

2. 1-1. PAST RESEARCH

There are two kinds of past research on metaphorical competence: one is on awareness (Deignan, Gabrys and Solska, 1997; Boers, 2000) and the other is on competence itself (Low, 1988; Janice Johnson and Rosano, 1993; Littlemore, 2001b; Charteris-Black, 2002). Surveys on awareness and competence are not completely separable, because surveys on awareness also examine competence. Majority of the research on metaphorical competence in the occidental world has been carried out with children (Gardner, 1974; Winner, Rosenstiel and Gardner, 1976; Cameron, 2003) and with ESL learners (Deignan, Gabrys and Solska, 1997; Boers, 2000; 2001; Littlemore, 2001b; Charteris-Black, 2002). Statistical data on competence was only prepared by Littlemore (2001b).

The following is a brief summary of past research on metaphorical competence and teaching.

2. 1-2. METAPHORICAL COMPETENCE IN PAST RESEARCH

Low (1988) advocates that all learners of English as a second language need to develop at

least some metaphor-related skills. He advises us to know that learning 'one-off' examples is not always helpful (ibid.: 129). He discusses approaches and areas in which learners should develop some skills related to metaphor (e.g. the ability to interpret and construct plausible meanings by using metaphor, knowledge of the boundary of metaphor and awareness of some features of metaphor) and proposes activities for language lessons. Deignan, Gabrys and Solska (1997) further emphasises the importance of dealing with metaphors in language lessons. They experimented on cross-linguistic awareness-raising activities to aid understanding of English metaphorical expressions using Polish as L1 and English as L2 and claimed that the same conceptual metaphors in different languages are realised through different linguistic expressions, concluding that L2 learners usually find it difficult to use metaphors appropriately.

Littlemore (2001b) discusses a number of psychological processes involving metaphor interpretation and examines metaphorical [N.B. her original term is 'metaphoric'] competence and its relationship to L2 learning and teaching. Metaphorical competence, according to Littlemore (ibid.: 461), consists of (a) originality of metaphor production, (b) fluency of metaphor interpretation, (c) ability to find meaning in metaphor and (d) speed in finding meaning in metaphor. She examined whether or not metaphorical competence is a unitary concept, identified cognitive traits that may help it develop, and investigated its relationship with communicative language ability (ibid.: 460). She measured the above four aspects of metaphorical competence. In her research, she cites Pollio and Smith (1980), who identified the first three components (i.e. originality, fluency, and ability to find meaning in metaphor) as distinct aspects of the overall construct (Speed was not investigated in their study).

Littlemore's investigation (ibid.) was classified into the four aspects or components quoted above and their relationships to other aspects of individual differences, e.g. cognitive style, using Belgian ESL (English as a Second Language) students as subjects. The result shown in one of the tables (Table 5: 'Pearson Correlations Between Aspects of Metaphoric Competence in the L1 and L2') (Littlemore, 2001b: 480) is especially meaningful. It indicates that the relationships between these four aspects are positive to a degree. For example, in L1, (a) is related to (d) (.338); (c) to (d) (.426), and in L2, (a) to (d) (.257). The implications of all of her results are important. With regard to the cognitive styles of the students, she used Riding's (1991) computer-based Cognitive Styles Analysis, CSA, and found that the students who have a holistic cognitive style may process metaphors more quickly than those with an analytic cognitive style. She mentions this with reservation, due to a small number of test items.

Littlemore's (2001a; 2001b) contribution to the investigation into metaphorical competence is noteworthy, however, the following consideration is necessary for applying the research to a Japanese EFL situation. The languages Littlemore compared were French (L1) and English (L2). The distance between these two languages is not as far as that between English and

Japanese. If the distance between the languages is wide, as between Japanese (L1) and English (L2), and if learners learn a language as a foreign language, it might be better to start from such primitive elements as the lexical and semantic knowledge which EFL learners have acquired at their earlier language learning stage. One of these is the learners' vocabulary knowledge and the other is their semantic ability. The learners' vocabulary size is known to be related to overall language competence, therefore, it might be meaningful to compare their vocabulary knowledge with metaphorical competence. Furthermore, it might be also meaningful to look at how deeply learners can delve into meanings and how well they recognise words of multiple meanings. This is the reason for focussing on the lexical and semantic aspects in this study, although the cultural aspect is also important.

Another priority given by Littlemore (2001b) is what aspects of metaphorical competence should be examined, (a) originality of metaphor production, (b) fluency of metaphor interpretation, (c) the ability to find meaning in metaphor, or (d) speed in finding meaning in metaphor? Or, should the test cover all aspects of metaphorical competence? The first item (a) proposed by Littlemore belongs to production and the other three to recognition. The items (b), (c) and (d) relate to finding the meanings of metaphorical expressions, while the item (a) relates to producing metaphors on one's own. The latter may be one of the most difficult tasks for EFL students to accomplish. In my experience in an EFL situation, the item (a) revealed childish metaphor production, however, the items (b) and (c) resulted in unexpectedly good results. In addition to these research areas, treatment of the results is also a big issue. Probably both qualitative and quantitative treatments are necessary.

2. 2. METAPHORICAL COMPETENCE IN AN EFL CONTEXT

Research into the understanding and use of metaphors or metaphorical expressions in a target language is an under-researched area in Japan. A primary reason may be that exposure to metaphors or metaphorical expressions is quite limited when learning a foreign language. In addition, although EFL learners encounter English metaphorical expressions in reading and listening, they usually learn them as one-off experiences. Even idioms embedded with metaphorical meanings in them are usually treated as just idioms, although they may provide opportunities for learning metaphors or metaphorical expressions. Teachers and learners do not go beyond a superficial level and consequently they miss the chance to learn expressions and concepts lying behind them, probably due to time limitation for teaching/learning, lack of awareness involved in metaphor and its concept, or for some other reason. This results in a scarcity of studies on awareness or competence.

Metaphor in language education can provide an opportunity to learn how our conceptual system is organised and how it functions in language. This enables learners to learn not only

languages but also develop understanding of views on relationship between mind, body and language.

In order to develop a holistic linguistic ability, it is necessary to nurture learners' lexical, semantic and cultural knowledge of the various aspects of a target language. This thesis does not delve deeply into cultural aspects of metaphorical competence, because research into metaphorical competence in an EFL situation requires a great deal of quantitative and qualitative theoretical and experimental surveys. Therefore, I decided to concentrate primarily on lexical and semantic aspects of metaphorical competence.

2. 2-1. METAPHORICAL COMPETENCE IN EFL

Metaphorical competence in English in an EFL context can be defined as how well learners comprehend and use English metaphorical expressions. Metaphorical competence in an EFL situation may concern (1) learners' recognition in listening and reading English metaphorical expressions in discourse, news, academic or other materials, (2) use of English metaphorical expressions in appropriate ways in writing and speaking and (3) understanding of the concepts of English metaphors and the concepts behind English (and Japanese) metaphorical expressions. Among these items, the last two may prove to be more difficult for EFL students to acquire, partly because they are less experienced or practiced. Based upon this assumption and my past experience, the tests of metaphorical competence were developed. The tests aimed to measure learners' lexical, semantic and contextual levels of metaphorical competence in English. This will be further described in Chapter 3.

We consciously or unconsciously understand and use metaphorical expressions in our native language. What is taken for granted in our native language is not always applicable in a foreign language. In a situation that provides insufficient access to a target language, opportunities for reception and production are limited. However, under these circumstances, the following result was obtained in my experimental test: a familiar expression, such as *Time is money*, was well interpreted by EFL students, but a less familiar one, such as *to spill the beans*, was misinterpreted by some EFL students or not interpreted by others, and another less familiar one, such as *to kick the bucket*, was not fully interpreted. Some of the causes (discovered in the tests in this study) resulted from the characteristics of the idiomatic expressions. There are a great many idioms in English, and EFL students may not have the opportunities to learn all of them. The phenomena seemingly affected by their linguistic ability may result in low metaphoric competence. This is a primary cause, and a secondary cause may result from a lack of knowledge of the mechanism of metaphor.

2. 2-2. CONSIDERATION IN RESEARCH ON METAPHORICAL COMPETENCE IN EFL

To investigate the lexical and semantic aspects of metaphorical competence performed by EFL students, the following two questions emerged:

(1) What elements of the language phenomena of lexical and semantic knowledge of learners should be investigated? What factors are most related to EFL students' metaphorical competence? These questions can be investigated by way of examining a relationship between EFL students' vocabulary knowledge and metaphorical competence. The vocabulary knowledge refers to breadth and depth. For breadth, vocabulary size may be one of the possible investigative points and for depth, word associations and/or polysemy can be utilised. This will be further discussed in Chapter 3.

(2) What cognitive linguistic elements should be investigated to examine metaphorical competence (i.e. understanding and use of metaphorical expressions and cognitive functions)? This question, including mechanisms to be employed by learners, can be investigated by considering schema theory, several ideas of image schema, mapping, network and analogical reasoning.

The present study owes a great deal to vocabulary research from applied linguistics, schema theory from cognitive science and image schema from metaphor research. Past research serves as background knowledge necessary for the investigation of metaphorical competence in an EFL situation.

The explanations of lexical elements (vocabulary, word associations and polysemy) are briefly touched upon in the following section, but will be discussed in detail in the sections for rationales relating to the tests of metaphorical competence in Chapter 3. More space is allocated in this and the following sections for such cognitive elements as schema, image schema, mapping and network. It is because the studies of the applications of these elements to metaphorical research are quite limited, although these elements seem to play important roles in understanding and the use of metaphorical expressions. Needless to say the former is a fundamental element of linguistic competence. Vocabulary plays a key role for learners as a stimulus for activating their schemas and image schemas and to connect mutual networks.

2. 2-3. FACTORS POSSIBLY AFFECTING METAPHORICAL COMPETENCE

Factors which may affect learners' metaphorical competence are hypothesised as (1) vocabulary knowledge (i.e. breadth and depth), (2) semantic elements (e.g. associations with words), (3) cognitive elements (e.g. schemas and image schemas) and (4) cultural aspects.

Learners' vocabulary knowledge is a key factor not only in metaphorical competence but in all aspects of competence performed by foreign language learners. Vocabulary knowledge, especially the size or breadth of learners' vocabulary, plays an important part as an axis to their

overall linguistic competence, and the breadth and depth expand networks from word to word. Semantic fields stretch the networks among words and ideas, and the image schemas organise the processes or structures of expressions. The functions of networking or stretching possibly stimulate and assist mapping between the target and source domains and activate analogical reasoning necessary to encode metaphorical meanings. All of these elements may contribute to better understanding and promote better manipulations of metaphorical expressions.

Since the issues of vocabulary, word associations and polysemy will be delineated in the sections designated to an individual rationale in Chapter 3, the following sections mainly focus on the elements (2) and (3), with some discussion of (4).

The issues of schemas, image schemas, mapping, network and analogical reasoning seem to relate to understanding and use of metaphorical expressions. The reasons for considering these five issues are based upon the following four assumptions:

- (a) if metaphor is conceptually structured, schemas are related to the understanding and use of metaphorical expressions,
- (b) if metaphor is a mapping between two (or more) domains, image schemas may link these domains,
- (c) if metaphor is conceptually structured on a linguistic basis, the network of words to words may play a part in mapping and
- (d) analogical reasoning may help understand metaphorical meanings.

In order to answer these assumptions and to investigate the semantic and cognitive elements at the same time, the theories or views of past studies are briefly examined and discussed in the section 2.4 entitled 'Background knowledge for pursuit of metaphor study.'

2.3. METAPHOR IN EDUCATION

Metaphor is made use of in education in two ways: one is to enhance understanding of the content of learning, for example, in studying electricity in physics metaphor is used to explain the contents; and the other use is to promote the awareness and comprehension of metaphor and/or metaphorical realisation in language education. The past research utilised in science education to help students to understand the theories or phenomena of physics were illustrated by Kuhn, Mayer, Petrie and Oshlag in Ortony (1994). The main concern in this thesis is with metaphor study in language education.

The past studies of metaphor (and figurative language) in education relevant to this thesis can be grouped into the following three categories:

- (1) the importance of metaphor in education in general: Low (1988), Maclennan (1994), Lazar (1996), Cameron and Low (1999a; 1999b); the performance of native speakers: Gibbs (1980), Tourangeau and Sternberg (1981); the competence or performance of non-native speakers:

Johnson and Rosano (1993), McCarthy (2001), Deignan, Gabrys and Solska (1997), Chartelis-Black (2002), Boers and Demecheler (1998), Boers (2001), Littlemore (2001a; 2001b), (2) the developmental studies of metaphor or metaphorical understanding as performed by children (Gardner, 1974; Winner, Rosenstiel and Gardner, 1976), and (3) the studies of pictorial metaphors, such as those represented by Forceville (2002).

The first category is the main concerns of this thesis, however, the last two also seem to be interesting, because (2) may tell us how children develop metaphorical understanding and manipulate metaphorical expressions and (3) may provide us with opportunities to look at metaphor in relationship with images. Before discussing the main category, let me briefly touch upon the last two categories first.

Gardner (1974: 84) examines the metaphoric capacity of children from 3.5 to 19 years old, using a test in which they “were asked to indicate knowledge of the literal meanings of antonymous word pairs and then to project these terms onto domains where they applied only in a metaphoric way.” The study found that there was improvement with age. Preschool children demonstrated considerable ability in this test and “the order of difficulty of words and domains were regular across ages” (ibid.). The difficulty found in the preschool children was in projecting metaphors of colours. The reasons for matching colours differed across ages. It is surprising to learn from this article that “the basic components of metaphoric thought have developed by the fourth year of life” (ibid.: 90). Another experiment on children’s metaphorical capacities was conducted by Winner, Rosenstiel and Gardner (1976). An experiment of the interpretation of metaphoric statements was carried out on children aged from 6 to 14. The materials consisted of 8 psychological-physical and 8 cross-sensory metaphors. Half of the subjects were allocated with a metaphor explication task in orally presented sentences and the other half were allocated with 4 multiple-choice interpretations to orally presented sentences followed by orally presented 4 multiple-choice answers. The 4 interpretation options were intended to be magical, metonymic, primitive metaphoric and genuine metaphoric. The results indicate there were more metonymic and primitive-metaphoric interpretations prior to the age of 10; the younger children tended to interpret metaphors as descriptions of magical situations; cross-sensory metaphors proved to be easier to comprehend than psychological-physical metaphors. Winner, Rosenstiel and Gardner (ibid.) affirm that there are developmental trends, however, as they state, there is more clarification still necessary to discover whether or not the factors of interpretation inability were due to a linguistic immaturity, a cognitive deficit, a lack of metaphoric identification or part or all of these factors. Their experiments and the results stimulate my idea for the tests for metaphorical competence. The detail of the tests will be further stated in Chapters 3 and 4.

Another interesting theme to investigate would be relationships between pictures and intended

images embedded in them. To make such investigation, picture scrolls may provide us with opportunities to see metaphors in relation to images, as is found in a Japanese picture scroll named 'Chojugiga' (鳥獸戯画), a national treasure, which metaphorically, ironically and comically depicts personalities of the people caricatured in animals or their actions. However, research into this would be an entire one course of research by itself, so it is not part of this study. The following sections will focus on the importance of metaphor in language education.

2. 3-1. METAPHOR IN LANGUAGE EDUCATION

The importance of metaphor in language education

Low (1988) believes that metaphor should be given a more important place in language teaching, because metaphor is central to the use of language, it pervades large parts of the language system, and therefore contributes to many important language-related activities or dimensions of language use. He proposes activities, such as the invention of a new metaphor, teaching the systematicity of metaphor, the teaching of conventional metaphors, for example, memorising individual expressions, and taking a polysemy method by using a word, for example, 'foot.' By doing this he posits that learners will learn the structuring of the metaphor, awareness of boundaries (appropriateness of the metaphor) and reasons why certain metaphors are not appropriate. Learners will also practice discourse using metaphors.

Cameron and Low (1999a) make efforts to combine metaphor study with applied linguistics synthesising the existing views of metaphor and its educational application. Cameron and Low (1999b) introduce ways of metaphor research, metaphor development in L1 and L2 and metaphor in discourse. What should be noted in Cameron and Low (1999b: 90) is that "the universality and systematicity of metaphors based on embodied experience should make many metaphorical uses of language transparent cross-linguistically, although as Deignan et al. (1997) discovered for Polish and English, conceptual metaphors may be realised through different linguistic expressions, and thus pose problems in use, but not in understanding. This problem should be investigated with quantitative data.

Cameron and Low (1999b: 91) also point out that there has been "very little research in L2 acquisition and very little research into teaching control over metaphor."

Metaphor and vocabulary

McCarthy (2001: 21-30) emphasises the importance of the metaphorical extension of words, stating that "metaphor, as a device for creating and extending meaning, is very important for the study of vocabulary." Among his examples of words, polysemy and metaphors, is included a conceptual metaphor ANGER IS WAR, from which English provides a certain range of conventional metaphors to verbalise features of arguments, such as *He made a vicious attack on*

my position, and *My defences were down*, etc. These are institutionalised or conventional metaphorical expressions, and native speakers are unconsciously aware of the metaphorical use of the lexical field, hence the range is not unlimited. However, this does not seem to be applicable to EFL situations, because non-native speakers may not have fully acquired linguistic and semantic abilities. His suggestion is to pay attention to the notion of the central or focal, or peripheral meaning of a word and the notion of metaphorical extension. The first or central meaning has an impact, but the word has peripheral meanings as well. He suggests the following task to illustrate the central and peripheral meaning of 'head':

- 1 Did you hurt your head?
- 2 She's head of the committee.
- 3 The head of this hammer is loose.

His intention with this exercise is for learners to process the meanings of the peripheral senses in terms of metaphors based upon the central or focal meanings. In this kind of exercises, polysemy ability assists expanding creativity.

Metaphorical competence, cognitive style, retention

Research on metaphorical competence related to my present study (Deignan, Gabrys and Solska, 1997, Littlemore, 2001a; 2001b) was introduced in the earlier sections of Part III, therefore, additional related research from the past (Chartelis-Black, 2002; Johnson, J. and Rosano, 1993; Tourangeau and Sternberg, 1981; Boers, 2000/2001; Gibbs, 1980) is discussed here. Their studies/experiments range from issues of proficiency and aptness in figurative language/metaphor to retention by metaphor. Some of these studies concern English as L1 and others L2. In most cases of L2, the language environment is that of ESL.

The second language figurative proficiency examined in English and Malay by Chartelis-Black (2002) discovered that the easiest figurative expressions performed by the Malay-speaking learners of English (average age: 23) were the figurative expressions with an equivalent conceptual basis and linguistic form between the two languages; the most difficult were the figurative expressions that have an equivalent linguistic form but have a different conceptual basis, and the other difficult ones were those that have a different conceptual basis and a different linguistic form. These are culture-specific expressions. He assures us that there is evidence of intralingual confusion between higher and lower frequency L2 figurative expressions and alludes to a typological distance between their L1 and English.

J. Johnson and Rosano (1993) examined relationships among the language proficiency, cognitive style and metaphor comprehension of NSs Canadian and ESL students (average age :

21). The ESL students varied in their native countries but all of the subjects spoke English as L2. They discovered that NS students scored better than ESL students in academic English proficiency but, on the level of cognitive sophistication in English, metaphor interpretation or on a measure of metaphor fluency in metaphor interpretation, there was no significant difference between the two. They cited this examination from J. Johnson's preceding studies on children, which claimed that language proficiency is not a major factor in determining the complexity level of metaphor interpretations but cognitive factors such as relevant knowledge and processing capacity are major factors. This indicates that cognitive factors play a more important role than language proficiency does.

Tourangeau and Sternberg (1981) examined aptness and similarity in metaphor on different subjects: 37 for aptness test and 20 for comprehension experiments, using a booklet of 64 metaphors. Their test examined the relationship or similarity between the target and the source in terms of the within-domain and the between-domain. In the tests, all of the subjects were asked to rate metaphors on a 9-point scale for appropriateness of metaphors. The aptness group rated the metaphors on 4 scales, good-bad, apt-not apt, interesting-dull and like-dislike. The comprehension group rated the metaphors on 2 scales, hard-easy and slow-fast. The results showed that aptness of metaphors related positively to between-domain distance, negatively to within-domain distance. They claim that "metaphors are perceived as more apt to the extent that their terms occupy similar positions within domains that are not very similar to each other" (Tourangeau and Sternberg, 1981: 27). As in Aristotle's advice in *Poetics* and *Rhetoric*, the similarity of tenor and vehicle reduces the obscurity of the metaphor but it decreases the quality of metaphor. Their result also claims that "comprehensibility also related to aptness" (ibid.).

Boers (2000/2001) examined metaphoric awareness and retention of vocabulary, idioms and unfamiliar figurative expressions and proposes classroom activities to enhance learners' metaphor awareness and vocabulary acquisition. His first experiment was on 118 Flemish students (the ages: 16-7), whose English level was referred to be intermediate. The subjects were divided into two groups: experimental and control. The experimental group was given input about metaphor, i.e. vocabulary notes organised along various metaphoric themes. The expressions used as a sample were a conceptual metaphor ANGER. The test was a cloze type with 10 gaps. The result showed that the experimental group was better (4.41 of the 10 gaps in the experimental group, compared with 3.67 in the control). The second experiment was on 73 university students (the ages: 19-20), whose L1 was French and their level of English intermediate. The test was essay writing embedding 10 target words after allowing the time to go over the target word list followed by voluntary Q and As. The experimental group (40 out of 73) was given a short lesson about the images of the words. The result showed that the experimental group used 7.1 target words, compared with those of 4.9 in the control group. His third experiment had 74

university students (the age: 19-20), whose L1 was French and their English level was intermediate. The test for the two groups incorporated orientational prepositional and phrasal verbs. Both groups received explanatory notes on the multi-word verbs. The experimental group (39 out of 74) received the same word list but the list was categorised under the headings of their underlying orientational metaphors, based upon Boers' lexico-semantic analyses of prepositions and phrasal verbs. This was also a cloze type test. The result was that the experimental group did not perform any better than the control group. According to Boers, the experimental group did not benefit from the help of the categorisation of words if the vocabulary was absent from their mind at the time of the test, and more fundamentally phrasal and prepositional verbs vary in their degrees of semantic transparency (Boers, 2000: 562).

What we can learn from the results of these experiments is as follows: 1) there are transparent and opaque figurative expressions, therefore, "metaphor awareness will most probably be less fruitful when the learner is faced with opaque idioms" (ibid.). 2) The L1 of the participants in these experiments was closely related to the target language, therefore, their L1 facilitated comprehension. 3) The levels of English proficiency was intermediate, therefore, when we plan a similar test, we should take into account the situation in which the target language is dealt with, whether it is L2 or FL, and the levels of the participants.

Another small scale Boers' (2001) experiment found that imagery processing, i.e. the association of an idiom with a concrete image or vivid scene, contributes to remembering figurative idioms. He invited learners to use imagery when they come across a new figurative idiom which leads to hypothesising about its etymological origin in his experiment, for example, *having a chink in one's armour*. This suggestion seems effective for advanced English learners, however, it may not be applicable for lower level learners whose vocabulary is very small.

Finally, Gibbs' (1980) implication in his earlier experiments on relationships between understanding and memory for idioms should be discussed. The title of his paper does not seem relevant to metaphor study, but the content is full of implications in two respects. Firstly he uses idiomatic expressions as stimuli in the test. The same idiomatic expressions were used in two ways: literal and metaphorical. Secondly he argues for the effect of context in idiomatic expressions. The examples he provided are quoted in the headline of the format of the preparatory MC tests in Chapter 3, Section 3.6. He infers from the experiments that it took less time for subjects to understand conventional idiomatic expressions and that there were fewer misinterpretations if there was a preceding context provided. Recall rates of the expressions with context were better than those without. These results possibly indicate that stimuli with contextual support affects comprehension. These results indicate what are the appropriate contents for the tests of metaphorical comprehension.

Corpus and metaphor

Deignan (1999: 177) discusses a corpus-based approach to the identification of metaphorical expressions. She states that the approach has its roots in lexicography and that the idea is influenced by cognitive linguistics. The benefit of using corpora is to ensure utilisation of a large amount of data in the frequency and use of linguistic metaphors. In this sense, a corpus-based approach provides us with data of metaphorical expressions in terms of syntactic, collocational and semantic features.

Deignan also alludes to the limitations of this approach. First, innovative metaphor cannot be found in corpora because “corpus studies help to provide ways of determining what is usual not what is inventive” (ibid.: 196). Second, corpus is bottom-up rather than top-down. There is no way of including a speaker meaning or a conceptual metaphor in a computer and “being provided with a list of lexical items realising that particular meaning or metaphor” (ibid.: 197). There may be risks such that metaphorical use may remain hidden if collocational profiles alone are used to separate uses (ibid.). Third, another problem is representativeness in corpus. In spite of these limitations in the data in corpus, especially the limitations in spoken languages, she suggests it provides us with authentic evidence (ibid.: 198).

Briefly, what we must note here is that corpus has such limitations, but at the same time it provides us with voluminous data not available elsewhere.

2. 4. BACKGROUND KNOWLEDGE FOR PURSUIT OF METAPHOR STUDY

In the following sections the following issues are reviewed and discussed: schema, schema theory, image schema, analogy, analogical reasoning, mapping and network. The first two items aim to enrich general background knowledge for understanding meanings in texts and the rest aim to investigate and enrich background knowledge for cognitive elements in metaphorical recognition and use.

2. 4-1. GENERAL BACKGROUND KNOWLEDGE

Schema and schema theory are reviewed and discussed as necessary background knowledge for understanding and interpretations of texts.

Schema and schema theory

Arbib and Hesse (1990: 43) traced the use of the word “schema” back to Head and Holmes (1911). Rumelhart (1980) suggests that it could be traced back to Kant’s (1787/1963) use of this term. It was passed down to Beth and Piaget (1966) through the gestalt psychologist Barlett (1932). Head and Holmes introduced the notion of the “body schema” into neurology. This resulted from the finding in the partial lobe lesion patients’ ignorance of half of their body,

for example, the phenomena of patients' not feeling pain in the injured part of their body or on the contrary, amputees' feeling pain in their missing limbs. This representation takes place in the brain, and this body schema constructs these people's reality. A student of Head, Barlett, transferred the idea of schema from neurology to experimental psychology (Arbib and Hesse, 1990: 43). Arbib, a cognitive scientist, and Hesse, a scientist, point out that Piaget defines the 'schema of an action' as the structure of the generalisable characteristics of action, for example, the repetition of the same action or its application to a new content, i.e. a constructivist theory of knowledge. Children build up a basic repertoire of schemas (e.g. for grasping) through their sensorimotor interaction with the world until they have schemas for abstract thought that are no longer rooted in the sensorimotor particularities (ibid.: 44). Piaget first used the English term "schema" and then the French "schème." Piaget traces children's cognitive development and claims that a complex schema network arises through assimilation and accommodation. Assimilation refers to "the process whereby the data of the world are assimilated to currently available schema" and accommodation refers to "the process whereby the individual's repertoire of schemas changes over time to reflect better other aspects of the world beyond those assimilable to current schemas" (ibid.: 46).

Arbib and Hesse (1990) argue that a "schema" is a "unit of representation" of a person's world. Schema theory is an attempt at an information-processing theory of mind. It is a materialist theory in that it seeks to show that all human mental phenomena reduces to (complex) patterns of schema activation and that schemas are instantiated as a dynamic process in the brain. The theory of schemas has two different aspects: synchronic and diachronic. The synchronic aspect concerns what happens at a particular time – each individual mind contains a collection of schemas that constitute the person's knowledge, or long-term memory. In a sense, this theory is a legacy of stimulus-response theory. The diachronic aspect (traced back to Piaget) covers the mechanisms whereby the individual's "stock" of schemas changes over time. Piaget suggests some idea of how schemas could arise and change over time, by a process of reflective abstraction (Arbib and Hesse, 1990: 14).

Schank and Abelson (1977) state that the idea of the schema in the interpretation of events has a long tradition in social psychology with its roots in Gestalt psychology.

In the 1970's, in line with the development of artificial intelligence, it was applied to work on perception and text processing. At first the study of the understanding of text concerned individual sentences, and attention is now paid more to whole texts (Schank, 1975; Rumelhart, 1975). Terms applied to the schema are "scripts" by Schank (1977); "frame" by Minsky (1975); "schemata" by Rumelhart (1980). Although the terms differ and involve some different notions, it refers to large repertoires of knowledge structures utilised in understanding tasks, whether they are actions in events or understanding of texts. After these publications,

schema theory has attracted attention in a number of research areas, such as discourse analysis, reading theory (Carrell, 1984; Rumelhart, 1980, etc.) and applied linguistics (Widdowson, 1990/1991).

Schank and Abelson's (1977: 37) classification of two classes of knowledge in understanding processes are general knowledge and specific knowledge. General knowledge enables a person to understand and interpret another person's actions or meaning based upon certain standard methods people usually use. Specific knowledge or specific detailed knowledge is used to interpret and participate in specific (but experienced) events, for example, ticket examination at a theatre or identification of seats at the theatre.

The central function is in the construction of an interpretation as an event, object, or situation, in other words, the process of comprehension. The internal structure of a schema is similar to the script of a play, however, what is different from a play is that abstraction is also involved.

Schema and its application to metaphorical interpretation

Arbib and Hesse's (1990: 54-5) exploration into dimensions of the notion of a schema assemblage using Arbib's duck-rabbit illustration (a synthesised picture combining part of a duck with part of a rabbit) is noteworthy in predicting what processes interpreters may undergo while they interpret and use metaphorical expressions. Arbib and Hesse (ibid.) emphasise a schema is both a process and representation and also show how schemas interact. They illustrate as follows: when we see the illustration of a duck we activate a "duck schema," with the help of the activation of a characteristic pattern of neural activity in our brain. The same thing happens when we see the illustration of a rabbit. When we see the illustration of a duck-rabbit, we may see it either as a duck or a rabbit, but not both simultaneously. This pair of possible percepts suggests, according to them, that the schemas for duck and rabbit are neural assemblies with mutual inhibitory interconnections. However, we can see a duck and rabbit side by side within the scene. It depends not just on the activation of the duck schema and the rabbit schema (low-level schema) but on the features (higher level schema) contributed to the activation. What is important here is that we must see not only a schema for a certain object but also its feature(s) or schema assemblages. Schema theory concludes that our minds comprise a richly interconnected network of schemas. (ibid.: 61).

Schema theory and its application to pedagogy

Notable applications of schema theory were in research into reading comprehension (Rumelhart, 1980; Carrell and Eisterhold, 1983; Carrell, 1984; Anderson and Pearson, 1984), discourse (R.C. Anderson, Spiro and M.C. Anderson, 1978) and vocabulary teaching and

learning (Lindstromberg, 1985). Reading comprehension is not a passive activity for reading the meaning from a text. Rather it is an active process in which readers reconstruct a meaning through interaction between readers' prior knowledge called schema(s) and the text.

Rumelhart's (1980: 34) definition of schema theory is that it is a theory about knowledge, that is, a theory about how knowledge is represented and about how that representation facilitates the use of the knowledge in particular ways. Schema theories posit that all knowledge is packaged into units. These units are schemas [the term used by Rumelhart is 'schemata' not 'schemas']. In other words, 'schemata' are "the building blocks of cognition." They are fundamental elements upon which all information processing depends. Schemas are employed in the process of interpreting sensory data (both linguistic and nonlinguistic), in retrieving information from memory, in organizing actions, in determining goals and subgoals, in allocating resources, and generally, in guiding the flow of processing in the system.

A schema is a data structure for representing the generic concepts stored in memory. When a schema stored in memory corresponds to the meaning of a concept in question, that meaning is encoded. In this sense, a schema theory embodies a prototype theory of meaning. The characteristics of schemas are that they resemble procedures or computer programmes capable of evaluating the quality of their own fit to the available data and that procedures consist of a network of subprocedures. A particular procedure performs its task by stimulating a pattern of subprocedures. A schema is also a network of subschemas, each of which carries out its assigned task of evaluating its goodness of fit whenever activated. These subschemas represent the conceptual constituents of the concept being represented. For example, a schema for FACE, consists of a certain configuration of subschemas, each representing a different constituent of a face, i.e. a subschema of MOUTH, NOSE, etc. (Rumelhart, 1980: 39).

There are two sources of activation for schemas: one is a mechanism of conceptual-driven processing or expectation-driven processing, so-called top-down activation (for example, an activation of recalling/imagining a scene "receiving a diploma" from the word "graduation") and the other is data-driven, so-called bottom-up activation (for example, an activation of recalling/imagining a scene "Thanksgiving Day" from the word "turkey"). Conceptually driven activation goes from whole to part, while data-driven activation goes from part to whole. In schema-directed processing activation goes in both directions (ibid.: 42). This indicates that both schema activations are effective for better understanding of a text.

Rumelhart (1980) assumes schema-directed processing proceeds as follows: when some event occurs at the sensory system, this event automatically activates certain low-level schemas, which in turn (bottom-up) activates certain 'higher level' schemas of their constituents. These 'higher level' schemas probably stimulate conceptually driven processing by activating the subschemas not yet activated but waiting for evaluating its fitness. The higher level or more

abstract schema would activate the other of its constituent schemas from top-down and go through its subschemas back to lower level schemas. Lower level schemas would then make contact with other schemas (ibid.: 42). Among his reports of cases of studies, two cases are noteworthy: one is the high-level BUSINESS schema where a bottom-up activation generates a top-down activation and the other is a case of the interactive process of language comprehension. The first case ensures that the schema activation occurs both ways and the second tells us of the relation between a whole and a part. He explains that information comes in from our sense organ, which suggests but does not determine appropriate schemas for the interpretation of these data. It is often only in the context of the whole that the individual parts of an object can be identified. Similarly, the whole itself cannot be identified apart from its parts. The interpretation of parts and wholes must proceed jointly (ibid.: 46).

Categories of schema consist of content schema which operates for social and cultural themes and formal schema which deals with the structure of a text and language (Carrell and Eisterhold, 1983; Carrell, 1987). Carrell and Eisterhold's (1983: 560) distinction between formal schemas and content schemas is that the formal schemas refer to background knowledge of the formal, rhetorical organizational structures of different types of texts and that the content schemas refer to background knowledge of the content area of a text. Both categories of background knowledge are necessary for full understanding of a text.

Carrell (1987: 476) concludes that both content and rhetorical form are factors in ESL reading comprehension though content is more important than form; reading is easy if content and form are familiar ones; reading is not easy if both content form are unfamiliar ones; unfamiliar content is more difficult to comprehend than unfamiliar form if either content or form is unfamiliar. Carrell (1987: 477) emphasises the importance of the background knowledge of any text content, especially the cultural content, in ESL reading, quoting the importance of the schemas embodying background knowledge about the content of a discourse from Steffensen et al. (1979: 19).

Carrell and Eisterhold (1983) advise there are three reasons for readers' failure in understanding a passage. The three reasons are lack of appropriate schemas; appropriate schemas on the readers' side but the author does not supply sufficient clues in a passage; consistent interpretation but misunderstanding of the author's intention. They also state that the tendency in reading comprehension among less proficient students is word-bound hence meaning tends to break down at the word level. More proficient students are not susceptible to vocabulary but structure difficulties in reading. These are the findings from the study of reading. The same phenomena are found in my EFL lessons for metaphorical comprehension.

Widdowson (1990: 163) puts this similar notion into different words: he argues that the expressing and interpretation of meanings involves two kinds of knowledge: one is systemic

knowledge and the other schematic knowledge. Systemic knowledge refers to the formal properties of language, its semantics and syntax, the meaning of words and their combination in sentences, and so on. Schematic knowledge refers to knowledge we have of the particular world we live in, our beliefs, ideas, experiences, and cultural values, and so on. He also alludes to an acquisition difference (ibid.: 110) in the mother tongue and a second language in the negotiation of meaning. In natural first language acquisition, children develop systemic and schematic knowledge concurrently, each supportive of the other. This experience cannot be replicated in second language acquisition. Learners are socialised into the schematic knowledge associated with their mother tongue. When they confront uses of the foreign language they are learning, for example, when they interpret meanings, they are naturally inclined to rely on their established association.

In brief, a schema, as is synthesised by Arbib and Hesse (1990: 61), is “a unit of interaction with, or representation of, the world.” It provides us with abilities for recognition and guide to action based upon one’s expectations about what will happen. By whatever term it may be called (“scripts” by Schank, “frame” by Minsky, “schemata” by Rumelhart) it refers to large repertoires of knowledge structures which serve to help us understand texts, tasks or actions. Schank and Abelson (1977) classify knowledge understood by schemas into two classes: general knowledge and specific knowledge. Rumelhart, on the other hand, places it in a broader sense and defines it as “the building blocks of cognition” and explains how we activate certain schemas. He applies it in research on the reading comprehension process, in which the main activations of schemas are top-down and bottom-up. Carrell and Eisterhold (1983) classify schemas in reading as formal and content schemas and state that both are necessary for full understanding of a text. Their schema theory postulates that comprehending a text is an interactive process between the reader’s background knowledge and the text. Widdowson (1990) states a similar notion. To express and interpret meanings we need two kinds of knowledge: systemic and schematic knowledge. All of these implications from schema theories make clear that in understanding meanings we need to have both background and specific knowledge. It is also applicable to understanding metaphorical meanings.

2.4-2. BACKGROUND KNOWLEDGE FOR COGNITIVE ELEMENTS

Image schema(s), analogy, analogical reasoning, mapping and network are discussed as cognitive elements for metaphorical understanding and use hereafter.

Before going into the topic of image schema(s), I will briefly discuss the differences between ‘schema’ and ‘image schema’ and then examine ‘image schema’ in detail.

A schema is a mental framework based on one’s past experience developed as a means of

accommodating new facts and making sense of them. A so-called 'image schema' is one of the human cognitive abilities used to conceptualise various mental images. It plays a role in linking experience and language. Some of the image schemas have been investigated as discussed in the following section. One of them is an embodied image, such as spatial cognition, e.g. front-back, up-down, right-left, whole-part and/or centre-peripheral, etc. It can be said that image schemas are highly abstracted and structuralised mental images, which may expand from simple embodied images (e.g. a human front-back) to more abstract and complicated images (e.g. the front-back of a building or procession).

Image schema

A so-called 'image schema' seems to necessitate more investigation, for example, what kinds of experiences (e.g. bodily, social or cultural experiences) are linked to specific image schemas, what interactive relationships are there between specific schemas and whether or not is there any universal image schema overriding cultural and linguistic differences?

Studies and discussion so far by scholars (Johnson, 1987; Lakoff, 1987; Yamanashi, 2001/2003) have concentrated on some image schemas based upon the conceptualisation of bodily experiences, such as up-down or front-back, as in Turner (1991). However, the importance of image schema lies in the fact that we draw various images in our mind, from which we form cognitive abstract structures, or image schemas resulting from our bodily experience. As Johnson (1987: 29) puts it, it is a "recurrent pattern, shape, and regularity in, or of, these ongoing ordering activities." The image schemas clarified so far are CONTAINMENT, FORCE, BALANCE, PATHS, CYCLES, SCALES, LINKS and CENTRE-PERIPHERY (Lakoff, 1987; Johnson, 1987). The importance of image schema is its effectiveness in the expansion of meaning. Examples of this meaning expansion are offered by several scholars. For example, the expansion of a preposition *in* (Yamanashi, 2003; Momiyama and Fukada, 2003) can be explained as follows: the *in* in the sentence *He is in a living room* refers to a physical space, but that in the sentence *He is in a good mood* refers to a mental space. The latter is an abstracted case from the original *in*. Yamanashi calls it a topological transfer of the image schema of CONTAINER. In the case of *over* (Lakoff, 1987: 422, 423) as in *Sam walked over the hill* and *Sam lives over the hill*, there is an image-schema transformation in the sense that the former focus is on the path-focus and the latter is on the end-point focus. Another expansion of meaning posited by Yamanashi (2003) is the backgrounding of image schema. He explains this by using 'deru' or 'come out' in the sentences like *A snake comes out of a hole*, *Good hue comes out* in dying and *Fog comes out*. It is clear where a 'snake' comes out in the first example, but unclear in the last two. To understand these three we use a container schema, but it is difficult to specify the place from where the 'hue' and 'fog' come out. In these cases, they come

out of an unspecified place and converge in the background. He posits this kind of expansion to be backgrounding or bleaching (Yamanashi, 2003: 143). Such linguistic phenomena also suggest, according to him, that the boundary of the container becomes less obvious. What these statements suggest is that we should consider image schema and its expansion and that there are cases where a boundary is fuzzy.

In the place of the term “image” schemas, Johnson (1987: 28-9) sometimes uses the “embodied schemata,” and poses several questions. Firstly, where in our cognition do image schemas operate? The answer is that they operate at a level of mental organization that falls between abstract propositional structures on the one hand, and particular concrete images on the other. Secondly, he asks how they operate. Since we have meaningful, connected experiences that we can comprehend and reason, there must be pattern and order to our actions, perceptions, and conceptions. A further question concerns the pattern and regularity of a schema. A schema is a recurrent pattern, shape, and regularity in, or of, these ongoing ordering activities. These patterns emerge as meaningful structures for us chiefly at the level of our bodily movements through space, our manipulation of objects, and our perceptual interactions.

Johnson’s further view on image schemas is as follows. Understanding consists of the experiences we have had. It is how we see the world. And “this is a result of this massive complex of our culture, language, history, and bodily mechanisms that blend to make our world what it is” (ibid.: 104). Image schemas and their metaphorical projections are primary patterns of this “blending.” Our subsequent propositional reflections on our experience are made possible by this more basic mode of understanding (ibid.).

Image schemas and metaphorical extensions

Johnson (1987: 104-9) proposes six kinds of evidence for the existence of image schemas and their metaphorical extensions.

- 1) Image-schematic transformations: We can make image schematic operations more abstract than just the formation of rich images or mental pictures.
- 2) Systematicity of literal experiences: The evidence of Lakoff and Johnson (1981) shows the existence of metaphorical structures of understanding. They unify a large number of literal expressions used to discuss a certain concept, for example, the concept of understanding and theory construction. An expression such as *Is that the foundation for your theory?* (ibid.: 105) is based upon one basic metaphorical system of understanding: THEORIES ARE BUILDINGS.
- 3) Extensions of conventional metaphor: There is a used and an unused portion. In any metaphorical projection, one part of the structure of the source-target domain (buildings in THEORIES ARE BUILDINGS) is projected (i.e. used) onto the target domain (theories). This used part forms the basis and the framework. The typical projected structures are drawn from

this framework. The used portion triggers the utterance of such expressions as “construct” or “foundations.” They are part of our ordinary literal language about theories. The unused portion of the metaphor may trigger some words for the source domain, for example, “rooms” or “facades.” These features lead us to use such an expressions as *He prefers massive Gothic theories covered with gargoyles* (ibid.: 106).

4) Polysemy: Polysymy refers not only to multiple meanings for a single term but multiple related meanings here. It is evidenced in the phenomenon of polysymy. “There exists an underlying image schema that is metaphorically extended, typically from the physical domain to nonphysical or more abstract domain” (ibid.: 107).

5) Historical change: The underlying metaphorical systems which relate to the various senses of polysemous terms were investigated. Through semantic changes, there is a general tendency to borrow concepts and vocabulary from the more accessible physical and social world.

6) Metaphorical constraints on reasoning: analogical thought processes structure our conceptual system. Johnson’s evidence here is based upon Gentner and Gentner (1983). We map features of the source domain onto the target domain by way of metaphorical projection.

Johnson (1987: 113) supplies several instances of metaphors based on image schemas for CONTAINMENT, FORCE, BALANCE, PATHS, CYCLES, SCALES, LINKS and CENTRE-PERIPHERY. Here is his explanation of the image schema of PATHS to represent all cases. He states that in all cases, there is a single, recurring image-schematic pattern with a definite internal structure. Every case of paths has the same constituents: (i) a source, or starting point; (ii) a goal, or endpoint; and (iii) a sequence of contiguous locations connecting the source with the goal. Paths are routes for moving from one point to another. The definite internal structure for PATH schema provides the basis for a great many metaphorical mappings from concrete, spatial domains onto more abstract domains. In the metaphor PURPOSES ARE PHYSICAL GOALS, for example, the goals are the endpoints to which one carries out a physical labour. The abstract purposes (for example, *job to be done*) are understood in terms of a type of physical labour to attain a spatial goal.

Johnson’s view on metaphor is that metaphor is a pervasive, irreducible, imaginative structure of human understanding that influences the nature of meaning and constrains our rational inferences (ibid.: xii). He emphasises the important ‘embodied’ imaginative structures of human understanding that make up our network of meanings and give rise to patterns of inference and reflection of abstraction based upon our ‘embodied’ experience. An image schema is a recurring, dynamic pattern of our perceptual interactions and motor programs that gives coherence and structure to our experience (ibid.: xiv).

Image schemas and bodily experiences

Lakoff (1987) takes the experimentalist approach in which he attempts to characterise meaning in terms of “the nature and experience of the organisms doing the thinking” (ibid.: 266). Objectivism tends to define meaning independently of the nature and experience of thinking beings. On the contrary, Lakoff claims that his and Johnson’s experiential realism characterises meaning in terms of embodiment, that is, in terms of our collective biological capacities and our physical and social experiences as being functioning in our environment (ibid.). They consider this in two parts: structure and the embodiment of that structure. Their basic idea is that our concepts are structured, as shown in ICMs. What makes structure meaningful is conceptual structure embodied (i.e. tied to) our preconceptual bodily experiences. For our preconceptual experiences, they posit two kinds: basic-level structure and kinesthetic image-schematic structure. “Basic-level categories are defined by the convergence by our gestalt perception, our capacity for bodily movement, and our ability to form rich mental images” (ibid.: 267). Kinesthetic image schematic structure is the image schemas that “are relatively simple structures that constantly recur in our everyday bodily experience: CONTAINER, PATHS, LINKS, FORCES, BALANCE, and various orientations and relations: UP-DOWN, FRONT-BACK, PART-WHOLE, CENTER-PERIPHERY, etc. (ibid.). Lakoff (1987) further posits two ways in which abstract conceptual structure arises from basic-level and image-schematic structure. One is by metaphorical projection from the domain of physical to abstract domains; the other by the projection from basic-level categories to superordinate and subordinate categories.

Lakoff (1987) praises Johnson’s (1987) insights, stating that experience is structured in a significant way prior to, and independent of, any concept and supports Johnson’s kinesthetic image schemas (Lakoff, 1987: 271). He provides an example of the CONTAINER schema. This schema consists of a boundary. It distinguishes interior and exterior. The CONTAINER schema defined the most basic distinction, for example, between IN and OUT. Our bodies are regarded as containers, for example, air is inhaled into the lungs of our body and exhaled out of them. He explains other bodily experiences to illustrate how our concepts are bodily oriented. Gibbs (1994), considering an experiment in developmental psychology, supports the idea of image schema, especially in connection with sensorimotor schemas in children, and maintains that the image schema of containment among others is important because of its relevance to preverbal thinking. Babies experience many kinds of containment, for example, drinking and eating, feeling their bodies when clothes are put on or taken off and when being put into or taken out of bed.

Image schemas, abstraction and transformation

Finally, we will look at an example of another characteristic of image schema (its concrete and

abstract relation) offered by Kawakami (1996). Kawakami (1996: 47) refers to the *in*, giving an example of *The present in the box*, where a container schema is employed and it belongs to the spatial domain. He also alludes to the characteristics of image schema, providing the following examples, where there are domain differences (i.e. social, emotional and abstract domains) but the abstract image schema of the *in* still remains in these different domains.

My brother is *in* high school. – This belongs to the social domain.

My brother is *in* love. – This belongs to the emotional domain.

My brother is *in* trouble. – This belongs to the abstract domain.

He alludes to the metaphorical mapping that takes place between the two relations while image schema can involve an abstract structure applicable to whole domains.

Still another characteristic of image schemas is flexibility, or image schema transformation. An example is one of the numerals in Japanese, the 'hon' or 'pon.' It is a numeral attached to nouns possessed of a long shape like a pole or a stick. To indicate numerals for a bat (baseball equipment) or a pencil, we say 'batto ippon,' i.e. 'a bat' or 'enpitsu nihon,' i.e. '2 pencils.' In these cases, there is a transfer from a schema for something long, i.e. pole or stick to something of a similar shape, i.e. an allusion from the shape. Therefore, it can be used to describe an arch of a home run hit or to describe a throw in Judo, for example, one dropping shoulder throw (seoi-nage ippon, 背負投げ一本). Lakoff (1987: 104) alludes to the extension of the Japanese classifier *hon*, stating that it can be extended to what are presumably less representative cases. This transfer is made possible because our image schema expands from something concrete to something abstract. The similar phenomena of transfer may occur in other cases (PATH, LINKS, etc.) as illustrated earlier.

In summary, image schema is a cognitive structure and some of the image schemas share a universality beyond language and culture. We form a certain image structured by bodily experiences, for example, spatial experiences (e.g. front and back).

As stated in the theory of conceptual metaphor relating to image schemas, image schemas play a role in linking experience with language or vice versa. If mental activities such as conceptualisation by schemas and activations by image schemas are smoothly undertaken by language learners, their ability to understand and use metaphorical expressions may be enhanced.

Image, schema and image schema can be summarised as follows: an image is a form of representation which is specific to perception, more specifically sight. Schemas are generalised knowledge about a sequence of events (Rumelhart, 1980) and image schemas are something similar to a cognitive models account of prototype effects (Lakoff, 1987). A similar notion is proposed by Jackendoff's (1983) conceptual structures. According to him, it is a 'conceptual

structure, at which linguistic, sensory, and motor information are compatible' (ibid.: 17).

Johnson (1987) also follows Rumelhart's definition of schema as generalised knowledge about a sequence of events. It originates in Schank and Abelson's notion of a scripted activity as a basic knowledge structure. Lakoff (1987) follows Minsky's (1975) frame, Schank and Abelson's scripts (1977), and Rumelhart's schemas (1980), all of which are similar to Fillmore's frames. Lakoff and Johnson (1981) call them propositional models. They are all network structures with labelled branches that can code propositional information.

Rumelhart's schemas, originating in Fillmore's (1968) earlier work on case frames, are widely used in computational approaches to cognitive psychology. Frames, scripts, and schemas are all attempts to provide a format for representing human knowledge in computational models of the mind. The structures contain empty slots, which can be filled by individuals, occurring in a given situation that is to be structured.

The studies reviewed above show that we have cognitive faculties assisting inference of abstract images (i.e. image schemas in this case) from concrete images. These cognitive faculties enable construction of our conceptual structures which constitute or characterise the world of meanings. Previous studies of image schemas have provided evidence of individual schemas, for example, a CONTAINER schema or PART-WHOLE schema, and have not yet synthesised relationships between/among image schemas, nor clarified to what extent and degree image schemas are universal or to what degree they transcend language and culture. Although there is more to be investigated on these themes, past investigation (Lakoff, 1987; Johnson, 1987; Yamanashi, 2003) makes clear the mechanisms of some image schemas which originate in our cognition of space, sensorí motor experiences and so on. The investigated schemas are thus limited but important, because we can make use of their views on image schemas in order to develop our metaphor research.

Analogy, analogical reasoning and metaphor

An original meaning of analogy (*ana logon* in Greek to mean 'according to a ratio') is similarity in proportional relationships (Britannica, Vol. 1: 367; OED, Vol. 1: 304). A general meaning derived from the original meaning widely used now is the act of comparing one thing with another that is similar in some way. For example, when we explain the movement of 'light,' we use the analogy of 'water.' Analogical reasoning refers to the comparison of similarity across different knowledge domains and the inference of shared similarity across them. In understanding different phenomena, for example, the systems of the current of 'water' and that of 'electricity,' the knowledge or domain of the source of the water, the storage of the water, the water stream, the water pressure, etc. is compared with the knowledge or domain of the source of the electricity, the storage of the electricity or battery, the electric stream, the electric pressure, etc.

In the comparison, the similarity in elements and the similarity of the system are examined. The transfer from the former domain, that is, a base domain to the latter domain, that is, a target domain is called mapping. Analogy is made use of in learning and/or solving problems, or constructing and/or creating a new idea. Similarities which are based on analogy comprise surface similarity, structural similarity and relational similarity.

Here a question arises: is there any difference between metaphor and analogy or analogical reasoning? Part of the answer is found in Gentner and Jeziorski (1994) and another part in Johnson (1987). Gentner and Jeziorski (1994: 447-8) analyse analogy and metaphor, stating that analogy can be viewed as a kind of highly selective similarity. In processing analogy, people implicitly focus on certain kinds of commonalities and ignore others. They further state that a theory of human processing of analogy and similarity can be put in structure-mapping: the central idea of structure-mapping is based upon the idea that “an analogy is a mapping of knowledge from one domain (the base) into another (the target) and a system of relations that holds among the base objects also holds among the target objects” (ibid.: 449). They state that, in interpreting an analogy, people seek to put the objects of the base in one-to-one correspondence with the objects of the target so as to obtain the maximal structural match (ibid.). The corresponding objects in the base target do not need to resemble each other. Object correspondences are determined by roles to be played in the matching relational structures. “Thus, an analogy is a way of aligning and focusing on relational commonalities independently of the objects in which those relations are embedded” (ibid.). What is important in the mapping process is the principle of systematicity: “people prefer to map systems of predicates governed by higher-order relations with inferential import, rather than to map isolated predicates. The systematicity principle reflects a tacit preference for coherence and inferential power in interpreting analogy” (ibid.).

Johnson (1987) distinguishes metaphor from analogical reasoning, citing from Gentner and Gentner’s (1983) explanation of electricity as ‘flowing water.’ His explanation is that “in analogical reasoning we map structural relations holding among objects in the source domain onto the corresponding objects in the target domain. We do not map the particular attributes of those objects, which is the chief difference between metaphor and analogy.” (ibid.: 110). He discusses this distinction using the following example. In our understanding of the relation of an electron to its nucleus on analogy with the relation of a planet to its sun, “the relevant mapping transfers selected structural features (e.g. ATTRACT, REVOLVES AROUND, MORE MASSIVE THAN), but not particular attributes (e.g. the sun is *hot*, *massive*, and *yellow*, while the nucleus presumably has none of these properties)” (ibid.). According to Johnson, analogy or analogical reasoning resorts to structural relations holding among objects in the domains not to the attributes of the objects, on the other hand, metaphor includes the particular attributes of the objects.

Gibbs (1994) who supports Gentner and Gentner's (1983) scientific reasoning in a study of students understanding of electricity or electrical circuits confirms that their study showed that metaphor or metaphoric images could elicit scientific reasoning (Gibbs, 1994: 161). Gibbs postulates that the pervasive nature of metaphor in everyday life and the metaphorical nature of our conceptual system could make this happen.

Another example of Gibbs' is the metaphorical nature of thought that can be evidenced in the psycholinguistics of idiomaticity. Traditional theories presumed that idioms (for example, *flip your lid* and *blow your stack*) were arbitrary meanings, however, "recent psychological data suggest that the meanings of idioms are not arbitrary but can be explained in part by independent conceptual metaphors" (ibid.: 162). Gibbs (ibid.: 162-3) supplies the evidence of these expressions which belong to the conceptual metaphors THE MIND IS A CONTAINER and ANGER IS HEATED FLUID IN A CONTAINER from his and other scholars' research. They examined people's mental images of the idioms *blow your stack*, *flip your lid* and *hit the ceiling* and found that these idioms share characteristics with 'stacks are blown,' 'lids flipped' and 'ceilings hit.' In these cases the internal pressure causes a violent releasing of some substance upward. All of these are physical reactions but it was discovered that they metaphorically map onto the above idioms and people understand the figurative meanings.

Rumelhart (1980: 55) comments that schemas play a central role in all of reasoning. Most of our reasoning apparently does not involve the application of general purpose reasoning skills. Rather, it seems that most of our reasoning ability is tied to particular schemas related to particular bodies of knowledge.

There remain uninvestigated areas in this field of cognitive science. The complete picture of how analogy is created and used by the human brain has still to be comprehensively investigated.

Analogy assists our understanding and metaphor makes language lively, however, we should consider the risks which analogy or metaphor can give rise to. Kusumi (2001: 364-70) points out two such risks: (i) ambiguous or implicit correspondences between the source and target. It may cause misunderstanding. For example, the metaphor THINKING IS CALCULATION may cause us to think of only one aspect of thinking because of the exclusion of the whole; (ii) ignoring characteristics of analogy or metaphor also cause problems. We should note that analogy or metaphor is a way in which one thing is meant in terms of another. For example, CONTAINER metaphor, such as storage of short-term or long-term memory, may lead us to think that we store our memory in those specific vessels, however, actually our memory is stored in every part or system of our brain. To avoid the risks of miscommunication, metaphor users need to be cautious about the correspondence between the source and target and the effects by the use of metaphors. This involves users' intention suggested by pragmaticians (see 2. 2-2. Part II). At the same time, cause and effect (especially,

failure) should be considered even allowing for the fact that metaphor has the advantages of making discourse lively and expressions more colourful.

Mapping

The term 'mapping' originates in mathematics. It means an act of fitting one member of a set exactly onto a member of another set (Summers, et al, 1992: 810). Based upon this, mapping can be defined as a process by which the components of two analogs, a source and a target, are put into communication with each other. Mapping is an operation of correspondence.

Lakoff (1987, 1994) develops his metaphor theory in Lakoff and Johnson (1981) and postulate that metaphor is mapping from an ICM in one domain to an ICM in another domain, that is, mapping between the source and the target domains (ibid.: 206-7). As we see in the conceptual metaphor LOVE IS A JOURNEY, the mapping is a set of correspondences. In the LOVE-IS-A-JOURNEY mapping, a love relationship corresponds to a vehicle. According to Lakoff (1994: 211-2), a vehicle is a superordinate category that includes such basic level categories as car, train, boat, and plane. The examples of vehicles are typically drawn from this range of basic level categories: car (*long bumpy road, spinning our wheels*), train (*off the track*), boat (*on the rock, foundering*), plane (*just taking off, bailing out*). Lakoff and his colleague Johnson found that mappings are at the superordinate rather than the basic level. "A mapping at the superordinate level maximizes the possibilities for mapping rich conceptual structures in the source domain onto the target domain, since it permits many basic level instances, each of which is information rich" (ibid.: 212). Elsewhere in Lakoff (1987), he also posits there are mappings between mental images and between schemas.

Kovecses (2002: 6-7) uses the same conceptual metaphor LOVE IS A JOURNEY to explain mapping. In one of the linguistic realisations of this conceptual metaphor, *We aren't going anywhere*, the portion 'going anywhere' refers to travelling to a certain destination. The word 'we' refers to travellers. In a word, this sentence provides three elements of a journey, i.e. the travellers (agent), the journey (process) and the destination (goal or result). If we hear this expression in a situation talking about a love relationship, we understand the journey to mean an abstract not a physical journey and the whole expression means that there is a problem in the love relationship. We understand this abstraction because the journey domain is applied to the love domain that illustrates the concept of love with this particular structure or set of elements.

Fauconnier (1997/2002) considers the mappings between domains as the unique human cognitive faculty of producing, transferring and processing meaning. According to his mental space theory, in using language or in understanding meanings, our faculty executes our fundamental cognitive ability to set up domains and establish mappings between elements in these domains. This applies to our understanding of metaphor. Some elements in a source domain are mapped onto corresponding

elements in a target domain. He posits three mappings: projection mapping, pragmatic function mapping and schema mapping. The projection mapping “will project part of the structure of one domain onto another” (ibid.: 9). In the pragmatic function mapping, the two relevant domains are mapped onto each other by a pragmatic function as seen in metonymy and synecdoche. Schema mapping operates “when a general schema, frame, or model is used to structure a situation in context” (ibid.: 11). Mappings operate to build and link mental spaces. Mental spaces are “partial structures that proliferate when we think and talk, allowing a fine-grained partitioning of our discourse and knowledge structures” (ibid.). For example, a mental space in *Liz thinks Richard is wonderful* refers to a space for a reporting Liz with a structure corresponding to wonderful Richard. He concurs with Lakoff’s ICM, as it is a form of schematic mapping. He asserts that these mappings are central to any understanding of semantic and pragmatic language interpretation and cognitive construction (ibid.: 12).

In sum, Lakoff (1987, 1994) used the term “metaphor” to refer to conceptual mapping. It is a mode of thought, defined as a systematic mapping between the source-target domains. Mapping takes place between source-target domains at any cognitive level such as mental image levels, words and schema levels. Fauconnier’s (1997/2002) three mappings: projection mapping, pragmatic function mapping and schema mapping are noteworthy. The implications proposed by Lakoff and Fauconnier can be made use of in the analysis of the test results in this study.

Network

The idea of network is inseparable from mapping, therefore, the following discussion has to incorporate the concept of mapping.

Aitchison (1987) refers to the origin of the idea of network as from Samuel Johnson, the 18th century lexicographer. She cites from Samuel Johnson that a network is “anything reticulated or decussated at equal distances, with interstices between the intersections” (ibid.: 72). It is something like a fishing net with equidistant intersections. Her definition of a network in relation to the mental lexicon is that a network is “an interconnected system” (ibid.). She describes three networks: semantic, lexical and phonological. She suggests there are closely linked and loosely linked networks.

She claims that researchers mostly agree on the existence of a network of some type, but they disagree on its organisation and the exploration methods. She points out problems in early work on meaning networks and simple word associations. Early work on meaning networks suggested linguistic habits and experimented on simple word associations. One finding was that people tended to select items from the semantic field of the original word, for example, the most often mentioned words for ‘sewing’ were ‘thread,’ ‘pin(s),’ ‘eye’ and ‘sew’; people tended

to select pairing words or words with opposite meanings, for example, husband and wife; adults tended to select the same word class, for example a noun for a noun, etc. She has some doubts about word associations, for example, “thinking up an immediate response to just one word is an unnatural activity and may not reflect ordinary speech processes” (ibid.: 73) and the standard results may differ on how to present words in an experiment. However, she examines the links of four words (*butterfly*, *hungry*, *red* and *salt*) and classifies the responses into four clusters: coordination, collocation, superordination and synonymy. Her results are as follows: coordination and collocation links seem to be powerful and long-lasting (ibid.: 79, 85). The links between hyponyms and their superordinates may be weaker than the above two but available when words are prototypically clear or commonly used ones (*butterfly* links to insect; *red* to colour) and synonymous links include ordinary and rough relations (*hungry* links to starved). We must note here that among these links, a prototype link may cause problems for EFL students because they may not adequately develop prototype systems in their mental lexicon. Aitchison concludes that the “treatment of superordinates suggests firm connections, such as those between co-ordinates and those between common hyponyms and superordinates, are used in conjunction with our reasoning ability to make other temporary links as we need them” (ibid.: 82). Her idea on this point shares with Lakoff’s. Connections between different topic areas may also be weak and made on the spot by means of active matching and decision-making (ibid.: 85).

Kovecses (2002: 227-8) postulates that imaginative or figurative human thought is constituted by the manipulations of structured domains of experience or ICMs. He follows Fauconnier and Turner’s notion of ‘mental,’ or ‘conceptual space’ to describe this process of human cognition. He employs a ‘network’ or ‘many-space model’ (following Fauconnier and Turner) instead of the two domain model and emphasises on-line understanding to account for metaphorical and nonmetaphorical aspects of utterance. “A mental space is a conceptual on-line packet, smaller than a conceptual domain and more specific” (ibid.). For example, when we hear a speaker say, “Yesterday, I saw Susan,” we build a space for what the speaker did and another space for yesterday when the speaker saw Susan. These are mental spaces. They are not conceptual domains like JOURNEY or FIRE. The mental space for “yesterday” contains the specific speaker, Susan. On the other hand, conceptual domains are more general than these mental spaces. The network model consists of input spaces, a blended space, and a generic space. This shares Turner’s idea of network models.

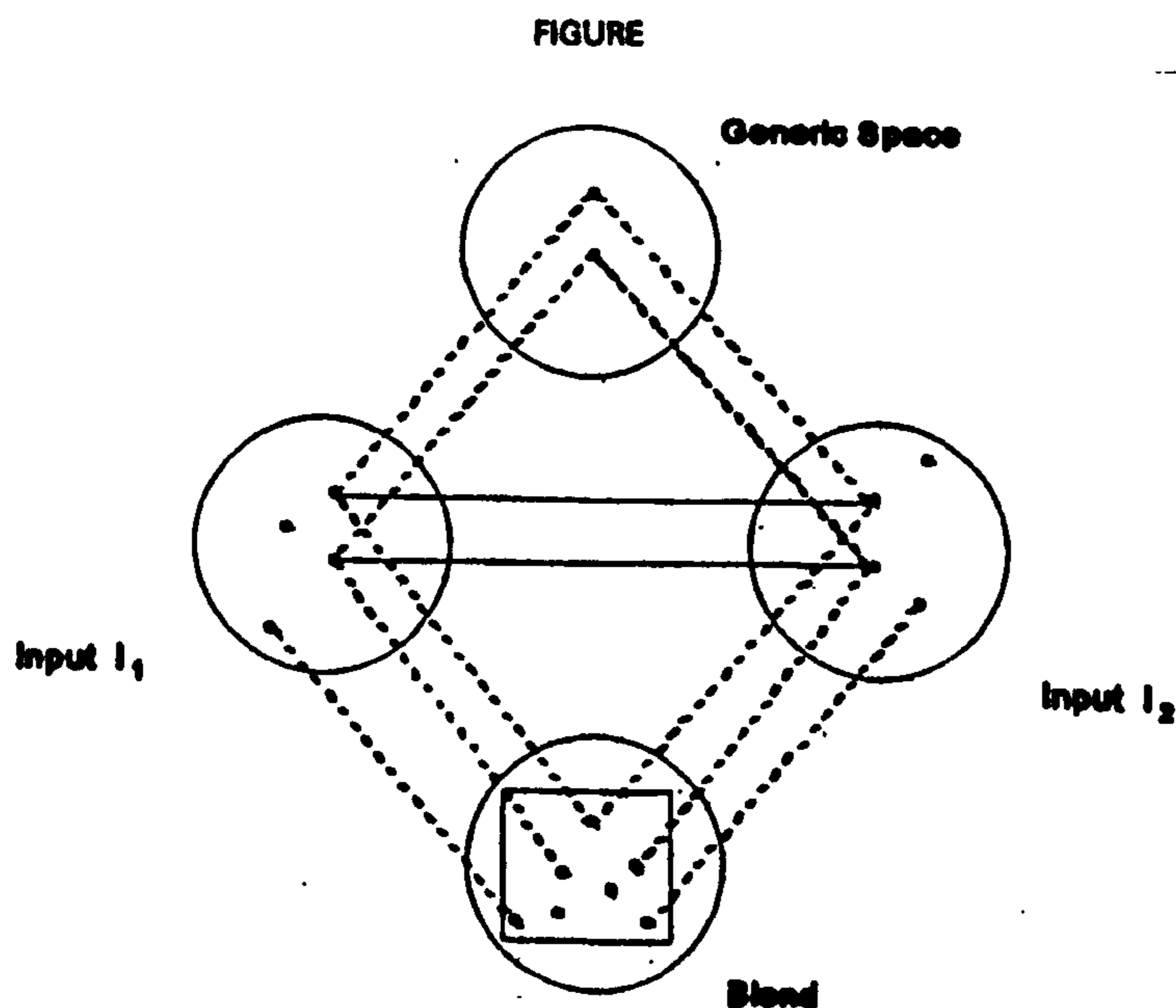
Turner’s (1998) “conceptual integration” developed in collaboration with Fauconnier relates network models as follows:

conceptual integration is a basic cognitive operation that operates on two input mental spaces to yield a third space, the blend. For example, in *Vanity is the*

quicksand of reason, one input space has *quicksand* while the other has *vanity* and *reason*; the blend has traps for *reason*. In blending, there is a partial cross-space mapping between the input spaces. In the *quicksand* example, the *traveler* in one input is the counterpart of *reason* in the other input. (ibid.: 64)

He explains how this network occurs: we can imagine, from the movie *Lawrence of Arabia*, a hot dry desert as a general background and a scientific frame for *quicksand*. In this expression, the *quicksand of reason* blend hints a dangerous trap, i.e. *quicksand*, but the blend does not take the knowledge the traveller should have for the danger of desert from the *quicksand*, but from the *reason* input. He further states that, in addition to these inputs and the blend, “conceptual integration involves generic space” (ibid.: 65). The cross-space mapping between the inputs comprises the content of the generic space. It contains an abstract structure connected to both inputs, for example, “the generic space for *vanity is the quicksand of reason* has action (not specified as physical or mental) intended to achieve something, and a difficulty for that action” (ibid.: 66). If we illustrated the figure of this network model (Figure 2-1), we should draw four spaces: a generic space at the top, two input spaces horizontally on both sides below the generic space and a blend space at the bottom.

Figure 2-1



(Figure 2.1. Conceptual integration, Turner, 1998: 65)

There are several types of integration network: a frame network, a single-framing network and a shared topology network. In a frame network, all spaces, i.e. inputs, generic and blend, share a topology provided by an organising frame. One of the examples Turner and

Fauconnier gave is “Regatta.” The case of “Regatta” illustrates the shared topology networks. A ship ‘Northern Light’ set the record for an ocean voyage. The report about it issued in 1993 can be analysed as follows: all four spaces have the organising frame *boat making an ocean voyage*. The blend has an extension of that frame: *two boats making ocean voyages and moreover, racing as they make them*. In a single-framing network, one input is a familiar abstract frame and the other input is a relatively specific situation.

Another example is a kin relationship between two people, John and James: *John is the father of James*. One input is the frame of kin relationship; the other input is for John and James. In the blend is *John is the father of James*. It means that John plays a role of James’ father. Then, in a shared topology network, all spaces share the topology of a generic space.

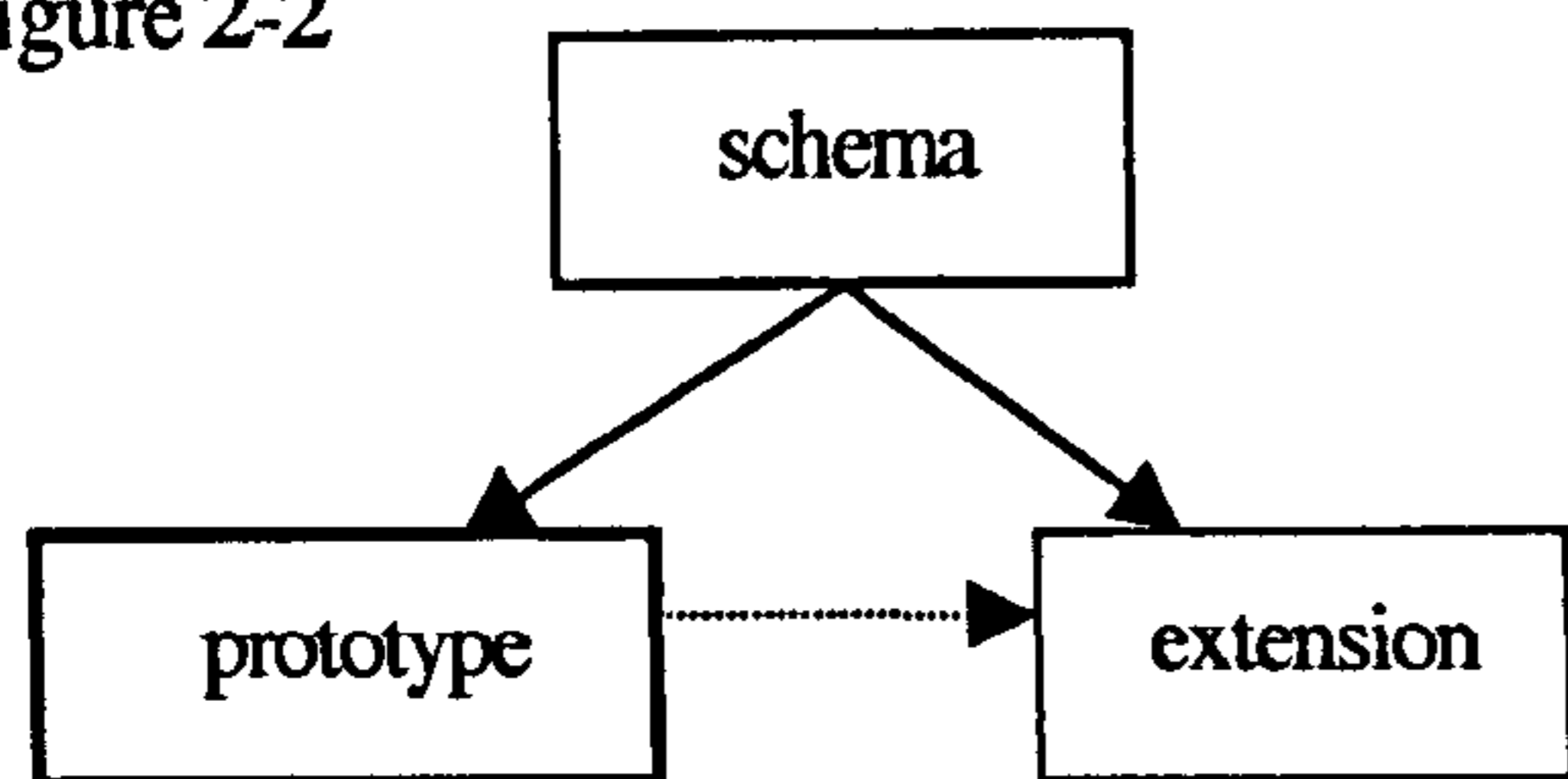
In sum, Tuner’s network model implies that meaning construction involves construction of blended spaces where pieces of input concepts can be combined and form new conceptualisations.

Finally, let me briefly discuss Langacker (1991) and Tsuji (2002), both cognitive linguists. They state that a network is literally a network system, and the terms often employed in cognitive linguistics are a meaning network and a neural network. In cognitive linguistics, a spreading activation model illustrates networks of words to words link, and words or concepts to concepts link. This model represents prototypical structures and structures of mental lexicons. Therefore, it can be utilised to explain priming effects (i.e. an application of revitalisation, such as of a dry well receiving a small amount of water to revive it) or to investigate an activation of schemas.

The network model proposed by Langacker (1991) refers to a connection among schema, prototype and extension. He illustrates it as follows:

There is an intimate connection between the “outward” growth of a network through extension, on the one hand, and its “outward” growth through schematization, on the other. The process of extension occurs because a speaker perceives some similarity between the basic value (i.e. the local and global prototype) and the extended value. This similarity perception represents the commonality of the basic and extended values, so it constitutes a schema having the two for instantiations, as depicted in [the] Figure (Langacker, 1991: 270-1).

Figure 2-2



(Adopted from Langacker, 1991: 270-1)

The above figure represents a minimum structure of a network consisting of a prototype, extension and schema. The prototype is cognitively salient in the sense that it represents category and assumes the typicality of the category; therefore, it functions as a core of category (see Note 9 for 'saliency'). The extension is connected by a prototype and its extended categorical relation. The extension may have different features from a prototype but bears some shared similarities within the same category. In other words, the instantiation of a schema is a prototype and its extension. A network model has a horizontal extension and tends to create schema, and at the same time it has a vertical schematisation.

Lakoff (1987: 91) proposes another network model called a "radial model," where a category (for example, mother) is "structured radially with respect to a number of its subcategories (for example, adoptive mother, birth mother, foster mother, surrogate mother, etc.). All of these relate to prototype categorisations.

In sum, we imagine by network or on network structure where neural cells construct a circuit. As Aitchison (1987: 195) states, finding a word in the mental lexicon can be envisaged as following a path through this complex network. Some networks are stronger than others. For well-known, common words, the paths are wide and well trodden and it is easy to reach them quickly. But for occasionally or seldom used words, the paths are narrow and not easy to find. "Eventually new tunnels are perpetually being dug. Furthermore, the word itself cannot ultimately be regarded as a finite package. Since each word has links with so many others, and with the general memory of information, all these connections are in a sense part of the sum total" (ibid.).

2.5. CONCLUSION

Past research

Past research on metaphor studies in applied linguistics consists of two types: awareness and competence. Both categories were investigated within the cognitive and linguistic arenas, mainly by occidental researchers. These studies aimed to discover ESL students'

comprehension and use of metaphors focussing on the awareness or identification, originality and/or aptness of metaphor/metaphorical expressions (Low, 1988; Low and Cameron, 1999a & 1999b; Deignan, Gabrys and Solska, 1997; Boers, 2000 & 2001; Littlemore, 2001b; Charteris-Black, 2002; Cameron, 2003; Carter, 2004).

Research on metaphorical competence in an EFL situation is quite limited because of the nature of the educational or communication environments. For example, access to metaphorical expressions is rarer in the EFL than in the ESL situations. However, English learners' encounter with metaphorical expressions occurs more often than expected, for example, in essays, poems and journalism, or even in catch copies in advertisement. In this sense, it is meaningful to investigate how EFL learners comprehend and use metaphorical expressions and what background knowledge is necessary to pursue research on metaphorical competence. To pursue research on metaphorical competence, one should have cognitive linguistic and semantic knowledge, for example, knowledge of polysemy, idioms, schemas, image schemas, analogy or analogical reasoning, mapping and network, together with the concept and function of metaphor.

Polysemy is defined as "several meanings in an individual word" (Carter, 1998: 12). If learners have a rich polysemous knowledge of words, it will stimulate their imagination, i.e. activate their schemas and image schemas and it will expand links among words so that mapping and/or networking can take place more easily.

Idioms vary from being opaque in their meaning (e.g. to kick the bucket), to being semi-opaque (e.g. to pass the buck) and to being relatively transparent (e.g. to see the light) (McCarthy, 2001). Although it is difficult for non-native English speakers to distinguish which is opaque, idioms are often used as metaphorical expressions. If learners know the conventional meanings, most of which involve etymological backgrounds, the meanings can be understood quite easily. Culturally bound idioms may provide good research material. This is why the tests of metaphorical competence in my study include several idiomatic expressions.

Necessary background knowledge and four assumptions

I proposed the following 4 assumptions for understanding and use of metaphorical expressions in the section 2. 2-3 FACTORS POSSIBLY AFFECTING METAPHORICAL COMPETENCE:

- (a) if metaphor is conceptually structured, schemas are related to the understanding and use of metaphorical expressions,
- (b) if metaphor is a mapping between two (or more) domains, image schemas may link these domains,
- (c) if metaphor is conceptually structured on a linguistic basis, the network of words to words may play a part in mapping and

(d) analogical reasoning may help understand metaphorical meanings.

We have so far investigated the semantic and cognitive elements and looked at the theories or views of past research. The following are the answers to these assumptions. As for the assumption (a), a schema is not only a schema for a certain object but its feature(s) or schema assemblages and our minds comprise a richly interconnected network of schemas (Arbib and Hesse, 1990). Schemas play important roles in cognition, especially in comprehension (Rumelhart, 1980; Carrell, 1984). Carrell's (1987) comment on the importance of the background knowledge of any text content is quite noteworthy. We should pay attention to Carrell and Eisterhold's (1983) three reasons for readers' failures in understanding a passage: lack of appropriate schemas; the author's insufficient clues provided in a passage; readers' misunderstanding of the author's intention. The first and the third are the readers' responsibilities, while the second is the author's. This should be taken into account when we plan assessments and measure learners' comprehension. Another noteworthy implication obtained from them (ibid.) is that less proficient students tend to be word-bound, on the other hand more proficient students are less susceptible to vocabulary problems but have structural difficulties in reading.

Metaphor is conceptually rooted in human cognition. A schema is a data structure for representing our generic concepts stored in the mind. This conceptual view and the role of schemas in comprehension are evidenced by key researchers who suggest that schemas play an important role in metaphor comprehension. This is an answer to the assumption (a).

The following answers the assumption (b). Concepts of image schemas have not been completely established with the exception of the conceptualisation based upon bodily experiences. These image schemas have been well investigated in English, and in Japanese to a degree, with the example of image schemas of CONTAINMENT, FORCE, BALANCE, PATHS, CYCLES, SCALES, LINKS and CENTER-PERIPHERY. There are a great many metaphorical expressions resulting from or interpreted by these image schemas. Some bodily experiences and their expressions may vary in race and culture. More investigation seems necessary. However, since human beings share generic elements, for example, of the image schemas quoted above, we can take advantage of these image schemas for our study. According to Johnson (1987), in the image schemas quoted above, there is a single, recurring image-schematic pattern with a definite internal structure. We can use this scheme for metaphorical understanding and use. Image schemas play a role in linking experience with language or vice versa. An image is a form of representation which is specific to perception (mostly sight). Schemas are generated knowledge about a sequence of events (Rumelhart, 1980). Image schemas are something like cognitive models resulting from prototype effects (Lakoff, 1987).

We utilise analogy or analogical reasoning in understanding or explaining something by

comparing it to something else and make use of it in teaching/learning something new. Metaphor has a similar mechanism. Distinctions between metaphor and analogy or analogical reasoning are as follows: “an analogy is a way of aligning and focussing on relational commonalities of the objects in which those relations are embedded” (Gentner and Jeziorski, 1994: 449). In analogical reasoning, we map structural relations putting objects in the source domain onto the corresponding objects in the target domain but we do not map the particular attributes of the objects. This is a chief difference between metaphor and analogy (Johnson, 1987: 110). Whichever is highlighted in domains, structural relations or particular attributes, there is one thing in common: that is, the function of mapping between/among domains. This may answer the assumption (d) in that the analogy or analogical reasoning can be utilised in comparison to attain comprehension.

Mapping is a set of correspondences between vehicle and target domains, as we see in the conceptual metaphor LOVE IS A JOURNEY, where a love relationship corresponds to a vehicle (Lakoff and Johnson, 1981). Kovecses (2002), using the same metaphor, alludes to the abstraction made in the journey domain applied to a love relationship. Lakoff’s (1987) term ‘metaphor’ refers to the conceptual mapping and it is a mode of thought, defined as a systematic mapping between the source-target domains.

Aitchison’s definition of a network in relation to the mental lexicon is that a network is an interconnected system. Fauconnier (1997/2002) uses the term ‘network’ or ‘many-space model’ for the two domain model used by the other researchers and he has proposed a view of mental space. “A mental space is a conceptual on-line packet, smaller than a conceptual domain and more specific.” Langacker’s (1991) network model synthesises schema, prototype and extension. The extension is connected by a prototype and its extended categorical relation. The instantiation of a schema is a prototype and its extension. Thus, the mapping and network proposed as the assumptions (c) and (d) may play an important role not only in metaphorical manipulation but also in mental activities.

Regarding the assumption (c), it can be said that metaphor plays the role of connecting analogy or analogical reasoning to verbal activities by mapping or networking. It also sustains the diachronic and synchronic transitions of meanings. We can take advantage of these linguistic features of metaphor. In this sense, it is meaningful to investigate the mapping or networking of learners’ verbal aspects of metaphor comprehension and use in order to enrich their linguistic and metaphorical competence.

This thesis focuses on metaphor in language education. Part III aimed to investigate past key studies on metaphorical competence and to study the necessary background knowledge to investigate metaphorical competence (i.e. schema, image schema, mapping, analogy or analogical reasoning and network). This chapter has been concluded by fulfilling these aims.

CHAPTER 3

STUDY 1: PREPARING THE STUDY INSTRUMENTS FOR METAPHORICAL TESTS

This chapter addresses an overview of the whole study (Studies 1 – 4) and discusses the search and preparation for measurement devices to be used for EFL students' metaphorical competence and its related factors.

3. 1. OVERVIEW OF THE FOUR STUDIES

The purpose of the four studies (Studies 1 – 4) is to discover the factors that affect EFL learners' understanding and use of English metaphorical expressions and the appropriate instruments by which to measure these factors in order to attain my final goal. The goal is to discover the abilities and skills of Japanese EFL learners' recognition and production of English metaphorical expressions. To attain this goal, some measurement instruments are necessary.

I made a search of past research for this specific purpose, but found it is quite limited for EFL situations, although, as stated in the earlier chapters, there are a number of works on metaphors, metaphor cognition theories, experiments and reports available. For example, in the study of metaphors, there are Lakoff and Johnson (1981), Lakoff (1987), Johnson (1987), Kittay (1989), Ortony (1979/1994), Gibbs (1994) and Steen (1994), to name a few, and in the pedagogical study of metaphors, Carter (1998; 2004), Gibbs (1999), Cameron and Low (1999a; 1999b), McCarthy (2001) and Littlemore (2001a; 2001b). Much of my study is indebted to this past research. My study also relies on my pedagogical experience and previous experiments.

The inspiration for the present study is based upon my previous experiments in EFL lessons, where I attempted to discover general aspects of Japanese students' recognition of English metaphors/metaphorical expressions. One of the experimental lessons concerned the identification of metaphorical expressions in a newspaper article, first with my guidance and then through students' independent identification (Appendix 3-1). I explained how often figurative language is used in our native language in everyday life, giving the following examples of simile, metonymy and metaphor in NL and English: 'yakano-yona-shigoto,' 'work *like* a mountain' as an example of simile; 'hamu-sandoicchi ga matteru,' 'a *ham-sandwich* is waiting' as metonymy; 'toki wa kanenari,' 'time is money' as metaphor in my guidance. I added a brief explanation of the mechanism of metaphor, using 'Time is Money,' where something important in the concrete notion of 'money' is mapped onto something important in the abstract idea of 'time.'

Firstly, it emerged from this experiment that the students understood better if there was sufficient information or explanation available in the article (i.e. contextual support) and if it was taught in guided reading (i.e. pedagogical support). They could easily infer meanings from the context and at times with the support of their teacher.

Secondly, it emerged that it was hard for some students to discover metaphorical expressions by themselves. This was discovered from the task in which they were told to find some other metaphorical expressions from the article without the teacher's guide. Only 15% of the students were able to discover an expression, for example, *threw its hat into the ring* (marked with ④ in the Appendix 3-1). It was hard for the students to interpret the whole meaning of this expression. The difficulty lay in the metaphorical use of this idiomatic expression. Even though they knew the meanings of individual words: 'throw', 'hat' and 'ring', they could not interpret this expression entirely correctly. This difficulty basically involves knowledge of vocabulary and idioms. Furthermore, it involves metaphorical understanding of idioms (*throw a hat in the ring*). They actually asked in the lesson what a metaphorical expression ('hiyuteki hyogen' in Japanese) was. This indicates that they lacked adequate experience of encountering a variety of idioms or metaphorical expressions.

To summarise these phenomena, it can be said that there were three main causes involved in this case: the first cause resulted from a lack of vocabulary, the second from a lack of training in metaphorical understanding (and schema training in language lessons in a broader sense) and the third from a lack of assistance from schema activation clues provided in the context. This and other experiences in my English lessons inspired me to conduct this series of studies.

3. 2. STUDIES IN THIS THESIS

The whole cycles of research consists of 4 studies: Study 1: Preparation for tests (addressed in this chapter); Study 2: Pilot test (in Chapter 4); Study 3: Main test 1 (in Chapter 5); Study 4: Main test 2 (in Chapter 6).

3. 2-1. HYPOTHESES ON FACTORS AFFECTING ENGLISH METAPHORICAL UNDERSTANDING AND USE AND INVESTIGATION METHODS

The following 3 factors are hypothesised and, therefore, investigated in the 4 studies.

Factor 1: Japanese EFL learners' vocabulary size and depth

The EFL learners' vocabulary breadth and depth affects overall understanding of English. It also affects the understanding of English metaphorical expressions. Therefore, the investigation into whether or not there is some relationship between learners' vocabulary size/depth and the depth of understanding of English metaphorical expressions is worthy of consideration.

Factor 2: Japanese EFL learners' lexical and semantic network

(i) Polysemy: one of the Japanese EFL learners' weak points is a lack of polysemy knowledge, which may be related to understanding of literal and metaphorical meanings. They tend to think English words are rather monosemous. This tendency may be related to their recognition of

English metaphorical expressions. Therefore some investigation into polysemy may be useful.

(ii) **Lexical network:** it is easy to understand metaphorical expressions in our native language but it is hard to understand their counterparts in a foreign language. The cause may reside in a lack of lexical knowledge and its networking, which may be one of the factors relating to the breadth and depth of understanding and use of English metaphorical expressions. In order to examine this specific issue, an investigation into Japanese EFL learners' lexical network using tests of word associations and semantic fields and/or polysemy and a comparison of the similarities and differences lying between those of Japanese EFL learners and those of native English speakers may be useful.

Factor 3: Cognitive and cultural aspects: cognitive and cultural aspects may be involved in understanding and use of metaphorical expressions. Since investigations into these aspects seem to involve some difficulty in quantifying data in the test results and subtlety which may appear in EFL students' answers, it is better conducted qualitatively by interviews and/or reports on certain English metaphorical expressions or target expressions.

3. 2-2. OVERALL RESEARCH QUESTIONS FOR THE FOUR STUDIES

- (1) What is/are the main component(s) which affect(s) EFL students' understanding of English metaphorical expressions, e.g. vocabulary knowledge (size and depth) or other elements?
- (2) Is there any relationship between EFL students' vocabulary knowledge and understanding of English metaphorical expressions?
- (3) How does EFL students' vocabulary size and depth relate to its semantic fields and lexical networking?
- (4) What image schema(s) or mapping phenomena do EFL students have when they encounter English metaphorical expressions and manipulate them?
- (5) Are there any suitable tests to measure and answer the above research questions?

3. 2-3. METHOD

Tests necessary for the studies were the tests to measure vocabulary size and depth, metaphorical comprehension and metaphorical use. These tests were to be selected from past studies or developed by the author. They were planned to be administered on Japanese EFL students at university level after pilot tests were conducted.

Treatment of collected data processing

- (1) quantitative data obtained from tests was treated by statistical data analysis

(2) interviews and/or reports were treated by qualitative data analysis

The summary of the hypotheses and the instruments in the studies

Quantitative data relating to Factors 1 & 2 in the hypotheses:

- vocabulary size test to measure vocabulary breadth
- tests of word associations and polysemy to measure vocabulary depth
- tests of interpretation and use of metaphorical expressions to measure comprehension and use of metaphorical expressions

Qualitative data specifically relating to Factors 3 in the hypothesis:

- an oral retrospective interview in which students were asked about the cognitive process that they went through or images they conceived when they composed sentences. This might provide some aspects of awareness of metaphorical expressions. This interview would take place in the later part of the studies.

3. 3. PREPARATION FOR TESTS

Most importantly, the specific measurement instruments to measure English metaphorical comprehension and use were searched for, or developed if there are no appropriate tests. Other linguistic tests relevant to measuring metaphorical competence were also searched for. The rationale for the measurement devices will be made clear to show that they are appropriate to satisfy the assumptions/hypotheses of the research.

3. 3-1. RESEARCH QUESTIONS IN STUDY 1

- Which linguistic or vocabulary tests are appropriate for the studies?
- What metaphorical tests are appropriated for the studies?

Procedures in the search for appropriate tests:

In order to investigate the factors of the proposed assumptions/hypotheses stated above and answer the research questions, the following search steps for appropriate tests were taken.

(1) Searching past research for a suitable vocabulary breadth test for Japanese EFL learners.

This test plays the role of an index test for the rest of the tests.

(2) Searching past research for tests of word associations suitable for Japanese EFL students or developing them. The test aims to measure the depth of their vocabulary knowledge.

(3) Searching past research for tests of semantic fields and/or polysemy suitable for Japanese EFL students or developing them. The aim is as the same as above.

(4) Searching past research for tests of metaphor interpretation/production suitable for Japanese EFL students or developing them.

3. 4. RATIONALE FOR TESTS AS MEASUREMENT INSTRUMENTS IN STUDY 1

Tests to be found or developed as measurement instruments are vocabulary tests (size, i.e. breadth, and depth, e.g. tests of word associations or polysemy) and tests of metaphorical comprehension and use.

Tests of vocabulary size

Firstly I searched for an appropriate vocabulary test to measure EFL students' vocabulary size. I planned to use it as an index throughout the studies. The surveyed vocabulary tests were those designed for second and/or foreign language education. Past tests in this field can be classified into two groups: one is measurements for the breadth of vocabulary (Nation, 1990 & 2001; Laufer, 1992; Schmitt, 1997 & 2000; Meara, 1997; Aizawa, 1998); the other is those for the depth of vocabulary (Read, 1994 & 1997; Schmitt, 1997 & 2000). Both of these were necessary resources for my studies.

The test of the breadth of vocabulary or vocabulary size measures how much English vocabulary ESL/EFL learners have acquired. There are two types in this group: The European Vocabulary Size Tests (Meara and Buxton, 1987; Meara and Jones, 1988) and Vocabulary Levels Tests (Nation, 1990 & 2001 and Schmitt, 2000). The former consists of 60 English words and 40 false English words to which testees answer 'Yes' if they know the meaning or 'No' if they don't. The format is simple and the test seems to be easy to answer but there may be some doubt as to whether the test really measures the ability of the testees' understanding of the meanings (Kadota, 2001). On the contrary, the latter is meant to measure levels of vocabulary size, which is crucial to my studies.

Nation's (1990; 2001) Vocabulary Levels Test (VLT, hereafter) consists of the 2,000-word level, the 3,000-word level, the 5,000-word level, the University Word List level and 10,000-word level, while Schmitt (2000) and Schmitt et al. (2001) have provided validation evidence for the Vocabulary Levels Test which consists of the 2,000-word level, the 3,000-word level, the 5,000-word level, the 10,000-word level and Academic Vocabulary in two Versions (Version 1 and Version 2). In each level of Schmitt's (1997) test, there are ten blocks of items to match three definitions with the correct three out of six options of words, which total thirty items. In Schmitt (1997) there are two versions, from which sixty items are available, whereas there are six blocks of items in each level in the same scheme (eighteen items in total) in Nation. I checked each item to find out which test was to be used in my survey in terms of frequency and familiarity levels. Schmitt's test seemed to be better suited to my experiment for three reasons: the number of items, the words to be tested and the most importantly, the validity of the test (Schmitt, 1997 & 2000; Schmitt et al., 2001).

There were no statistics which showed exactly how much English vocabulary ordinary Japanese university students have acquired when they reach their university level. The Course of Study (1997/1999) set by the Ministry of Education determines the size of vocabulary that can appear in teaching materials (i.e. authorised textbooks) as follows: 900 words at lower secondary levels plus from 900 to 1,800 words at upper secondary levels, depending upon the type of upper secondary schools in which learners study. Taking this indication into account, we can estimate that the vocabulary size of ordinary Japanese EFL students who graduate from upper secondary school might range around 2,000 words, with special exceptions of those who possess a large vocabulary, such as students who intend to major in English or those who have a larger vocabulary for some other reason. Therefore, the 2,000-word level (or 3,000-word level at most) may serve as a measurement in my study. Another consideration was on an appropriate number of items to test students' vocabulary size. The total of 60 items in Schmitt in comparison of 18 items in Nation may provide more statistically valid data for the users. The above were the reasons for choosing Schmitt's test (2000) and Schmitt, et al.'s (2001) for my study.

Still another resource for vocabulary is *JACET 4000 Basic Words* (1993) (*JACET 4000*, hereafter). It proposes 4,000 recognition vocabulary for the first 2 year university level. I scrutinised the inclusive ratios of the target words of Schmitt's VLT 2000 and 3000 levels in *JACET 4000*. The inclusive ratio of the VLT 2000 level in *JACET 4000* and that of 3000 level in *JACET 4000* were 97.5% and 77.5% respectively. The inclusive ratio of both levels in it was 87.5%. This result supported my selection of Schmitt's VLT.

Tests of vocabulary depth

The other vocabulary test necessary for my survey is the test to measure how deeply a knowledge of vocabulary penetrates the mental lexicon and how well words are associated with other words. I surveyed past research for tests by which to measure how deeply testees' knowledge of vocabulary penetrates their mental lexicon and to discover testees' semantic processing strategies which affect deeper understanding of meanings. Past research on lexical semantics and word associations is abundant in the broader sense, for example, the concept of word associations, the timing of association speed and the counting of number of associations.

While I tried to discover how EFL students' lexical network operates in their mental lexicons, I have found that the idea of word associations tests (Boix, 1995; Read, 1994 unpublished; Read, 1997 and Schmitt, 1997 Doctoral thesis) (tests of word associations, hereafter) seems to be suited to the purpose of my study for the following reason: they measure breadth and depth of testees' vocabulary knowledge. Read (1994) attempted to bridge the gap between measures of breadth and depth of vocabulary knowledge and developed the word associates format as a measure of depth of vocabulary knowledge. He first developed a 50-item vocabulary test (the pilot test) and

through several validation procedures he finally settled on a 40-item vocabulary test (the revised version). The target words were adjectives taken from the University Word List (Nation, 1990) for the 50-item test and from Barnard's Second and Third Word Lists (Nation, 1986) for the 40-item test. His reason for choosing adjectives was to maintain “consistency in the relationship between the target and the associations” (Read, 1994: 3). Schmitt (1997; 2000) also experimented with the tests of word associations, states that the tests “have value in measuring [L2 learners’] lexical organization” (2000: 42) and ensures the reliability and validity of the tests as measurements for the depth of their vocabulary knowledge. Read’s (1994: 4) revised format of word association test is as follows:

The target word: *sudden*

beautiful quick surprising thirsty	change doctor noise school
------------------------------------	----------------------------

The answers to the target word *sudden* are *quick* and *surprising* on the left column (paradigmatic) and *change* and *noise* on the right (syntagmatic). He varied the patterns to prevent respondents’ guessing.

Adjustments for the test of word associations

Tests of word association in my study do not exactly follow the same format as Read’s. I simplified the format (one target word to which testees chose an answer from four options), so that it would be easier for EFL students to answer. Before I completed the format, I had to collect the words to be used in the test of word associations.

Criteria for the selection of target/prompt words for a preparatory test

Firstly the lexical and semantic aspects were to be taken into account in the choice of words as stated in the selection of target/prompt words (Nation, 1990; 2001; Read, 1997; Schmitt, 2000; 2001). Secondly each word should have physical, psychological and/or sensory meanings, which aimed at discovering the depth of Japanese EFL students’ comprehension levels. For example, *empty* means *bare* and/or *nothing* in space (physically) and at the same time, *hollow* in mind (psychologically). Thirdly word classes should be considered. Frequency and familiarity for EFL students were also to be checked. The latter was checked in the word list provided in the Course of Study (the Monbusho, 1997/1999), and an authorised English textbook (English Course I, 1992), whose market share was very high.

The target/prompt words were selected from the most popular English and Japanese dictionary (Konishi, 1988) in which the frequency levels are ranked with specific marks. The target/prompt words were chosen mostly from the highest frequency words and also the next highest frequency

level in the dictionary with a few additional low frequency words included. Meara (1982) warns of the risk of using high frequency words, however, a risk for no response to the target/prompt words might be more damaging to the survey, because if most of the words belong to low frequency levels, testees would give fewer responses.

Fifty-two target/prompt (i.e. stimulus) words (18 adjectives, 22 nouns including the words which share the same word classes and 12 verbs, all of which have physical, psychological and sensory meanings) were included in the test. These 52 words became the prompt words (stimuli) in a preparatory test.

Fifty-two words used in the preparatory test

A: 18 adjectives of physical, psychological and/or sensory meanings:

barren, bitter, calm, cool, empty, fair, harsh, hot, huge, loud, mad, pure, poor, rigid, sharp, smooth, vivid and warm

B: 21 nouns (some of which share the same word classes but used as nouns) of physical, psychological and/or sensory meanings:

anger, anxiety, black (a/n), blue (a/n), burden, concern (n/v), delicacy, discussion, distance, fire, green (a/n), head (n/v), heat (n/v), heart, honour, joy, mind (n/v), mood, red (a/n), sorrow and white (a/n)

C: 13 verbs (some of which share the same word classes but used as verbs) of physical, psychological and/or sensory meanings:

absorb, appreciate, bake, break, create, defend (v/n), deliver, digest (v/n), grieve, imagine, reveal, soothe and strike (v/n)

The low frequency words for ordinary EFL students in the above lists are *barren, harsh, rigid, anxiety, absorb, appreciate, grieve, reveal* and *soothe*. This was to be considered when the main test was compiled.

The test of word associations in the preparatory test

This test aimed to elicit associative responses. The subjects were asked to write associative words in response to the target/prompt words. In the test, they were asked to write the first three words which immediately came to mind, then to rate the word which had the strongest/deepest association as three and finally to give a brief reason for the rating. The other two associative words were rated two and one by the subjects in the order of association strength. An example of the format with direction for writing answers and the first item of the test is shown below.

The format of the preparatory test of word associations:

Write the first 3 words you think of when you read each prompt word in the space provided. Then, rate

the strongest/deepest associations as 3, the next 2, and the last 1 in the square bracket by circling the number and then explain briefly in the space why that word (rated 3) is the strongest/deepest association.

1. **absorb** () [3,2,1], () [3,2,1], () [3,2,1]

The reason(s):

3. 5. EXECUTION OF THE PREPARATORY TEST

Subjects, date and location

Subjects for the preparatory test: 7 volunteer British undergraduates who studied in School of English Studies at the University of Nottingham: 1 male, aged 19-20; 6 female, aged 19-20.

Date and location: November 26, 1999; the School of English Studies at the University of Nottingham.

Classifications of responses

Riegel, Ramsey, and Riegel's (1967) classification explained in Schmitt (1997) includes the following seven categories: superordinates, coordinates, synonyms, contrasts, functions (e.g. fork-eat), attributes, and parts (e.g. fork-handle). Schmitt (1997: 69-70) notes that Clark's rule (1970) relies on the idea of semantic features. Schmitt (ibid.) summarises Clark's paradigmatic and syntagmatic rules. They can be briefly summarised as follows.

Paradigmatic Rules:

- * The Minimal-Contrast Rule: If a stimulus has a common 'opposite', it will always elicit that opposite... Most common... minimal contrast, i.e. man-woman=[+/- male]
- * The Marking Rule: unmarked man produces marked woman, change a feature...
- * Feature Deletion and Addition Rules: deletion produces superordinates (e.g. fruit from apple), addition of features produces subordinates (e.g. apple from fruit)
- * Category Preservation Rule: word class is preserved because it is a 'high' feature

Syntagmatic Rules:

- * The Selectional Feature Realization Rule: adj., adv. and v. elicit more syntagmatic responses than n. ; adj. + n. elicit more syntagmatic responses (80%)
- * The Idiom Completion Rule: e.g. whistle stop; justice peace

Schmitt (1997) classifies associates into syntagmatic and paradigmatic categories according to the features of relation between the target word and the first answer. I followed his classification, because it is rational. Thus, the main idea of classification applied to the categorisation in this preparatory test was taken from Schmitt (1997). The notion can be summarised as follows.

- (1) syntagmatic rule: (i) The selectional feature realization rule, e.g. young+animal (S1, hereafter)
(ii) The idiom completion rule, e.g. whistle+stop (S2, hereafter)
- (2) paradigmatic rule:

- (i) Paradigmatic pair rule (“The minimal-contrast rule”) includes
- *contrastive, opposite (e.g. man-woman) and pair (Pc, hereafter);
 - *antonym (Pa, hereafter);
 - *synonymous (e.g. blossom-flower) (Ps, hereafter);
 - *relationship (e.g. black-white, table-furniture, reflect-affect; object-attribute type (e.g. hammer-steel); object-referent type (e.g. foot-shoe); concept-referent set (e.g. banana-fruit);
 - *dimension-referent (Pr, hereafter)
- (ii) Feature deletion/addition rule includes
- *superordinate>subordinate (Pf, hereafter)

Hence, the basic classifications in my study were based on “syntagmatic” and “paradigmatic” categories. Presumably there were some answers which could not be classified into these two categories in the case of EFL students’ answers, therefore, it might be better to have another categories such as “miscellaneous” and “illegible” referring to non-categorical.

As for the classification of word classes, McNeil’s (1966) tripartite distinction (homogenous—same word class (hom) stated in Schmitt (1997); heterogenous—different word class (het); syntagmatic—sequential in nature) should be noted, however, in this study, the straightforward methods of classification, such as the classification into parts of speech, were employed.

Results and analysis

The responses written by 7 British native speakers were totalled, classified into syntagmatic, paradigmatic, miscellaneous and illegible categories (Table 3-1). The word classes of the strongest/deepest association (rated 3, i.e. the strongest/deeper association, by the respondents) were also counted (Table 3-2). After these procedures, a test of word association in multiple choice type for Study 2 (a pilot test, which will appear in Chapter 4) was formulated.

Table 3-1 Categorical distribution of responses in word associations (%)
N=7 British undergraduates (N.B. 5 stimuli (colours) are not included)

Category	syntagmatic	paradigmatic	miscellaneous	illegible	Total
13 verbs	25.3	74.7	0	0	100
16 nouns	8.9	91.1	0	0	100
18 adjectives	23.8	73.8	0	2.4	100

The number of subjects (7) in this preparatory test was small, however, since all of the 7 were NSs, this should be sufficient for norming purpose 3 in the initial test-building. As shown in Table

3.1, the syntagmatic and paradigmatic ratio in the 13 verbs and 18 adjectives was quite similar (24-25 % vs. 74-75%), while that in the 16 nouns showed a different ratio (9% vs. 91 %). The nouns are more prone to paradigmatic associations. No “clang” answers were found in the response (the term “miscellaneous” in the table refers to the term “clang” in Schmitt, 2000). It was probably because the respondents were all native English speakers. Results might be considerably different if the number of subjects increase.

Table 3-2 Elicited word classes of strongest association (%)

N= 7 British undergraduates (N.B. 5 stimuli (colours) are not included)

Elicited word class	verbs	nouns	adjectives	miscel. ans.
	syntag/parad	syntag/parad	syntag/parad	0
13 verbs	0 / 40.3	31.9 / 20.8	0 / 6.9	0
16 nouns	0 / 0	4.9 / 80.5	0 / 14.6	0
18 adjectives	0 / 0.9	23.5 / 13.0	0 / 61.7	0.9 (adverbs)

As for the word classes (Table 3-2), the implications elicited by the first answers in 47 stimuli words numbered from 1 to 47 in the test (the five stimuli, i.e. black, blue, green, red and white, which share two word classes were excluded, because the instruction in the test referring to word classes was ambiguous) were as follows:

- *the nouns elicited more nouns than the other word classes and more in a paradigmatic relationship (85 %).
- *the noun did not elicit any verbs but a small number of adjectives in a paradigmatic relationship (15 %)
- *the verbs elicited the same word class (paradigmatic verbs)(40 %) but not as many as the nouns (52 %)
- *the adjectives elicited a considerable number of the same word class in a paradigmatic relationship (62 %)

As a whole, the responses in this preparatory test provided usable results and the reasons the students wrote for the strongest/deepest associations were informative. These implications were taken into account in the compilation of a quantifying multiple choice type word association test which would consist of 20 stimuli and a polysemy test of 10 stimuli to solicit responses from both native English speakers and ESL/EFL students in Study 2. The other 22 words were discarded, because it was found that the stimuli were not as appropriate as the above 30.

Polysemy tests

In understanding metaphorical expressions, lexical and semantic networking plays an important

role. Polysemy can be used as one of the devices to investigate this issue. Polysemy tests and some experimental studies relating to them are found only in Anderson & Ortony (1975) and Cowie (1982). Anderson & Ortony (ibid.) examined memory and recall stimulated by clue and context, while Cowie (ibid.) experimented upon degrees of relatedness and separation of meaning. Unfortunately their measurement instruments were not suitable for my context and participants. Therefore I had to compile a new test, learning from past research on polysemy.

To quantify the state and effect of networking, we need a measurement device. One of the measurement devices may be a polysemy test. My idea of a polysemy test was inspired by the following statements given by Gibbs (1994) and Miller (1994). Gibbs (1994:157) states that “the metaphorical nature of thought comes from recent study of polysemy, a state in which words have multiple meanings that are systematically related.” He further explains that the meanings of polysemous words are related to one another in terms of family resemblance and that many of a polysemous word’s meanings are motivated by the metaphorical projection of knowledge from one domain to another (ibid.) and gives the example of prepositions *over* and *above* quoting from Brugman & Lakoff (1988). Miller (1994: 397) also states that metaphor is frequently cited as a source of polysemy, referring to “leg” of a table.

Compiling/developing a polysemy test

In developing a polysemy test, the following implications and warnings were taken into account.

- (1) Relatedness and distance of meanings from Miller (1994), Gibbs (1994), Lakoff (1994) and Carter (1998): Their implication is that polysemy plays an important role in understanding metaphorical expressions.
- (2) Lakoff’s warning on polysemy generalization in conceptual mapping (Lakoff, 1994) and Goddard’s (1998: 19) explanation of distinction between polysemy and semantic generality: Polysemy (i.e. the existence of several distinct-but-related meanings) must be distinguished from semantic GENERALITY. This designates a situation in which a word has a single general meaning which can be used in different contexts. “A useful indicator that we are dealing with polysemy, rather than with generality, is the presence of different grammatical properties associated with the (proposed) different meanings” (ibid.).
- (3) Differentiation of polysemy from hyponym (same pronunciation), homograph (same spelling) (Cowie, 1982; Carter, 1998; Gibbs, 1999; Goddard, 1998).
- (4) Goddard’s warnings on lexical and grammatical elements for non-native speakers: He warns on non-native English speakers’ difficulty for distinguishing polysemous meanings, for example, (i) kinds of verbs (transitive or intransitive), (ii) relatedness of meaning, (iii) part-of speech. The following is a brief summary of his implications of (i) to (iii).

Goddard's (1998) implication for polysemous words:

(i) kinds of verbs: he gives an example of two sentences with the word *skip* embedded in them: (a) The children *skipped* happily down the street; (b) We *skipped* the first chapter, and explains there are two distinct meanings involved in the example: the *skip* in the sentence (a) is an intransitive verb; the one in the sentence (b) a transitive (1998: 19).

(ii) relatedness of meaning: he explicates further, asking the differences in meaning of whether or not the meaning in (a) is closely related to the meaning in (b). His explanation is that these two are connected in the sense that one usual step or element is missing in a sequence. He states it is hard for non-native English speakers to find this relatedness.

(iii) part-of-speech: another warning is of the part-of-speech as in the word *table*₁ (noun, as on the *table*) and *table*₂ (verb, as in Don't *table* that document) (1998: 20).

Selection of target words for the polysemy test (PolyT) and the format of the test

Ten target words for the polysemy test, PolyT, were chosen from the words used in the test of word associations. These 10 words were chosen after the pilot test of word associations, which was interpreted by two (a British male and a Canadian female) postgraduates to ensure the validity of the meanings. The format of the preparatory polysemy test was as follows:

Interpret an underlined word (1) and describe the state, act or situation meant by the word or the sentence (2). The following example shows the first target item.

Defend:

1.They defended their goal with great skill.

(1)

(2)

2. The lawyer is defending his client's rights in the court.

(1)

(2)

After analysing the results of the preparatory polysemy test (of course, there was no problem in the interpretations), the polysemy test, PolyT, for Study 2 (Pilot test) was formatted. The pilot test was to be amended into the following format to make it easier for EFL students to answer and notes to low frequency words were added in Japanese in the Main test.

The format of the polysemy test for Study 2 (Pilot test):

Interpret an underlined word in Japanese in (1) and describe the state, act or situation meant by the word or the sentence in (2).

Defend:

1. They defended their goal with great skill.

(1)

(2)

2. The lawyer is defending his client's rights in the court. (Note: client: 依頼人)

(1)

(2)

3. 6. TESTS OF UNDERSTANDING AND USE OF METAPHORICAL EXPRESSIONS

I searched past research for metaphor tests. They were quite limited in number, especially tests which could measure metaphorical understanding and use in an EFL situation, however, there were two experiments which greatly inspired me. They were Winner, Rosenstiel and Gardner (1976) and Gibbs (1980). I compiled two kinds of tests inspired by these experiments: one was a test of metaphoric sensitivity and skills stimulated by the former and the other was a test of literal/metaphorical understanding and use stimulated by the latter. Metaphorical competence test is abbreviated as MC, hereafter.

Test of metaphorical sensitivity and skills (MC-XY Test)

Winner, Rosenstiel and Gardner (1976) experimented on children's metaphoric understanding using the psychological-physical metaphor and the cross-sensory metaphor, the tasks of which were multiple choice and explication. The psychological-physical metaphor refers to the kind of metaphor such as *The prison guard was a hard rock*, while an example of the cross-sensory metaphor is *Her perfume was bright sunshine* (ibid.: 290). From Asch & Nerlove (1960) they cite that both kinds of metaphors have "dual-function adjectives (e.g. *hard* and *bright*), which have a primary, physical meaning and a secondary meaning acquired through metaphorical extension. The secondary meaning may be psychological (e.g. a *hard* man) or may make reference to a different sensory modality (e.g. a *hard* sound)" (ibid.: 290).

Winner, et al. (ibid.) used the sentence pattern of *An X is an adjective Y.*, in which an X and a Y are nouns in their experiment. My interpretation of this sentence pattern is that the sentence pattern itself takes the format of a conceptual metaphor, and that in the sentence *An X is an adjective Y.*, the adjective plays the important role of a pivot or a point of junction of two ends (a noun at both ends) to let the one end (noun) meet and connect to the other (noun). The use of adjectives to connect these two ends promotes polysemy skills, which, I believe, will examine testees' ability of metaphorical cognition and production and will enhance users' ability if taught in class. It will be a useful exercise for Japanese EFL students to learn how to use a figurative language or a metaphor, and to produce some on their own. The experiment in my study differs from their survey,

although it uses the same sentence pattern. The sentence pattern of this test takes the pattern of a conceptual metaphor, X is Y, hence, it is named XY Test, and abbreviated as XYT, hereafter.

Selection of the target words for MC-XYT

The 10 adjectives, which have primary, physical, psychological and cross-sensory meanings and which belong mostly to high frequency, were selected. They were *bright, cold, dark, grey, hard, high, keen, lofty, weak* and *wild*. The format of the test of metaphoric sensitivity and skills was as follows. The instruction in the preparatory test was “Write two sentences using the target adjectives. Use each adjective in a literal sense in one of the sentences (L) and figuratively in the other sentence (F).”

MC-XYT

Write two sentences using the target adjectives listed below. Use each adjective in a literal sense in one of the sentences (L), and figuratively in the other sentence (F).

Format is: An/the X is a(n) adj. Y. Use any word(s)/phrase(s)/clause(s) for X and Y.

Example: *hard* L: The object on the table is a *hard* stone.

F: Mike Tyson’s muscles are *hard* steel.

1. *bright* (L)
(F)

Tests of literal/metaphorical understanding and use (MC tests)

In the compilation of the tests for metaphorical understanding and use, the implications of Gibbs’ (1980: 150) experiments on understanding and memory for idioms are so important that I took the essence of his original experiments and used it in my own way. He used 8 stories with a “literal” target sentence and 8 stories with an “idiomatic” target sentence (ibid.) In addition to testing purposes, this kind of reading exercise may be especially useful for EFL students as it helps them to understand that the same expressions convey different implications in different contexts. Stories with idiomatic context embedded in them can be used for EFL learners to practice deeper reading/comprehension ability. Thus, the idea of the tests for metaphor interpretation (paraphrasing) and for producing passages came from Gibbs’ implication, and the tests were arranged to fit in an EFL situation. A number of idioms and proverbs (sayings) were selected from, for example, *The Penguin Dictionary of English Idioms* (Gulland, et al., 1994) and *Seigorin* (Arai, 1992).

Criteria for selection of idioms and expressions for MC tests

Each idiom or expression chosen was one written in easy English in order to minimize EFL students' anxiety, however, it was also one rich in context, and it was such that could be used in both physical and psychological meanings, that is, lexically easy but slightly complicated in the sense of cultural implication.

Sources of words and idioms to be used for MC tests

- * Schmitt's Appendix 7.2 Word Class Lists in his doctoral dissertation (1997)
- * Vocabulary & Idiom guidelines of the Monbusho Course of Study for Lower and Upper Secondary Schools (1997/1999)
- * *The Penguin Dictionary of English Idioms* (Gulland, et al., 1994)
- * *Oxford Thesaurus Penguin Dictionary of English* (Spooner, 1998)
- * *Nichiei kotowaza no hikakubunka* (Okutsu, 2000)
- * *Seigorin* (proverbs and idioms) (Arai, 1992)

Some of the expressions selected for the tests may sound somewhat odd to English native speakers, but it was because they were taken from popular Japanese sources. Since Japanese students learn from these sources, it made sense to include some expressions from them, even if they are somewhat odd.

Expressions (sentences) and idioms used in the preparatory MC tests

Idioms:

a pain in the neck, to be off one's head, to count heads or head counting, to hold one's head high, to let the cat out of the bag, to see which way the cat jumps, to stand in someone's way and to take a leaf out of someone's book.

Expressions (sentences):

A little pot is soon hot, Fish begins to stink at the head, Omelettes are not made without breaking eggs, The rotten apple injures its neighbours, Wake not a sleeping lion and You cannot eat your cake and have your cake.

The format of the preparatory MC tests

The instruction in the preparatory test was to write two pairs of passages with the same target idiom or sentence embedded in each passage in different contexts, one of which is literal and the other metaphorical. The following Gibbs' (1980: 150) example was also given in the test.

Target idiom/sentence: "He's singing a different tune."

Literal: Nick and Sue were listening to Jackson Browne on the radio.

"All Jackson Browne songs sound alike." Sue said. "Now isn't that the same song we heard him do on TV recently."

"No." Nick replied:

"He's singing a different tune."

*Paraphrase: "He's not singing the same song."

Idiomatic/figurative/metaphorical: On TV there was a program discussing Carter's first year in office. One reporter talked about the military budget.

"In the campaign Carter promised to cut that budget."

"But now that he's President,"

"He's singing a different tune."

*Paraphrase: He's now changed his mind."

3. 7. CONCLUSION

The research questions were proposed and initial steps for searching and compiling tests necessary for the studies were taken. It was decided to adopt Schmitt's VLT to investigate EFL students' vocabulary size, however, the other tests were at preparatory stages. Since the target words or expressions for the polysemy test or PolyT and the tests of metaphorical competence or MC tests were selected, these tests will be administered in Study 2 as pilot tests.

CHAPTER 4

STUDY 2 : PILOT TESTING OF METAPHORICAL COMPETENCE

4. 1. THE PURPOSE OF STUDY 2

In Study 1, the hypotheses and research questions were proposed and the tests to examine these issues established. In Study 2, the execution of pilot tests will be conducted and the revisions to them, if necessary, will be carried out and discussed. At the same time, the formation of new tests will be proposed.

Pilot tests consist of tests of word associations, polysemy and metaphorical understanding and use. The test of word associations followed Read's (1994, 1997) principle. The idea of the tests of metaphorical understanding and use derived from the idea that semantic processing strategies affect the deeper understanding of meanings (Carter, 1998; Ellis, 1997). The tests of metaphorical understanding and use, MC tests, attempted to measure this and they will be further refined and developed into the main tests with the same objective(s) in Study 3 and Study 4 in order to obtain quantitative data in actual EFL situations. If revisions are necessary, they will be carried out. If the tests are found to be appropriate (or inappropriate), results obtained from the tests should be analysed and discussed.

4. 1-1. PILOT TESTING OF MC TESTS

Research questions for the pilot tests

What results can be obtained from the pilot tests of word association, polysemy and metaphorical comprehension and use? Are there any modifications or revisions necessary to finalise the tests?

4. 1-2. METHOD

Pilot tests to be used in Study 2

The pilot tests in Study 2 consisted of the following specific tests compiled by the author.

(1) Tests of word associations, abbreviated as WAT, hereafter:

(i) a multiple choice type: to solicit associations from the prompt/stimulus words: The test aimed to discover lexical and semantic factors relating to metaphorical understanding quantitatively.

(ii) a descriptive type: the test aimed to investigate associative factors again.

A special emphasis was placed on WAT in this study, because the target words selected for

WAT were recycled for the following tests of polysemy and metaphorical sensitivity or skills.

(2) Polysemy test, abbreviated as PolyT, hereafter. This test aimed to measure lexical and semantic expansion.

(3) Test of metaphorical sensitivity or skills, abbreviated as MC-XYT, hereafter: This test aimed

to measure literal and metaphorical skills in the sentence pattern of X is a(n) adjective Y.

(4) Tests of literal and figurative/metaphorical passage interpretation/writing: The tests aimed to measure understanding of metaphorical expressions embedded in passages (receptive), abbreviated as MC-RT hereafter, and the use of metaphorical expressions in passage writing (productive), abbreviated as MC-PT hereafter.

The MC tests include a short interview with respondents to discover whether or not there is any revision necessary. The tests aim to compare the English native speakers' semantic fields and their interpretation and use of metaphorical expressions with those of Japanese ESL learners. These tests intend to obtain a quantitative information about the lexical, semantic and cultural (if possible) aspects of understanding and use of metaphorical expressions in the main tests. All of the above tests cover the abilities of recognition and production, however, oral communication abilities (hearing and speaking) will not be examined in these tests.

Considerations for Japanese EFL students in case of revisions

In reviewing and revising the tests of word association and metaphorical tests in Study 1 (the preparatory tests), the following considerations were taken into account.

Considerations for the WAT:

- (1) the nearly equal ratio of syntagmatically related and paradigmatically related words.
- (2) the word classes, i.e. the balanced number of nouns, verbs and adjectives if possible.

Considerations for all of the tests:

- (3) the word frequency and the vocabulary range of ordinary Japanese EFL learners
- (4) the attention to low proficiency in the use of idioms of ordinary Japanese EFL learners
- (5) the avoidance of confusing words from the point of view of Japanese EFL learners
- (6) the attention to Japanese EFL learners' limited exposure to English metaphors or metaphorical expressions
- (7) the tests should not be too complicated for EFL students to answer

The confusing words referring to item 5 above were such words as *mine* and *saw*. The former (*mine*) is usually recognised as the possessive pronoun by Japanese EFL learners, not as *mine* as in 'coal mining.' If the options for the target word (*strike*) in the WAT were [*bell, gold, mine, iron*], for example, the word *mine* might create confusion, therefore, it might be better not to use *mine* in the options for *strike*. This means that the word *strike* may not be used for an item in the paradigmatic field as I had planned in Study 1, though actually there are quite a few native

speakers' associations with labourers' *strike*. The latter (*saw*) is usually the past tense of the verb *see* for Japanese EFL. Therefore it would confuse Japanese EFL students if the option *saw* was used in the sense of a 'cutting tool.' Similar treatments were applied to other options.

The sources of words and idioms to be used for the tests

They are the same as those in Study 1.

Subjects

(1) Preliminary Pilot:

24 British undergraduate students: 7 male; 17 female, aged 19-20 (English majors);

10 Japanese ESL undergraduate and postgraduate students: 3 male; 7 female, aged 22-35.

Their majors varied from English to Business studies.

The totals of NSs and ESL were 34.

(2) Revision stage:

(i) WAT-1:

11 British undergraduates different from the above 24: 4 male and 7 female, aged 19-20.

(ii) WAT-2:

42 Japanese EFL students, aged 18-20.

(iii) MC-PT:

24 British undergraduates: 7 male and 17 female aged 19-22, half of whom overlapped with the above 24 British students.

20 (5 male; 15 female) new Japanese ESL aged 22-45.

The totals of NSs and ESL were 44.

Time and location

December, 1999 for (1), (2) (i) and (iii) at the School of English Studies at the University of Nottingham; May, 2000 for (2) (ii) at Kobe Geijutsu Koka University.

Procedure

The pilot tests, take-home type tests, except for WAT-2, were distributed to the British students by the tutors in the School of English Studies at the University of Nottingham and collected by them. The author distributed the tests to the Japanese ESL and EFL, and collected them herself.

4. 2. PILOT TESTING OF THE MC TESTS

4. 2-1. TEST OF WORD ASSOCIATIONS or WAT

A multiple choice type WAT

In order to obtain quantitative data from WAT, the descriptive (association soliciting) type test in the preparatory test in Study 1 was converted into a multiple choice type where examinees

discriminated unrelated words from related words in response to the target and the other choices.

In the descriptive type test in Study 1, there were 52 prompt words (stimulus) (18 adjectives, 22 nouns including the words which share the same or more word classes, and 12 verbs). Each word has physical, psychological and/or sensory meanings, which aimed at discovering Japanese EFL students' comprehension of the depth of vocabulary. After the responses in the descriptive type test in Study 1 were surveyed, 20 words (an almost equal ratio of syntagmatic and paradigmatic stimuli and an almost equal number of word classes (i.e. 5 nouns, one noun-adjective, 8 adjectives and 6 verbs) were selected based upon the clarity and majority of the answers. For example, *absorb* (v.) was selected and classified into an item in the syntagmatic group, because there were more collocational (syntagmatic) answers in the descriptive type test, such as *absorb+alcohol* and *+water* than paradigmatic (synonymous) answers such as *soak (up)* and *take (take in or up)*. Using the same method, the 20 words were selected from the 52. The selected 20 words were *absorb, anger, bake, black, break, burden, cool, create, deliver, distance, huge, loud, mad, mood, rigid, sharp, smooth, sorrow, strike* and *warm*. The words belonging to the syntagmatic group were *absorb, loud, sharp, smooth, deliver, create, mood, bake, strike, warm* and the other words belonging to the paradigmatic group were *anger, black, break, distance, huge, rigid, sorrow, mad, burden* and *cool*. These 20 words were used as targets (stimuli) in a multiple WAT (the example is shown below). Another 10 words from the remaining 32 were again used as a descriptive type WAT in Study 2.

After the 20 words of word associations in multiple choice questions (*absorb, anger, bake, black, break, burden, cool, create, deliver, distance, huge, loud, mad, mood, rigid, sharp, smooth, sorrow, strike, and warm*) were tested, they were classified into two categories, i.e. the syntagmatic and the paradigmatic, depending upon the relationship between the stimulus and the options.

Whether a specific word was used in the syntagmatic or the paradigmatic fields was decided by the answers given in the preparatory test. It was sometimes hard to draw a line between the syntagmatic and the paradigmatic. However, the reasons given for the strongest/deepest associations written in a column of the descriptive test, to some extent, indicated into which category their answers most likely fitted. The other problem was to discover a proper classification of the two categories (fields). I classified the answers based upon the following concepts, that is, the answers classified as belonging in the syntagmatic field were those dependent on syntactic and grammatical elements (collocations, such as a noun phrase (adjective+noun), a phrasal verb (verb+noun) and noun/verb +function word(s) before or after, while in the paradigmatic field were those answers which seemed to come from the paradigms, that is, categorical and conceptual ideas and those of similarity, contiguity (synonyms), the contrastive opposite pair or opposites (antonyms), the attributes/features added or deleted, and others. The example of *absorb* was stated in the part of the preparatory test. The further example of the word

anger could be cited here. As the word *anger* is a noun, there were more synonymous answers, such as *fury*, *rage* and *violence*, which made me decide to use this word for a question in the paradigmatic field in the pilot and main tests. These 20 words were classified into one of the two fields: the syntagmatic and the paradigmatic, of which 11 words belong to the syntagmatic and 9 to the paradigmatic.

All of the vocabulary used in these two tests were checked for their frequency level in the vocabulary lists of the *Monbusho Course of Study Guideline (1997/1999)* and *English Course I (1992)*, one of the most popular high school English textbooks, so that an equal balance of high and low frequency for Japanese EFL students could be guaranteed.

The format and instruction of a multiple choice type WAT is as follows.

In each item, there are four words listed after the target word. Three words out of four are strongly linked to the target word and to the other three words, but a fourth one is not.

Put a cross on the one that is not linked to either the target word or the other three words.

Example: The target word: grieve: 1()mourn 2()cry 3(X)smile 4()weep

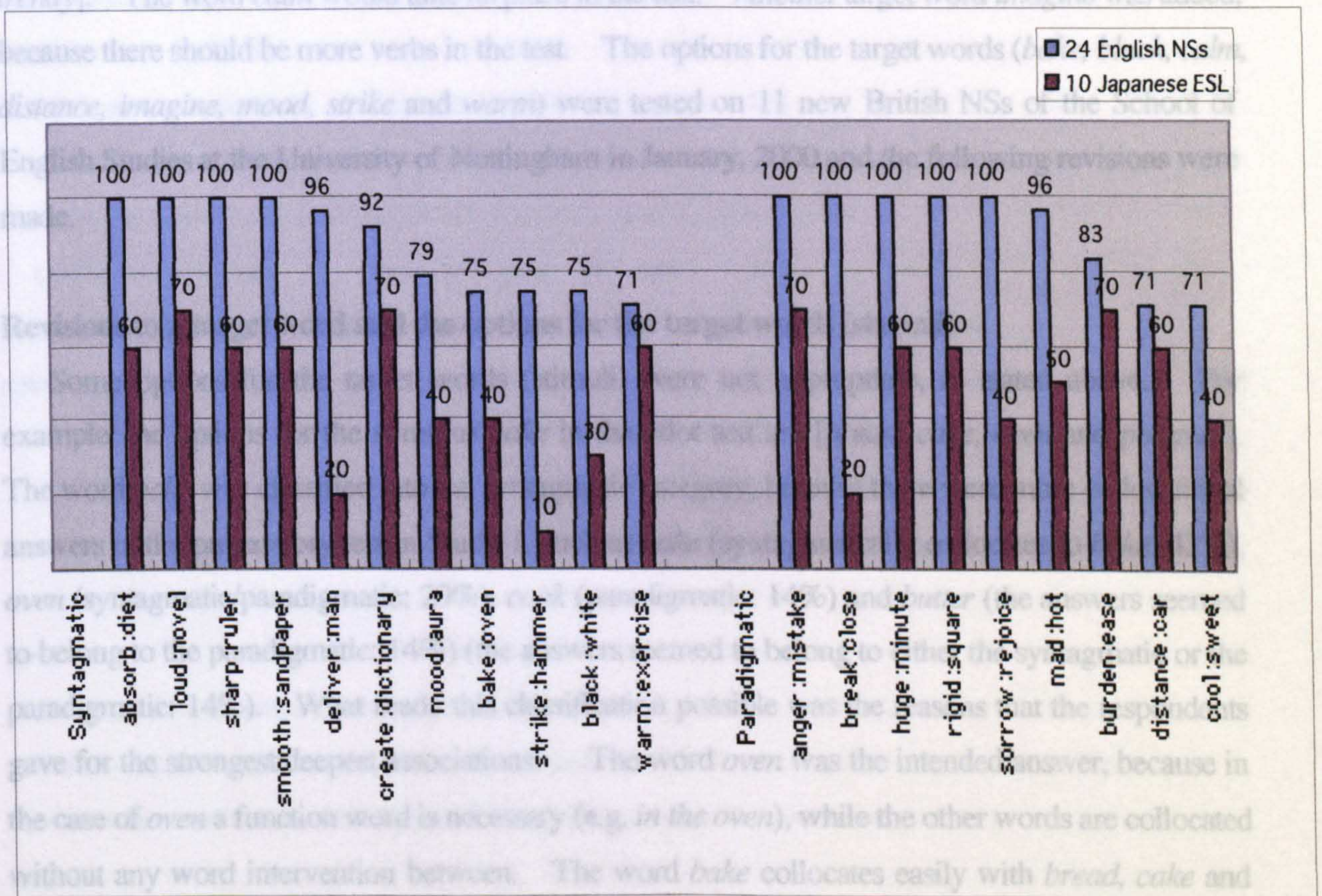
1. absorb: 1()alcohol 2()diet 3()heat 4()water
2. anger: 1()fury 2()mistake 3()rage 4()violence
3. bake: 1()bread 2()cake 3()oven 4()potatoes
4. black: 1()cat 2()death 3()night 4()white
5. break: 1()close 2()crack 3()destroy 4()smash
6. burden: 1()ease 2()load 3()stress 4()worry
7. cool: 1()calm 2()exciting 3()sweet 4()trendy
8. create: 1()design 2()dictionary 3()mood 4()story
9. deliver: 1()baby 2()man 3()speech 4()package
10. distance: 1()car 2()journey 3()length 4()miles
11. huge: 1()enormous 2()gigantic 3()massive 4()minute
12. loud: 1()drum 2()music 3()novel 4()voice
13. mad: 1()angry 2()crazy 3()dangerous 4()hot
14. mood: 1()aura 2()bad 3()good 4()sad
15. rigid: 1()firm 2()hard 3()square 4()stiff
16. sharp: 1()knife 2()pencil 3()razor 4()ruler
17. smooth: 1()marble 2()sandpaper 3()silk 4()skin
18. sorrow: 1()anguish 2()grief 3()pain 4()rejoice
19. strike: 1()bell 2()gold 3()hammer 4()iron
20. warm: 1()exercise 2()jumper 3()milk 4()weather

4. 2-2. RESULTS AND ANALYSES OF WAT

Results and analysis of a multiple choice type WAT

The distribution of the intended answers is shown in Figure 4-1. The syntagmatic category is grouped on the left and the paradigmatic on the right with space between. Both groups are placed in the order from the higher agreement of answers to the lower. The [absorb:diet] at the base of the graph indicates that the intended answer to *absorb* is *diet*, and the same applied to other items.

Figure 4-1 Distribution of the intended answers in WAT (%)



The general overview of the distribution of the intended answers was that the Japanese students' answers were dispersed over the choices, while those of the native speakers inclined towards the intended answers. There was no 100% agreement to any of the options by the Japanese. If there were, the test would have been too easy, therefore, it should be reconsidered. The answers which gained the 100 % agreement by the native English speakers were *absorb*, *loud*, *sharp* and *smooth* in the syntagmatic category, and *anger*, *break*, *huge*, *rigid* and *sorrow* in the paradigmatic. The items with more than 90% agreements were *deliver* (96%), *create* (92%) in the syntagmatic and *mad* (96%) in the paradigmatic, while those ranging from 89% to 71% were *mood* (79%), *bake* (75%), *black* (75%), *strike* (75%) and *warm* (71%) in the syntagmatic; *burden* (83%), *cool* (71%)

and *distance* (71%) in the paradigmatic. Thus, those that obtained more than the 90% agreement by the NSs were usable in the final test as they were. However, some reconsideration and revision on the agreement below 89% were necessary. These were the options for the target words: *bake, black, burden, cool, distance, mood, strike* and *warm*. Among these words, the word *burden* had the highest agreement (83%). I consulted two British language teachers. They assured me that the item and its options worked well, therefore, there was no revision made to this item. The other revisions to the target words and their options were made and tested on British undergraduates at another time. The revisions are shown below. At this stage, the target word deleted from the pilot test was *cool*, because there was some ambiguity among the options [*calm, exciting, sweet, trendy*]. The word *calm* would take its place in the test. Another target word *imagine* was added, because there should be more verbs in the test. The options for the target words (*bake, black, calm, distance, imagine, mood, strike* and *warm*) were tested on 11 new British NSs of the School of English Studies at the University of Nottingham in January, 2000 and the following revisions were made.

Revisions to a target word and the options for the target words (stimuli)

Some options for the target words (stimuli) were not appropriate, as stated above. For example, the options for the stimulus *bake* in the pilot test are [*bread, cake, oven* and *potatoes*]. The word *bake* was classified into the syntagmatic category, because there were more collocational answers in the preparatory test in Study 1, such as *cake* (syntagmatically collocates to *bake*: 43%), *oven* (syntagmatic/paradigmatic: 29%), *cook* (paradigmatic: 14%) and *butter* (the answers seemed to belong to the paradigmatic: 14%) (the answers seemed to belong to either the syntagmatic or the paradigmatic: 14%). What made this classification possible was the reasons that the respondents gave for the strongest/deepest associations. The word *oven* was the intended answer, because in the case of *oven* a function word is necessary (e.g. *in the oven*), while the other words are collocated without any word intervention between. The word *bake* collocates easily with *bread, cake* and *potatoes* in the pattern of S+V. However, the result of the test showed that native speakers' association (i.e. semantic field) in this case was tightly interwoven regarding the relationship of the words, *bake, oven, bread* and *cake*. This probably caused the answers to be divergent, and therefore in another retest the options were changed to [*bread, cake, pot, potatoes*] and [*bread, cake, fish, potatoes*]. However, the answer to the former options was too obvious and the one to the latter too confusing for Japanese, because *bake, grill, toast*, etc. are all 'yaku' in Japanese. Thus it seemed to be better to have the original options.

The target words to be reexamined were *bake, black, calm, distance, mood, strike, burden, warm* and *imagine*. The results (%) of the items were listed in contrasting those in the pilot test (A) with the results of 11 new subjects' answers (B).

The results of the items reexamined:

bake:

(A) The pilot test: 1()bread 2()cake 3oven(x) 4()potatoes ... 75%

(B) Answers given by 11 new subjects: 1()biscuits 2()bread 3()cake 4(x)oven... 91%

black:

(A) The pilot test: 1()cat 2()death 3()night 4(x)white ... 75%

(B) Answers given by 11 new subjects: 1()cat 2()dress 3()tie 4(x)white ... 91%

cool (71%) in the pilot test was converted to *calm*.

calm: 1(x)exciting 2()peaceful 3()quiet 4()relaxed ... 91%

distance:

(A) The pilot test: 1(x)car 2()journey 3()length 4()miles ... 71%

(B) Answers given by 11 new subjects: 1(x)direction 2()journey 3()length 4()miles... 100%

mood:

(A) The pilot test: 1(x)aura 2()bad 3()good 4()sad ... 80%

(B) Answers given by 11 new subjects: 1()bad 2()happy 3(x)hard 4()good ... 100%

strike:

(A) The pilot test: 1()bell 2()gold 3(x)hammer 4()iron ... 75%

(B) Answers given by 11 new subjects: 1()bell 2(x)grass 3()hammer 4()iron ... 100%

burden (83%) in the pilot test was tested on two language teachers (native English speakers). They agreed on the intended answer 'ease,' therefore, no change was made.

warm:

(A) The pilot test: 1(x)exercise 2()jumper 3()milk 4()weather ... 71%

(B) This adjective was deleted, because the answer ratio was less than 90% and replaced by a verb *imagine*. Another reason was that there should be more verbs in the test. The result of the new target was shown below.

imagine:

(B) Answers given by 11 new subjects: 1()dream 2(x)speak 3()suppose 4()think ... 100%

The format of the test for a revised version was the same as in the former test. The test items were *absorb, anger, bake, black, break, burden, calm, create, deliver, distance, huge, imagine, loud, mad, mood, rigid, sharp, smooth, sorrow* and *strike*. The revised WAT is shown in Appendix 4-1.

A descriptive (association soliciting) type WAT

The other 10 words (*barren, defend, digest, discussion, empty, heart, hot, pure, poor* and *vivid*) of the original 52 were used again as stimuli in the WAT for a descriptive type in the pilot tests. The format of the test was the same as that in the preparatory test in Study 1.

Results and analysis of a descriptive (association soliciting) type WAT

First a categorical classification was considered. The WAT descriptive type consisted of 10 words: 6 adjectives (*barren, empty, hot, poor, pure* and *vivid*), 2 verbs (*defend* and *digest*), and 2 nouns (*discussion* and *heart*). The reason for the larger number of the adjectives used here was that adjectives seemed to have more soliciting tendencies. The answers were classified into the syntagmatic and the paradigmatic groups, and also into the following sub-groups. The sub-groups of the syntagmatic was abbreviated as the **s**; the sub-groups of the paradigmatic were as the **pc** (categorical and conceptual ideas), the **ps** (the ideas of contiguity, similarity and synonymy), the **pp** (contrastive opposite pair, opposite), the **pa** (antonym), the **pf** (attributes/features added or deleted) and others (e.g. illegible, etc.). The detailed results were to be shown later in the sections of General and Specific features.

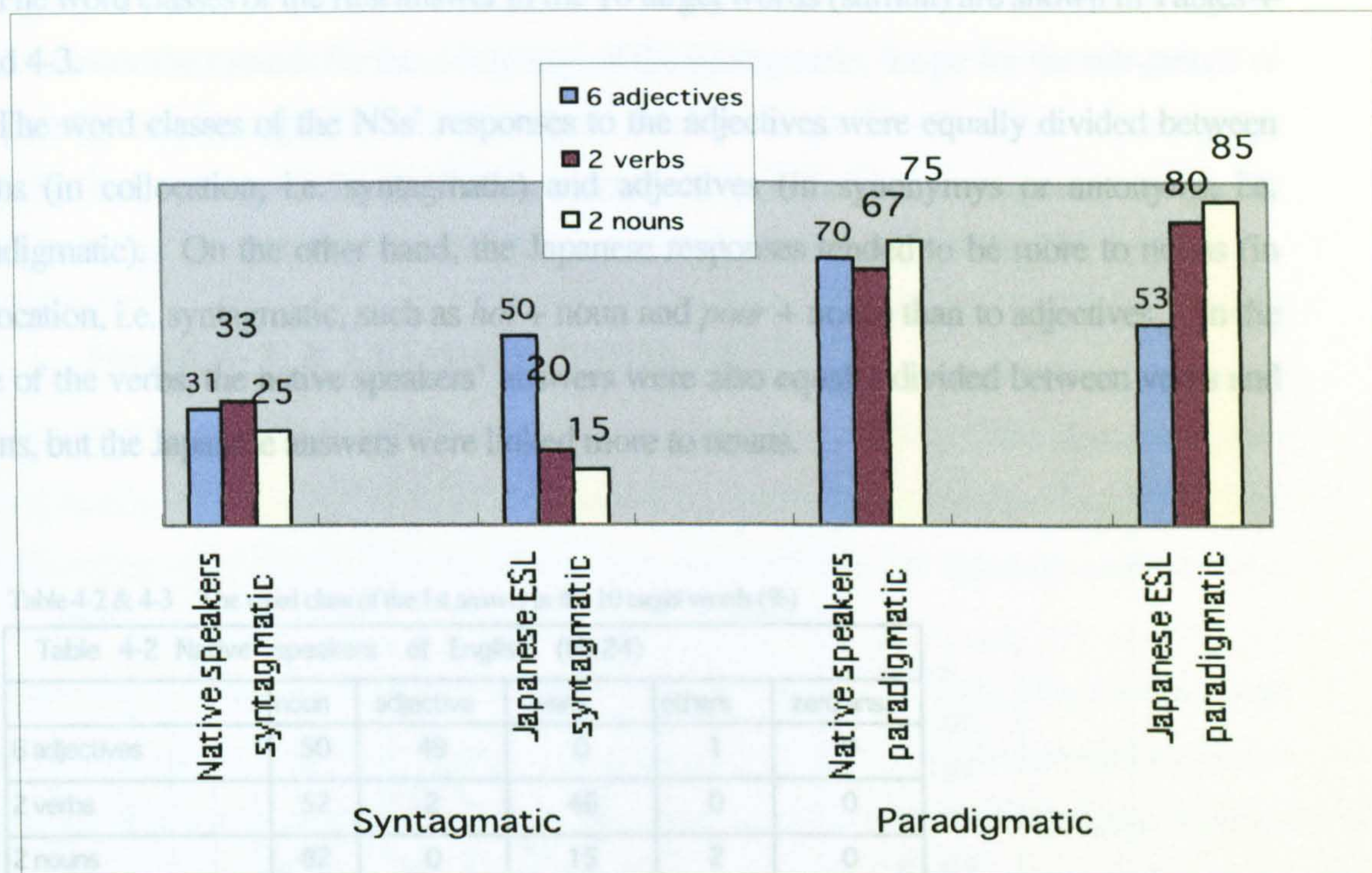
The distribution of the answers of the 10 words (6 adjectives, 2 verbs and 2 nouns) and their syntagmatic and paradigmatic relation is shown in Figure 4-2.

General and specific features

The general feature of both of the native speakers' and the Japanese answers was that their answers belonged more to the paradigmatic field. The Japanese answers appeared frequently in the paradigmatic field as shown in the Figure 4-2, but the fact was that their answers were not as systematic as the native speakers'.

A specific feature of the native speakers' answers was that in the syntagmatic field, they produced more answers in collocation in verbs, such as *digest + food*, while those of the Japanese ESL did not show a specific feature in verbs. Their answers diverged from *eat* to *stomach*, etc. (the paradigmatic) and there was no such collocational answer as *digest + information* which appeared in the NSs' responses. Another native speakers' features was that nouns in the paradigmatic answers showed the similar demography as the Japanese. The Japanese answers seemed to be more paradigmatic but this did not necessarily mean that their answers were rich in content. The reason for a large number of the Japanese paradigmatic answers was that they answered the words which were associated with attributes or features, for example, in *discussion*, they associated it with the location where discussion takes place (*seminar* and *meeting*, etc.), and in *heart*, they associated it with attributes of heart (*love* and *mind*, etc). Additionally, a greater number of subjects would produce a different result.

Figure 4-2 Distribution of the answers to the ten target words (%) (N=24 English NSs; 10 Japanese ESL)



The ratio of the syntagmatic/paradigmatic categories

Table 4-1 shows the results of the ratio of the syntagmatic and paradigmatic answers.

Table 4-1 The ratio (%) of the syntagmatic/paradigmatic answers to the 10 target/stimulus words in the pilot test (NS=24; J:ESL=10)

category	syntagmatic		paradigmatic	
	N.S.	J:ESL	N.S.	J:ESL
6 adjectives	34	48	66	52
2 verbs	33	20	67	80
2 nouns	21	14	79	86
Total:10 words	31	36	69	64

Table 4-1 indicates that the syntagmatic and paradigmatic ratio of the native speakers was 3.1 to 6.9, while that of the Japanese was slightly different (3.6 to 6.4). If subjects were not as advanced as the examinees who answered this test, then the result would be different. Greater language proficiency normally leads to more paradigmatic answers.

As a whole the number of paradigmatic answers was larger than those of the syntagmatic (approx. 70% vs. 30%), while the results of verbs and nouns were different between the two subjects.

The word classes

The word classes of the first answer in the 10 target words (stimuli) are shown in Tables 4-2 and 4-3.

The word classes of the NSs' responses to the adjectives were equally divided between nouns (in collocation, i.e. syntagmatic) and adjectives (in synonymys or antonyms, i.e. paradigmatic). On the other hand, the Japanese responses tended to be more to nouns (in collocation, i.e. syntagmatic, such as *hot* + noun and *poor* + noun) than to adjectives. In the case of the verbs, the native speakers' answers were also equally divided between verbs and nouns, but the Japanese answers were linked more to nouns.

Table 4-2 & 4-3 The word class of the 1st answer in the 10 target words (%)

Table 4-2 Native speakers of English (N=24)					
	noun	adjective	verb	others	zero ans.
6 adjectives	50	49	0	1	0
2 verbs	52	2	46	0	0
2 nouns	82	0	15	2	0
Total: 10 words	58	30	11	1	0

Table 4-3 Japanese ESL students (N=10)					
	noun	adjective	verb	others	zero ans.
6 adjectives	67	27	0	2	5
2 verbs	70	0	25	5	0
2 nouns	75	5	15	5	0
Total: 10 words	69	17	8	3	3

In general, the nouns stimulated more answers in the associations of the nouns with other nouns (i.e. content words). For example, the word *discussion* stimulated synonymous *argument* (as a synonym of *debate* and *discussion*) both in the native speakers' (80%) and in the Japanese answers (75%), although there was a considerable difference in the content of the answers. For example, in the case of Japanese, there was no such word as *debate* or *communication* given as answers. It was probably because the Japanese avoid argumentative communication in their daily life. The answers suggested the Japanese schema of this word. In this sense, it may be a culture bound word.

Overall features of the 10 stimuli

The results and findings of the 6 adjectives (*barren*, *empty*, *hot*, *poor*, *pure* and *vivid*), the 2 verbs (*defend* and *digest*) and the 2 nouns (*discussion* and *heart*) are now discussed with a special foci on the general features of the 6 adjectives first and then on the other 4 stimuli,

followed by the interpretations of the results.

Figures 4-3 and 4-4 show the features of the 6 adjectives. The abbreviations in Figures are as follows: the **s** stands for the sub-groups of the syntagmatic, the **pc** for the sub-groups of the paradigmatic (categorical and conceptual ideas), the **ps** for the ideas of contiguity, similarity and synonym, the **pp** for contrastive opposite pair, or opposite, the **pa** for antonym, the **pf** for attributes/features added or deleted, and others (e.g. illegible, etc.).

Figure 4-3: 6 adjectives: British NS (n=24)

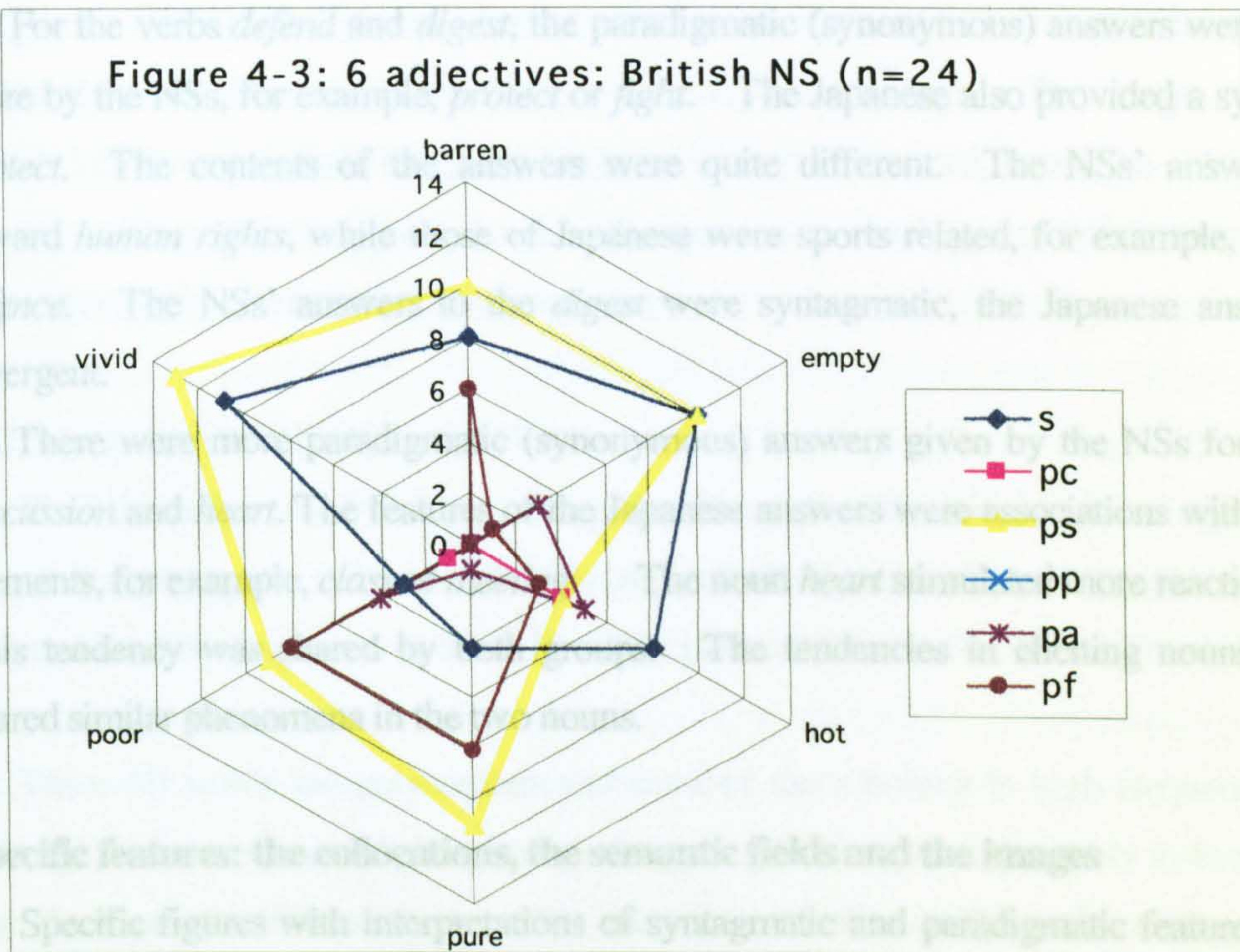
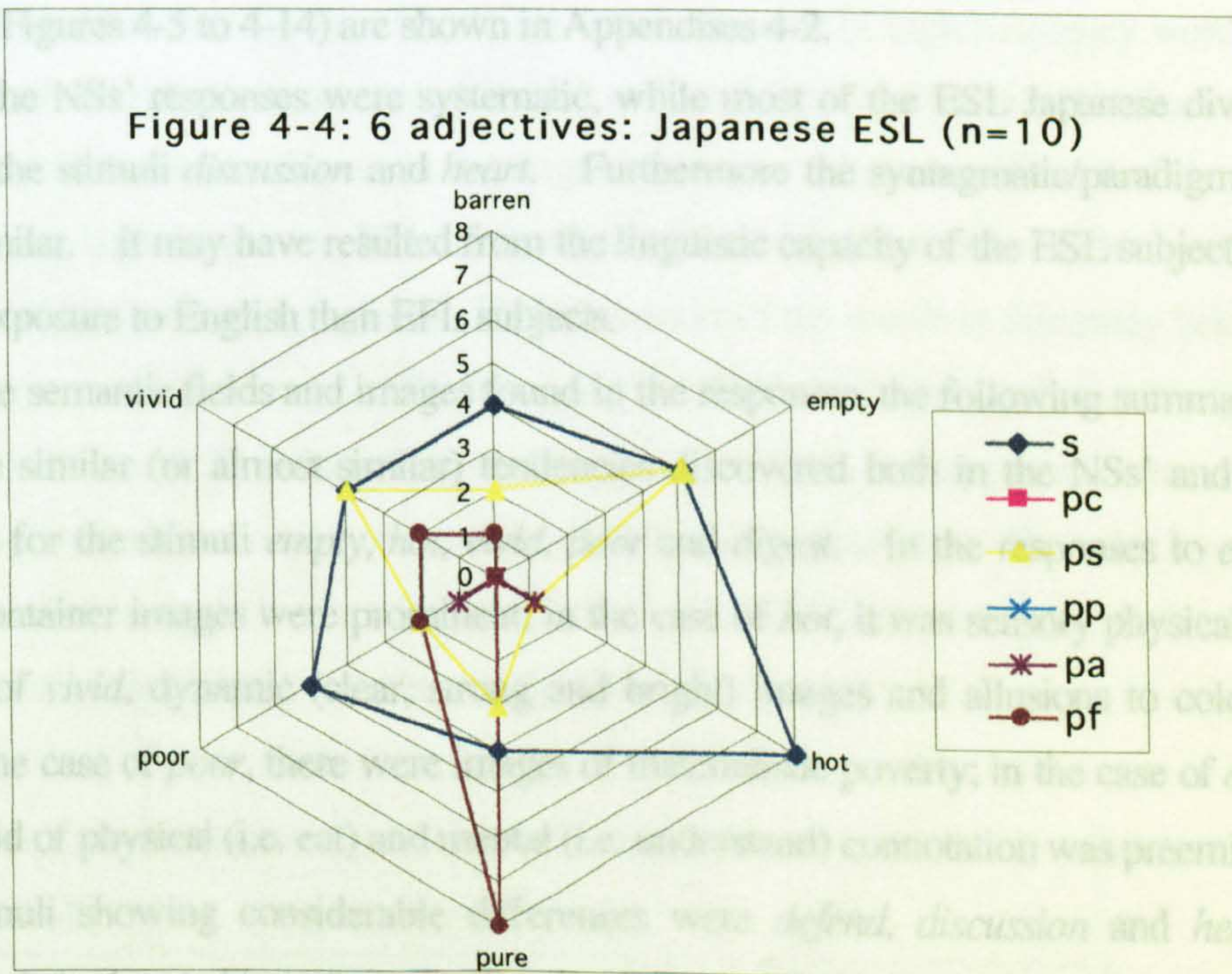


Figure 4-4: 6 adjectives: Japanese ESL (n=10)



The overall features of the native English speakers' responses were that the adjectives *vivid* and *empty* occur more in the syntagmatic and in the paradigmatic fields and the adjective *pure* in the paradigmatic, while the responses of the Japanese ESL showed that the adjective *hot* accumulated the majority of the syntagmatic answers and that the adjective *pure* was more in the paradigmatic. Specific features of each item focussing on collocation, the semantic fields and images are briefly summarised in the following section.

For the verbs *defend* and *digest*, the paradigmatic (synonymous) answers were provided more by the NSs, for example, *protect* or *fight*. The Japanese also provided a synonymous *protect*. The contents of the answers were quite different. The NSs' answers tended toward *human rights*, while those of Japanese were sports related, for example, *football* or *offence*. The NSs' answers to the *digest* were syntagmatic, the Japanese answers were divergent.

There were more paradigmatic (synonymous) answers given by the NSs for the nouns *discussion* and *heart*. The features of the Japanese answers were associations with attributive elements, for example, *class* or *meeting*. The noun *heart* stimulated more reaction to nouns. This tendency was shared by both groups. The tendencies in eliciting nouns by nouns shared similar phenomena in the two nouns.

Specific features: the collocations, the semantic fields and the images

Specific figures with interpretations of syntagmatic and paradigmatic features of the 10 target items (Figures 4-5 to 4-14) are shown in Appendixes 4-2.

Briefly, the NSs' responses were systematic, while most of the ESL Japanese diverged, as provided in the stimuli *discussion* and *heart*. Furthermore the syntagmatic/paradigmatic ratio was quite similar. It may have resulted from the linguistic capacity of the ESL subjects. They have more exposure to English than EFL subjects.

As for the semantic fields and images found in the responses, the following summary can be made. The similar (or almost similar) tendencies discovered both in the NSs' and the ESL Japanese are for the stimuli *empty*, *hot*, *vivid*, *poor* and *digest*. In the responses to *empty*, the space and container images were prominent; in the case of *hot*, it was sensory physical feelings; in the case of *vivid*, dynamic (clear, strong and bright) images and allusions to colours were evident; in the case of *poor*, there were images of materialistic poverty; in the case of *digest*, the semantic field of physical (i.e. eat) and mental (i.e. understand) connotation was preeminent.

The stimuli showing considerable differences were *defend*, *discussion* and *heart*. The responses to *defend* probably indicated cultural differences: for the NSs the word stimulated their images of human rights, while the ESL students possibly imagined sports scenes. The *discussion* also related to cultural elements not only in the sense that it elicited the contents (or

synonymous images) of the discussions but that the ESL students imagined the attributive features of the word, e.g. the place where the discussion took place. The NSs' images of the word *heart* tended toward the functions of the heart and the hierarchical system and something relating to emotion. The ESL Japanese displayed the emotion related images, e.g. 'love' and 'mind.'

The stimuli which elicited the responses in-between of being similar and different are *barren* and *pure*. The similarity shared between the two parties was that of a space image. As stated earlier, the ratio of the unanswered responses in *barren* was high. The images of *pure* seemed similar. The respondents imagined 'innocence' from this word, hence the colour 'white' was elicited. These results provided me with considerable background information for selecting target words when I compiled a polysemy test.

4. 2-3. POLYSEMY TEST or PolyT

The 10 words in the PolyT were from the 52 words in the initial WAT: 6 adjectives (*barren*, *empty*, *hot*, *poor*, *pure* and *vivid*), 2 verbs (*defend* and *digest*) and 2 nouns (*discussion* and *heart*). The results of the responses to these 10 words in the descriptive WAT has already been discussed above.

These 10 words are polysemous and most of them belong to high frequency vocabulary, although *barren* and *vivid* belong to low frequency, and *digest* is probably in-between high and low for Japanese EFL students. We must pay attention to Meara's caution in using high frequency words (Schmitt, 1997). He claims that in the case of high frequency words, we are unable to tell whether the answers come from L2 or from L1 translation, and that the associations may change as the learners advance in the target language. However, if most of the words in the test were not high frequency, EFL students would not be able to answer the questions, and the results would then be meaningless. Therefore most of the words in this study belong to the high frequency vocabulary range. The format of PolyT was the same as that in Study 1. The subjects were the same 24 British NSs and 10 Japanese ESL. The results were as follows. The answers provided by the NSs accumulated 100% correct answers. Those by Japanese ESL were shown in Table 4-4. In the table the numbers (1) and (2) referred respectively to core and secondary (or after secondary) meanings in the test.

Table 4-4 The correct answer ratio (%) of core and secondary (or after secondary) meanings in PolyT (N=10 Japanese ESL)

target words	barren	empty	hot	poor	pure	vivid	defend	digest	discussion	heart
(1)	80	100	100	100	100	100	100	100	100	100
(2)	90	100	90	100	100	80	90	90	90	100

In summary, most of the core (or primary) meanings of the target words were interpreted correctly. Only one word *barren* in the core meaning and the secondary (or after secondary) meanings of *barren*, *hot*, *vivid*, *defend*, *digest* and *discussion* were not perfectly correct but fairly well interpreted. These phenomena may have been due to the ESL students' high accessibility to the target language. These 10 target words may well be used as test items in the PolyT (see Appendix 4-3), although it can be predicted that EFL students may show different results.

4. 2-4. TEST OF METAPHORICAL SENSITIVITY AND SKILLS or MC-XYT

This test originated in Winner, Rosenstiel and Gardner (1976), who used the sentence pattern of *An X is an adjective Y*, in which an X and a Y were nouns in their experiment. The same sentence pattern was employed in this study and examinees were asked to write two sentences using the target adjective embedded into them: one employed was literal and the other had a figurative/metaphorical meaning. This also aimed to measure polysemy and metaphorical skills, using the combination of adjectives and nouns. The 8 adjectives, which have primary, physical, psychological and cross-sensory meanings and which mostly belong to high frequency levels, were selected for the pilot test. They were *bright*, *dark*, *grey*, *high*, *keen*, *lofty*, *weak* and *wild*. The format and instruction for this test is the same as in Study 1. The results are shown in Table 4-5.

Table 4-5 The mean and SD of the 8 target items in the MC-XYT

target words	literal or fig/met	British NSs (Max=1)		Japanese ESL (Max=1)	
		mean	SD	mean	SD
bright	literal	0.91	0.08	0.72	0.24
	figurative/metaphorical	0.88	0.12	0.50	0.28
dark	literal	0.85	0.08	0.71	0.19
	figurative/metaphorical	0.83	0.09	0.54	0.34
grey	literal	0.80	0.12	0.72	0.28
	figurative/metaphorical	0.77	0.10	0.44	0.34
high	literal	0.84	0.10	0.68	0.26
	figurative/metaphorical	0.79	0.08	0.50	0.33
keen	literal	0.81	0.15	0.64	0.36
	figurative/metaphorical	0.60	0.28	0.29	0.36
lofty	literal	0.72	0.20	0.25	0.32
	figurative/metaphorical	0.64	0.30	0.15	0.23
weak	literal	0.74	0.20	0.65	0.31
	figurative/metaphorical	0.75	0.25	0.43	0.38
wild	literal	0.80	0.12	0.60	0.32
	figurative/metaphorical	0.74	0.22	0.47	0.40

The discrepancies of the means between the literal and figurative/metaphorical uses and those of SDs by NSs compared with those of Japanese ESL were smaller. The discrepancies of the means and SDs of Japanese ESL students were greater, especially the mean discrepancies of *grey* and *keen*. The means of *lofty* in the figurative/metaphorical were lowest.

Revisions to the pilot MC-XYT

From the answers in the pilot test, I noticed two problems. The first was an ambiguous instruction. The use of the word “figuratively” was too broad. Therefore, the instruction in the main test would become more precise, i.e. “metaphorically” instead of “figuratively”. Some explanation of simile and metaphor should also be added. The other problem was the target words. The number of target words in Study 2 was less than the preparatory test because of the time constraint on examinees. The 8 words (*bright, dark, grey, high, keen, lofty, weak* and *wild*) were used in the pilot test based upon their ease and usability for Japanese EFL students. There was still a problem in the selection of words, such as *keen* and *lofty*. As shown in the results in Table 4-5, their means were lower than that of the other words. These two words are low frequency for Japanese EFL. Therefore, only six words, omitting *keen* and *lofty*, would be used for Japanese EFL examinees.

The answers in the literal and metaphorical production test were rated/judged by three native speakers of English. These ratings would be used as benchmarks in order to judge the creativity of Japanese EFL students.

4. 2-5. TESTS OF LITERAL/METAPHORICAL PASSAGE INTERPRETATION or MC-RT

The passages written in Study 1 were used as the MC-RT. The purpose and the format of the test were the same as in Study 1. The ratings of the answers for this test were made by the author.

The target expressions and idioms (The full texts were listed in Appendix 4-4.)

- (1) *A little pot is soon hot.*
- (2) *The rotten apple injures its neighbours.*
- (3) *a pain in the neck*
- (4) *to be off one's head*
- (5) *to count heads*
- (6) *to hold one's head high*
- (7) *to let the cat out of the bag*

- (8) *to stand in someone's way*
- (9) *Wake not a sleeping lion.*
- (10) *Fish stinks at the head.*
- (11) *You cannot eat your cake and have your cake.*

4. 2-6. RESULTS AND ANALYSIS OF MC-RT

The vocabulary of these sentences and idioms do not belong in the low frequency category, though if they are embedded in the passages, there may be some risk that EFL learners will not fully understand them. All of the passages embedded with the target expressions were distributed to 24 NSs and 10 Japanese ESL students to interpret (paraphrase) in order to examine whether or not there were problematic expressions. Fortunately more than one answer (paraphrasing) could be obtained from both the NSs and Japanese ESL (except for item 5). All of the NSs interpreted the passages correctly. The passages containing (1) to (11), excluding (5) (which one NS said she had never heard of, even though her answer was correct), were interpreted with 100 % accuracy by the NSs. It could be estimated that NSs or those highly proficient in English might not have interpretation problems and that the initial validity of the passages was guaranteed. Some problems were found in the answers provided by ESL students, as summarised below. However, this misunderstanding did not mean that these passages were not usable for the test, because there should be a variety of levels of expressions ranging from high to low frequency in and familiarity with words and idioms.

The misunderstanding by one Japanese (ESL) student was of the following idioms and proverb:

(4) *to be off one's head* in the literal passage: it was taken for *remember*.

(6) *to hold one's head high* : an ambiguity was found in the interpretation in the literal passage (*That's their life*).

(7) *to let the cat out of the bag* : the interpretations in the literal and figurative meanings were the same (*She would like to tell secret to others; She cannot keep secret*).

(8) *to stand in someone's way* : the interpretation in the figurative was wrong (*He has to speak with audience standing in front of Thompson*).

(11) *You cannot eat your cake and have your cake*. (this was interpreted as a positive meaning in the literal passage). Possible reasons for misunderstanding in the above answers may have involved idiomatic expressions. More investigation in a new study into idiomatic expressions seems necessary.

4. 2-7. TESTS OF LITERAL/METAPHORICAL PASSAGE WRITING or MC-PT

I noticed that there should be more test items for the MC tests. Therefore, additional

responses to new passages with the same purpose were collected from 24 British (half of them were new) and 20 new ESL respondents in the pilot test. All of the 11 test items were distributed. The researcher required her questionnaire to be distributed to a nearly equal number of respondents, but in fact she had no control over the distribution. As a matter of fact, there was only one response available for items (12), (13) and (22) from a single Japanese ESL subject. Answers were measured on a 3 point scale (the same as in Chapter 3) by the author.

The additional expressions/idioms were

(12) *Although the sun shines, leave not your cloak at home.*

(13) *If you climb the ladder, you must begin at the bottom.*

(14) *The bird has flown away.*

(15) *to come to a head*

(16) *to keep one's head above water*

(17) *to keep one's head down*

(18) *to spill the beans*

(19) *to tell someone where to get off*

(20) *to throw out the baby with the bath water*

(21) *to see which way the cat jumps*

(22) *to take a leaf out of (someone's) book*

The results of the test were as follows. No NSs' answers were problematic. Among the answers provided by the Japanese ESL, items 12, 13, 14, 17 and 21 were not problematic. Item 19 showed no problem in the literal but the average in the figurative/metaphorical answer was 1.7. Items 16, 20 and 22 showed a full point in the literal but a null in the figurative/metaphorical answer. Zero points were rated in items 15 and 18. We should pay attention to the idiomatic expressions here again.

These 22 passages are potential test items for comprehension and use of English literal and metaphorical expressions, which will be used as the receptive and the productive tests in Study 3.

4. 3. CONSIDERATION FOR USABILITY OF THE TESTS FOR AN EFL SITUATION

To measure subjects' vocabulary depth I proposed WAT and PolyT. The WAT for NSs and ESL students did not seem to be problematic. Further considerations were how EFL subjects reacted to this test and whether or not both the WAT and PolyT were administered to the same subjects, especially in view of the time limitation. The revised WAT (i.e. WAT-2), PolyT and VLT were administered to 42 Japanese EFL subjects. The format was the same as in that for NSs and

ESL. The results of the VLT, PolyT and WAT are shown in Table 4-6.

Table 4-6 Means and Standard Deviations of the VLT, PolyT and WAT

Tests	N	Mean	S. D.
VLT (120 points)	42	76.27	19.81
PolyT (20 points)	42	11.41	3.64
WAT (20 points)	42	11.33	3.92

The means of the PolyT and WAT revealed similar results and the standard deviation of PolyT was slightly smaller than the WAT's. From these data, either of PolyT or WAT seemed to be usable. The following results can be also taken into consideration when choosing.

In this pilot test, respective test items from the MC-RT (*Wake not a sleeping lion*) and MC-PT (*The bird has flown away*) were administered. The MC tests include the MC-RT and MC-PT (6 points in total). Table 4-7 shows the Pearson correlation coefficients of the 4 tests.

Table 4-7 Correlation coefficients of the MC tests, VLT, PolyT and WAT

Tests	MC tests	VLT	PolyT	WAT
MC tests	1.0000 (42) p=.	.6695* (42) p=.000	.6656* (42) p=.000	.2801* (42) p=.072
VLT		1.0000 (42) p=.	.8170* (42) p=.000	.4764* (42) p=.001
PolyT			1.0000 (42) p=.	.3687* (42) p=.013
WAT				1.0000 (42) p=.

(coefficient / (cases) / * p<.05

The correlation coefficients in the table revealed that the MC tests positively correlated with the VLT (0.669) and the PolyT (0.666) and that the correlations between the WAT and the VLT (0.476) and between the WAT and the PolyT (0.369) were not as strong as the former correlations. More importantly, the correlation between the MC tests and the WAT showed a non-significant result (0.280). From these results it appears that the subjects' lexical abilities, i.e. vocabulary knowledge, such as vocabulary size and polysymy ability, might relate more to the understanding of metaphorical expressions than word association knowledge.

The final consideration was the practicability of the tests. I noticed that the subjects' anxiety about the WAT was high. They mentioned that the WAT was difficult to answer. They said that

it was too complicated. And, it took them more time than the other tests. Taking the students' anxiety toward the test into account, and also considering the effects of polysemy ability, as stated in Chapter 2, which may help stimulate and promote semantic extensions and networking from words to words, I decided to use PolyT instead of WAT to measure subjects' vocabulary depth, based also upon the result of non-significant correlation of WAT with MC.

4. 4. CONCLUSION

The WAT, PolyT, MC-XYT, MC-RT and MC-PT were tested on British NSs and Japanese ESL subjects. Though the number of subjects was small, I was able to refine my tests in preparation for the next study.

Both a multiple choice and a descriptive WAT was piloted on the NS and ESL subjects. The revision of the WAT was tested on 42 Japanese EFL. These students displayed a negative attitude toward the WAT, while they did not show any negative feelings to the PolyT. The main reason seemed to result from the characteristics of the test, i.e. paradigmatic or syntagmatic rules necessary in answering. Those who could not find such rules may have felt helpless. As a matter of fact, one student who had the highest VLT score intuitively found a rule to employ, but the rest of the students could not. The WAT seemed to be suitable for those who have good vocabulary knowledge. However, the PolyT seemed to be accepted by ordinary students. In this sense, it can be used as a test to measure the depth of the target words. In a sense, the WAT informed the development of the PolyT, but did not prove suitable as a stand-alone test in its own right.

The target words of the MC-XYT revealed some problems, therefore, the problematic words will be excluded in the main tests. Although the MC-RT and the MC-PT may require additional revisions in the main tests, the answers in these tests did help in choosing for expressions or passages which are suitable for the MC-RT or the MC-PT.

Based upon the above results, the formation of the new tests can be summarised as follows.

- (1) WAT: a multiple choice type formed in the pilot study to measure an associative ability may be one of the options. However, it has several weaknesses as a test for EFL subjects: (i) there was no significant correlation with the MC tests, (ii) students could not do it well nor did they like it and (iii) there may have been some problems (e.g. syntagmatic or paradigmatic distinction) in the test items. As a result, it was only used to inform PolyT.
- (2) PolyT: the 10 target words examined in the pilot study to measure knowledge of the depth of words. This test is usable to measure vocabulary depth.
- (3) MC-XYT: the 6 target adjectives to measure the literal and metaphorical skills of manipulations of the target adjectives embedding into a conceptual metaphor pattern, X is Y,

are usable as test items.

- (4) MC-RT: the 11 expressions from the piloted 22, which are embedded in the literal and metaphorical passages, are usable for measuring a receptive ability, i.e. interpretation.
- (5) MC-PT: the 11 expressions from the piloted 22 to ask examinees to embed into passages literal and metaphorical meanings are usable for measuring a productive ability, i.e. controlled writing.

The respective 11 target expressions for the receptive test, i.e. the MC-RT and the productive test, i.e. MC-PT, will be introduced in the early sections of Chapter 5.

CHAPTER 5

STUDY 3: ASSESSING METAPHORICAL COMPETENCE: FIRST EXECUTION OF THE MAIN TESTS (Testing of the MC tests)

5. 1. THE PURPOSE OF STUDY 3

In Study 3, the tests of metaphorical competence designed in the previous studies will be tested on Japanese EFL students, and the results will be analysed and discussed. The overall objectives of the tests are to assess EFL students' metaphorical competence (i.e. their ability to understand and use English metaphorical expressions), to specify the principal component(s) or factor(s) affecting their metaphorical understanding and use, and to discover whether or not there are relationships between their metaphorical competence and linguistic competence, such as vocabulary size and depth. More specifically, the study intends to investigate EFL students' receptive and productive competence of English metaphorical expressions and also to validate the measurement instruments.

5. 1-1. TESTS OF METAPHORICAL COMPETENCE

The MC tests and the PolyT piloted, revised and validated in a small scale study in Study 2 will be used as measurement instruments for assessing metaphorical competence in Study 3 to find out whether or not these tests are feasible on a reasonable number of subjects. In Study 2, 22 test items of the MC-RT and MC-PT, and 8 items of MC-XYT were tested on 24 NSs and 10 Japanese ESL students at the preliminary stage. At the revision stage WAT was re-tested on 11 NSs and 42 Japanese EFL students and MC-PT on 24 NSs and 20 Japanese ESL students. The pilot indicated that most of the test items selected in Study 2 were usable as measurement instruments. Other selections for measurement instruments involve vocabulary size and depth. Vocabulary Levels Test already validated by the compilers (Schmitt, 2000; Schmitt, Schmitt & Clapham, 2001) will be used as an index test for vocabulary size. The PolyT was found to be more suitable to use for assessing vocabulary depth of Japanese learners of English than the WAT in Study 2.

Research questions

The following research questions are investigated in this study.

1) What kind of metaphorical competence (in receptive and productive modes) do Japanese EFL students demonstrate on the tests of metaphorical competence designed for this research?

These research questions will be investigated using both receptive and productive tests of metaphorical competence (i.e. MC-RT and MC-PT).

2) What mapping and/or networking do Japanese EFL students perform when they deal with English metaphorical expressions?

This research question will be investigated using the test of metaphorical competence, i.e. MC-XYT.

3) Is there any relationship between Japanese EFL students' linguistic competence and metaphorical competence?

This research question will be investigated using data gathered from all of the tests administered in this study.

5. 1-2. METHOD

Instruments and treatment of data

The following are the tests used in this study and a brief summary of the tests of metaphorical competence. The statistical data obtained in the study is quantitatively treated by SPSS 11.0 for Windows. The contents of the answers are also qualitatively analysed.

Tests used in Study 3

Vocabulary Levels Test (VLT, hereafter) (Schmitt, 2000; Schmitt, Schmitt & Clapham, 2001): the same word levels used in the previous studies (2000 and 3000 word levels).

This test aims to measure subjects' vocabulary breadth and functions as an index for other tests. The total points allocated to VLT were 120.

Polysemy Test or PolyT: the same 10 target words used in the previous study.

This test aims to measure subjects' vocabulary depth. The total points allocated to PolyT were 20.

Tests of metaphorical competence or MC tests:

(1) the receptive test, abbreviated as MC-RT:

(i) the receptive literal part, abbreviated as MC-RT-L: 3 points

(ii) the receptive metaphorical part, abbreviated as MC-RT-M: 3 points

(2) the productive test, abbreviated as MC-PT:

(i) the productive literal part (MC-PT-L): 3 points

(ii) the productive metaphorical part (MC-PT-M): 3 points

These two kinds of tests aim to investigate the receptive and productive competence using literal and metaphorical expressions. The tests intend to collect data quantitatively and qualitatively. As part of investigation, an interview is included.

(3) theXY test, abbreviated as MC-XYT:

(i) the XY literal part (MC-XYT-L): 3 points

(ii) the XY metaphorical part (MC-XYT-M): 3 points

This test aims to discover whether or not subjects can manipulate literal and

metaphorical expressions using 6 target adjectives in the sentence pattern 'X is an adjective Y.' It also aims to discover what semantic fields they expand stimulated by the 6 adjectives.

Brief summary of Tests of Metaphorical Competence

Since VLT and PolyT have already been discussed to a great extent in Chapter 3, the tests of metaphorical competence are briefly summarised here.

The tests of metaphorical competence, MC-tests

The tests of metaphorical competence, MC-tests, consist of the following three types: (1) the receptive test (MC-RT), which consists of (i) the receptive literal (MC-RT-L) and (ii) the receptive metaphorical (MC-RT-M) parts; (2) the productive test (MC-PT), which consists of (i) the productive literal (MC-PT-L) and (ii) the productive metaphorical (MC-PT-M) part; (3) the XY test (MC-XYT), i.e. the test of metaphorical sensitivity and/or skills. This also consists of (i) the literal (MC-XYT-L) and (ii) the metaphorical (MC-XYT-M) parts.

(1) The receptive test, MC-RT and (2) the productive test, MC-PT

The first two types of the tests of metaphorical competence intend to cover two modes: receptive and productive. They consist of (1) passage interpretation (hence, named 'receptive') and (2) passage writing (hence, named 'productive'). In the receptive test, subjects were asked to paraphrase/interpret a target expression embedded in a short passage, in one of which the target expression was used literally and the other metaphorically. In the productive test, subjects were asked to write a pair of passages, into which they literally and metaphorically embedded a target expression (i.e. a test item) different from the one in the receptive test. This did not involve creating new metaphors but involved producing new passages, which is a difficult task for EFL students, and is therefore called a productive test. These two types of tests are abbreviated as MC-RT and MC-PT respectively.

Eleven target expressions in MC-RT

The following were the eleven target expressions (i.e. test items) in MC-RT. The labels in brackets at the end of a target expression in the list indicate the following characteristics of the expressions: "S" shares the similar idea, meaning or connotation between in English and in Japanese; "I" stands for an idiomatic or proverbial expression; "I+" indicates that a passage has a strong contextual support. The format and the

instruction of the tests were the same as those in the previous studies.

(1) MC-RT test items 1~11:

R-1 *to let the cat out of the bag* [I +]

R-2 *A little pot is soon hot.* [S]

R-3 *Fish begins to stink at the head.* [S/I]

R-4 *to stand in someone's way* [I]

R-5 *to be off one's head* [I]

R-6 *a pain in the neck* [I]

R-7 *The rotten apple injures its neighbours.* [S]

R-8 *to hold one's head high* [S]

R-9 *to count heads* [S/I]

R-10 *Wake not a sleeping lion.* [S]

R-11 *You cannot eat cake and have your cake.* [I]

The following is an example of the item R-1 (*to let the cat out of the bag*) of MC-RT. In an actual test, there was no indication of which of the two passages (i.e. passage i. or passage ii.) was literal or metaphorical. (see Appendices 4-4 and 5-1 for the texts from R-1 to R-11)

Example:

Instruction: Write or interpret the meaning of the underlined expression embedded in the following passage in Japanese or in English.

Target sentence/idiom: R-1: to let the cat out of the bag

(i) "Mr. Brown's fed up with the cat killing his birds. He says he's going to put it in a bag and drown it," she said. "How awful!" Joan replied. "When he's not looking you'll have to let the cat out of the bag."

(ii) "I told Jane everything." Mickey said.

"I told you she can't keep a secret." Ruth said. "She always lets the cat out of the bag."

This test item is marked with [1 +] in the above list. As read in the passage (ii), the meaning of the target item (*she ... lets the cat out of the bag*) has already paraphrased in the preceding sentence (*she can't keep a secret*). The rest of the passages in the test contain medium or subtle implications.

Eleven target expressions in MC-PT

The following were the eleven target expressions (or test items) in MC-PT. The labels in brackets at the end of a target expression in the list indicate the following characteristics:

“C” conveys clear images of movement or situation in the expression; “I” stands for an idiomatic or proverbial expression. The format and the instruction of the tests were the same as those in the previous studies.

(2) MC-PT test items 1~11:

P-1 *to throw out the baby with the bath water* [I]

P-2 *to keep one’s head down* [C/I]

P-3 *to see which way the cat jumps* [C/I]

P-4 *to spill the beans* [I]

P-5 *to keep one’s head above water* [I]

P-6 *Although the sun shines, leave not your coat* at home.* [C/I] *The original word ‘cloak’ is replaced by the word ‘coat’ because the latter is a more familiar word.

P-7 *to tell (someone) where to get off* [I]

P-8 *If you climb the ladder, you must begin at the bottom.* [C]

P-9 *The bird has flown away.* [C]

P-10 *to take a leaf out of (someone’s) book* [I]

P-11 *to come to a head* [I]

The following is an example of one of the test items of MC-PT.

Example:

Instruction: Write a pair of short passages, each of which consists of easy sentences with the same target sentence/idiom embedded in it in different contexts (one is literal, and the other metaphorical). Target sentence/idiom: P-1: *to throw out the baby with the bath water*

(3) The XY test, MC-XYT

This test aims to measure literal and metaphorical sensitivity/skills in the sentence pattern of ‘X is an adjective Y’ using six target adjectives which convey primary, physical, psychological and/or cross-sensory meanings: *bright, dark, grey, high, weak and wild*. This test concerns writing skills, therefore, it comprises part of the productive test.

In this test, subjects were asked to write two kinds of sentences, into which an adjective was embedded in a sentence pattern of “A(n)/The + noun is/are (a/am) adjective + noun,” where in one, the adjective should be used literally and in the other it should have a metaphorical connotation. The adjective *hard* was used as a target word in the instruction for a literal and a metaphorical example. The following is an example.

Instruction: Write two sentences using the target adjectives listed below. Use each adjective in a literal sense in one of the sentences (L), and metaphorically in the other sentence (M). The format of the sentence is A/An/The X(noun) is a(n) adjective Y(noun) as shown in the examples. (Do not use similes in which like is used in the comparison, i.e. ‘The prison guard is like a hard rock’.)

Example: Target word: *hard* Literal: The object on the table is a *hard* stone.

Metaphorical: Mike Tyson's muscles are *hard* steel.

Consideration of the allocation of the tests

As is often the case, the number of available subjects and time is a problem. The estimated total number of subjects for this study ranged around 100 and the available time was one class period (90 minutes in total). It seemed to be hard to administer all 22 test items of MC-RT and MC-PT to all the subjects due to time constraint, therefore, a certain scheme was taken: a combination of one MC-RT item and one MC-PT item, for example, a combination of R-1 *to let the cat out of the bag* with P-1 *to throw out the baby with the bath water*, and so on. There were 11 combinations, and one combination was administered to a certain number of subjects (see the section of Participants), while VLT and MC-XYT were administered to all the subjects. If the subjects are divided into groups and if we compare the data across the groups, we need to investigate the homogeneity of the groups.

Participants:

The same number of subjects took VLT, PolyT and MC-XYT: 106 (24 male; 82 female) aged 18-25, freshmen and sophomores who studied at Kansai Gaidai University. However, the number of subjects for MC-RT and MC-PT varied. The number of subjects who answered the same test items varied from 7 to 12 depending upon available responses. There were 11 combinations, i.e. 11 groups. The actual number of responses (i.e. subjects) for the combinations of the test items is shown in Table 5-1. Among the subjects were 7 (3 male; 4 female) interviewees who volunteered for an interview.

Table 5-1 The number of subjects in the 11 combinations

Combination	MC-RT	Label	MC-PT	Label	No. of subjects
1	R-1 <i>to let the cat out of the bag</i>	I +	P-1 <i>to throw out the baby with the bath water</i>	I	10
2	R-2 <i>A little pot is soon hot.</i>	S	P-2 <i>to keep one's head down</i>	C/I	11
3	R-3 <i>Fish begins to stink at the head.</i>	S/I	P-3 <i>to see which way the cat jumps</i>	C/I	12
4	R-4 <i>to stand in someone's way</i>	I	P-4 <i>to spill the beans</i>	I	9
5	R-5 <i>to be off one's head</i>	I	P-5 <i>to keep one's head above water</i>	I	9
6	R-6 <i>a pain in the neck</i>	I	P-6 <i>Although the sun shines, leave not your cloak at home.</i>	C/I	11
7	R-7 <i>The rotten apple injures its neighbours.</i>	S	P-7 <i>to tell (someone) where to get off</i>	I	7
8	R-8 <i>to hold one's head high</i>	S	P-8 <i>If you climb the ladder, you must begin at the bottom.</i>	C	11
9	R-9 <i>to count heads</i>	S/I	P-9 <i>The bird has flown away.</i>	C	8
10	R-10 <i>Wake not a sleeping lion.</i>	S	P-10 <i>to take a leaf out of (someone's) book</i>	I	10
11	R-11 <i>You cannot eat your cake and have your cake.</i>	I	P-11 <i>to come to a head</i>	I	8
Total					106

Time: May-July, 2000

Locations & Procedures: The tests were administered to 106 subjects at Kansai Gaidai University. The allocated length of time was approximately 40 minutes for VLT and PolyT, and approximately 50 minutes for the tests of metaphorical competence. This comprised a class period (90 minutes). Interviews took place according to the volunteers' convenience. The procedure of the test was the same as that in the previous tests.

5. 1-3. ASSESSMENT OF VOCABULARY LEVELS TEST AND POLYSEMY TEST

There were 120 test items in VLT and 20 in PolyT, each of which was allocated 1 point. The total points were 120 for VLT and 20 for PolyT. The items of these tests were objective (i.e. either correct or incorrect), therefore, were made by the author.

5. 1-4. ASSESSMENT AND TREATMENT OF THE ANSWERS IN TESTS OF METAPHORICAL COMPETENCE

Scoring of MC-RT, MC-PT and MC-XYT

Since MC-RT, MC-PT and MC-XYT constitute the main body of the whole study, the delineation of criteria used in scoring for these tests is explained in the following sections. The answers in both of MC-RT and MC-PT were rated on a subjective scale of three points each. Two raters (one is a middle-aged male British native speaker who teaches EFL students in Japan; the other the author) assessed the answers. There was moderation between the two if there were judgement problems. In general, the assessments were made on the clarity of paraphrasing or interpretation in MC-RT, while in MC-PT, a clear linkage between source and target domains was weighed. MC-XYT was also assessed by the same raters. The overall agreement ratios of the raters were approximately 80% in the initial judgement. After readjustment, the agreement ratios reached 95%. The disagreement remained in the judgement for the defects of spelling and grammar and the lack of collocation. In such cases, the scores were averaged. The criteria and the points are specified in its designated section.

The criteria used in scoring MC-RT

In MC-RT (both in RT-L and RT-M), a correct and clear interpretation of a meaning or implication was allocated three points; an answer which was judged correct but which included some ambiguity two points; an answer which stopped explanation halfway but was correct up to that point was allocated one point; an incorrect or no answer received

zero points. In MC-RT (both in RT-L and RT-M), students were allowed to answer in their native language (Japanese).

The main concern of this study is on metaphorical competence, therefore, the criteria for the metaphorical parts of MC-RT-M is focused upon more than MC-RT-L to investigate subjects' comprehension of metaphorical meaning. Table 5-2 summarises the criteria used in scoring the metaphorical parts of MC-RT-M.

Table 5-2 Criteria used in scoring of metaphorical parts of MC-RT-M

Score	Criteria for interpretation of a metaphorical passage (MC-RT-M)
3	The meaning of the target expression is interpreted correctly.
2	The interpretation of the target expression can be judged correct, but the answer includes some ambiguity in interpretation and/or is lacking detail or precision.
1	The answer is too brief to be judged precisely correct or incorrect; an incomplete interpretation.
0	An incorrect answer or no answer written.

The criteria used in scoring MC-PT

MC-PT-L and MC-PT-M were also scored on a three-point scale: three points for an answer with correct use of the target expression; two points for an answer which seemed to be correct but which included clumsiness or crucial errors; one point for an incomplete or ambiguous answer; zero if an incorrect or no answer was provided.

Scoring of MC-PT-M was more complicated than scoring MC-RT-L, MC-RT-M or MC-PT-L. The productive metaphorical test (MC-PT-M) intended to measure how well (or not) EFL students could manipulate metaphorical expressions in writing. It also involved the aspects of image schema, its activation, mapping, and networking of words and images (Lakoff and Johnson, 1980; Tourangeau & Sternberg, 1981; Ortony, 1994; Black, 1994) combined with general writing skills. With regard to measurements of metaphorical competence, the implications provided by Tourangeau & Sternberg's (1981) aptness in metaphor and Littlemore's (2001b) originality of metaphor production are meaningful. However, the languages experimented on in past research were closely related to the learners' native language, for example, the comparisons of L2 (English) with L1 (French, Belgium, German or Dutch), and the subjects examined in the tests were intermediate or higher learners of English as L2. Since the language distance in this study is greater than that used in past research and the subjects in this study are EFL students, a specific learning context, such as an EFL situation, can be taken into account. In the case of Japanese EFL students, some lexical, grammatical and syntactic errors are expected besides poor skills of manipulation of metaphorical expressions. Therefore, as

long as errors do not affect the meaning of a whole passage, that is, even if a subject-predicate agreement is lacking, or if there is an error in singular-plural noun distinction, but when a passage is able to get the meaning across, most of such errors may well be discounted. Taking this generous treatment of errors into account, the following scoring criteria for the assessment of productive metaphorical writing was established. Table 5-3 explains the criteria used in scoring MC-PT-M on the left column together with students' sample answers on the right column.

Table 5-3 Criteria used in scoring of metaphorical parts of Productive Test (MC-PT-M)

Score	Criteria for producing a metaphorical passage	Examples from the students' answers to Target expression: P-2 <i>to keep one's head down</i>
3	The meaning of the target expression is embodied and fits well in a passage; semantic relatedness or mapping between the source and the target (the vehicle and the topic) is clear; degree of metaphoricity is high.	One day, Ben went to his friend, Ken's house. He was invited to Ken's birthday party. At the end of the party, everybody start to give a present to Ken, but Ben didn't have anything. he forgot to buy it. Ben seems to <i>keep his head down</i> that day.
2	The meaning of the target expression is embodied in a passage to some extent, but semantic relatedness or mapping between the source and the target (the vehicle and the topic) is not as clear as 3. Additional linkage(s) or sentence(s) is necessary.	John isn't good at English. But his sister is very good at English. So, Ken's sister always teaches English to Ken. Ken <i>keep his head down</i> .
1	The meaning of the target expression is not embodied in a passage. The relationship between the source and the target (the vehicle and the topic) in metaphorical use is lacking. Anomaly. Confusion involved, but there is an effort to use an expression.	My son is too shy to talk to a stranger, when he walks the road. He walks to <i>keep his head down</i> .
0	An incorrect answer or no answer written.	He was keep his head down. Because he is bright.

The criteria used in MC-XYT

Each answer which made sense in a literal sentence and which showed a reasonable mapping from 'vehicle' to 'topic' in a metaphorical sentence was rated as one point each: one point for a literal and one point for a metaphorical meaning. A half-point score was permitted if a sentence ran well in a literal and/or a metaphorical sense but there was ambiguity between a topic-vehicle linkage or if it did not follow the required format. The following first examples are the answers rated as one point for a literal use and one point for a metaphorical use, and the second are rated as a half point for literal and metaphorical uses respectively.

An example of a student's answer which obtained one point:

Target adjective: *bright*

Literal: At night this street is a *bright* street.

Metaphorical: Her eyes are *bright* jewels.

An example of a student's answer which obtained a half point:

Target adjective: *grey*

Literal: My father's hair is *grey*.

Metaphorical: I have a *grey* life.

The final treatment was taken in this test when totalling: the total points each subject obtained in the literal and metaphorical parts were 6. The total points (Max=6) were divided by 2 in order to make an individual's maximum in Literal and Metaphorical parts of XYT 3 points respectively. This aimed to scale them in equal balance with other components of the metaphorical tests, which were 3 points in MC-RT and MC-PT respectively.

5. 2. RESULTS AND ANALYSES

Results of the test of metaphorical competence and VLT used as an index

Table 5-4 and Table 5-5 respectively show the raw mean scores and SDs of MC-RT (RT-L & RT-M) and MC-PT (PT-L & PT-M) (3 points each) contrasted with those of VLT (120 points maximum) which was used as an index.

Table 5-4 Mean scores and SDs of MC-RT (RT-L & RT-M) and VLT

Receptive Test items	N 106	RT-L		RT-M		V.L.T. (120p. max)	SD
		Means (3 p. max)	SD	Means (3 p. max)	SD		
R-1. to let the cat out of the bag	10	2.4	1.4	2.1	1.5	100.6	9.1
R-2. A little pot is soon hot.	11	1.9	1.5	1.9	1.5	97.5	17.5
R-3. Fish stinks at the head.	12	1.2	1.5	1.3	1.5	90.0	22.4
R-4. to stand in someone's way	9	1.7	1.6	0.8	1.3	101.6	12.9
R-5. to be off one's head	9	2.8	0.5	0.7	1.3	97.7	14.4
R-6. a pain in the neck	11	1.9	1.5	1.8	1.5	91.6	16.2
R-7. The rotten apple injures its neighbours.	7	1.3	1.6	1.3	1.6	94.1	9.4
R-8. to hold one's head high	11	1.6	1.6	1.3	1.4	96.0	9.3
R-9. to count heads	8	1.9	1.6	1.7	1.4	98.9	20.8
R-10. Wake not a sleeping lion.	10	2.6	1.0	2.1	1.3	97.9	10.0
R-11. You cannot eat your cake and have your cake.	8	2.1	1.5	1.1	1.4	96.9	12.4
Average		(1.95)	-	(1.46)	-	96.4	14.7

Table 5-5 Mean scores and SDs of MC-PT (PT-L & PT-M) and VLT

Productive Test items	N 106	PT-L		PT-M		V.L.T. (120p. max)	SD
		Mean (3 p. max)	SD	Mean (3 p. max)	SD		
P-1. to throw the baby with the bath water	10	0.9	1.0	0.2	0.5	100.6	9.1
P-2. to keep one's head down	11	1.4	1.4	0.7	1.2	97.5	17.5
P-3. to see which way the cat jumps	12	1.1	1.4	0.3	0.9	90.0	22.4
P-4. to spill the beans	9	1.3	1.2	0.1	0.3	101.6	12.9
P-5. to keep one's head above water	9	0.6	1.0	0.5	1.1	97.7	14.4
P-6. Although the sun shines, leave not your coat at home.	11	1.1	1.2	0.6	0.7	91.6	16.2
P-7. to tell (someone) where to get off	7	1	1.1	0.2	0.3	94.1	9.4
P-8. If you climb the ladder, you must begin at the bottom.	11	2.3	1.0	1	1.2	96.0	9.3
P-9. The bird has flown away.	8	2.1	1.4	1	1.2	98.9	20.8
P-10. to take a leaf out of (someone's) book.	10	0.9	1.1	0.4	0.9	97.9	10.0
P-11. to come to a head	8	1.6	1.2	0.7	1.0	96.9	12.4
Average		(1.30)	-	(0.51)	-	96.4	14.7

The mean scores of the literal parts in both tests were higher than those of their metaphorical counterparts. The discrepancies between the literal and the metaphorical parts in some test items were large, especially in several test items of MC-PT. These may have been caused by the differing degrees of ease and difficulty among the items or by the subjects' linguistic ability. This will be further developed in the discussion section.

VLT intended to measure vocabulary breadth and at the same time intended to serve as an index to other tests. It was also used to investigate homogeneity among the groups. The mean scores of VLT ranges from 90.0 to 100.6 and the SDs also varied to a degree. From these scores it seemed on the surface that there were some gaps among the groups.

In order to guarantee homogeneity among the 11 groups, ANOVA for VLT was computed. It showed the result of F Ratio= .580 and of F Prob.= .827. Considering from this result, it can be said that there was no significant difference between the subject groups in terms of vocabulary size. Therefore, further discussion of the results obtained from the tests of metaphorical competence using VLT as an index could be carried on.

Since the homogeneity among the 11 groups was established statistically, the following overall cross comparisons could be summarised from the average mean scores: the average mean score of MC-RT (3.41) was about 2 times higher than that of MC-PT (1.81); MC-RT-L (1.95) about 1.3 times higher than that of MC-RT-M (1.46); MC-PT-L (1.30) about 2.5 times higher than that of MC-PT-M (0.51); MC-RT-L (1.95) about 1.5 higher than that of MC-PT-L (1.30); MC-RT-M (1.46) about 2.8 times higher than that of MC-PT-M (0.51). The average mean scores of these cross comparisons are illustrated in Table 5-6.

Table 5-6 The average mean scores of MC-RT and MC-PT in cross comparison

Combination#	N	MC-RT-L Mean (3p. max)	MC-RT-M Mean (3p. max)	MC-PT-L Mean (3p. max)	MC-PT-M Mean (3 p. max)
1	10	2.4	2.1	0.9	0.2
2	11	1.9	1.9	1.4	0.7
3	12	1.2	1.3	1.1	0.3
4	9	1.7	0.8	1.3	0.1
5	9	2.8	0.7	0.6	0.5
6	11	1.9	1.8	1.1	0.6
7	7	1.3	1.3	1.0	0.2
8	11	1.6	1.3	2.3	1.0
9	8	1.9	1.7	2.1	1.0
10	10	2.6	2.1	0.9	0.4
11	8	2.1	1.1	1.6	0.7

#Combination on the left column refers to the combination of test items shown in the left column of Table 5-1.

Results of MC-XYT

Table 5-7 shows the results of MC-XYT. Since the answer was calculated in decimal points, the decimals in the table were shown down to two places. The results indicate that the mean of the metaphorical parts was lower than that of the literal. One of the reasons was that there were quite a few students who wrote only literal sentences for the target adjectives. The other reason was caused by the contents of the answers in metaphorical expressions. More details of the results are explained in the discussion section entitled 'EFL students' semantic web and mapping.'

Table 5-7 Means and SDs of MC-XYT

Combination#	N=106	Means of MC-XYT-L, MC-XYT-M & total			
		XYL (3p. max)	XYM (3p. max)	Total (6p. max)	SD
1	10	1.93	1.47	3.40	0.84
2	11	2.13	2.07	4.20	1.13
3	12	1.73	1.57	3.30	1.38
4	9	1.84	1.76	3.60	1.05
5	9	1.48	0.82	2.30	0.76
6	11	1.79	1.11	2.90	0.84
7	7	1.83	1.17	3.00	0.94
8	11	2.05	1.55	3.60	0.65
9	8	2.00	1.80	3.80	1.09
10	10	1.68	1.52	3.20	1.16
11	8	1.95	1.55	3.50	1.13
Mean		1.86	1.49	3.34	--

#Combination on the left column refers to the combination of test items shown in the left column of Table 5-1.

5. 3. ANALYSIS AND DISCUSSION FOR RESEARCH QUESTION 1

Research question 1) What kind of metaphorical competence (in receptive and productive modes) do Japanese EFL students show in the tests of metaphorical competence designed for this study? (i.e. metaphorical competence measured in MC-RT and MC-PT)

5. 3-1. FEATURES OF THE ANSWERS IN MC-RT- L AND MC-RT-M

Discrepancies between literal and metaphorical competence

On the whole, the literal competence in interpretation showed higher mean scores compared with that of the metaphorical counterpart. In order to clarify the discrepancies in competence between the literal and metaphorical interpretations and to show the characteristics of the answers at a glance, the results are classified into three ranks from high to low mean scores of the test items (Table 5-8).

Table 5-8 From high to low mean scores of MC-RT test items

Ranks	MC-RT			
	RT-L test items	(means) [label]	RT-M test items	(means) [Label]
High mean scores (over 2 points)	R-5 to be off one's head R-10 Wake not a sleeping lion. R-1 to let the cat out of the bag R-11 You cannot eat your cake and have your cake.	(2.8) [I] (2.6) [S] (2.4) [I+] (2.1) [I]	R-1 to let the cat out of the bag R-10 Wake not a sleeping lion.	(2.1) [I+] (2.1) [S]
Medium mean scores (1.9 – 1.0 points.)	R-2 A little pot is soon hot. R-6 a pain in the neck R-9 to count heads R-4 to stand in someone's way R-8 to hold one's head high R-7 The rotten apple injures its neighbours. R-3 Fish stinks at the head.	(1.9) [S] (1.9) [I] (1.9) [S/I] (1.7) [I] (1.6) [S] (1.3) [S] (1.2) [S/I]	R-2 A little pot is soon hot. R-6 a pain in the neck R-9 to count heads R-3 Fish stinks at the head. R-7 The rotten apple injures its neighbours. R-8 to hold one's head high R-11 You cannot eat your cake and have your cake.	(1.9) [S] (1.8) [I] (1.7) [S/I] (1.3) [S/I] (1.3) [S] (1.3) [S] (1.1) [I]
Low mean scores (below 0.9 points)			R-4 to stand in someone's way R-5 to be off one's head	(0.8) [I] (0.7) [I]

The discrepancies of the mean scores between the receptive literal and metaphorical competences showed the following features: the largest discrepancy was found in R-5 *to be off one's head*, where the literal mean score was 2.1 points higher than that of the metaphorical counterpart which obtained the lowest mean score (0.7 points). Next to this discrepancy were in R-11 and R-4. The literal mean scores of R-11 *You cannot eat your cake and have your cake* and R-4 *to stand in someone's way* were 1.0 and 0.9 points higher than those of the metaphorical counterparts respectively. In these items,

the mean score of the metaphorical part of R-11 was medium (1.1) and that of R-4 was slightly lower (0.8). On the contrary, the smallest discrepancy was in R-3. The metaphorical mean score of R-3 *Fish stinks at the head* was slightly higher than or almost equivalent to the literal counterpart (0.1 point difference), where the mean score of the metaphorical part was medium (1.3 points).

The medium or small range discrepancies were in the R-10 *Wake not a sleeping lion*, R-1 *to let the cat out of the bag*, R-8 *to hold one's head high* and R-9 *to count heads*. The mean scores of the metaphorical parts of these items were 2.1 points in R-10, 2.1 in R-1, 1.3 in R-8 and 1.7 in R-9. These mean scores belonged to high or medium ranges (see Table 5-8).

There were no mean score discrepancies in R-2 *A little pot is soon hot* and R-7 *The rotten apple injures its neighbours*. The mean scores of the metaphorical parts in R-2 and R-7 were 1.9 and 1.3 respectively. These belonged to medium range scores.

These results possibly indicate that the EFL students could interpret the literal meanings better than the metaphorical implications and, at the same time, that they could interpret the metaphorical implications fairly well in certain expressions, such as the 5 items which attained more than half (the mean score 1.5) of the maximum point: R-1, R-10, R-2, R-6 and R-9. This will be discussed in more detail in the following sections.

Methods used in interpretation and competence

The expressions with higher means in MC-RT-L (the top three) were the items RT-L R-5 *to be off one's head*, RT-L R-10 *Wake not a sleeping lion* and RT-L R-1 *to let the cat out of the bag*, followed by RT-L R-11 *You cannot eat your cake and have your cake*. Only one of the four items of the same expressions in the metaphorical interpretation attained this level, especially MC-RT-M R-5 was situated at the bottom in the metaphorical interpretation and MC-RT-M R-11 was ranked third from the bottom. In order to interpret the students' answers, it is better to look at the contents of the first three.

R-5: to be off one's head

Literal: Dave and Graham are gardeners, and were discussing headgear. Graham said, "I don't want to wear a hat to the garden party this year."

"But I wore it last year, and it's a tradition. We've been wearing that hat for almost thirty years."

"I'll make someone else wear it this year. It's itchy."

"Well, as long as it can be off my head."

Metaphorical: Bob and James were discussing Johnny's Birthday plans.

"So, we'll do a pub crawl then. How many pubs are there in London?" said Bob.

"Too many to count," replied James.

"Oh well, the main thing Johnny wants for his Birthday is to be off his head."

R-10: *Wake not a sleeping lion*.

Literal: In the zoo the warden explained how aggravated and violent the animals get when provoked. He addressed the visitors "Wake not a sleeping lion".

Metaphorical: She had had a lot on her mind lately. Especially at home, and school only made things worse. He knew he had offended her but desperately needed to speak to her. His friend advised him saying "Wake not a sleeping lion".

R-1: *to let the cat out of the bag*

Literal: "Mr. Brown's fed up with the cat killing his birds. He says he's going to put it in a bag and drown it," she said.

"How awful!" Joan replied. "When he's not looking you'll have to let the cat out of the bag."

Metaphorical: "I told Jane everything." Mickey said.

"I told you she can't keep a secret." Ruth said. "She always lets the cat out of the bag."

In the test items R-5 and R-1, most of the words used in the passages of the literal parts belonged to the high frequency range; there were only a few unfamiliar words for Japanese EFL students, such as *itchy* in RT-L R-5. On the other hand, in the item RT-L R-10, there were more unfamiliar words, such as *warden*, *aggravated*, and *provoked*. However, the students might have been able to infer the meaning from the context and the words preceding or succeeding the problematic word, such as *aggravated* in RT-L R-10. They could infer the meaning of *aggravated* from the succeeding word *violent*. The unfamiliarity with the words did not seem to affect their interpretation greatly if a certain amount of contextual support was available in the passage. In addition to the contextual support, the expression "Wake not a sleeping lion" is a conventional proverb which is familiarised in their daily discourse. These elements may assist their understanding.

In the parts of the metaphorical interpretation, fewer answers were obtained in RT-M R-5. It seemed that the metaphorical meaning of this idiom was beyond understanding by most of the students. It was found in the interview that most of the interviewees said they had never met this idiom before, but that few who interpreted the meaning said that they used analogy from 'off + head.' This way they interpreted R-5. On the contrary, they said that RT-M R-10 was easy to interpret. They used their NL schema so effectively that they mapped "her" (heroine) onto the 'lion' or vice versa in RT-M R-10 and

interpreted it correctly. As to RT-M R-1, the cue is overt in the preceding sentence 'she can't keep a secret.' These results indicate that both familiar words in a passage and a certain amount of contextual support affect comprehension.

To explain the interpretations of the items with medium mean scores, the items R-3 (*Fish stinks at the head*) and R-7 (*The rotten apple injures its neighbours.*) are taken up. The passages of the items R-3 and R-7 are as follows.

R-3: Fish begins to stink at the head.

Literal: Laura, Sally and Peggy were preparing a meal.

"Is the fish still alright to eat for dinner?"

"Smell it to see."

"If you smell the head it is the best way."

"Fish begins to stink at the head."

Metaphorical: The four men stood huddled together talking quietly, "there is a rat in the system somewhere."

"Private information is being leaked to other companies."

"I don't trust the boss myself; he may not be involved, but he is a part of the problem."

"Fish begins to stink at the head."

R-7: The rotten apple injures its neighbours.

Literal: Sally and Tom had a beautiful garden. At the bottom of the garden there was an apple tree. On Sunday afternoon they picked all the apples and put them in the box.

However, a rotten apple had been put in by mistake and it turned all the others bad. When Sally realised, she said "The rotten apple injures its neighbours."

Metaphorical: Somerville used to be such a nice area," said Anne.

"Yes," agreed Cheryl, "but once a few bad families started to move in the area got a really bad reputation."

"The problem is that the rotten apple injures its neighbours," replied Anne.

The problem of R-3 lay in the key-word *stink* in the target expression. This problem was discovered in the interview with the students after the test. This problem might have been greater for those with vocabulary size not sufficiently large (for those with less than 70 % score in VLT). The same vocabulary problem seemed to also affect the score of metaphorical interpretation of the same target expression RT-M R-3 and the target expression R-7, where the students with smaller vocabulary (below 70 % score) pointed

out the words that they did not know were *rotten* and *neighbours*. These words are not exactly low-frequency words, but are rather unfamiliar to some Japanese EFL students. This possibly indicates that the levels of words and familiarity to words are part of the factors in comprehension and that the test items should consist of various levels of words and expressions.

What was found so far is that there seems to be three factors affecting EFL students' understanding metaphorical expressions: their vocabulary knowledge, the utilisation of cues and contextual supports in a passage, and the activation of analogical reasoning, some of which may relate to their NL knowledge. In the following sections, the contextual supports and cues in the passages, schema activation and analogical reasoning are discussed.

Contextual support and schema activation

The top two metaphorical test items which obtained comparatively higher scores were RT-M R-1 and RT-M R-10. The expression RT-M R-1 *to let the cat out of the bag* is a very familiar idiom to native English speakers, though only a few Japanese knew this idiom (about five percent in my past small scale survey). The reason they could interpret the expression even though they did not know the idiomatic meaning, was there was a preceding contextual support in the metaphorical passage: "she can't keep a secret." This contextual support in this passage might have been too direct. However, in daily discourse, we consciously or unconsciously attempt to get a point across by alluding to the meaning in a preceding or succeeding utterance. This passage may represent such a situation. Therefore, if there is a paraphrasing in discourse, EFL students may understand a metaphorical meaning quite well.

As for RT-M R-10 *Wake not a sleeping lion*, there seemed to be no difficult words in the metaphorical passage, and as stated earlier, the expression in English connotes a similar meaning in Japanese. The Japanese proverb uses a child or baby instead of 'a lion' ("Wake not a sleeping child/baby"). That is a difference. If you wake up a sleeping child or baby, he/she will cry, which will bring forth a problem. It is better not to cause a problem by waking him/her up. Students encounter the metaphorical use of this expression in their daily discourse. In addition, there is such a phrase as 'a sleeping lion' (「眠れる獅子」) in Japanese, which expands the usage to an expression like 'He is a sleeping lion.' The word 'sleeping' metaphorises the state of being 'motionless' or 'quiet'; 'lion' is a metonymy, which stimulates the image schema of strength or ferocity. As a whole, it metaphorically means that he is motionless and quiet now, but once he wakes up, he will be active, powerful, and even violent. These schema elements (L1

schema or native language schema, NL schema) seemed to assist the better understanding of this kind of expression to a great extent. It was confirmed in the interview that the activation of NL schemas took place in the test items labeled S in Table 5-1 and that the other items were interpreted by analogy or intuition.

Cues, schemas and metaphorical competence in interpretation

It can be said from the contents of the answers that the metaphorical competence seemed to be affected by how much activation of schema(s) took place and how well analogical reasoning was employed. In order to activate a certain schema, vocabulary knowledge plays an important role as a first aid and it calls in NL knowledge and stimulates analogical reasoning. In the case of EFL students, if their vocabulary was too small, mapping and/or networking would not expand to related semantic fields, therefore, a mental activity would stop there. It would block understanding and might not go further. To investigate such phenomena, it may be worth while looking at how the cues (words) in the passages stimulate understanding or are related to the possible activation of schemas and/or analogical reasoning. For this purpose, the cues in the passages and the utilisations of the cues in understanding metaphorical expressions together with the realisation of analogical reasoning are examined. In the following sections, the target items, topic/event, cues (“words”) in a passage followed by estimated implications and schemas to be employed are summarised first in the lists, then main investigations follow.

(i) The case of the high mean scores (over 2 points)

Items	topic / event	Cues (“words”) in a passage=estimated implications	Schemas to be employed
R-1 <i>let</i> [I +]	gossiping	preceding sentence: “she can’t keep secret”; “cat”=secret; “out”=disclosure; “bag”=container	Contextual support: preceding passage
R-10 <i>lion</i> [S]	advice	“offended her”=problem; “wake not”, “sleeping”= avoid problem; “lion”=matonymy for heroine	NL schema, analogy from a Japanese saying and analogy by metonymic mapping

The subjects showed high competence in the metaphorical interpretations in the above two items (R-1: *to let the cat out of the bag*; R-10: *Wake not a sleeping lion*). The high competence resulted from the effect of a strong contextual support in the first case. That of the second was due to the similar ideas shared between the two languages (or cultures). In these cases the cues in the passage were well utilised. Especially, metonymic mappings were evidenced successful in the answers. It can be said from these phenomena that the combination of some degree of contextual support and the subjects’ knowledge about the idiom affected EFL students’ metaphorical competence.

(ii) The case of the medium mean scores (1.9 – 1.0 points)

Items	topic / event	Cues ("words") in a passage=estimated implications	Schemas to be employed
R-2 <i>pot</i> [S]	gossiping	"hadn't seen"= time lapse; "18 yrs old now", "gorgeous"= adulthood; "pot"=metonymy for heroine; "hot"=mature	NL schema, analogy by metonymic mapping
R-6 <i>pain</i> [I]	homework	"teacher", "cannot speak English", "not grasp the main ideas, etc."=problem; "pain"=problem; "neck"=receptacle of problem	lesson schema
R-9 <i>count heads</i> [S/I]	lost love	ended relationships=lost love; feel down=pessimistic; good-looking girls=new love; cheered up=encourage; count heads=hope for the future	love schema
R-3 <i>fish</i> [S/I]	leakage of inner information	"huddled"=act of event, "quietly"=seriousness of the event; "rat"=metonymy for problem, i.e. boss; "system"=company; "leak"=problematic action; "boss"=core of problem; "fish"=metonymy for boss	NL & mystery schema, analogy by metonymy and a similar Japanese expression
R-7 <i>rotten</i> [S]	gossiping	"bad families"=source of problem; "bad reputation"=problem; "rotten"=bad; "apple"=metonymy for problem; "injures"=cause disgrace; "neighbours"=environment	NL schema, analogy from a Japanese proverb
R-8 <i>head high</i> [S]	drowning & rescue	"incident", "wave", "drowned"=problem; "saved"=solved problem; "head high"=praise for bravery	NL schema, body schema
R-11 <i>cake</i> [I]	world problem	"President Clinton"=problem solver; "to end world hunger, etc."=to solve problems; "confused"=ignorance; "cannot eat/have"=fail to solve problems; "cake"=means to solve problems	politics schema

The expressions ranked at the medium position varied from the expressions sharing similarity in languages (or in cultures) or similar implications in the idioms/proverbs with the NL to the idiomatic expressions.

The contents of the answers revealed that the subjects resorted to the NL schemas in the items R-2 *pot*, R-9 *count heads*, R-3 *fish* and R-7 *rotten* (excluding R-8 *head high*) and made the most of these schemas in interpretations. In addition to the benefit from the NL schemas, the following phenomena of schema activation were also observed in the contents of the answers. The items marked with [S] or [S/I] are looked at first, then followed by those with [I].

(a) the case of R-2 *pot*: 1.9 mean score

The answers revealed that the interpretation of "hadn't seen" could be linked to the time lapse and that the interpretation of "18 years old now" and "gorgeous" referring to adulthood was well inferred so that this led to a smooth mapping of metonymy of "pot" to a heroine and of "hot" to her maturity. The stimuli-response relationship seemed to be executed well. This may have led to the successful metaphorical analogy. As a result, the subjects performed at a higher level.

(b) the case of R-9 *count heads*: 1.7 mean score

Compared to R-2 *pot*, there were some cues which could not be well utilised in this item, especially, the meaning of the key words “count heads” could not be successfully inferred, while the other cue words listed in the list seemed to be successfully made use of.

(c) the case of R-3 *fish*: 1.3 mean score

The subjects seemed to well utilise the important words in the cues. They could identify the “rat” as a metonymy with a problem, i.e. the boss; the “system” with the company; the “boss” with the core of the problem. Therefore, even though some of them did not know the meanings of “huddled” or “leak,” they could infer the implications to mean a suspicion and a problematic action respectively. This phenomena were especially evident in the answers provided by those with high VLT scores (over 70 % score in VLT and PolyT). The cues in this passage could successfully stimulate the subjects’ recognition and these elements as a whole led to understanding.

(d) the case of R-7 *rotten*: 1.3 mean score

The subjects could identify “bad families” with a source of problem, “bad reputation” with a problem, the word “rotten” to mean bad and the word “apple” as a metonymy for a problem. However, they seemed to have difficulty in inferring the cue “injures” to mean causing disgrace and “neighbours” to mean environment. They could not schematise the mappings of these cues, especially those with lower vocabulary (below 70 %). Probably those who could not infer the meaning failed to expand the cues “injures” and “neighbours” to abstract implications. They seemed to apply the physical meanings to this situation. Their metaphorical reasoning may not have been executed well in these two words.

(e) the case of R-8 *head high*: 1.3 mean score

The cues “incident” and “wave” were well utilised, however, the word “drowned” caused a problem. A meaning from the cue “saved” seemed to be inferred. Another serious problem for the subjects to cope with seemed to be the cue “head high”. Most of the answers interpreted this phrase as a physical action not as praise for bravery. Those who did this kind of interpretation showed a low competence.

(f) the case of R-6 *pain*: 1.8 mean score

The cues indicating the problems, such as “our teacher cannot speak English” and the students “could not grasp the main ideas,” seemed to be well understood, however, the

key word “pain” caused a slight problem. There was such a tendency, but most of the subjects utilised the cues in the passage well, which led to medium metaphorical performance.

(g) the case of R-11 *cake*: 1.1 mean score

There were only a few answers which showed high metaphorical interpretation in this item. The cues “President Clinton” and “to end world hunger” may have been understood, however, there was a doubt whether or not the cues “confused” meaning ignorance, “cannot eat/have” meaning to fail were well inferred by the subjects. The metonymic mapping of “cake” to the means to solve problems did not seem to be identified. These phenomena necessitates to be investigated further. This will be carried on in Chapter 6.

(iii) The case of the low mean scores (below 0.9 points)

Items		Cues (“words”) in a passage—estimated implications	Schemas to be employed
R-4 <i>stand</i> [I]	election campaign	“campaign”, “election”=event; “rival”=obstacle; “stand in”=obstruct; “way”, “road to re-election”=success; “popular”=problem	election schema
R-5 <i>off head</i> [I]	birthday plan	“birthday”, “pub crawl”, “Johnny’s want”=events; “off head”=get drunk or lose reason	birthday or pub schema

The lowest were the two idiomatic expressions: R-4 and R-5.

(a) the case of R-4 *stand*: 0.8 mean score

The cues “campaign”, “election” and “road to re-election” seemed to be utilised in interpretation to an extent, the metonymic interpretation of “rival” as an obstacle was identified successfully, however, the “stand in” did cause a slight problem because there were answers in which the subjects wrote a literal interpretation. There was a confusion between literal and metaphorical interpretations. This phenomena were found in both high and low VLT scorers in this item.

(b) the case of R-5 *off head*: 0.7 mean score

This item showed the lowest metaphorical interpretation. The answers revealed they partially understood, for example, “birthday” and “Johnny’s want” to mean events in this passage, but the cue “pub crawl” may not have been understood clearly. The interpretation of the words is one of the problems and another problem concerned the idiom “off head.” There were few answers in which they interpreted it as getting drunk or lose reason. The item is a highly conventional idiom. Most of the students may not have encountered with this expression before, therefore, those who could not execute metaphorical reasoning seemed to leave the answer blank.

Summary of the metaphorical competence displayed in the interpretation

The above features possibly indicate that the EFL students could interpret metaphorical expressions successfully or without much difficulty if they can resort to their lexical and cultural knowledge. The similarity in ideas and cultures may have assisted their understanding. On the contrary, in the case of idioms or proverbs, where they lack any clue to resort to, they may have more difficulty in understanding or may fail to understand. As a whole, some of the EFL students' metaphorical competence in recognition was high but the majority of them were moderate, and the metaphorical competence of those with weaker vocabulary knowledge was low.

Another important discovery was that they could identify metonymy quite well. Metonymy is not as complicated as metaphor. Generally speaking, in metonymy they can identify one with another in contiguity. On the other hand, in metaphor, as is termed "inyu" (i.e. hidden implication) in Japanese, more abstract and complicated elements are involved. Therefore, more subtle sensitivity and richer lexical knowledge may be necessary for its recognition and manipulation. That's why the EFL students showed better understanding and better recognition in metonymy than in metaphor. In metaphorical understanding, metaphorical reasoning sometimes works successfully but other times, not. Metaphorical understanding seems to be the most successful when assisted by lexical, semantic and cultural knowledge and contextual support.

5. 3-2. FEATURES OF THE ANSWERS IN MC-PT-L AND MC-PT-M

The 'productive' in this study does not refer to creative writing. It is rather a composition restricted by the controlled requirements. Composition in a foreign language requires various basic skills: spelling, grammar, syntax and structure of a passage and so forth. It is the most difficult task for EFL students to perform. Therefore, I established a generous scale for assessing their passage writing, as stated earlier.

Discrepancies between literal and metaphorical competence

Table 5-9 shows the mean scores in three ranks from high to low in MC-PT-L and MC-PT-M. Most of the scores in the productive tests shown in the table were much lower than those of the receptive tests, especially, in the metaphorical passage writing.

Table 5-9 From high to low mean scores of MC-PT test items

Ranks	MC-PT	
	PT-L test items (means) [Label]	PT-M test items (means) [Label]
High mean scores (over 2 points)	P-8 If you climb the ladder, you must begin at the bottom. (2.3) [C] P-9 The bird has flown away. (2.1) [C]	
Medium mean scores (1.9 – 1.0 points.)	P-11 to come to a head (1.6) [I] P-2 to keep one's head down (1.4) [C/I] P-4 to spill the beans (1.3) [I] P-3 to see which way the cat jumps (1.1) [C/I] P-6 Although the sun shines, leave not your coat at home. (1.1) [C/I] P-7 to tell (someone) where to get off (1.0) [I]	P-8 If you climb the ladder, you must begin at the bottom. (1.0) [C] P-9 The bird has flown away. (1.0) [C]
Low mean scores (below 0.9 points)	P-1 to throw the baby with the bath water (0.9) [I] P-10 to take a leaf out of (someone's) book (0.9) [I] P-5 to keep one's head above water (0.6) [I]	P-2 to keep one's head down (0.7) [C/I] P-11 to come to a head (0.7) [I] P-6 Although the sun shines, leave not your coat at home. (0.6) [C/I] P-5 to keep one's head above water (0.5) [I] P-10 to take a leaf out of (someone's) book (0.4) [I] P-3 to see which way the cat jumps (0.3) [C/I] P-1 to throw the baby with the bath water (0.2) [I] P-7 to tell (someone) where to get off (0.2) [I] P-4 to spill the beans (0.1) [I]

The discrepancies of the mean scores between the productive literal and metaphorical competences showed the following differences: first the discrepancy in the mean scores between the literal and metaphorical in the productive test was about 2 times greater than that in the receptive test; second, there were about 1.7 times more subjects who provided no written answers in the productive test.

The largest discrepancies (over 1.0 point mean score difference) were found in P-8 *ladder*, where the literal mean score was 1.3 points higher than the metaphorical counterpart, although it was the highest mean scores in the metaphorical part (1.0). Next to this was in P-4 *spill*, where there was a 1.2 point mean score difference. We must note here that the metaphorical mean score of this item was the lowest (0.1). In P-9 *bird*, there was 1.1 point mean score difference, where the metaphorical part obtained the equivalently high mean score to P-8 among the whole answers.

The medium range discrepancies (0.9 – 0.5 mean score difference) were in P-11 *to come to a head*, (0.9 point mean score difference); in P-3 *cat jumps* and P-7 *get off* (0.8 point difference respectively); in P-1 *baby* and P-2 *head down* (0.7 point difference respectively) and in P-6 *sun* and P-10 *leaf* (0.5 point difference respectively).

The smallest (less than 0.5 point mean score difference) was in P-5 *above water* (0.1 point difference).

Probable reasons for discrepancies between the literal and the metaphorical are as

follow:

(i) the case of the large discrepancies: P-8 *ladder*, P-9 *bird* and P-4 *spill*

The discrepancies of the mean scores of the first two between the literal and metaphorical parts were larger, however, these two items ranked the highest in the metaphorical manipulations. As stated earlier, these items had common characteristics, i.e. they have clear images conveyed by the expressions themselves. Compared to these two, the mean score difference (1.2 point difference) in P-4 *spill* was the second largest but the mean score of this item was the lowest. The P-4 *spill* seemed to have a specific characteristic in the expression itself. The answers showed that most of the subjects used the expression in a literal sense. They could not use it appropriately as an idiomatic or metaphorical expression. It was discovered in the interview that the lack of the knowledge of its idiomatic meaning was the main cause.

(ii) the case of the items resulted in the medium discrepancies:

There seemed to be three kinds of characteristics in the discrepancies. One was the literal manipulation which was approximately two times (or more than two times) better than the metaphorical, as in P-11 *come head*, P-2 *head down* and P-3 *cat jump*. The weaker manipulation in these items in common seemed to be resulted from the mixture of literal and metaphorical manipulation, and a NL interference, for example, in P-11 there were 2 answers in which the subjects seemed to apply the Japanese expression (meaning to get angry) to this English expression. NL interference itself is another interesting research theme concerning metaphorical expressions, however, it may need another investigation concentrating only on this issue.

A second characteristic was that the subjects could provide fairly meaningful answers in the literal parts but not as meaningful in the metaphorical, such as P-6 *sun* and P-10 *leaf*, though these were better than the others, such as P-7 *get off*, P-1 *baby* and P-5 *above water*. Possible reasons are that the expression of P-6 *sun* is explanatory and the words in P-10 *leaf* are familiar to the subjects. Those who could utilise literal implications could possibly bridge the schemas in literal manipulation to metaphorical.

A third characteristic was scarcity in metaphorical answers, such as P-7 *get off* and P-1 *baby*. It was found in the interview that there were some who did not know the meaning of the phrase *get off* nor the meaning of the idiom *to throw out the baby with the bathwater*. Therefore, those who knew the meaning of *get off* seemed to provide meaningful answers in the literal but in the metaphorical passage some of them failed to manipulate the item. Concerning P-1 *baby*, there was only one subject who could

successfully manipulate both literally and metaphorically. This highly conventional idiom seems to be hard to manipulate in a metaphorical sense. It may be necessary to investigate metaphorical use of the conventional idioms since sufficient evidence could not be obtained. This will be carried on in Chapter 6.

(iii) the case of the small discrepancy: P-5 *above water*

The discrepancy was small, however, the mean scores of the literal and metaphorical were low. About one third of the subjects could correctly use this expression in a literal sense but among those, there were still fewer students who could provide a correct or acceptable metaphorical use. Whether or not they could provide acceptable answers seem to depend upon their past experiences of how much access they had to idiomatic expressions.

In writing a passage, whether it is literal or metaphorical, the subjects need various basic linguistic skills ranging from vocabulary to the structure of a passage. The interviewees said that even though they understood the meaning of the target item, they had difficulty in putting it into English. A limitation concerning their performance mentioned by the interviewees was that they could not do better than their linguistic ability. They also said in the interviews that they did their best in this test and that they would be more interested in learning English if they could understand and use English expressions metaphorically just as they did in their mother tongue. They mentioned that comprehending metaphorical expressions was interesting but using or manipulating expressions was more interesting because they contrived and designed how to use the expressions effectively in a passage.

It was also found in the contents of the answers that the schemas and image schemas they used in writing metaphorical passages played a part in successful performance in addition to lexical knowledge. It was confirmed in the interview that they employed certain specific schemas for certain expressions. In the following sections, these issues are discussed.

Schemas and image schemas displayed in writing metaphorical passages

This and the following sections discuss what schemas and image schemas were used in writing. In order to investigate the schemas and image schemas for the items, the cues or devices embedded in the target expressions as stimuli and the schemas and image schemas activated by the stimuli are looked at. The stimuli, the schemas and/or analogy possibly stimulated by the stimuli and the image schemas resulted from the schemas are shown in the lists first, followed by the investigations relating to each item.

(i) The case of the high mean scores (over 2 points)

There was no item which obtained more than 2 points in Productive Metaphorical parts.

(ii) The case of the medium mean scores (1.9 – 1.0)

items	stimuli	→ "schemas" / analogy	→ IMAGE SCHEMAS/ Metaphor
P-8 ladder [C]	climb (action) + ladder (metonymy) + begin (action) + bottom (metonymy)	"ladder schema" leading to progress / movement	MOVEMENT/MORE IS UP
P-9 bird [C]	bird (metonymy) + fly away (action)	personification / departure	MOVEMENT/SPACE/ Ontological or Orientational metaphor

The above items P-8 (*If you climb the ladder, you must begin at the bottom.*) and P-9 (*The bird has flown away*) marked with [C] obtained higher mean scores (2.3 and 2.1 respectively in the literal; 1.0 in the metaphorical parts). In these items, the answers did not show an extremely high but a moderate metaphorical manipulation. Possible reasons for the mean scores higher in the P-8 and P-9 than the rest were that the words in the targets were simple ones and that the images the respondents could picture in their mind stimulated by the words were simple and vivid ones. Some interviewees mentioned they could clearly draw pictures in their mind by these expressions. In addition, there is a similar expression in Japanese (a Japanese saying implies "start from the beginning") to the P-8; the image (a ladder and climbing the ladder) is not an abstract one and the expression probably stimulates the image schema of a physical movement climbing from the first step to the top, which is related to a conceptual metaphor: MORE IS UP; UPWARD MOVEMENT IS AN ACCOMPLISHMENT. As a matter of fact, most of the students employed this image schema for metaphorical mapping. This was confirmed in the interviews.

In the metaphorical passage writing using the P-9, the schema the students employed was also movement (quick departing movement, in this case). They mapped the bird onto the motion of flying away by airplane or spending money quickly. Their mapping seemed to run actively and smoothly in this expression. These reasons might explain why they performed the higher competence. In brief, the expressions which convey clear images could stimulate the respondents' imagination and make mapping smoother and stronger. This may lead to the higher competence.

(iii) The case of the low mean scores (below 0.9 points)

items	stimuli	→ "schemas" / analogy	→ IMAGE SCHEMAS/ Metaphor
P-2 <i>head down</i> [C/I]	keep (state) + head (metonymy) + down (location)	"body schema" / emotion	EMOTION IS DOWN/ Ontological metaphor
P-11 <i>come to</i> [I]	come + head (metonymy)	down-top schema / "body schema"	hierarchical /
P-6 <i>sun</i> [C/I]	sun shines (protection) + leave not (caution) + coat (protection) + home (location)	"schemas of sun, coat" / protection	warmth/container
P-5 <i>above water</i> [I]	keep (position) + head (metonymy) + above water (location)	"body schema"	/ Ontological metaphor
P-10 <i>leaf</i> [I]	take & out of (action) + leaf (metonymy) + book (container)	container / detachment	container
P-3 <i>cat jump</i> [C/I]	see (action) + which way (choice) + cat (metonymy) + jump (action)	"cat schema" / choice or departure	MOTION/Ontological or Orientational metaphor
P-1 <i>baby</i> [I]	throw out (action) + baby (metonymy) + with + bath water (metonymy)	"schemas of baby, bath" / treasure, disposal	MOTION/Ontological or Orientational metaphor
P-7 <i>get off</i> [I]	tell (action) + where (location) + get off (destination or termination)	transportation schema	movement / termination
P-4 <i>spill</i> [I]	spill (action) + beans (metonymy)	(not specified) / disclosure	container/Ontological or Orientational metaphor

First the items marked with [C] or [C/I] then those with [I] are looked at.

(a) the case of P-2 *head down*: 0.7 mean score

The contents of the answers showed that the subjects employed BODY schema. If we limit the meaning of this idiom to the genuinely idiomatic expression, the mean score would be low, however, in a broader sense, the following features were found. The stimulus "head" as a metonymy combined with the phrase "keep ... down" indicating a low physical position was mapped to a physical posture, which one takes to escape from danger by protecting the important part of one's body (the head), which is an ontological way of using it literally or metaphorically, or the low position of a head was mapped to a pessimistic, emotional state of mind or vice versa, as is often used in the metaphor EMOTION IS DOWN. A representative students' answer in a metaphorical sense was a passage describing a pessimistic feeling (e.g. keeping one's head down due to a failure in an examination). It may be a universal schema to employ in describing both physical and mental states or feelings by using the important part of a body. Although the mean score was not very high, it can be said from the results, together with the fact that this item ranked third in the whole productive metaphorical items, that the subjects could cope with this item better than the rest of the items in this rank.

(b) the case of P-6 *sun*: mean score 0.7

The mean score of this item was the same as the *head down*, but the contents were not as good as the former. The subjects seemed to resort to the "coat" or "home" as a protection rather than to the "sun" schema which intended to utilise the implication of the

benefit of the sun or sunshine. One of the reasons for the low metaphorical performance in this item was probably there were not sufficient utilisation of the sun schema, and the other was there were more than two elements in the item they had to use in composition: one was the sunshine in a subordinate clause and the other “leave not”, “coat” and “at home” in a principal clause. This item was not as simple as an item with one element.

(c) the case of P-3 *cat jump*: 0.3 mean score

The mean score was low, however, the contents of the answers showed that those who provided answers seemed to well utilised the “cat” schema. They seemed to infer the meanings from the “see” as a viewer’s action, from the phrase “which way” as a choice and from the “jump” as a cat’s action, and the combination of “which way” and “jump” as a choice or departure, i.e. movement. These elements were put together and stimulated the image schema of MOTION. Those who attempted to apply these elements seemed to manifest a fairly good metaphorical performance.

(d) the case of P-11 *come to*: 0.7 mean score

There was a subject (over 70 % score in VLT) who seemed to infer the meaning of this idiom and write a metaphorically appropriate answer. However, others utilised only a hierarchical schema, such as the “head” to mean the top of a position, for example, the leader. If we only limit the meaning of this item to the genuinely idiomatic expression, the EFL students’ competence would be very low. If we include the applications of the BODY schema (i.e. down to top) in an appropriate answer, the result of the data would be higher. This study took the position of a broader interpretation.

(e) the case of P-5 *above water*: mean score 0.5

The same phenomena as stated above were found in this item. Those with broader vocabulary could manipulated this item metaphorically, even though they did not use the conventional meaning of this idiom. Those who used the BODY schema showed a fairly good metaphorical performance.

(f) the case of P-10 *leaf*: mean score 0.4

The subjects with more than 70 % score in VLT manipulated this item successfully, for example, they could identify the “leaf” and “book” with an important idea or thing and its container respectively. Therefore, metonymic identification was well executed and this seemed to lead to metaphorical manipulation of this expression. The metaphorical competence of those who provided their answers was an acceptable one.

(g) the case of P-1 *baby*: mean score 0.2

The metonymic identifications of those who provided their answers to this item were also good. However, the problem seemed to reside in the stimuli which did not work well for some subjects, especially for those whose vocabulary was not sufficiently large.

(h) the case of P-7 *get off*: mean score 0.2

There were too few answers to analyse the manipulation, however, what can be said from a scanty answer is that the idiom “get off” could stimulate the imagination of an action or event termination. The subjects’ metaphorical performance using this idiom was poor. There was no specific reason found in the contents of the answers.

(i) the case of P-4 *spill*: mean score 0.1

This idiom had a similar aspect to the previous one. However, there was an answer (provided by the subject with 70 % score in VLT and 60 score % in PolyT) in which the “spill” was connected to the meaning of disclose and the “beans” to an important thing. There was no answer provided by those who were below 70 % in VLT and 60 % in PolyT.

Summary of the metaphorical competence in the use of metaphorical expressions

There were no items rated with high mean scores in the metaphorical parts. All the answers were rated as being medium or lower. The expressions which obtained higher mean scores, among the medium and low mean scores, both in the literal and metaphorical passage writing (the top two) were P-8: *If you climb the ladder, you must begin at the bottom* and P-9: *The bird has flown away*. The mean scores of these metaphorical passages were higher than any other items although the mean scores of the metaphorical parts themselves were not as high as in the literal counterparts, which were twice those of the metaphorical passages. Probable reasons for these results were: the words used in the two items belong to the high frequency level; the images stimulated by the expressions are probably direct and motional. The words, such as *climb*, *ladder*, *begin* and *bottom*, may have stimulated their imagination of the motion starting from an initial stage to going upward. The schemas which the subjects seemed to apply in these expressions are probably UPWARD MOVEMENT schema. Similar operation in mind might have been applicable to P-9: *The bird has flown away*, where the words *bird* and *fly away* stimulated their imagination of departure (i.e. DEPARTURE schema). The third rank in the productive metaphorical was P-2: *to keep one’s head down*. In this case, the BODY schema was employed. The implications of these phenomena possibly indicate

that the EFL students can perform metaphorical competence without much difficulty by using their schemas and image schemas, especially MOTION and/or BODY schemas, stimulated by the target expressions.

However, if the stimulus was not sufficiently strong or they could not understand the meanings of the expressions, for example, P-5: *to keep one's head above water* or P-10: *to take a leaf out of (someone's) book*, it seemed that they failed to activate their imagination. This was confirmed in the interview. The interviewees answered they could not make sense of these expressions.

The weakest competence was found in the understanding and manipulation of the idiomatic expressions. The lowest mean score in the productive metaphorical was P-4 *to spill the beans* (0.1 point); the next to the lowest were P-1 *to throw the baby with the bath water* (0.2 point) and P-7 *to tell (someone) where to get off* (0.2 point). Among the three expressions, the first two idioms are especially unfamiliar to Japanese EFL students. This was also confirmed in the interview.

Finally, the following phenomena can be summarised: all of the target expressions with the lowest mean score in the productive literal were idioms (P-5: *to keep one's head above water*; P-1: *to throw the baby with the bath water* and P-10 *to take a leaf out of (someone's) book*). None of these expressions contain difficult words, however, there were more incomplete answers. These tendencies possibly suggest that these idiomatic expressions seem to be problematic not only in metaphorical but in literal performance.

5. 3-3. CONCLUSION

The overall phenomena discovered in the results of this study was that Japanese EFL students' metaphorical competence was better in understanding than in using. The average mean score of the receptive metaphorical test was approximately 3 times better than that of the productive metaphorical test. As stated earlier, they could make use of contextual support in the case of the receptive test, however, in the case of the productive test, they had to manipulate the expressions on their own.

To sum up, the factors which may affect understanding are (i) students' familiarity with the words used in a passage; (ii) familiarity with the expressions/idioms used in a passage; (iii) contextual support in a passage and (iv) understanding of metaphorical transfer in a passage. The factors that may affect production (i.e. using) of a passage with a metaphorical meaning embedded in it include these four factors, but more importantly it may involve students' general writing ability.

The EFL students who have broader and richer vocabulary knowledge seemed to be able to link a word or an expression to its related semantic fields easily and result in better

performance in interpretation and use of the metaphorical expressions. The ideal level of vocabulary is estimated to be 70 % or more in 2000 & 3000 word levels in VLT, as will be described in Research Question 3.

5. 3-4. TOWARD A NEW STUDY

The metaphorical test items for further use

In the previous sections, the differences found in the test items in the metaphorical tests were discussed qualitatively in point of the test items and the contents of the answers. Additionally, another quantitative point must be addressed. Taking both quantitative and qualitative results described in Study 3 into consideration, the test items for a new study should be selected. For this purpose, the means, the SDs and F ratio were again scrutinised. The means and SDs did not indicate a great difference among the 11 items. The computed F ratios of MC-RT-L, MC-RT-M, MC-PT-L and MC-PT-M were reviewed. The results were as follows: MC-RT-L=1.657 (prob.=.102); MC-RT-M=1.258 (prob.=.265); MC-PT-L=1.821 (prob.=0.067); MC-PT-M=1.231 (prob.=.281). First, these F ratios did not indicate significant differences between the items, thus demonstrating that there was not a great deal of variability among the test items. Second, the results of the Levene test also showed no significant difference in variance. However, due to the small number of subjects for each item, these results were also examined by Multiple Range Tests. The results of the Multiple Range Test (significance level=.05) suggested further examination of the differences was necessary between the items shown in Table 5-10. On the other hand, the Modified LSD (Bonferroni) (significance level=.05) indicated only two items of MC-RT-L (between the items RL R-11 *You cannot eat your cake and have your cake* and RT-L R-5 *to be off one's head*) were significantly different. The differences were also indicated in the ANOVA and Multiple Range Test.

Table 5-10 Multiple Range Tests

MC tests	Multiple Range Test			Modified LSD
	(between) Item and Item			Bonferroni
MC-RT-L	11	and	3,1,10,5	11 and 5
	7	and	10, 5	
MC-RT-M	5	and	1,10,2	No two groups are significantly different at the .050 level.
MC-PT-L	5	and	9,8	the same as above
	1	and	9,8	
	10	and	9,8	
MC-PT-M	4	and	8,9	the same as above
	7	and	8,9	
	1	and	8,9	

Concerning these two test items, however, since the metaphorical parts were not problematic, these items were retained in the test.

Taking into consideration the earlier result of the reasonable homogeneity across the 11 groups as stated in the early part of RESULT AND ANALYSES and the results from the Levene test and the Multiple Range Tests, we can treat the mean results of the MC tests across the groups. Based upon these mean scores, the following classification is made for a selection of the test items for a new study.

MC-RT:

For the first choice: (the mean scores with over 2.0 or nearly 2.0)

R-1 to let the cat out of the bag; R-2 A little pot is soon hot; R-10 Wake not a sleeping lion.

For the second choice: (the mean scores with below 1.8)

R-6 a pain in the neck; R-3 Fish stinks at the head; R-7 The rotten apple injures its neighbours; R-8 to hold one's head high; R-11 You cannot eat cake and have your cake; R-9 to count heads; R-4 to stand in someone's way; R-5 to be off one's head

MC-PT:

For the first choice: (the mean scores with over 1.0)

P-8 If you climb the ladder, you must begin at the bottom; P-9 The bird has flown away.

For the second choice: (the mean scores below 0.9)

P-2 to keep one's head down; P-11 to come to a head; P-6 Although the sun shines, leave not your coat at home; P-5 to keep one's head above water; P-10 to take a leaf out of (someone's) book; P-3 to see which way the cat jumps; P-1 to throw out the baby with the bath water; P-7 to tell (someone) where to get off; P-4 to spill the beans

5. 4. ANALYSIS AND DISCUSSION FOR RESEARCH QUESTION 2

Research question 2) What mapping and/or networking do Japanese EFL students perform when they deal with English metaphorical expressions? (i.e. metaphorical competence measured in MC-XYT)

5. 4-1. METAPHORICAL COMPETENCE MEASURED IN MC-XYT

Reasons for implementing MC-XYT for this study

Low (1988: 126) reclassified metaphor in the notion of 'X is Y', in which the 'X' is treated as if it were, in some ways, the 'Y', for example, *Anger is fire*. The 'X' is defined as 'prime', 'tenor' or 'topic', while the 'Y' is 'borrowed by', 'transferred to' it or called 'vehicle.' The conceptual metaphor is usually stated in a sentence pattern of 'X is Y', such as LIFE IS A JOURNEY. Therefore, in this study the students' metaphorical competence is examined in this sentence pattern.

5. 4-2. RESULTS AND ANALYSIS

The use of the 6 adjectives

When the usage of adjectives is taught in EFL lessons in Japan, the probable first step is to teach them about either predicative use or attributive use or both. Therefore, the answers were first checked in relation to the ways in which the EFL students used the 6 target adjectives. Table 5-11 shows the ratio of the use of the 6 adjectives and zero answer ratio. It shows that some adjectives were used more in the predicative use than in the attributive use and vice versa. The predicative use in this case is focused on the aspects of Nexus use, i.e. a subject-predicate relation in the sentence pattern of 'S + be-V + adjective + N' and the attributive use is on those of Junction, i.e. the combination of an adjective with a noun 'adjective + N' in a sentence. The higher ratio of the attributive use is on the adjectives *bright* and *high* and the adjectives *grey* and *weak* showed the higher ratio where no answer was given.

Table 5-11 The use of the 6 adjectives in metaphorical expressions (N=106)

Use 6 adjectives	Predicative use (%)	Attributive use (%)	Zero answers (%)
bright	37.7	60.4	1.9
dark	46.2	38.7	15.1
grey	40.6	22.6	36.8
high	23.6	55.7	20.7
weak	19.8	45.3	34.9
wild	35.8	48.1	16.1

Lexical/semantic and metaphorical features shown in MC-XYT

Winner, Rosenstiel and Gardner (1976) analysed the children's metaphoric understanding and use and classified their answers into four ranks: magical, metonymic, primitive metaphoric and genuine metaphoric. Malgady (1980: 242, cited from 1975) demonstrates "figurativeness" in the continuum of anomaly-metaphor-tautology and suggests that the topic and vehicle terms share a moderate degree of similarity in a successful manipulation. Taking these implications into consideration, two major categories can be established in an EFL situation: metaphorical and non-metaphorical answers. The former (metaphorical) can be further classified and assessed for metaphorical satisfaction, that is, whether the answer is either primitive or skilful/sophisticated in a metaphorical sense. Thus, the answers in the metaphorical use were assessed/scaled in three ranks: 1 point for a satisfactorily skilful/sophisticated answer in which a target adjective was used metaphorically in the sentence pattern of 'S + be-V + adj. + N'; 0.5 point for a primitive and/or unsatisfactory (but including a certain metaphorical) answer and zero for no answer written, an inappropriate answer or an answer with some confusion of the metaphorical with the literal. The evaluation given to a skilful or sophisticated answer does not mean attainment of a native speaker's level but it does contain a certain level of metaphorical use.

The total points allocated for MC-XYT were 12: 6 for the literal and 6 for the metaphorical use. However, for the convenience of comparisons, the sum of XYT was halved so that respective MC-RT-L, MC-RT-M, MC-PT-L, MC-PT-M, MC-XYT-L and MC-XYT-M were equally allocated 3 points.

In the following sections, some samples were quoted from the original answers (see all of the answers in Appendix 5-2) in order to discuss the contents, levels and features of the EFL students' metaphorical competence. Therefore, though the answers contained grammatical errors, they were not corrected in the quotations. The samples are marked or unmarked in the lists: no mark referring to a satisfactory answer; a question mark (?) referring to an unsatisfactory answer which is grammatically and/or syntactically incorrect but which should be looked at for analyses of metaphorical use. The number after the samples indicate the number of answers to that specific answer. If there is no indication, it indicates that there was only one answer.

The main concern is on EFL students' metaphorical manipulation, however, the answers in the test revealed linguistic features as well as metaphorical features. The following sections address these two features.

Overall features

The following two major aspects were observed in this test: 1) the answers which were

written in the required format of S (noun) + be-verb + (an) adjective N and 2) the answers which were not written in the required format. The results differed according to the adjectives. Table 5-12 shows the number of answers written in the required format and their average.

Table 5-12 The number of answers and averages in the required format in the metaphorical use (N=106)

adjectives	No of answers in the required format	Ave. (each max=0.5)
bright	21	0.37
dark	14	0.29
grey	4	0.25
high	19	0.18
weak	19	0.20
wild	13	0.31

The number of answers varied from the fewer (the fewest was 4 answers as indicated in the *grey* column) to the more (the most was 21 answers in *bright*). The largest number did not necessarily ensure the quality of the answers. For example, there were 21 answers for the adjective *bright* with an average of 0.37 and there were only 13 answers for the adjective *wild* with an average of 0.31, while there were only 4 answers for the adjective *grey* with an average of 0.25. These three averages were not so far apart partly due to the low maximum point, however it was found that the quality of the answers in the adjective *grey* was the lowest of all the answers when qualitatively evaluated. It can be said that the EFL students could manipulate some adjectives better than others.

Table 5-13 shows the means and SDs of MC-XYT of the 6 adjectives contrasting the data between Literal (XYL) and Metaphorical (XYM) uses.

Table 5-13 Means and SDs of MC-XYT of the 6 adjectives (N=106)

adjectives	Literal (Max=0.5)		Metaphorical (Max=0.5)	
	Mean	SD	Mean	SD
bright	0.24	0.15	0.28	0.21
dark	0.22	0.14	0.13	0.16
grey	0.22	0.16	0.11	0.15
high	0.21	0.17	0.14	0.17
weak	0.10	0.14	0.12	0.18
wild	0.27	0.21	0.20	0.18
Total	1.26	0.52	1.01	0.60

Most of the adjectives were better manipulated in the literal use than in the metaphorical except for the adjective *bright* and *weak*, where the metaphorical manipulations were slightly higher (0.04 in *bright* and 0.02 in *weak* higher mean scores respectively). Two times better manipulated in the literal use was *grey* and nearly two times better were *dark* and *high*, then *wild* followed. The distribution of scores shown by SDs indicate that there were scattered scores in *bright* and *wild*. These data should be taken into account when the results are analysed.

In the following sections, the individual features of the results of the target adjectives are analysed under the following headlines:

- 1) the metaphoricity/skills in the answers in MC-XYT which were written in the required format, with all of the answers listed in Appendix 5-2;
- 2) the metaphoricity/skills in the answers in MC-XYT which were not written in the required format. Then the headline 2) was further classified and examined under the sub-headlines:
 - 2-1) Nexus features, that is, the subject-predicate relation, in other words, what word was used as a subject of a sentence for the target adjectives.
 - 2-2) Junction features, that is, the attributive use of the target adjectives.
 (See Appendix 5-3 for the individual answers in the Nexus and Junction features)

Individual features of the results of the 6 target adjectives

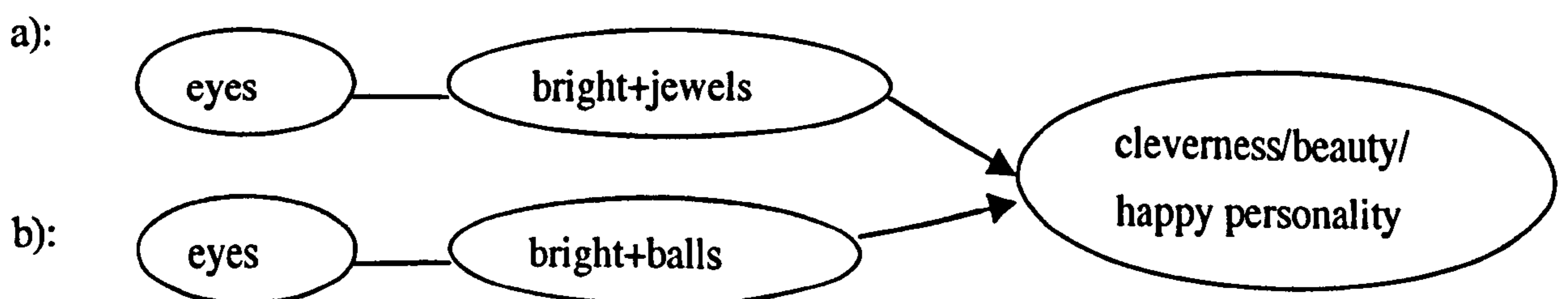
The target adjective *bright*

- 1) The metaphoricity/skills in the answers which were written in the required format:

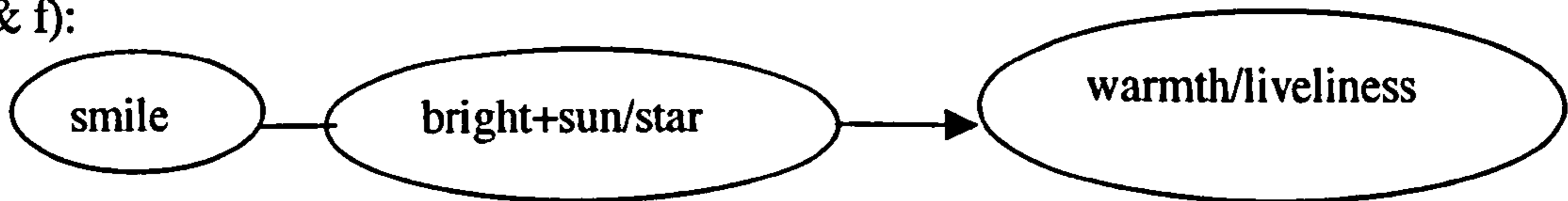
S (noun) + be-verb + (a) bright N.

- * a) Her eyes are bright jewels. / b) Her eyes are bright balls. / c) Your smile is a bright sun. /
- d) Lucy's smile is bright sun. ~ e) His character is bright sun. / f) Her smile is bright star.
- * g) Walt Disney is a bright man.
- * n) The boy is a bright student. / o) ? Dog is a bright animal.
- * q) ?His head is bright light. / r) ?Afternoon is a bright sky. / s) ?Her smile is bright floor.

The typical features in the above answers can be summarised as follows.



c), d) & f):



The answers classified in a) ~ n) are successful ways of using the adjective *bright* as metaphorical expressions to some extent. In the sentences a) & b) listed above, the *eyes* as a perception organ seemed to map an object of similar quality (i.e. *jewels*) or similar shape (i.e. *balls*, which are too similar in a shape) or vice versa, and the *eyes* combined with the target word *bright* brings forth the concept of cleverness, intelligence or beauty. In the sentences c),d) & f), the *smile* as an expression of emotion seems to elicit the picturesque image of the *sun* or *stars* and the *smile* combined with the target word *bright* creates an atmosphere of warmth and liveliness as if the sun is giving us its energy. In both cases the word *bright* seems to be used to create positive images. On the contrary, the answers from g) to n) were ordinary. The answers e) and such answers as o) ~ s) are not so successful in the way they described the attributes of the subjects of sentences using the target word *bright* or they involved such errors as a wrong choice of word and a misspelling. For example, in q) *His head is bright light*, the combination of *head* with *bright light* did not make sense in English, however, if the word *head* was interpreted as ‘idea’ or ‘thought’, it would make sense, and if the word *floor* in s) *Her smile is bright floor* was correctly spelt, it would be ‘flower’, in which case it turned out to be a beautiful sentence of ‘Her smile is a bright flower.’

2) The metaphoricity/skills in the answers which were not written in the required format
 (The answers in the headline 1) are included in the total of the headline 2)

2-1) Nexus features

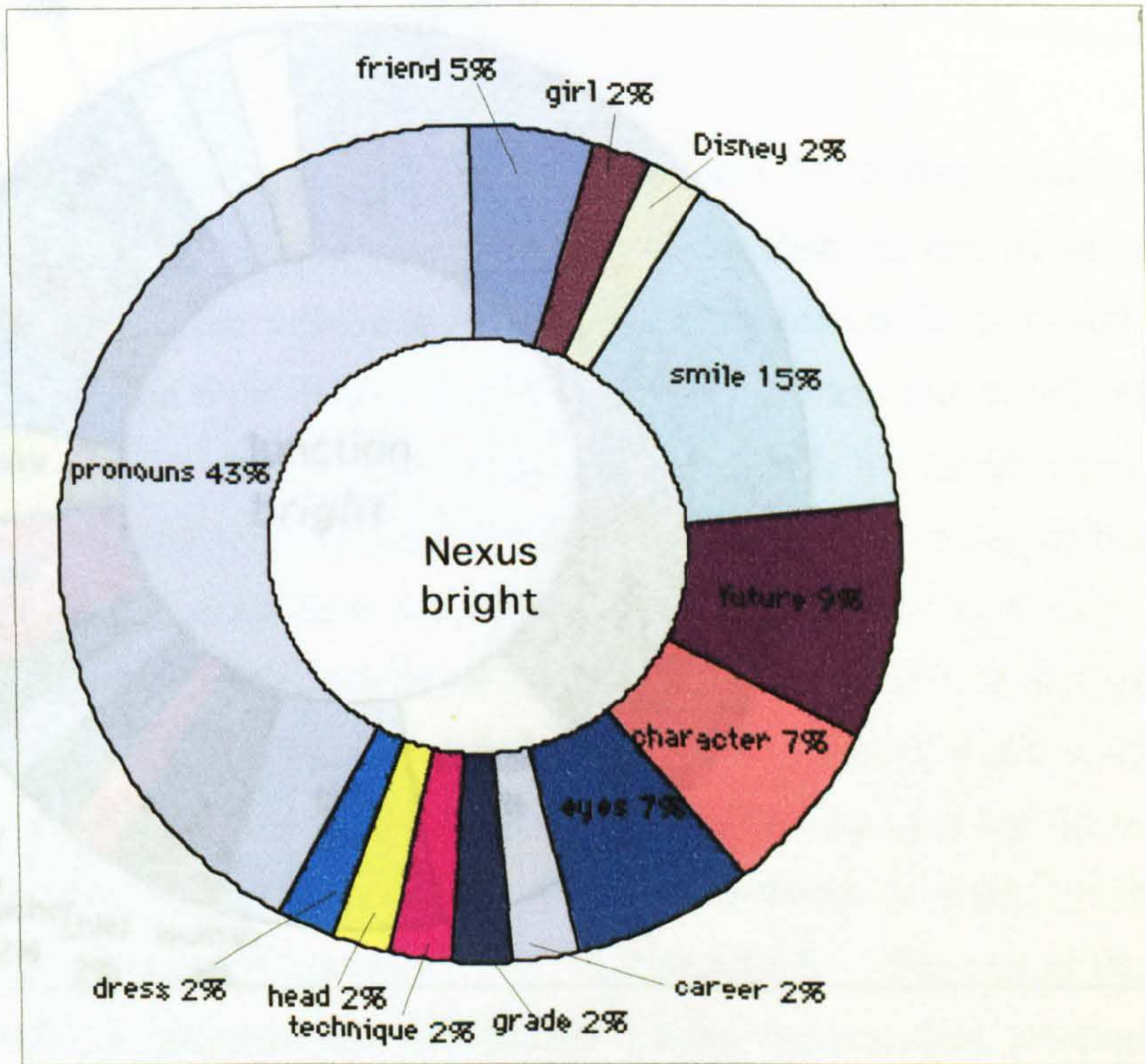
There were more answers of the non-human subjects (49 %), Non-human-S, hereafter, such as someone’s *smile is bright* or someone’s *future is bright* than those of human subjects (9 %), Human-S, hereafter. Next to the Non-human-Ss were the personal pronouns, for example, *s/he is bright* (42 %). Table 5-14 summarises the subjects of the sentences written in the answers. Figure 5-1 illustrates the Nexus features of *bright*.

Table 5-14 The subjects used in the sentence pattern of ‘X is *bright* Y’

Subjects		Total number of answers	%
Nouns	Human-S	4	58
	Non-human-S	21	
Pronouns	Human-S	18	42

Figure 5-2 Junction features of *bright*

Figure 5-1 Nexus features of *bright*



2-2) Junction features

Table 5-15 summarises the nouns in the answers which were used to connect to the adjective *bright*. Figure 5-2 illustrates the Junction features of *bright*.

Table 5-15 The noun connected to the adjective *bright*

Adjective + noun	Total number of answers	%
bright + noun (human)	33	67
bright + noun (non-human)	16	33

The typical features in the above answers can be summarised as follows:

a) - d):



e) - f):

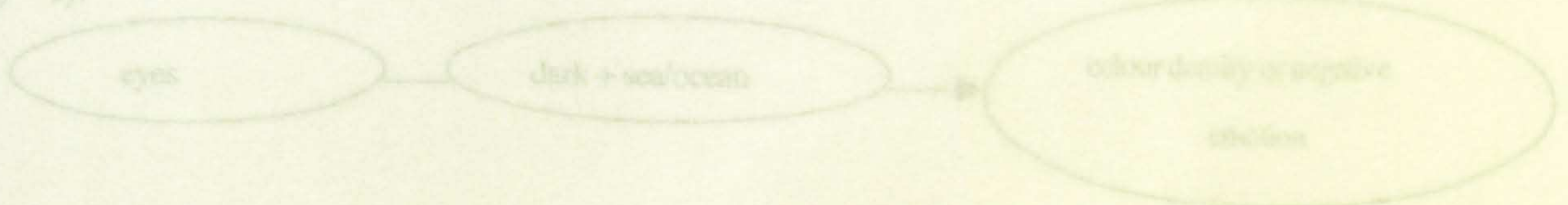
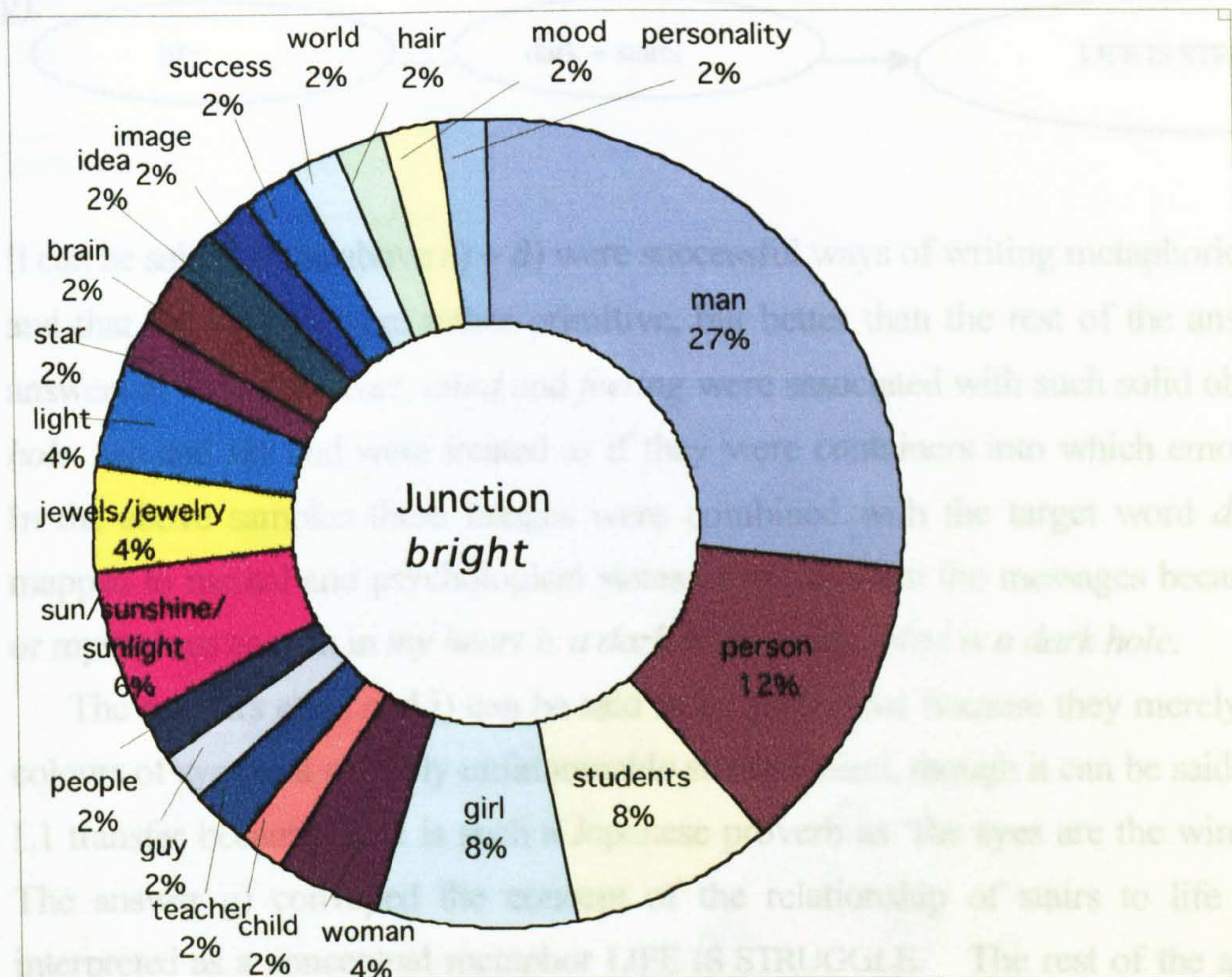


Figure 5-2 Junction features of *bright*.



The target adjective *dark*

1) The metaphoricity/skills in the answers which were written in the required format:

S (noun) + be-verb + (a)dark N.

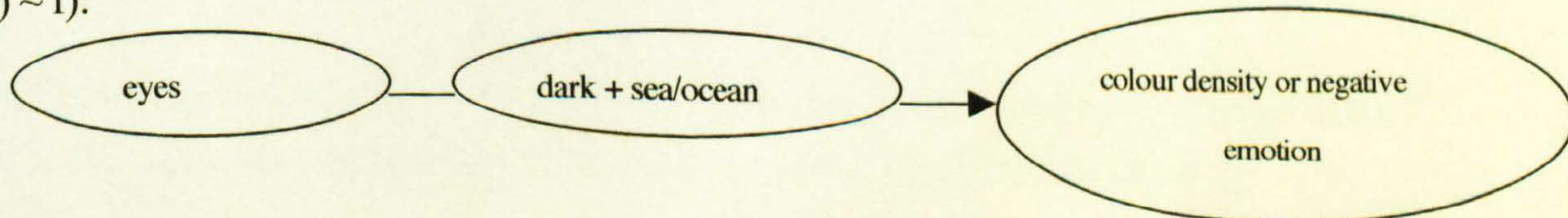
- * a) My heart is a dark stone. / b) My mind is a dark hole. / c) My feeling is dark sea. / d) Miki's feeling is dark sky.
- * e) Her eyes are like the bottom of dark sea. / f) Your eyes are like a dark sky.
- * g) My life is dark stairs.
- * j) ?Her eye's color is dark ocean.
- * k) ?The score in exam is dark one.

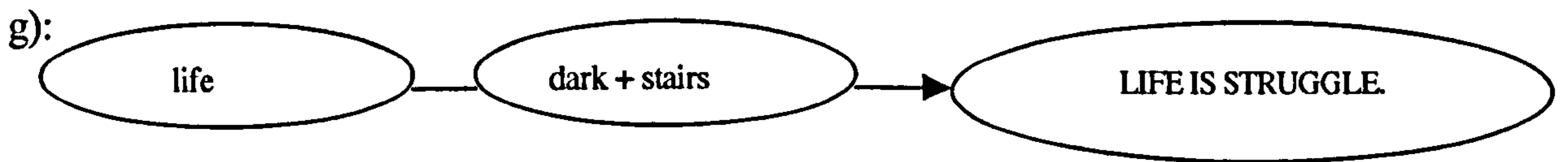
The typical features in the above answers can be summarised as follows.

a) ~ d):



e) ~ f):





It can be said that the above a) ~ d) were successful ways of writing metaphorical expressions, and that the e) ~ g) were rather primitive, but better than the rest of the answers. In the answers a) ~ d), the *heart*, *mind* and *feeling* were associated with such solid objects as *stone*, *hole*, *sea* and *sky* and were treated as if they were containers into which emotion is placed. In the above samples these images were combined with the target word *dark*, and were mapped to mental and psychological states of mind. Then the messages became pessimistic or mysterious as seen in *my heart is a dark stone* or *my mind is a dark hole*.

The answers e), f) and j) can be said to be superficial because they merely described the colours of eyes or a possibly unfathomable state of mind, though it can be said that they were L1 transfer because there is such a Japanese proverb as ‘the eyes are the window of mind.’ The answer g) conveyed the concept of the relationship of stairs to life which can be interpreted as a conceptual metaphor LIFE IS STRUGGLE. The rest of the answers are not very successful in the sense that the images did not convey clear messages nor were they successful from the point of view of L1 transfer in the connection of *score* to *dark*. There is a Japanese expression ‘the/someone’s future is dark,’ therefore the student who wrote k) probably had a sense of foreboding of his/her test score, intuitively thinking that the result was a bad one. This kind of skidding image was sometimes found in the answers.

2) The metaphoricity/skills in the answers which were not written in the required format

(The answers in the headline 1) are included in the total of the headline 2)

2-1) Nexus features

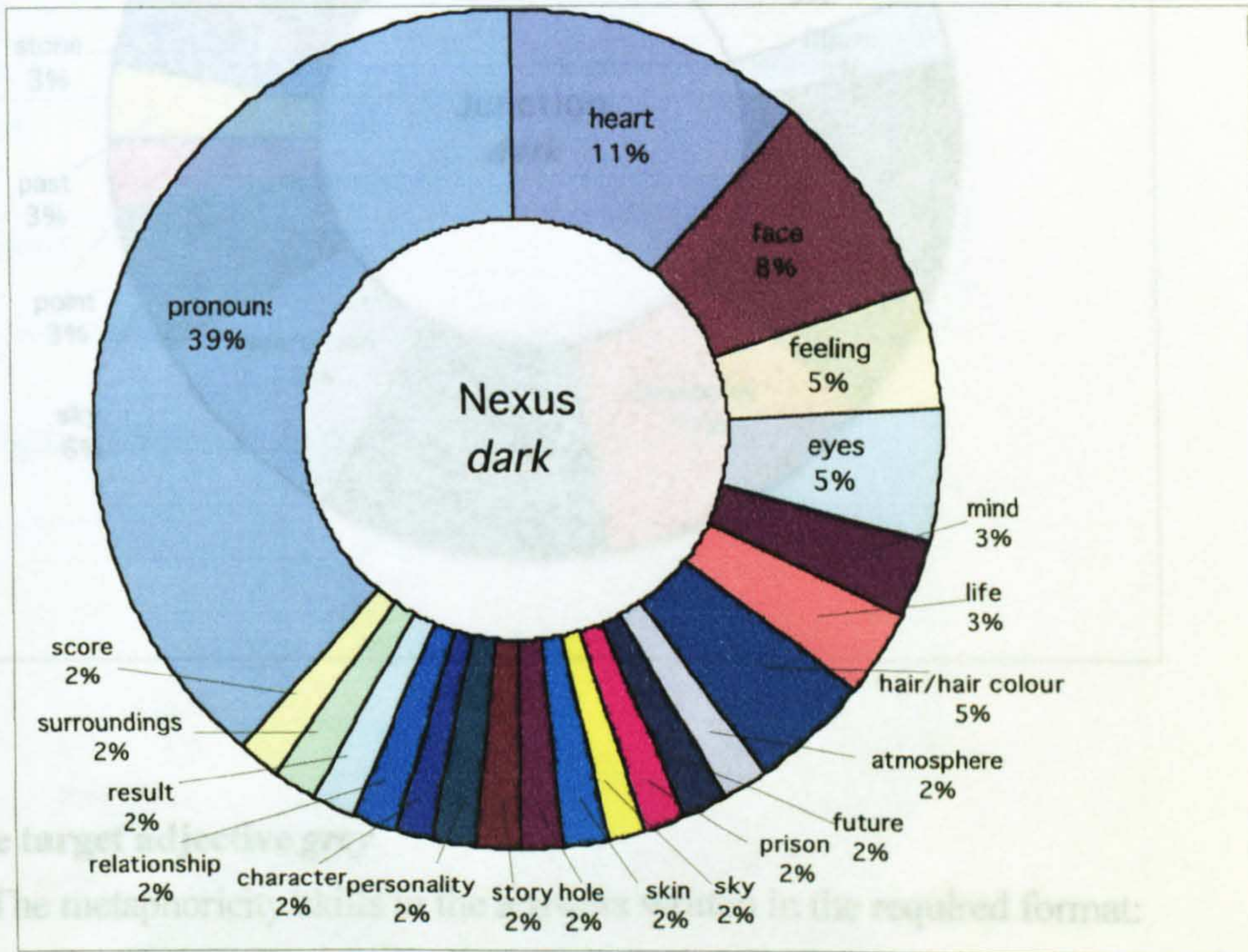
There were more answers of Non-human-Ss (61 %), such as *heart*, *face* or *feeling*, in this sentence pattern, then followed personal pronouns (39 %), though in the noun Non-human-Ss, the words *heart*, *face*, *feeling*, *eyes*, and *mind* represent a human mental state.

Table 5-16 summarises the subjects of the sentences written in the answers. Figure 5-3 illustrates the Nexus features of *dark*.

Table 5-16 The subjects used in the sentence pattern of 'X is dark Y'

Subjects		Total number of answers	%
Nouns	Human-S		
	Non-Human-S	38	61
pronouns	Human-S	24	39
	Non-human		

Figure 5-3 Nexus features of *dark*.



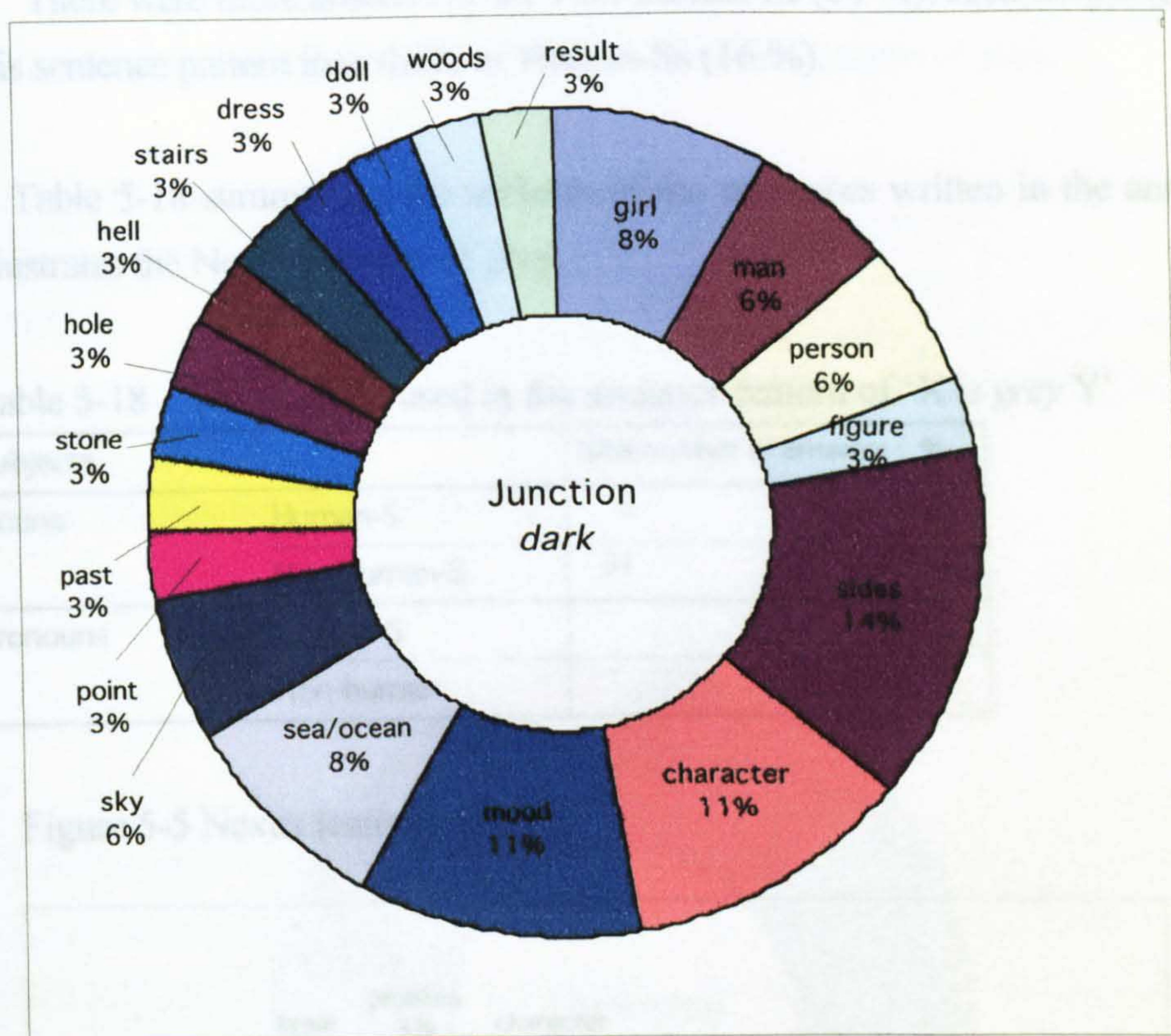
2-2) Junction features

Table 5-17 summarises the nouns in the answers which were used to connect to the adjective *dark*. Figure 5-4 illustrates the Junction features of *dark*.

Table 5-17 The nouns connected to the adjective *dark*

Adjective + noun	Total number of answers	%
dark + noun (human)	8	22
dark + noun (non-human)	28	78

Figure 5-4 Junction features of *dark*



The target adjective *grey*

1) The metaphoricity/skills in the answers written in the required format:

S (noun) + be-verb + (a)grey N.

- * a) The sky was grey curtain. / b) My heart is grey sky.

The typical features in the above answers can be summarised as follows.

There were only two answers metaphorically (though not quite satisfactorily) written in the required format using the word *grey*. Although the samples were scant, these samples can be interpreted as follows: the vast sky was mapped to the expansion of space like a curtain as written in a) and the implication of *grey* + *curtain* conveyed the threatening state of the sky; in the second sample the *heart* is connected to the *sky* indicating a grey atmosphere. From these samples, it can be said that the description using the word *grey* probably conveys a pessimistic state of mind or surroundings. More features can be seen in the Nexus and Junction features.

2) The metaphoricity/skills in the answers which were not written in the required format (The answers in the headline 1) are included in the total of the headline 2)

2-1) Nexus features

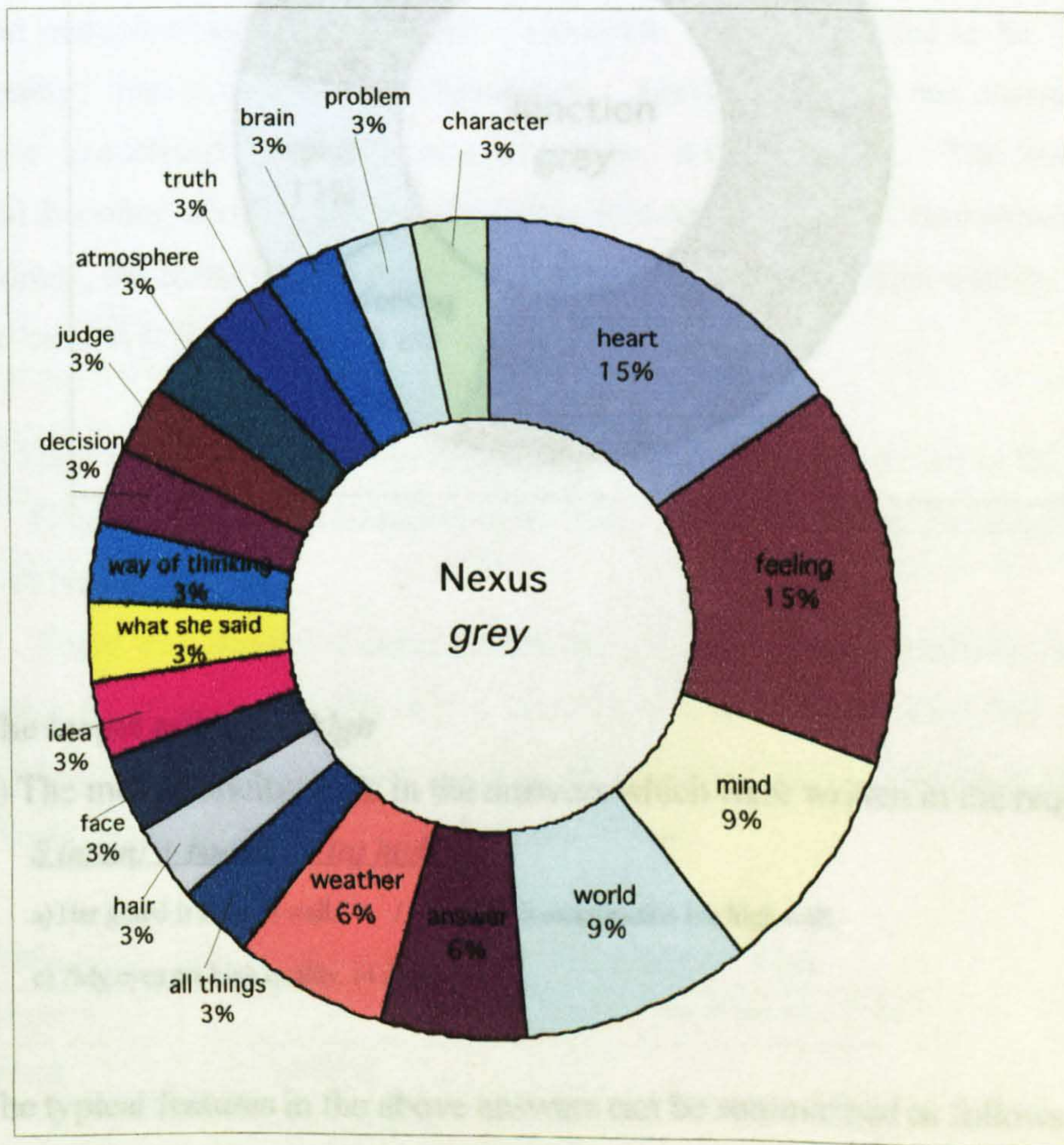
There were more answers of the Non-human-Ss (84 %), such as *heart, feeling* or *mind*, in this sentence pattern than those of Human-Ss (16 %).

Table 5-18 summarises the subjects of the sentences written in the answers. Figure 5-5 illustrates the Nexus features of *grey*.

Table 5-18 The subjects used in the sentence pattern of 'X is *grey* Y'

Subjects		Total number of answers	%
Nouns	Human-S	6	16
	Non-human-S	31	84
pronouns	Human-S		
	Non-human		

Figure 5-5 Nexus features of *grey*



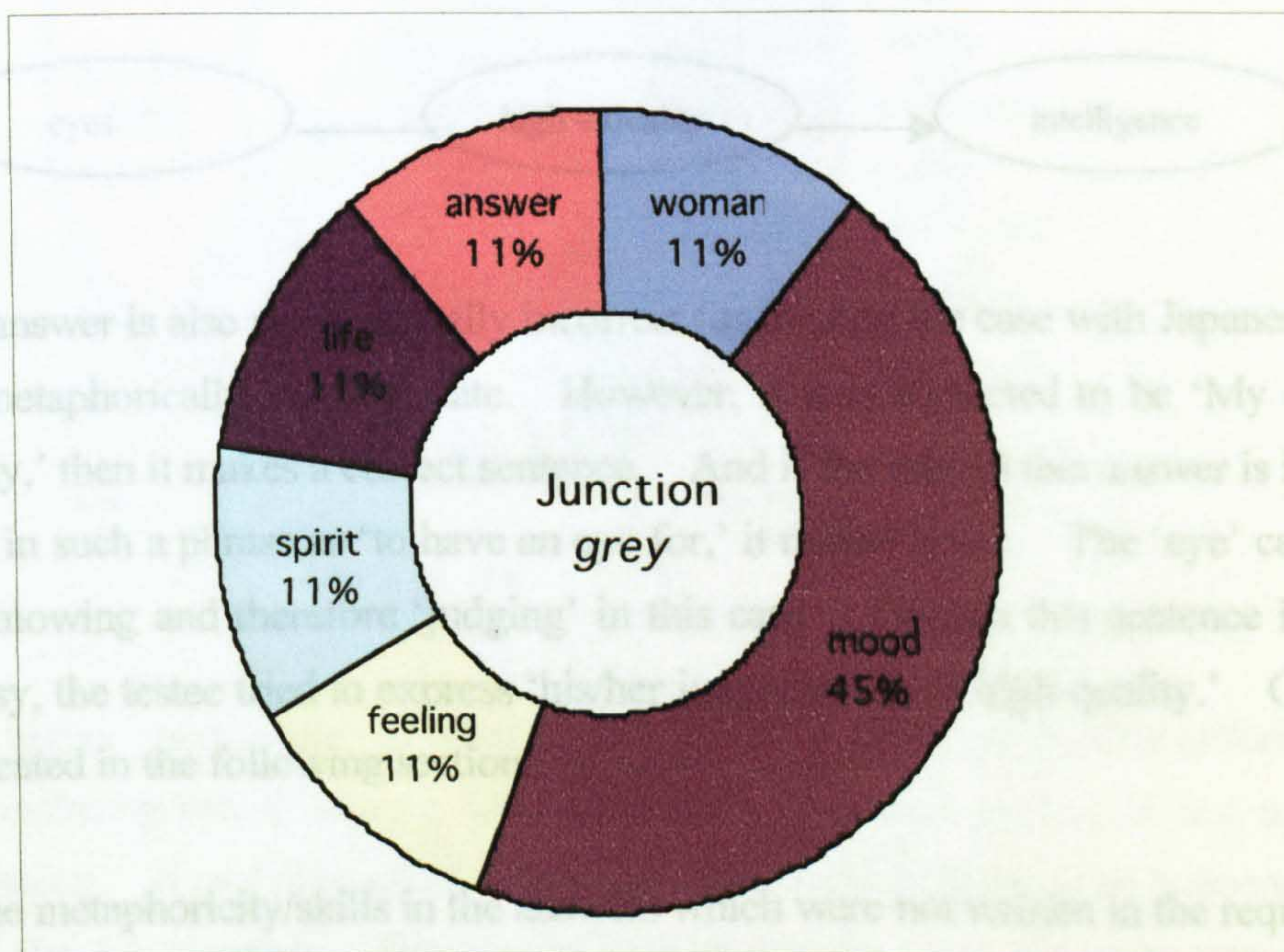
2-2) Junction features in the target adjective *grey*

Table 5-19 summarises the nouns in the answers which were used to connect to the adjective *dark*. Figure 5-6 illustrates the Junction features of *grey*.

Table 5-19 The nouns connected to the adjective *grey*

Adjective + noun		Total number of answers	%
grey +	noun (human)	1	11
	noun (non-human)	8	89

Figure 5-6 Junction features of *grey*



The target adjective *high*

1) The metaphoricity/skills in the answers which were written in the required format:

S (noun) + be-verb + (a) high N.

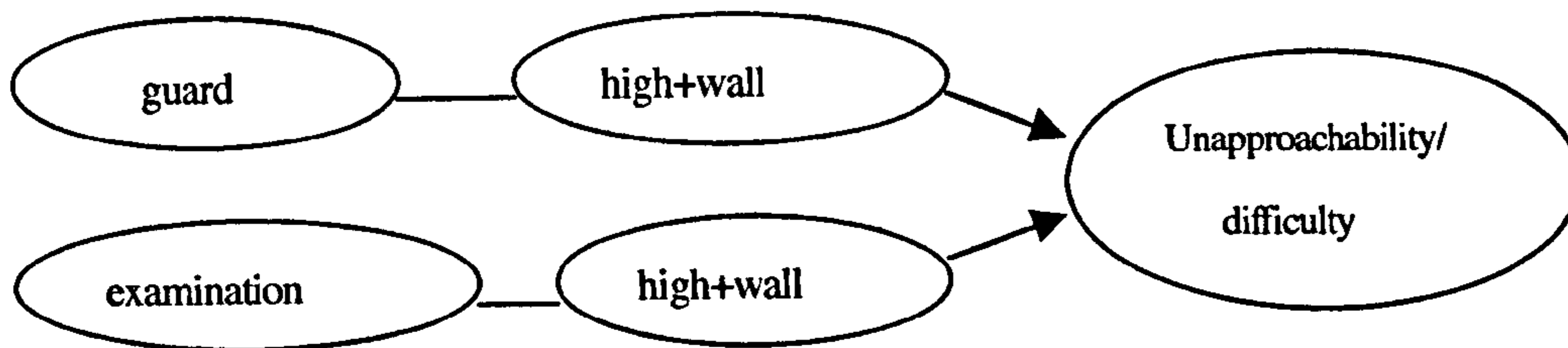
* a) Her guard is so high wall. / b) This examination is a high wall.

* c) ?My eyes are high quality. (4 answers)

Subjects	Total number of answers	%
Nouns	4	7
Human-S	2	3
Non-human	2	3

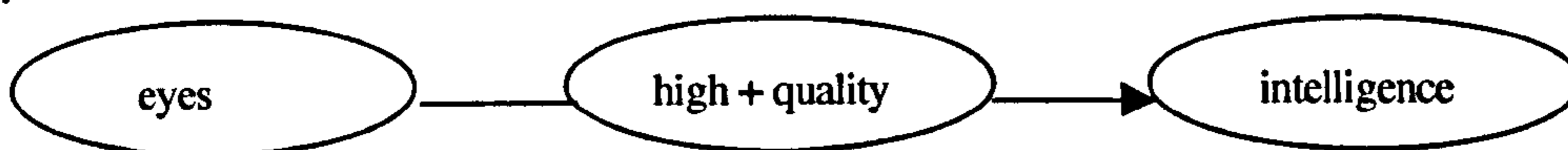
The typical features in the above answers can be summarised as follows.

a) and b):



The answer a) is grammatically incorrect but its implication can be inferable. A probable correct sentence is ‘Her guard is such a high wall.’ In this vein, this answer is understandable.

c):



This answer is also grammatically incorrect (as is often the case with Japanese EFL students) and metaphorically inappropriate. However, if it is corrected to be ‘My eyes are of high quality,’ then it makes a correct sentence. And if the *eyes* in this answer is interpreted as the ‘eye’ in such a phrase as ‘to have an eye for,’ it makes sense. The ‘eye’ can refer to seeing and knowing and therefore ‘judging’ in this case. Though this sentence is metaphorically clumsy, the testee tried to express ‘his/her judgement is of high quality.’ Other features are delineated in the following section.

2) The metaphoricity/skills in the answers which were not written in the required format
(The answers in the headline 1) are included in the total of the headline 2)

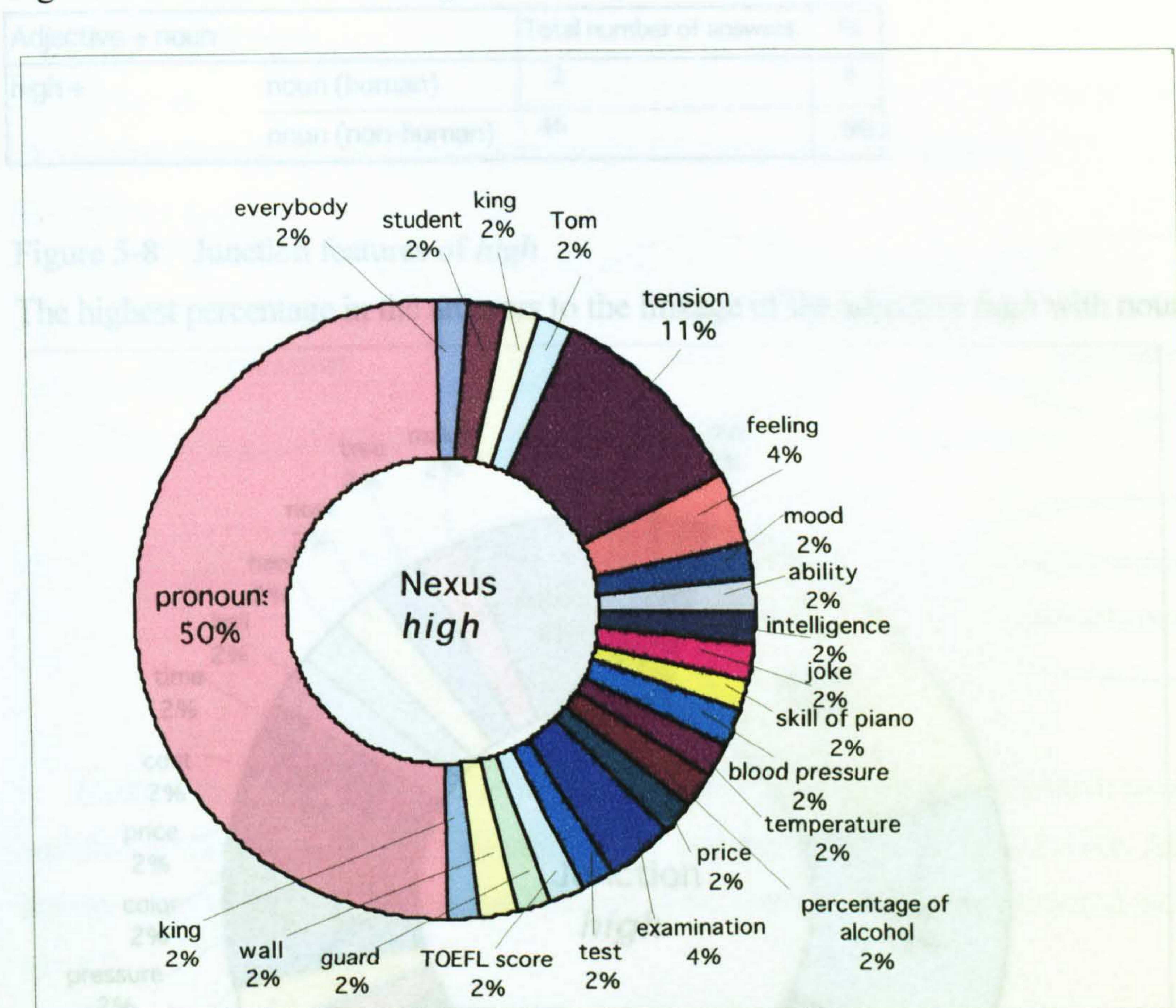
2-1) Nexus features

There was an almost equal percentage (50 %) gained in personal (human) pronouns and nouns as subjects. In the nouns, the Non-human-Ss were dominant (43 %). Table 5-20 summarises the nouns in the answers which were used to connect to the adjective *high*, and Figure 5-7 illustrates the Nexus features of *high*.

Table 5-20 The nouns connected to the adjective *high*

Subjects		Total number of answers	%
Nouns	Human-S	4	7
	Non-human-S	25	43
pronouns	Human-S	28	50
	Non-human		

Figure 5-7 Nexus features of *high*



The higher percentage in the above answers were such expressions as someone's *tension/feeling/mood*, among which answers the word *feeling* is not appropriate as an expression. It probably came from such a Japanese expression as 'someone is emotionally high' (i.e. L1 transfer). The next to highest was *the level of tests/examinations is high*, the expression of which is usually used by Japanese people. Japanese students often mention the levels of tests or examinations, for example, 'someone's TOEFL scores are high.' The implication of *the intelligence is high* can be interpreted in the same vein. The answers, such as *skill, blood pressure* and so on, indicate that the conceptual metaphor MORE IS UP seemed to be utilised here.

2-2) Junction features

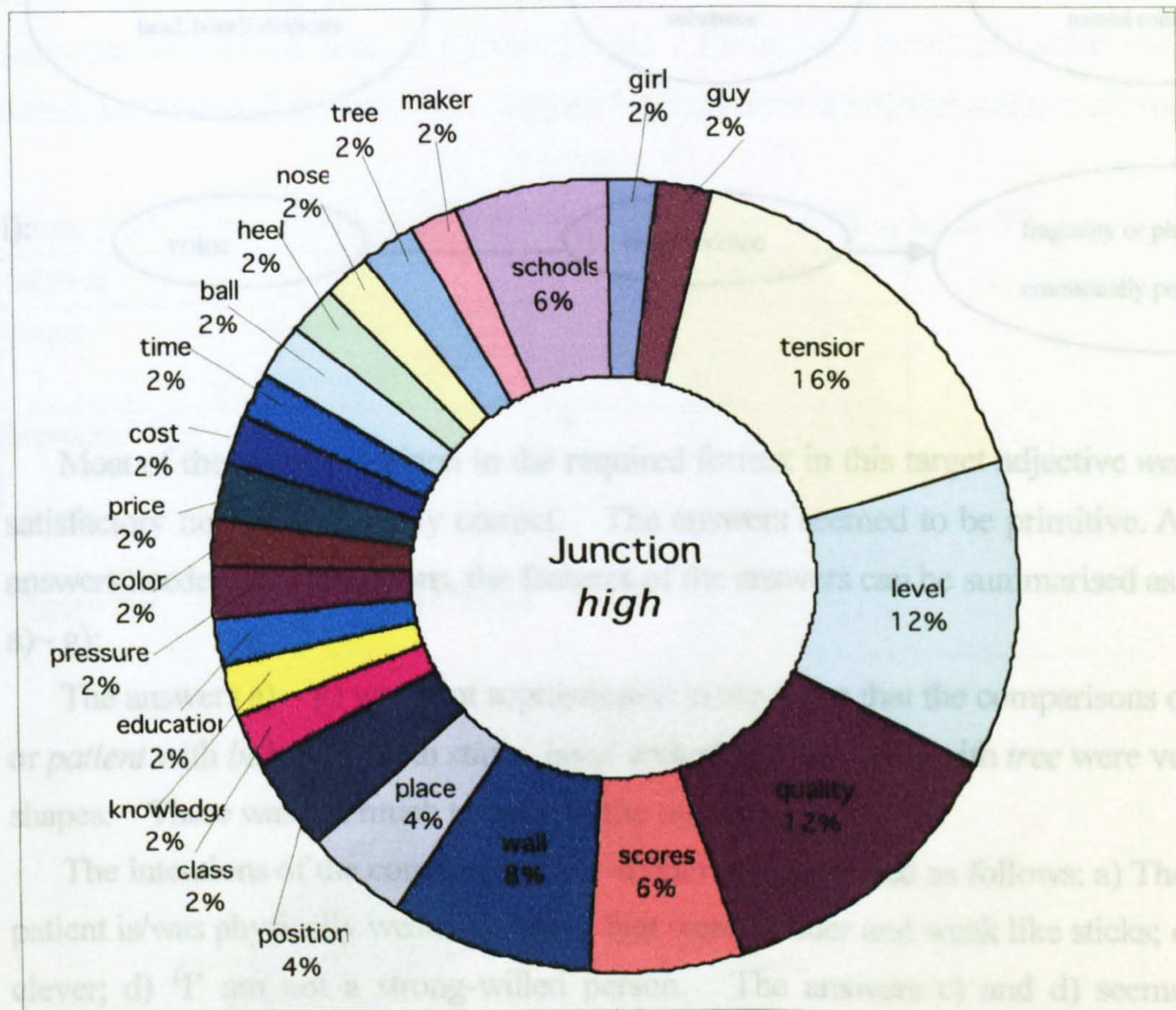
Table 5-21 summarises the nouns in the answers which were used to connect to the adjective *high*, and Figure 5-8 illustrates the Junction features of *high*.

Table 5-21 The nouns connected to the adjective *high*

Adjective + noun	Total number of answers	%
high + noun (human)	2	4
high + noun (non-human)	46	96

Figure 5-8 Junction features of *high*

The highest percentage in the answers to the linkage of the adjective *high* with nouns was the



implication of the psychological state as shown by *high tension*, and next to it were *high quality* and *high level*. The concrete position expressed by *high wall* and *high scores* and *high place* followed.

The target adjective *weak*

1) The metaphoricity/skills in the answers which were written in the required format:

j) *S (noun) + be-verb + (a) weak N.*

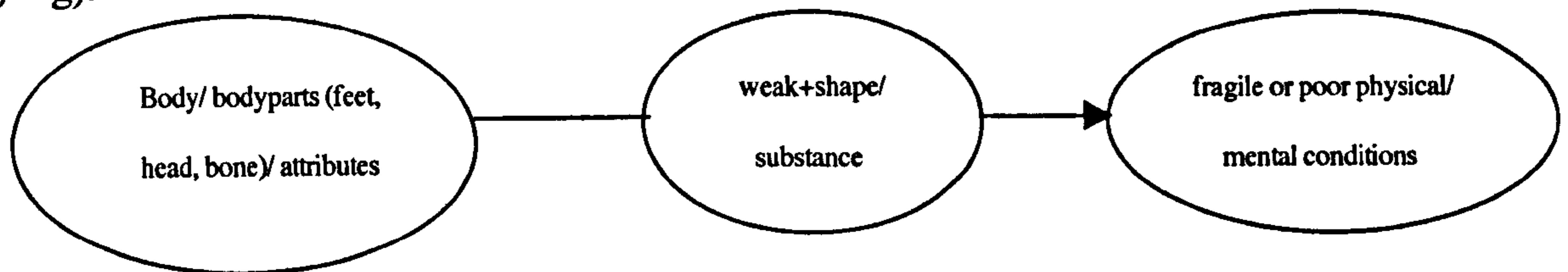
- * a) The lady was a weak little child. / b) John's feet are weak sticks. / c) ?My head is a weak stone. /
- d) ?My character is a weak dog. / e) ?His bone is weak tree. ~ g) ?Her heart is weak mind.
- * i) The voice was a very weak voice.
- * j) My weak point is to swim in the sea. / k) His weak point is being shy. ~ m) Math is my weak point. /

n) His weak point is girlfriends. ~ r) My weak point is left side.

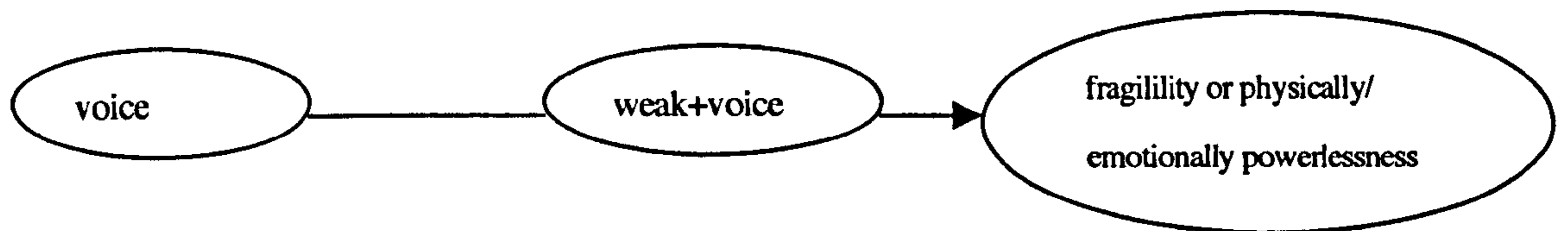
* s) ?Shoji is a weak paper.

The typical features in the above answers can be summarised as follows.

a) ~ g):



i):



Most of the answers written in the required format in this target adjective *weak* were not satisfactory nor grammatically correct. The answers seemed to be primitive. Although the answers needed the corrections, the features of the answers can be summarised as follows.

a)~ g):

The answers a) ~ g) were not sophisticated in the sense that the comparisons of *lady* or *patient* with *baby*, *feet* with *sticks*, *head* with *stone*, and *bone* with *tree* were very similar in shapes. There was not much transfer in the meaning.

The intentions of the compositions a)~d) can be interpreted as follows: a) The lady or the patient is/was physically weak; b) John's feet were slender and weak like sticks; c) 'I' am not clever; d) 'I' am not a strong-willed person. The answers c) and d) seemed to be L1 transfers: for the answer c), there is an expression such as 'stone head' (stone-headed in English, the original meaning in Japanese is 'a head as hard as a stone'). It means a stubborn person or a mentality which is rigid or unadaptable, while a counterpart is 'soft head' (soft-headed) in Japanese; for the answer d), a dog can allude to such an expression as 'a defeated dog' both in English and Japanese. Therefore, if the answer d) is corrected to *My character is of a weak dog*, it makes more sense.

i): In this sentence the physical weakness was mapped to voice.

j) ~ r): The adjective *weak* was used in the set phrase of *weak point* in these samples, and is commonly used in a Japanese expression. Concerning *weak + points*, an additional discussion takes place at the end of this section.

s): The word *shoji* is a Japanese sliding door made of paper, therefore, it is *weak*. This

sentence described nothing more than what the sliding door *shoji* is.

Table 5-23 The nouns connected to the adjective *weak*

2) The metaphoricity/skills in the answers which were not written in the required format

(The answers in the headline 1) are included in the total of the headline 2)

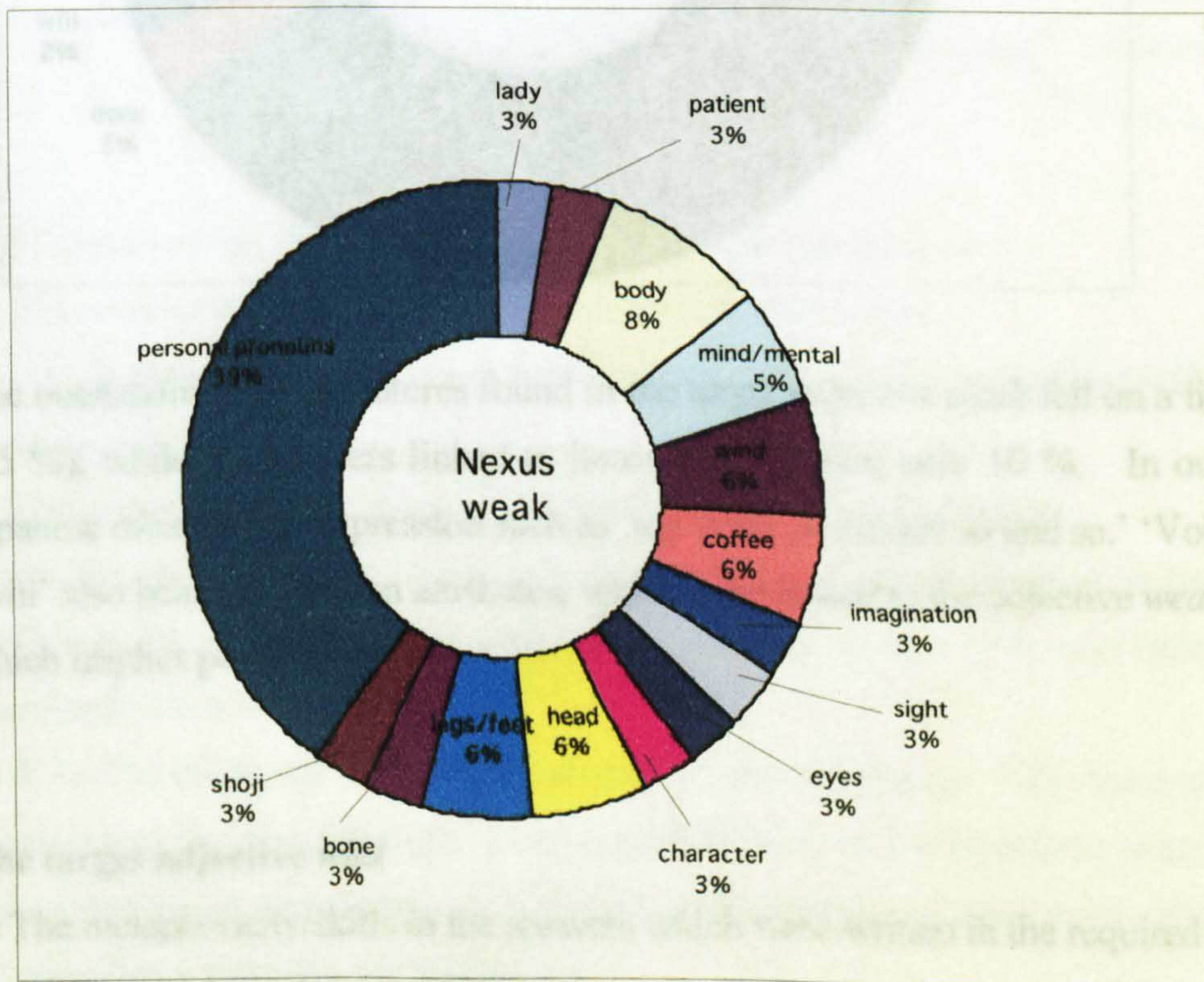
2-1) Nexus features

There were more answers of the personal pronoun subjects (40 %) but there were a few noun Human-Ss, such as *lady* and *patient* (3 % respectively), however, the *body* and body parts and human attributes occupied 37 %. Table 5-22 summarises the subjects of the sentences written in the answers. Figure 5-9 illustrates the Nexus features of *weak*.

Table 5-22 The subjects used in the sentence pattern of 'X is weak Y'

Subjects	Total number of answers	%	
Nouns	Human-S	2	6
	Non-human-S	19	54
pronouns	Human-S	14	40
	Non-human		

Figure 5-9 Nexus features of *weak*



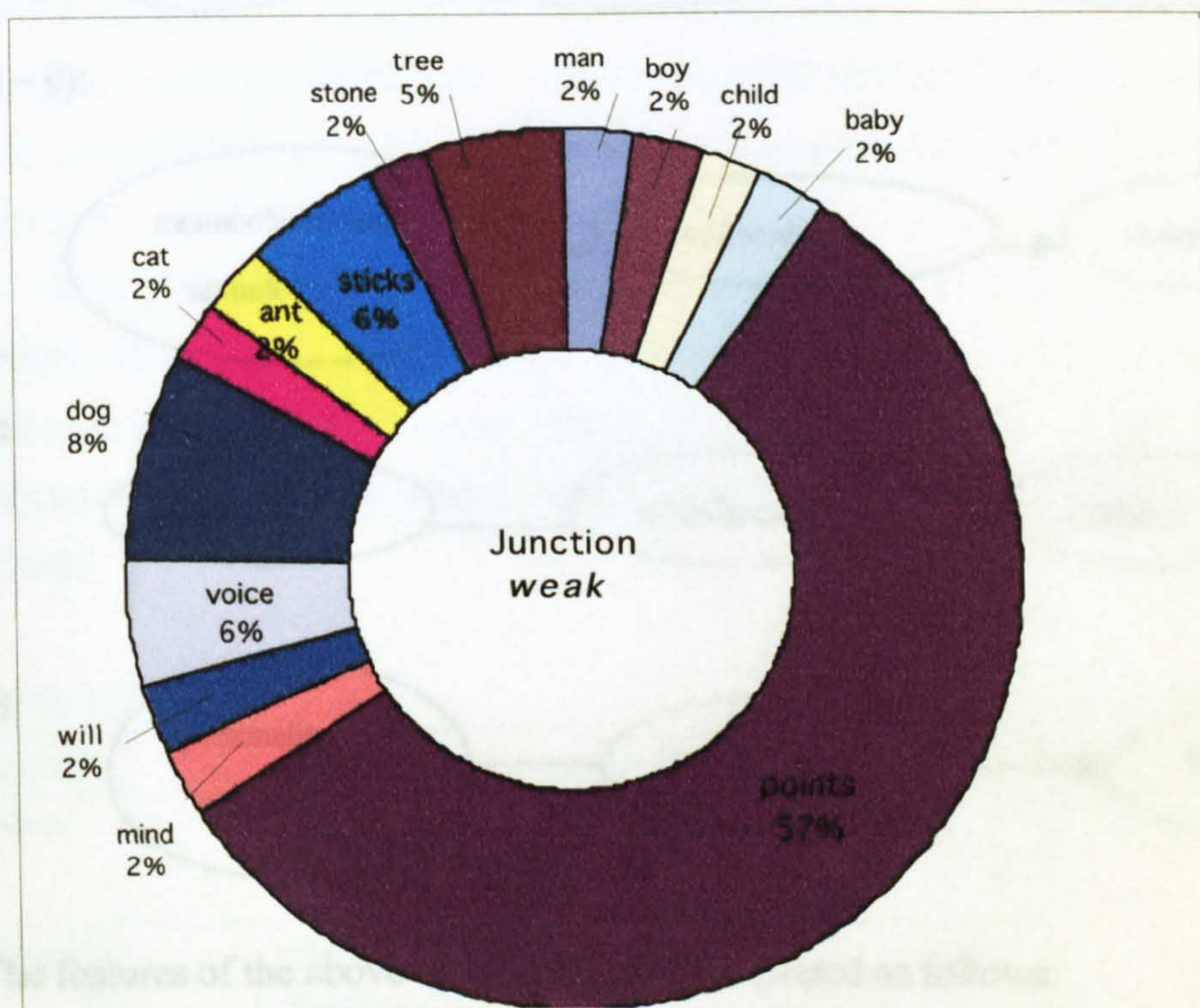
2-2) Junction features

Table 5-23 summarises the nouns in the answers which were used to connect to the adjective *weak*, and Figure 5-10 illustrates the Junction features of *weak*.

Table 5-23 The nouns connected to the adjective *weak*

Adjective + noun		Total number of answers	%
weak +	noun (human)	4	10
	noun (non-human)	38	90

Figure 5-10 Junction features of *weak*



The outstanding Nexus features found in the target adjective *weak* fell on a linkage to *points* (55 %), while the answers linked to human nouns were only 10 %. In our daily life the Japanese often use an expression such as ‘my weak points are so and so.’ ‘Voice’, ‘mind’ and ‘will’ also belong to human attributes, which were linked to the adjective *weak* in the answers, which implies powerlessness.

The target adjective *wild*

1) The metaphoricity/skills in the answers which were written in the required format:

S (noun) + be-verb + (a) wild N.

- * a) The wind is a wild wind.
- * b) The way of his eating is a wild animal. / c) Ben’s attitude is wild animal. ~ e) His action is a wild animal.
- * f) His character is wild hunter.

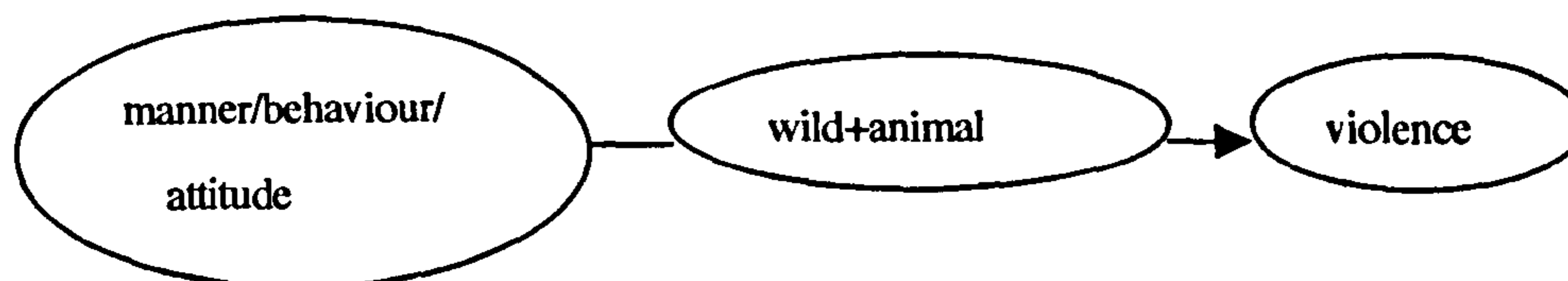
- * g) ?The personality is wild animal.
- * h) ?Her eyes are like wild animal. / i) ?His face is wild animal.
- * j) Tarzan is a wild man. / k) My boyfriend is a wild man.

The typical features in the above answers can be summarised as follows.

a):



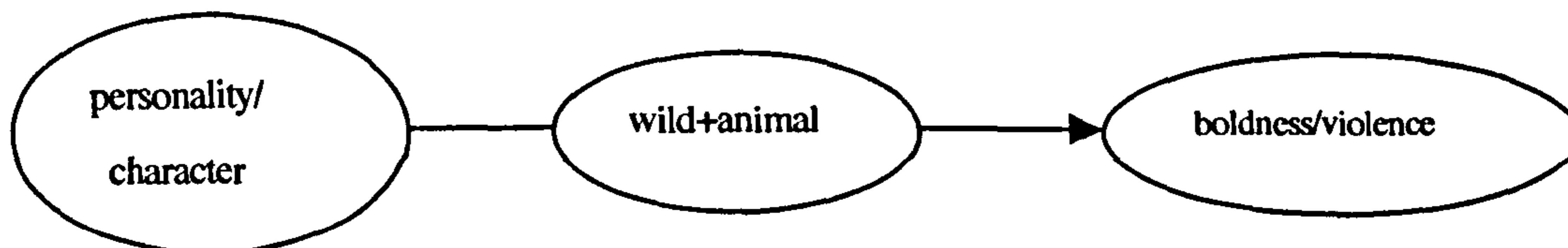
b) ~ e):



f):



g):



The features of the above answers can be interpreted as follows.

a): This answer was not sophisticated but it made some sense.

b) ~ e): In these answers, manner, behaviour and attitude were associated with *wild + animal*, meaning violence.

f): If this answer was written grammatically correct, it would be fine.

g): In the sentence g), the word *personality* seemed to be confused with one's character or attributes. If the answer was *Someone's character is that of a wild animal*, it could be illustrated as above.

h) & i): The meanings of these two answers were ambiguous. Was the answer h) intended to mean that her eyes (eyesight?) are as good as those of a wild animal or as stern as those of a tiger or even as cute as those of a kitten? The meaning of answer i) is also too ambiguous to infer clarity from the whole sentence.

Not all of the answers were satisfactory, however, there was an interesting phenomenon in the characteristics of the subjects. The gender chosen as the subject of a sentence was mainly masculine except for one answer (i.e. the item i). For example, the answers, such as

'he' was a wild animal, were dominant. It seems that the combination of *wild + animal* solicited a masculine image.

j) & k): These two sentences merely described vaguely how the person is.

Besides these answers, there were some answers using a simile, for example, *He is like a wild monkey*. A probable implication is that the person's looks or his behaviour was mapped to that of a wild monkey or animal or vice versa.

2) The metaphoricity/skills in the answers which were not written in the required format

(The answers in the headline 1) are included in the total of the headline 2)

2-1) Nexus features (The answers taken up for analysis include the verb 'look' instead of 'be-verb')

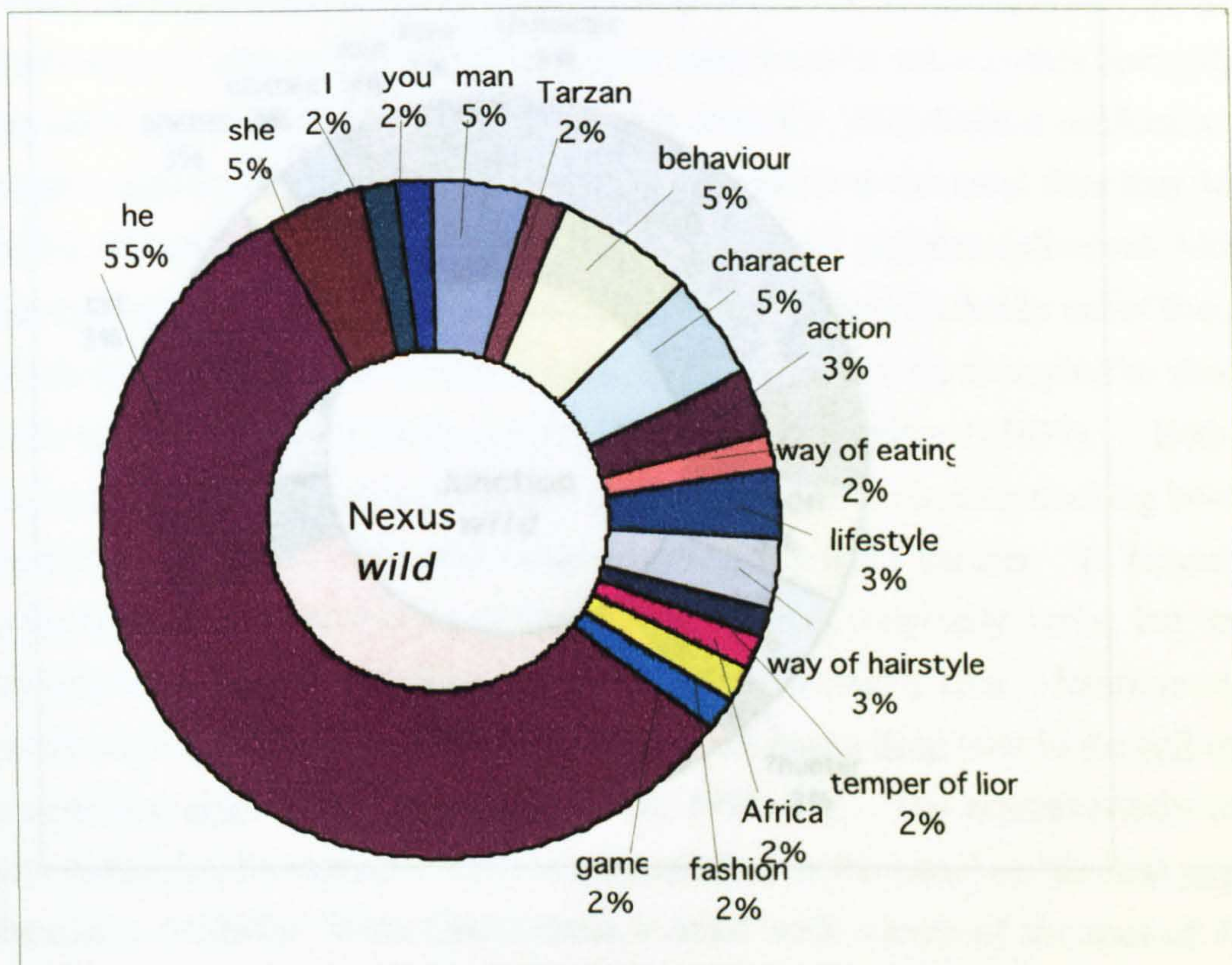
There were more answers of the personal pronouns as subjects (64 %). The masculine pronoun *he* occupied 56 % of all the answers. Then the Human-Ss *man* and *Tarzan* followed, and next to it came the Non-human-Ss, such as *character*, etc. Table 5-24 summarises the subjects of the sentences written in the answers. Figure 5-11 illustrates the Nexus features of *wild*.

Table 5-24

Subjects		Total number of answers	%
Nouns	Human-S	4	6
	Non-human-S	19	30
pronouns	Human-S	40	64
	Non-human		

*The game in this answer does not refer to the 'game' in card games nor to the 'wild card' in a metaphorical sense.

Figure 5-11 Nexus features of *wild*



The outstanding Junction feature is that there were more connections of the target adjective *wild* with nouns, such as *wild + animal* and *wild + man*, which imply appearance, i.e. what a person or thing looks like; the *wild + human nouns* (boy, person, guy and hunter) followed;

2-2) Junction features

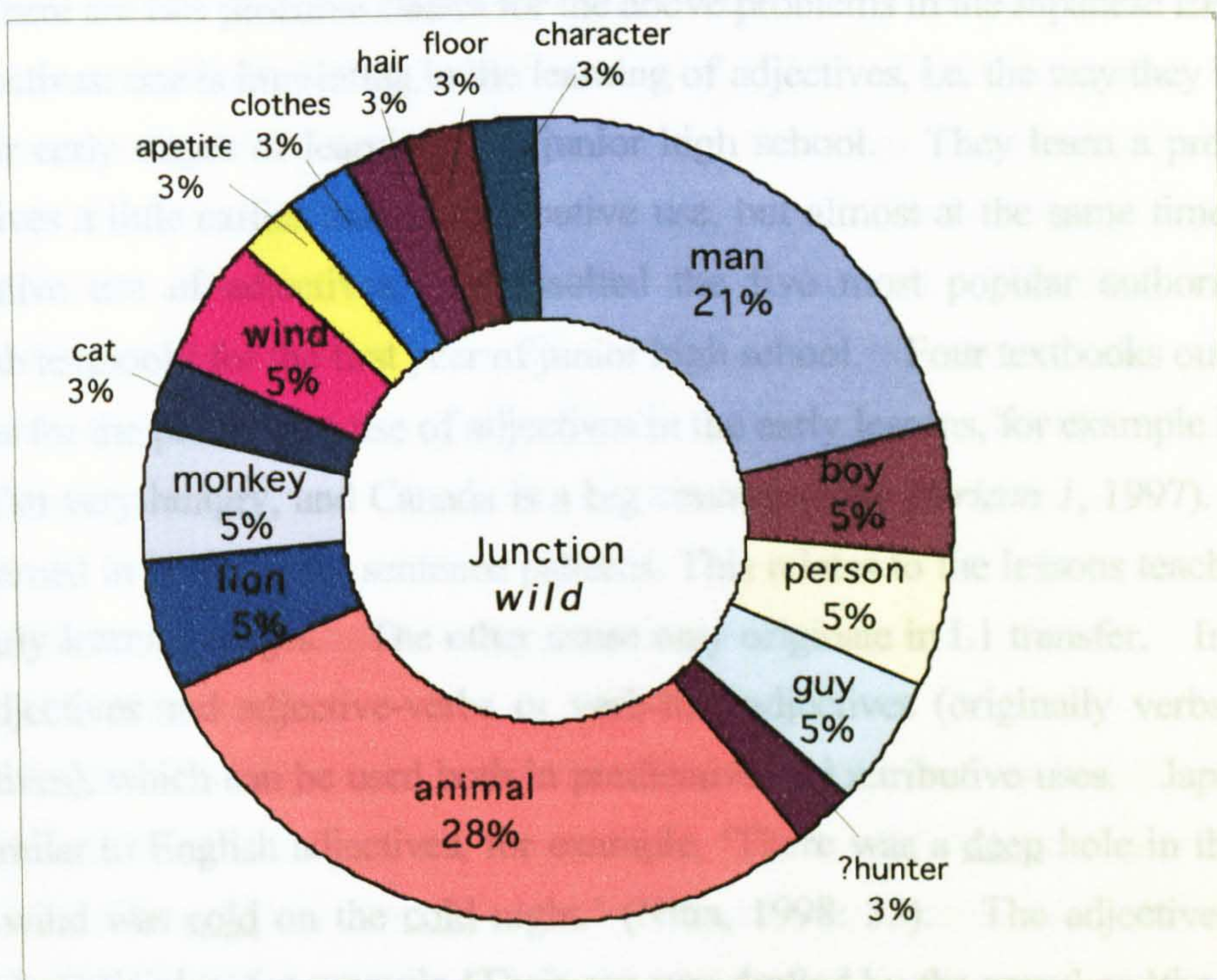
Table 5-25 summarises the nouns in the answers which were used to connect to the adjective *wild*, and Figure 5-12 illustrates the Junction features of *wild*.

Table 5-25 The nouns connected to the adjective *wild*

Adjective + noun		Total number of answers	%
wild +	noun (human)	15	41
	noun (non-human)	22	59

There were a few answers written in the required format of *A/An/The X is a/an adjective Y* (X and Y are nouns), as stated in the sections of the overall and individual features of the test results. There seemed to be two problems with the EFL students' fulfillment of the test of *A/An/The X is a/an adjective Y*: one was syntactic and the other metaphorical. The defects in the syntactic problem were either in the subject of a sentence or in the predicate. An example of the former defect in such a sentence is 'He is a bright man.' It does not fulfill the requirement of using a noun for the subject of a sentence. An example of the latter defect is such a sentence as 'Her smile is bright.' It did not meet the requirement of a

Figure 5-12 Junction features of *wild*



The outstanding Junction feature is that there were more connections of the target adjective *wild* with nouns, such as *wild + animal* and *wild + man*, which imply appearance, i.e. what a person or thing looks like; the *wild + human nouns* (boy, person, guy and hunter) followed; then the *wild + kinds of animals* (lion, monkey and cat). The other feature was that the word *wild* connoted manners, attributes or aspects, such as the *wild + wind*, the *wild + appetite*, *wild + character*, and so on. From these answers, it can be said that the meaning of the word *wild* affected the implication conveyed by the word.

5.4-3. DISCUSSION

Linguistic, syntactic and metaphorical problems

There were a few answers written in the required format of A/An/The X is a/an adjective Y (X and Y are nouns), as stated in the sections of the overall and individual features of the test results. There seemed to be two problems with the EFL students' fulfillment of the test of A/An/The X is a/an adjective Y: one was syntactic and the other metaphorical. The defects in the syntactic problem were either in the subject of a sentence or in the predicate. An example of the former defect in such a sentence is 'He is a bright man.' It does not fulfill the requirement of using a noun for the subject of a sentence. An example of the latter defect is such a sentence as 'Her smile is bright.' It did not meet the requirement of a

combination of adjective plus noun in the predicate, either.

There are two probable causes for the above problems in the Japanese EFL students' use of adjectives: one is imprinting in the learning of adjectives, i.e. the way they learn adjectives in their early stages of learning in a junior high school. They learn a predicative use of adjectives a little earlier than an attributive use, but almost at the same time they learn the attributive use of adjectives. I consulted the five most popular authorised Monbusho English textbooks for the first year of junior high school. Four textbooks out of five provide lessons for the predicative use of adjectives in the early lessons, for example I'm sleepy, I'm late! I'm very hungry, and Canada is a big country (*New Horizon 1*, 1997). Both usages are learned in very simple sentence patterns. This relates to the lessons teaching be-verbs in the early learning stages. The other cause may originate in L1 transfer. In Japanese there are adjectives and adjective-verbs or verb-like adjectives (originally verbs, but used like adjectives), which can be used both in predicative and attributive uses. Japanese adjectives are similar to English adjectives, for example, 'There was a deep hole in the soft trunk' or 'The wind was cold on the cold night.' (Nitta, 1998: 33). The adjective-verbs resemble English participles, for example 'Their son was drafted by the army' or 'the man working at the hospital....' (ibid.). Nitta (ibid.) made a small scale survey of the uses of Japanese adjectives and verbs in a pocket book with 510 pages to see whether they belonged to the predicative use or the attributive use (Table 5-26). If survey materials differed, the results would differ, however, the results of his survey suggests certain conclusions. It implies that the expressions with the nuance of verbs tend to converge to the predicative use, while those with that of adjectives to the attributive use. These tendencies might have consciously or subconsciously affected the uses of English adjectives by Japanese speakers. The EFL students' use of adjectives may oscillate between the two.

Table 5-26 The predicative use and the attributive use
in Nitta's survey

Use	predicative	attributive
Parts of speech		
verbs	85%	15%
adjectives	37%	63%

A second problem revealed in the test of A/An/The X is a/an adjective Y is the EFL students' lack of success in metaphorical manipulation. There were dual tasks for the students to fulfil in this test: one was syntactic use as stated above and the other was the metaphorical use of adjectives. In metaphorical manipulation, the students had to connect the subject of a sentence to the predicate, in which in addition the target adjective should be metaphorically embedded. Therefore, the students were tested on the uses of adjectives

linguistically and metaphorically in the combination of the subject of a sentence with the predicate. These dual tasks seemed to be difficult. In the interview with the students, those who had richer semantic fields (tested by PolyT) of the target word seemed to have fewer problems. They seemed to expand the meanings of the word and connect these meanings from word to word without much difficulty. The knowledge of polysemy or rich semantic fields seemed to play an important role in this task. Therefore, if we look closely at the EFL students' answers in this context, their linguistic ability and metaphorical competence in the target adjectives may become clear. In the following sections, these aspects are discussed.

Semantic webs and metaphorical sensitivity/skills

Target adjective *bright*

In the test of Metaphorical sensitivity/skills, the testees were asked to write a sentence in the required format, for example *Her eyes are bright jewels* (the sentence a. in the previous section). The answers most commonly written were sentences in the pattern of 'X is adjective' (e.g. *My future is bright*), as also stated in the previous section. Another phenomenon discovered in the answers was the influence of the core meanings in English-Japanese dictionaries. Those who used these kinds of dictionaries seemed to have a similar mental lexicon of that of the English-Japanese dictionaries. The meanings of the adjective *bright* from the core or primary to the peripheral listed in an English-Japanese dictionary (Iwasaki, et al.: 1998) are 1) bright in the degrees of brightness, 2) clear, transparent 3) clear in colour, 4) lively, 5) clever, 6) glorious, etc.

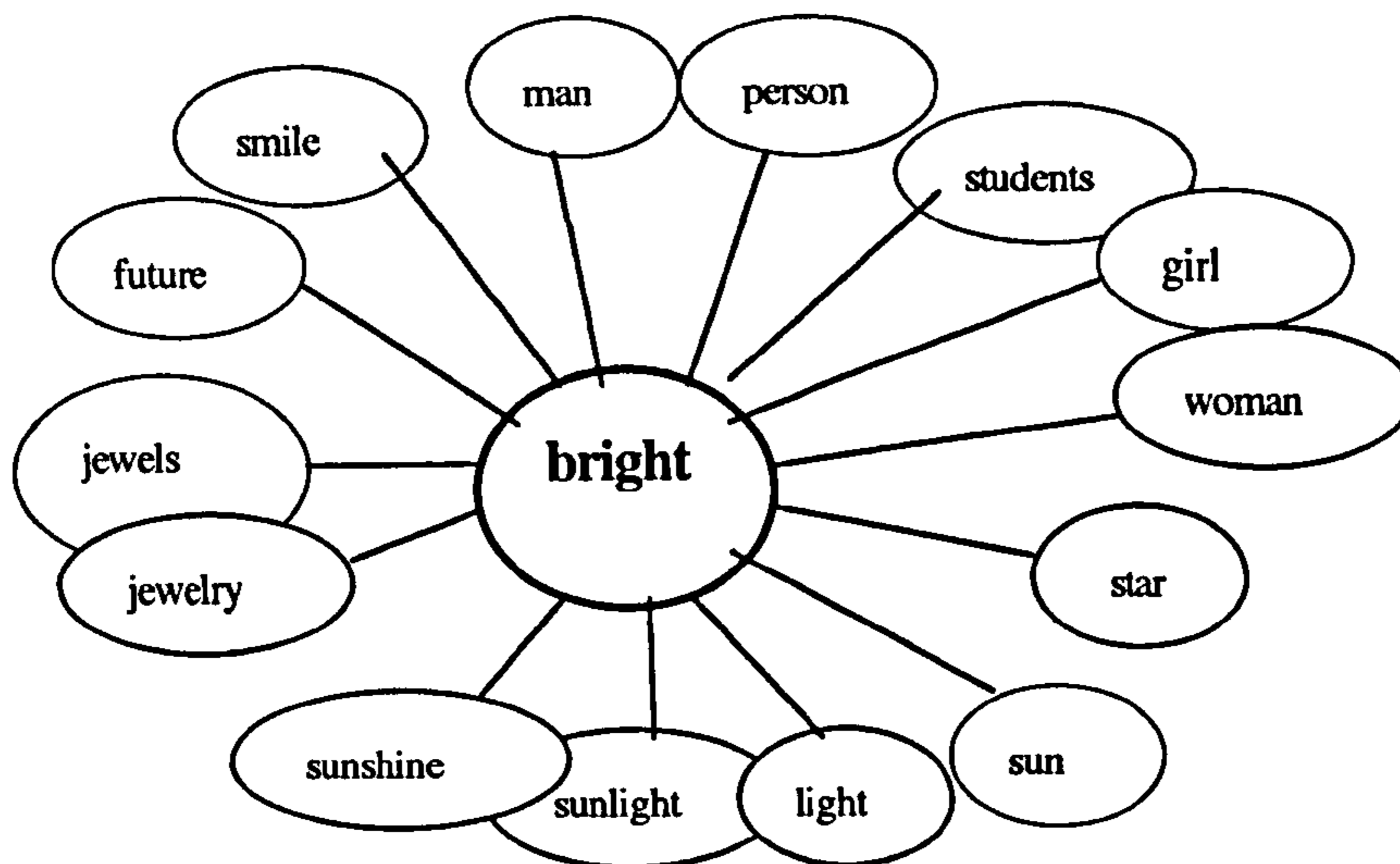
Based upon the results of all of the answers written in the metaphorical use of *bright*, including both the answers in the required format and those not in the required format, the following features can be summarised.

The adjective *bright* was metaphorically used by the EFL students to mean

- 1) cleverness, intelligence or knowledge when used in combination with eyes or human perception, or in allusion to people's attributes, for example, *Her eyes are bright jewels* or *My friend is a bright person*.
- 2) warmth, liveliness or full of life when used in combination with smile or positive human expression, for example, *Your smile is bright sun* or *Her success is bright*.
- 3) something shining or glittering when used in combination with *star*, *light* or *jewelry*, for example, *Miki's dress is bright jewelry*.

Figure 5-13 summarises the EFL students' typical semantic web of the adjective *bright*.

Figure 5-13 The semantic web of the adjective *bright*



A comparison of English NSs' use of the target word *bright* with that of the EFL students' may be worthwhile. A consultation of the corpus (the high significance listing of the top 40) provides the following information. Some of the EFL students' semantic webs of this adjective are shared with the NSs'. The words in the COBUILD corpus top 40 collocations which overlap with the EFL students' answers are: *light, lights, future, eyes, sun, sunshine, sunlight, star, idea, ideas* and *hair*. There seems to be a fair amount of similarity in the target word *bright* between the NSs and the EFL students.

In conclusion the following summary can be made about the EFL students' metaphorical competence in using the target adjective *bright*. The adjective *bright* conveys a visual, sensory and psychological meaning in itself and it has a positive interior image. Therefore those who used these characteristics in the context of the word *bright* and who could link or transfer the meaning of the subject of a sentence to the predicate and match these two items using the target adjective wrote a satisfactory metaphorical answer. The answers which employed the sensory use of *bright* were quite successful in their metaphorical use of this adjective (as in the sentences a), b), c) d) and f) in the previous section). The answers which used the adjective in a plain way were not quite metaphorically perfect but they made sense to a certain degree as shown in the sentences g) to n) in the previous section. The answers of the adjective *bright* gained the highest means among the 6 adjectives.

Target adjective *dark*

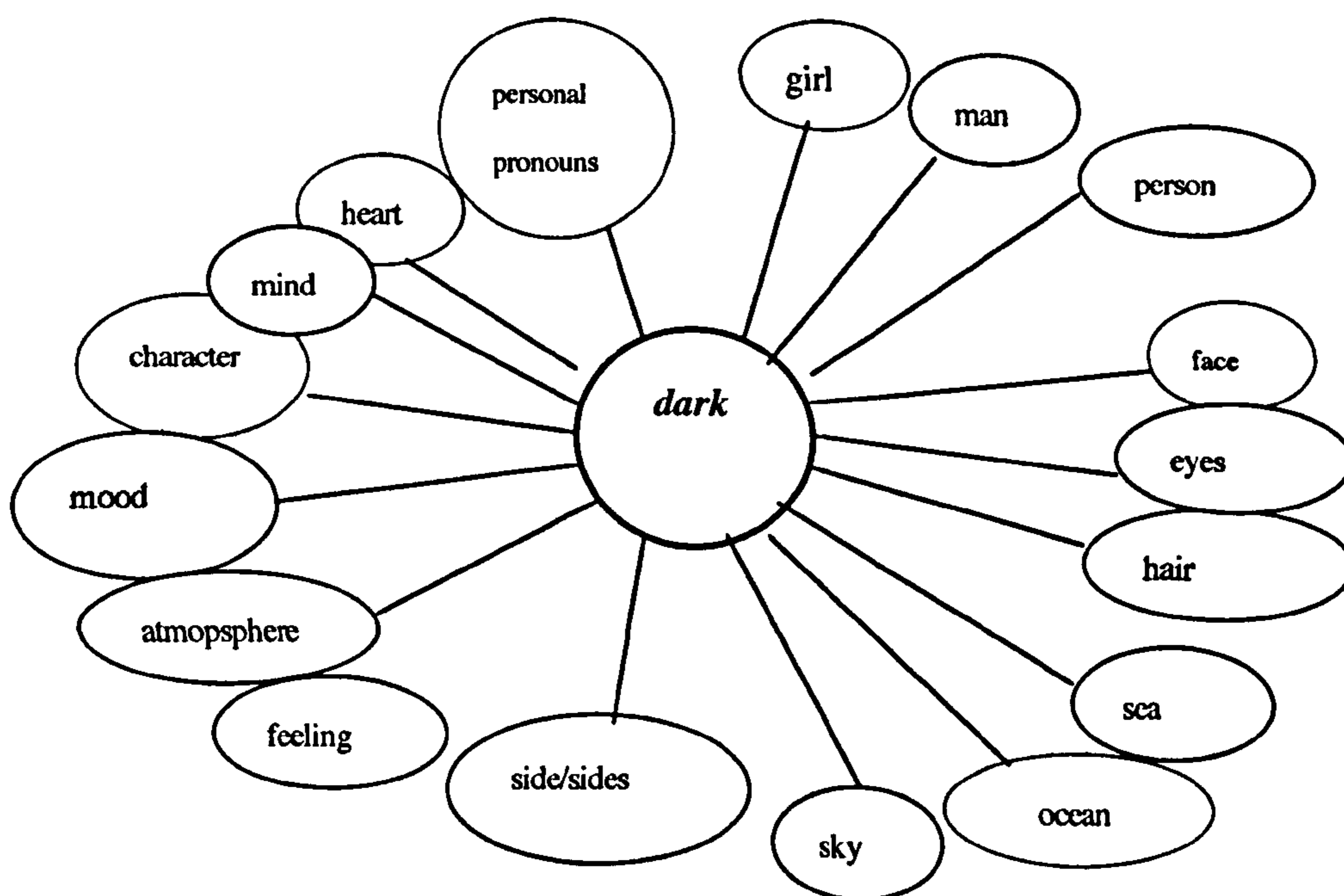
There were more answers in a predicative use of *dark* than an attributive use, for example,

S/He is/was/looks dark or *someone's face/heart is/becomes dark* rather than, for example, *dark sides* in an attributive use. The influence of the core meanings in an English-Japanese dictionary was also found in the answers. The meanings from the core to the peripheral in an English-Japanese dictionary are 1) dark, an antonym to clear or light, 2) somber meaning lower in brightness, such as dark green, 3) obscure in meaning, 4) ignorant, 5) gloomy, etc.

The following features can be summarised in the metaphorical use of the adjective *dark*, though there were fewer answers written in the required format than for the previous adjective *bright*.

- 1) something concrete is dark, as seen in *a/the sky/hair/skin/face/eyes/hole is/are dark* or *dark hair/hole*, etc,
 - 2) something abstract or a psychological state can be *dark* to mean pessimistic, as seen in *heart/mind/feeling/atmosphere/mood is dark* or *dark feeling/atmosphere/mood*,
 - 3) descriptions cover both concrete and abstract phenomena or states, such as *dark sides/past*.
- Figure 5-14 summarises the EFL students' typical semantic web of the adjective *dark*.

Figure 5-14 The semantic web of the adjective *dark*



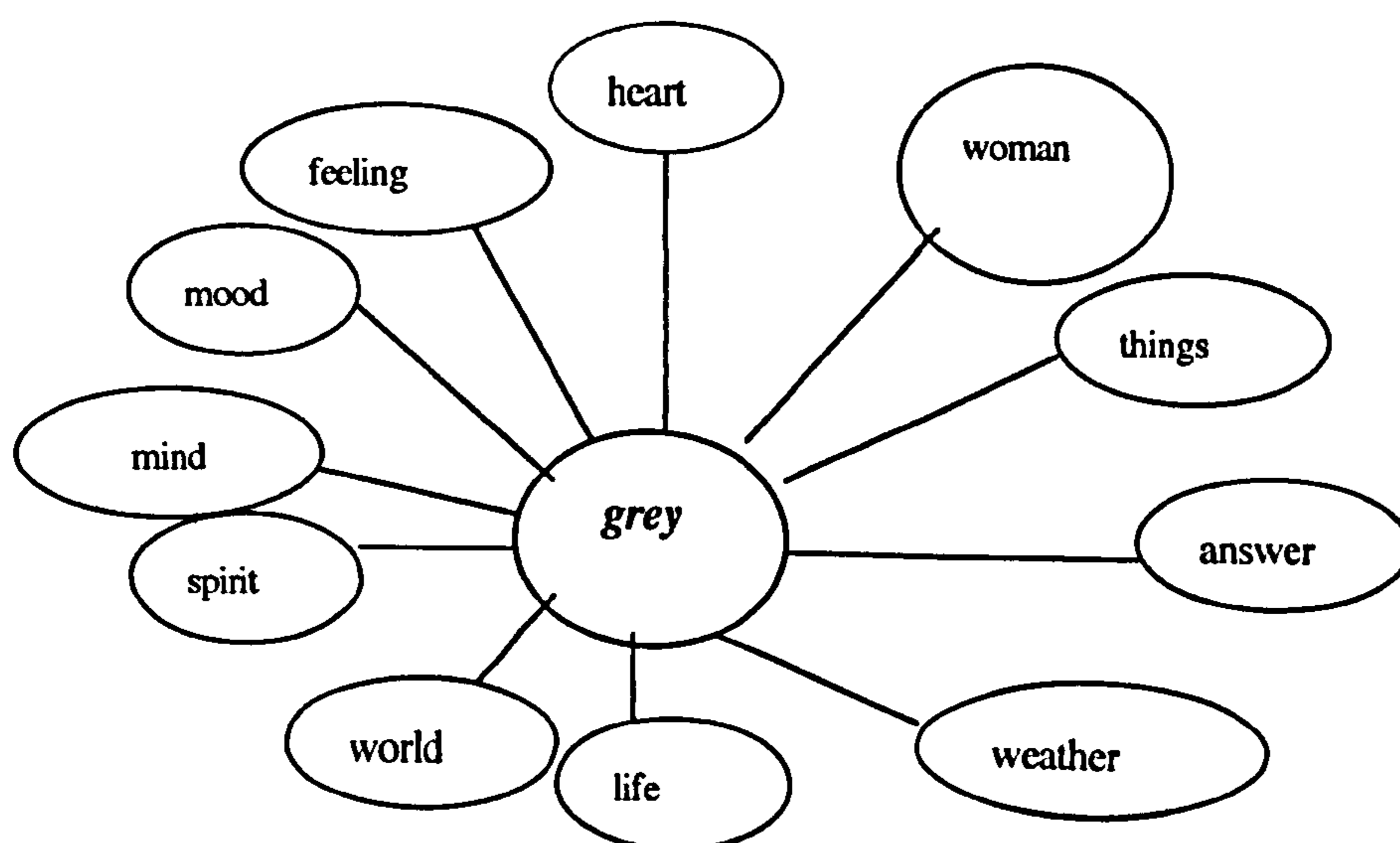
The EFL students' use of the word *dark* in comparison with that of the NSs' is as follows. The COBUILD corpus top 40 collocations which overlap with the EFL students' answers are: *hair, haired, eyes, side, skin, sky, colour, colours* and *man*. There was no entry for *mind, character, personality, mood, atmosphere, future, surroundings* and *relationship* in the top 40 collocations. The Japanese students used the adjective *dark* to describe more psychological states.

Finally the following summary can be made about EFL students' metaphorical competence in using the target adjective *dark*. The adjective *dark*, scientifically, implies a limited degree of brightness, however, it seems to stimulate our sensory organ to map from visual cognition to a mental and psychological implication. In the students' answers, the adjective *dark* tended to be used to describe mental and/or psychological states, especially to describe pessimistic, unfathomable states, moods or feelings. The answers employing this characteristics of the word turned out to be metaphorical to a degree.

Target adjective *grey*

The adjective *grey* showed similar results to those of the adjective *dark*. However, the zero answer ratio was the highest among the 6 adjectives. It seemed to be difficult for the students to use this adjective metaphorically. There were two types of answers, one of which describes something concrete and the other something abstract. There were more combinations of the adjective *grey* with abstract nouns, such as *heart*, *feeling*, *mind* or *ways of thinking*, which mean that the state or atmosphere was not promising, then followed the combination with *answer* and *decision*. The implication of the latter seemed to mean obscurity in the related matter. The meanings from the core to the peripheral in an English-Japanese dictionary are 1) grey (the colour between white and black) or dim, 2) grey-haired, 3) dull, sombre, cloudy, 4) dreary, 5) old-aged, etc. Figure 5-15 summarises the EFL students' typical semantic web of the adjective *grey*.

Figure 5-15 The semantic web of the adjective *grey*



The COBUILD corpus top 40 collocations which overlap with the EFL students' answers

are: *hair* and *hairs*. There were fewer matches in this adjective than in others.

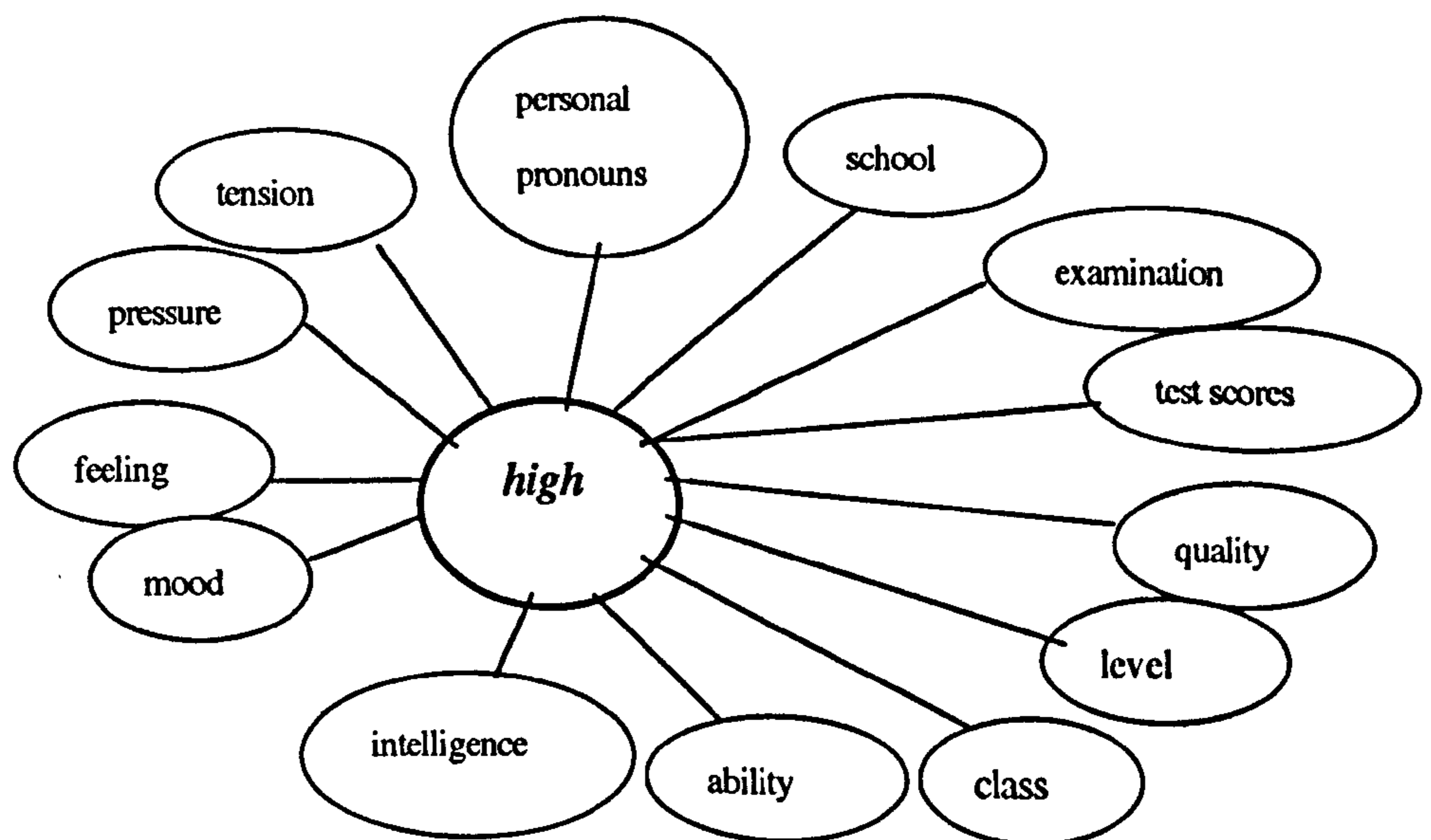
The EFL students' metaphorical use of this adjective was monotonous. The word *grey* can be used in a visual, sensory meaning which may express a negative image. However, the students' answers did not go much further into metaphorical manipulation. At best it was *The sky was grey curtain*.

Target adjective *high*

There were more answers written in the attributive use of the adjective *high*. It occupied the second highest means in the attributive use. It was possibly affected by daily Japanese conversation in which the word *high* is used. The meanings in an English-Japanese dictionary are 1) the level of altitude or a distance above the ground, of which antonym is low, 2) situated at an important/high position, 3) noble, sublime, 4) progressed, 5) important or prominent, 6) dear or expensive, etc.

The most popular answers were *someone* (mostly pronouns) *is high* and next to them were allusions to something abstract, for example, *tension, feeling, quality or the levels of tests is/are high*, and *high tension/level/quality/scores*. Figure 5-16 summarises the EFL students' typical semantic web of the adjective *high*.

Figure 5-16 The semantic web of the adjective *high*



The COBUILD corpus top 40 collocations which overlaps with the EFL students' answers are: *school, quality, level, levels, pressure, prices, heels, price, cost, temperature, temperatures, class* and *tension*. There seems to be a high degree of similarity between the

NSs and the EFL students.

The adjective *high* indicates an ontological position, altitude or location. This physical meaning maps to a mental implication. As stated in the section of the results and analysis, the metaphorical use of the adjective *high* seemed to relate to a conceptual metaphor MORE IS UP. It can be said that the concept and image of UP is abstract and used to imply someone or something above the usual level, amount, rate or degree. The *high* indicates a vertical position, therefore, it is used to scale the level of examinations or as a measure of a test level. Such answers as *high tension*, *high quality* and *high level* are commonly used in daily conversation by Japanese. Both languages and culture seem to share the same metaphorical concept.

Target adjective *weak*

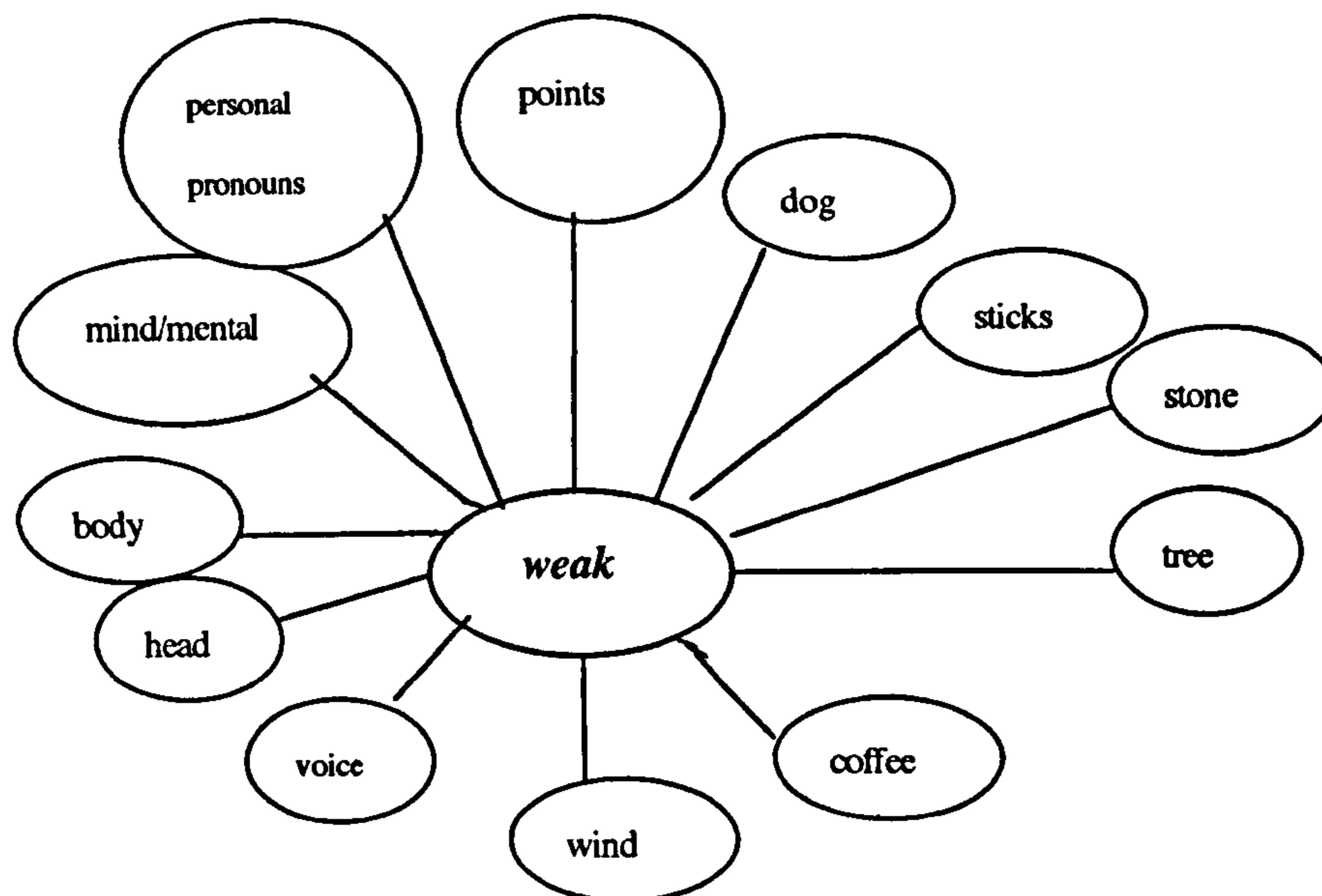
There were more attributive answers, especially in the combination of *weak* with *points*. The core meaning in an English-Japanese dictionary is physically weak as in weak constitution, the meaning of which is the opposite of strong. A secondary meaning is to mean not vigorous in mind or will, a tertiary meaning is insufficient, then poor, etc follows. The dominant answers written by the students coincided with the lexical meanings in the dictionary.

A number of answers using this adjective were *someone* (personal pronouns) *is weak*, then *body/mind/head is weak*, *wind/coffee is weak*, *eyesight/imagination is weak* and *character/imagination is weak* followed in the predicative use. The outstanding answer in the attributive use was *weak points*. The zero answer ratio was the second highest to the adjective *grey*. Figure 5-17 summarises the EFL students' typical semantic web of the adjective *weak*.

The COBUILD corpus top 40 collocations which overlap the EFL students' answers are: *he*, *points*, *voice*, *legs*, *will*, *she*, *men* and *minded*. There does not seem to be much overlapping between the NSs and the EFL students for this adjective.

As for the EFL students' metaphorical competence in using this adjective, the characteristics of the implication of physical weakness mapping to mental weakness was exemplified in some of the answers, for example, the sentences a) ~ i) in the previous section. This was affected by the core meaning of the word *weak* which implies physical weakness, scarcity of strength or power, all of which had a static image. On the other hand, most of the answers used the combination of *weak* and *points*, which was quite ordinary in a metaphorical sense.

Figure 5-17 The semantic web of the adjective *weak*



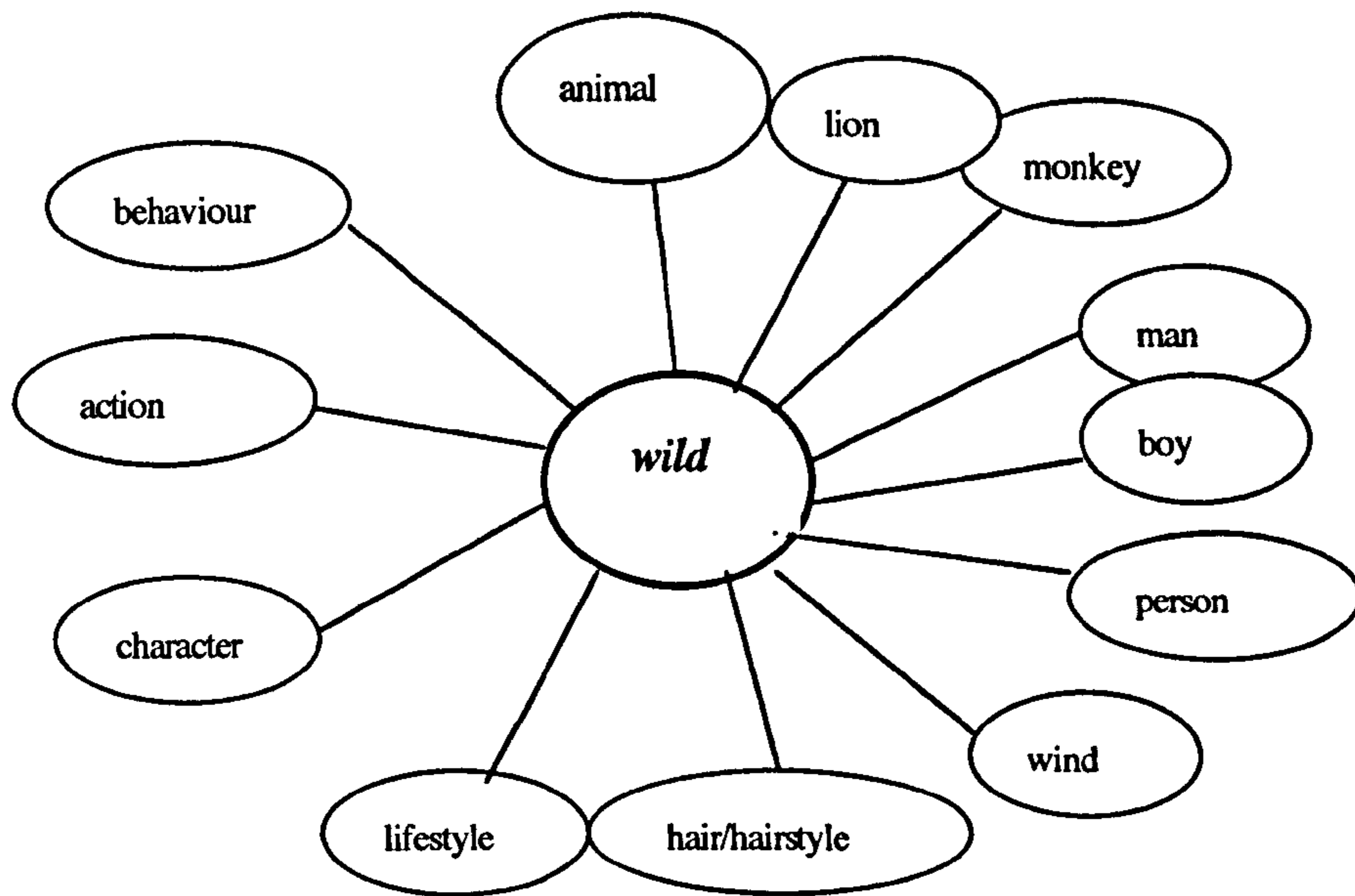
Target adjective *wild*

The ratio of attributive use in the answers to *wild* was slightly more than the previous *weak*, and the zero answer ratio was not very high. The core to peripheral meanings of *wild* in an English-Japanese dictionary are 1) untamed, 2) uncultivated, 3) natural, 4) savage, violent, 5) crazy, 6) untidy, etc. As analysed in the results section, the core meaning was mapped to the person's *character* or *attributes*, *behaviours* or *appearance*. In addition, the core meaning *wild* was combined with animal (*wild + animal*). In such a case, it means the *manner*, *behaviour* or *character is wild*. The analogy from the image of *wild animal* seemed to influence the use of the word *wild*. All of the connotations converged to the meaning of strength, power or violence. Figure 5-18 summarises the EFL students' typical semantic web of the adjective *wild*.

The COBUILD corpus top 40 collocations which overlap the EFL students' answers are: animals, man, hair, cat and Africa. They share a degree of similarity.

The means of this adjective was second to the adjective *bright*. In the metaphorical use of this adjective, the EFL students' semantic web stretched its threads to a variety of words, and so their imagination expanded to include a variety of expressions. The word *wild* elicits a dynamic image compared to the previous adjective *weak*. It shows the dynamics of the word which affect our imagination. The same effect is true of the adjective *bright*. These words inspire a wider variety of responses.

Figure 5-18 The semantic web of the adjective *wild*



5. 4-4. CONCLUSION

In successful metaphorical expressions, the items to be linked in the expression share some similarity, but not too much. Aitchison (1987: 149) states that when humans consciously use metaphor they subconsciously follow certain guidelines. They tend to compare items which come from different semantic fields, which share minor but obvious characteristics. She also emphasises the power of the mental lexicon. The mental lexicon contains mechanisms which enable a person to continually expand old words and coin new ones (ibid.: 143). Especially in an EFL situation, learners' mental lexicons play an important role not only in metaphorical manipulation but in all aspects of language performance. If they have richer semantic fields, they can use them for networking of word to word connections. And, another important element for understanding and using metaphorical expressions is the intuition or ability to connect the vehicle to the topic or vice versa. In an example such as 'Mike Tyson's muscles are hard steel,' learners should know the relation of 'muscle' to 'steel' and that of the state of the muscle to 'hard.' The meaning is created by the combination of these words. This kind of training may be necessary for EFL learners to become more familiar with metaphors. Ikegami (1975: 274) indicates the importance of understanding transfer in meaning, giving an example of a Japanese expression 'flame licks,' in which there are two crossings or transfers operating in combination: 'flame burns' and 'tongue licks', thus we get 'flame licks.' The test of 'X is Y' in this sense ensures a necessary training for this purpose. There were only 6 adjectives (*bright, dark, grey, high, weak* and *wild*) tested in MC-XYT. From the results of the test for

the first three adjectives with visual and sensory meanings, the expansion from sensory and/or psychological nuances to metaphorical expressions was demonstrated by the participants, and for the remaining three adjectives, the characteristics of the nuances of each word were utilised in the metaphorical expressions. The meanings which words convey stimulate our imagination and create their metaphorical world.

5. 5. ANALYSIS AND DISCUSSION FOR RESEARCH QUESTION 3

Research question 3) Is there any relationship between Japanese EFL students' linguistic competence and metaphorical competence?

5. 5-1. VOCABULARY SIZE AND METAPHORICAL COMPETENCE

The final discussion in this study is whether or not there is any relationship between the subjects' vocabulary breadth and metaphorical competence. Table 5-27 shows the results of the tests of metaphorical competence (MC tests) and of VLT.

Table 5-27 Contrasting the results of MC tests to those of VLT

Combination# of items in MC-RT & MC-PT	Means of MC tests					Means of VLT (120 p)
	N	MC-RT (6p)	MC-PT (6p)	MC-XYT (6p)	Total (18p)	
1	10	4.5	1.1	3.4	9.0	100.6
2	11	3.8	2.1	4.2	10.1	97.5
3	12	2.5	1.4	3.3	7.2	90.0
4	9	2.5	1.4	3.6	7.5	101.6
5	9	3.5	1.1	2.3	6.9	97.7
6	11	3.7	1.7	2.9	8.3	91.6
7	7	2.6	1.2	3.0	6.8	94.1
8	11	2.9	3.3	3.6	9.8	96.0
9	8	3.6	3.1	3.8	10.5	98.9
10	10	4.7	1.3	3.2	9.2	97.9
11	8	3.2	2.3	3.5	9.0	96.9
Total	106	N/A	N/A	36.8	94.3	1060.8
average		N/A	N/A	3.34	8.56	96.4

#Combination on the left column refers to the combination of test items shown in the left column of Table 5-1.

It can be said from the results in Table 5-27 that Japanese EFL students' difficulty in recognition and production of metaphorical expressions lies in using them rather than in understanding them. In understanding metaphorical expressions, they can resort to the contextual support more or less, however, in using them, they have to be independent.

Another issue that this study attempts to investigate is whether or not the subjects' vocabulary knowledge is related to the metaphorical competence. The following table 5-28 shows the results of the Pearson correlation coefficients. There were problems in using correlation statistics due to the insufficient number of subjects who participated in the MC tests. This leads to non-significant p-values. Although there was only one significant result, the face value in the table indicates that the correlation between vocabulary size and metaphorical competence at least was not negative. Vocabulary size may have a relationship with metaphorical knowledge, but this will need to be tested with a study including greater number of subjects.

Table 5-28 Correlation between VLT and MC tests

Combination# of MC-RT&PT	N	V.L.T.(120 p)		Tests of Metaphorical competence(18 p)		Correlation betw.VLT/MC tests	
		Mean	SD	Mean	SD	Pearson Cor.	p=
1	10	100.6	9.1	9.0	3.2	0.533	0.113
2	11	97.5	17.5	10.1	4.5	0.436	0.180
3	12	90.0	22.4	7.2	4.5	0.858*	0.000
4	9	101.6	12.9	7.5	2.9	0.618	0.076
5	9	97.7	14.4	6.9	2.6	0.607	0.083
6	11	91.6	16.2	8.3	4.9	0.457	0.158
7	7	94.1	9.4	6.8	3.5	0.676	0.095
8	11	96.0	9.3	9.8	4.6	0.583	0.060
9	8	98.9	20.8	10.5	3.4	0.684	0.061
10	10	97.9	10	9.2	3.7	0.075	0.837
11	8	96.9	12.4	9.0	3.41	0.040	0.924
Total	106	96.4	14.7	N/A	N/A	N/A	N/A

#Combination on the left column refers to the combination of test items shown in the left column of Table 5-1.

* p<05

5. 5-2. VOCABULARY KNOWLEDGE AND METAPHORICAL COMPETENCE

The Results of the VLT, PolyT and MC tests

It may be necessary to have a certain amount of vocabulary to understand and use metaphorical expressions without much difficulty. Table 5-29 shows the subjects' vocabulary size scaled by VLT which was contrasted with their metaphorical competence scaled by MC tests.

Table 5-29 Vocabulary knowledge and metaphorical competence

Ratio of correct answers in VLT % = Points in VLT	N (106)	VLT (120 points)		PolyT (20 points)		MC tests (18 points)	
		Mean	SD	Mean	SD	Mean	SD
over 90 % = over 108 points	23	111.3	3.1	16.0	1.7	9.9	3.9
89-80 = 107-96	44	101.9	3.3	15.0	1.6	9.6	3.3
79-70 = 95-84	23	90.1	3.7	13.8	1.9	7.9	3.6
69-60 = 83-72	10	77.1	3.7	11.4	2.3	6.2	3.3
59-50 = 71-60	1	71	N/A	9.0	N/A	5.2	N/A
below 49 = below 59	5	52.2	3.9	7.2	3.0	2.3	2.2

Table 5-29 reveals that, although the correlation analysis was unable to show a relationship, the higher the vocabulary and polysemy mean scores are, the higher the mean scores in the

MC tests. It also reveals that as the vocabulary knowledge became less, the mean scores of the MC tests became lower. For example, where the subjects had a vocabulary size of 80% or higher, their mean scores in the MC tests were 9.6 (53% correct answers) or 9.9 (55% correct answers) respectively. The subjects whose vocabulary size were 70-79% in VLT scored the mean 7.9 (44 % correct answers) in the MC tests, and those whose vocabulary size were 60-69% scored 6.2 (34% correct answers), whereas if the vocabulary size went below 59%, which is half of the maximum in the test, they scored only 5.2 (29% correct answers) or below. This possibly indicates that there is a linear relationship: the less vocabulary they know, the lower their metaphorical ability. Furthermore, these results possibly suggest that more than 70% of vocabulary (equivalent to 14 points in PolyT) might help manipulation of metaphorical expressions. If the vocabulary size is smaller than 70 percent, they might still have a chance to understand better or develop their manipulation with the help of their vocabulary knowledge and with some other elements, such as general knowledge of the world and/or analogy from their past experience. It may be hard to manipulate English metaphorical expressions if the vocabulary size is too small. However, this implication is not merely applicable for the understanding and production of metaphorical expressions. It is applicable to most areas of language use.

5. 5-3. CONCLUSION

As for the research questions (aspects of Japanese EFL students' understanding and use of metaphorical expressions and the relationship between linguistic and metaphorical competences), it can be said that students' vocabulary level may be one of the main factors in an EFL situation, as was discussed in the last section of this study. Vocabulary range does not necessarily mean that one knows the meaning of a word alone, but rather it means one knows the word and at the same time knows something additional to the lexical meaning. The knowledge about the word and the knowledge of the world would help understand and manipulate expressions.

The factors that might affect metaphorical understanding are probably students' familiarity with the words and expressions in addition to vocabulary awareness. However, contextual support and/or cues in a discourse/passage may help their understanding to a great extent. The schema factor may also affect their understanding and use of metaphorical expressions and schema activation may elicit metaphorical transfers of meaning. The issue of schemas is a very important point when it comes to teaching metaphorical expressions. Therefore, this factor will be investigated in a further study.

The production of a passage with a metaphorical meaning embedded in it includes these factors, however, more importantly it involves students' general writing ability, especially in

an EFL situation. The research question of mapping and networking had been touched upon to a degree, but further investigation will still be necessary. This will be also taken up in Study 4.

In Study 3 the test items to be used for assessing metaphorical competence and the index tests were selected; however, these tests need be examined on a reasonable number of subjects. Therefore, these tests will be administered on an appropriate number of subjects in a new study, where consequently the results will be analysed and discussed quantitatively and qualitatively. In brief Study 4 will re-examine the feasibility of the tests and address Japanese EFL students' metaphorical competence, factors affecting their metaphorical competence and a relationship between their mental lexicons and metaphorical competence.

CHAPTER 6

STUDY 4: ASSESSING METAPHORICAL COMPETENCE: SECOND EXECUTION OF THE MAIN TESTS (Re-testing of the MC tests)

6. 1. THE PURPOSE OF STUDY 4

In Study 3, two experiments were carried out, the results analysed and several aspects of Japanese EFL students' understanding and use of English metaphorical expressions were discussed. However, the study needs to be expanded to cover a greater number of subjects. It necessitates an appropriate number of subjects to be tested on each test item. Therefore, this chapter aims to re-test the test items of metaphorical competence used in Study 3 and to analyse and discuss the study quantitatively and qualitatively with reference to the previous results if necessary.

6. 1-1. RESEARCH QUESTIONS

The following research questions will be investigated and answered in this study.

- 1) What results will be obtained if the tests of metaphorical competence used in Study 3 are tested on different subjects ?**
- 2) What aspects of metaphorical competence do EFL students display in the tests of metaphorical competence?**
- 3) Are the test items suitable as test items of metaphorical competence for Japanese EFL students? (i.e. to scrutinise the reliability and ensure the validity of the tests of metaphorical competence)**
- 4) Is there any relationship between Japanese EFL students' metaphorical competence and other linguistic competences, such as vocabulary size and polysemy knowledge?**

6. 1-2. METHOD

The methodology and procedures used in the previous studies are employed in this study. The data obtained from the tests will be quantitatively treated by SPSS 11.0 for Windows and the answers supplied by the subjects will be qualitatively analysed.

The tests used in Study 4 and the aims of the tests

[I] The tests of metaphorical competence, MC tests: They comprise 3 types of tests:

- 1) The receptive test, abbreviated as MC-RT.
- 2) The productive test, abbreviated as MC-PT.
- 3) X Y Test (or the test of metaphorical sensitivity/skills), abbreviated as MC-XYT.

The aims of tests 1), 2) and 3) are the same as those in Study 3. They intend to measure

examinees' understanding and use of English metaphorical expressions.

[II] Vocabulary Levels Test, abbreviated as VLT (Schmitt, 2000 and Schmitt, Schmitt & Clapham, 2001): The aim of this test is the same as that in Study 3. It will play a role as an index to other tests in order to examine whether or not the test groups are homogeneous and test the correlation between the subjects' vocabulary size and their metaphorical competence. It will also serve to examine the homogeneity of the subjects in Study 4.

[III] Polysemy test, abbreviated as PolyT: The aim of this test is the same as that in Study 3. It will measure lexical and semantic networking quantitatively.

MC-XYT, VLT and PolyT are the same as those in Study 3. Although most of the test items in the tests of metaphorical competence used in Study 3 remain as test items in Study 4, the ten test items (i.e. passages) for MC-RT and seven test items (i.e. target expressions) for MC-PT are selected from the respective 11 test items previously used.

6. 1-3. INSTRUMENTS AND PROCEDURES

Participants

The total number of subjects in this study was 172: 55 male; 117 female students, aged 19-21, freshmen and sophomores who studied at Kansai Gaidai University and Kobe Geijutsu Koka University, among whom were 5 subjects with 1 year or less experiences of studying abroad. All of the 172 subjects took the same VLT, PolyT and one of the tests of metaphorical competence, i.e. MC-XYT. It was estimated that MC-RT and MC-PT of the tests of metaphorical competence would take a long time for examinees to complete, therefore, some arrangement was necessary. In order to enable at least 50 subjects to be allocated to the same metaphorical tests, the subjects were divided into 3 groups for MC-RT and MC-PT: Group 1 consisted of 57 (15 male + 42 female) subjects; Group 2 consisted of 56 (20 male + 36 female) subjects; Group 3 consisted of 59 (20 male + 39 female) subjects. The tests were administered in May-July, 2002

Consideration of the execution of the tests

Psychological sides:

In general, tests should be easy to administer. The considerations taken into account for the execution of the tests of metaphorical competence were as follows:

- 1) the tests should not give examinees too much anxiety (i.e. they should not look too difficult to answer);
- 2) the tests should not take longer than the examinees' endurable concentration time;
- 3) the tests should be easy to assess.

Technical sides:

A normal class period in Japanese universities lasts 90 minutes and each class meets about 15 times per term. The available length of time to administer the tests of metaphorical competence for this study was estimated to be 90 minutes (one class period) or 180 minutes (two class periods) unless the class specifically dealt with enhancing metaphorical understanding and use. The estimated total number of subjects ranged around 200. Under these circumstances, it might not be possible to retest all of the items in the tests of metaphorical competence on all of the subjects. For this reason, a scheme was necessary to allocate the number of subjects to specific test items and therefore a selection from the test items of the metaphorical competence was made.

Suppose the estimated total number of subjects were about 200 and they were divided into three groups, then approximately 65 subjects would be available for each group as examinees. In other words, the test items were to be classified into three groups in order to test on approximately 65 subjects. Writing (i.e. productive) tests usually require more time for subjects to complete than reading (i.e. receptive) tests do. Therefore, there may well be more receptive test items than productive test items if a grouping of test items are made. The more test items there are in the test, the better the results statistically. However, the time constraint does not allow this to happen. If one class period (i.e. 90 minutes) can be allocated to administer 3 kinds of the tests of metaphorical competence (the tests of metaphorical receptive, i.e. MC-RT, those of metaphorical productive, MC-PT, and XYT, i.e. MC-XYT), another class period can be allocated to VLT and PolyT. Taking these constraints into account, the number of possible items within the time allowance was decided upon: a maximum of 4 items for MC-RT, and 3 for MC-PT of metaphorical competence for each group. This allocation makes 12 test items for MC-RT and 9 for MC-PT possible in total. However, one of the items in MC-RT and MC-PT was respectively used as a benchmark across the groups. This made the total test items for MC-RT 10 and those for MC-PT 7. The 6 test items in MC-XYT were tested on all the subjects. To examine the reliability and validity of a small number of test items, a special statistic treatment by SPSS for the test results was taken. This will be delineated at the related specific results.

Since all of the subjects are divided into three groups, the homogeneity among the groups must be examined, in case the results among the groups are compared. VLT is used as an index for the rest of the tests, and at the same time, one of the test items from both the receptive and productive will play the role of a benchmark. From the findings of the ease/difficulty of classification of the test items and the contents of the answers in the previous tests in Study 3, the items R-10 (*Wake not a sleeping lion*) for MC-RT and P-8 (*If you climb the ladder, you must begin at the bottom*) for MC-PT could respectively serve as

benchmarks for the remainder of the MC-RT and MC-PT. The test items are recycled from the previous study.

The selection and grouping of the test items for the tests of metaphorical competence in Study 4

The grouping of the test items was formed based upon the results of ease/difficulty listed in Tables 5-8 and 5-9 in Study 3. There were two considerations in comprising the grouping: the ease/difficulty shown in the test results and the characteristics and/or quality of the test items. The ideal components of the test items in a group are that one item serves as a benchmark; another item or items should have a high score from the previous test; secondly one or two items should have a medium score; finally one item should have a low score. The reason for including the test items of higher and lower scores was that different levels of test items and the slightly different quality embedded in the test items/passages may be able to measure a wider range of competence.

Familiarity/unfamiliarity with the expressions is also a matter of consideration. The quality of the answers may also be important. About half of the four English expressions (i.e. test items) in each group in the receptive test share similar meanings to the Japanese equivalents and the rest are idiomatic or proverbial including unfamiliar expressions. In the productive test, the majority of the three English expressions (i.e. test items) convey clear images and the rest are idiomatic or proverbial also including an unfamiliar expression.

The test items in the 3 groups

The following are the test items allocated to the 3 groups.

The receptive test, MC-RT:

In this test, about half of the four English expressions (i.e. test items) in each group share similar meanings (including subtle implications) to the Japanese equivalents (indicated by the letter S in the following test item lists) and the remainder are idiomatic or proverbial (indicated with I in the following test item lists). One of the passages is an idiomatic expression indicated with I +, in which a strong contextual support is provided, while others are moderately contextual. This is to investigate how effective contextual support is for an idiom which is assumed to be unfamiliar to EFL students. One same item serves as a benchmark for every group.

MC-RT items for Group 1:

(The letter and number at the end of the item, for example, [R-10] coincide with those in Study 3. The same is applicable to the other groups.)

1. *Wake not a sleeping lion.* (benchmark)(S) (abbreviated as *lion*)[R-10]
2. *Fish stinks at the head.* (S/I) (abbreviated as *fish*)[R-3]
3. *to let the cat out of the bag* (I+)(abbreviated as *let*)[R-1]
4. *to be off one's head* (I) (abbreviated as *off*)[R-5]

MC-RT items for Group 2:

1. *Wake not a sleeping lion.* (benchmark)(S)[R-10]
2. *The rotten apple injures its neighbours.* (S) (abbreviated as *rotten*)[R-7]
3. *a pain in the neck* (I) (abbreviated as *pain*)[R-6]
4. *to stand in someone's way* (I) (abbreviated as *stand*)[R-4]

MC-RT items for Group 3:

1. *Wake not a sleeping lion.* (benchmark)(S)[R-10]
2. *A little pot is soon hot.* (S) (abbreviated as *pot*)[R-2]
3. *You cannot eat* your cake and have it.* (I) (abbreviated as *cake*)[R-11]

*The original English proverb is 'You cannot have your cake and eat it. However, it may be misunderstood by EFL students who might think that if you do not have your cake, you can not eat it or that if you have eaten your cake, it will be gone and you cannot have it in your hand. To avoid these misunderstandings, the order is as it is in the test.

4. *to hold one's head high* (S) (abbreviated as *head high*)[R-8]

The productive test, MC-PT:

Similar consideration was taken in selection and grouping of the productive test items. Three test items, one of which was a benchmark expression, were allocated to each group. The majority of the three English expressions (i.e. test items) convey clear images of movement or situation (indicated with C in the following lists) and the other is a conventional idiomatic English expression (indicated with I in the following lists).

MC-PT items for Group 1:

5. *If you climb the ladder, you must begin at the bottom.* (benchmark)(C)
(abbreviated as *ladder*)[P-8]
6. *The bird has flown away.* (C) (abbreviated as *bird*)[P-9]
7. *to spill the beans* (I) (abbreviated as *spill*)[P-4]

MC-PT items for Group 2:

5. *If you climb the ladder, you must begin at the bottom.* (benchmark)(C)[P-8]
6. *to see which way the cat jumps* (C/I) (abbreviated as *cat*)[P-3]
7. *to keep one's head down* (C/I) (abbreviated as *head down*)[P-2]

MC-PT items for Group 3:

5. *If you climb the ladder, you must begin at the bottom.* (benchmark)(C)[P-8]

6. *to throw out the baby with the bath water* (I) (abbreviated as *baby*)[P-1]

7. *Although the sun shines, leave not your coat* at home.* (C/I) (abbreviated as *sun*)[P-6]

*The original word 'cloak' was replaced by the word 'coat' in the test because the word 'coat' is more familiar to EFL students.

The combination of test items allocated to a group

Each group had a combination of 4 receptive test passages numbered from 1 to 4, one of which was a benchmark plus 3 productive test items numbered from 5 to 7, one of which was a benchmark. The total number of test items for a group was 7 and each test item had both literal and metaphorical questions (i.e. literal and metaphorical interpretations in the case of the receptive, and literal and metaphorical uses in the productive). The format was the same as in the previous studies.

Assessment and treatment of the answers in the tests of metaphorical competence, VLT and PolyT

The criteria for the assessment and treatment of the answers in the tests of metaphorical competence, VLT and PolyT were the same as those in Study 3. The total points allocated to the tests of metaphorical competence were 54 points, which contained 12 points for the receptive literal test; 12 for the receptive metaphorical; 9 for the productive literal; 9 for the productive metaphorical; 6 for XYT literal; 6 for XYT metaphorical, VLT 120 and PolyT 20.

The assessments of the tests of metaphorical competence were made by two raters: a middle-aged male native English speaker and the author. The assessment procedure and scoring are the same as in Study 3. The agreement ratios between the two raters were approximately 80 % first. After the discussion on differences, the agreement ratios reached 96%. The disagreement remained in the problems of spelling and grammatical errors and collocations. The assessments for VLT and PolyT were made by the author.

6. 2. RESULTS OF STUDY 4

Treatments of the results

The quantitative answers were computed on SPSS 11.0 for Windows. In the following several sections, the results of the tests which all of the subjects took (VLT, PolyT and MC-XYT) are shown first, followed by the tests (MC-RT and MC-PT) which the grouped subjects

took and the correlations among the tests. Then brief summaries of the linguistic competence and the homogeneity of the subjects in Studies 3 and 4 and the differences in the answers by gender and study abroad experiences are shown.

The overall results of VLT, PolyT and MC-XYT

Table 6-1 shows the test results of the 172 subjects who took VLT, PolyT and MC-XYT.

Table 6-1 Means & Standard Deviations of VLT, PolyT and MC-XYT. (N=172)

Test / Max	Mean	Std. Deviation
VLT/120	81.33	19.84
POLYT/20	10.63	4.61
MC-XYT/12	4.66	2.35

The mean scores of the 172 subjects were slightly different from those of the previous chapter. The mean scores of VLT and SD in the previous chapter were 96.39 and 14.7 respectively; those of PolyT were 14.38 and 2.73 respectively; those of MC-XYT were 4.54 and 1.96 respectively. The mean scores of VLT and PolyT were higher in Study 3, however, the mean score of MC-XYT showed a similarity.

Table 6-2 summarises the groupwise results of the receptive, productive, VLT, PolyT and MC-XYT.

Table 6-2 Means and Standard Deviations of the MC-RT, MC-PT, MC-XYT, VLT and PolyT of the 3 Groups

Test / Max	Group 1 N	Mean	SD	Group 2 N	Mean	SD	Group 3 N	Mean	SD
MC-RT/24	57	12.05	6.48	56	12.54	7.61	59	11.83	5.26
MC-PT/18	57	7.05	4.53	56	7.03	5.39	59	5.0	3.84
MC-XYT/12	57	5.11	2.59	56	4.23	2.06	59	4.63	2.35
VLT/120	57	81.31	19.67	56	80.43	20.48	59	82.1	19.09
PolyT/20	57	10.74	4.71	56	10.89	4.11	59	10.29	5.01

The results of the whole population had already been shown in Table 6-1. Here in Table 6-2 were the groupwise results. Some results seemed to show similar phenomena while others were a little different. Therefore, first the groupwise homogeneity of MC-XYT, VLT and PolyT is looked at, and second that of the individual results of the receptive and productive tests items due to the different number of subjects tested on the items.

The significance values in the Levene statistic for the homogeneity of variances (.05 significance level) with MC-XYT, VLT and PolyT were .43, .82 and .36. The results of the

ANOVA with MC-XYT showed $F(2,169)=1.27$, $p=.28$; those with VLT showed $F(2,169)=.72$, $p=.93$; those with PolyT showed $F(2,169).27$, $p=.77$. These values indicate the homogeneity was not violated. Therefore, we can treat all groups as having the same vocabulary ability. Further analyses and comparisons will appear in the research questions 1 to 4 in the ANALYSES AND DISCUSSION.

The results of the benchmark tests of MC-RT and MC-PT

One of the test items was used as a benchmark in MC-RT and MC-PT. The one in the MC-RT was '*Wake not a sleeping lion*,' and the other in the MC-PT was '*If you climb the ladder, you must begin at the bottom*.' The following are the statistical data of these two tests.

Table 6-3 Means & Standard Deviations of the benchmark tests

	N	MC-RT ' <i>Wake not a sleeping lion</i> ' (Max=3)				MC-PT ' <i>If you climb the ladder, ... bottom</i> ' (Max=3 p)			
		literal		metaphorical		literal		metaphorical	
Groups		Mean	SD	Mean	SD	Mean	SD	Mean	SD
1	57	2.18	1.31	1.57	1.43	1.85	1.28	1.69	1.27
2	56	2.28	1.67	1.58	1.45	1.76	1.21	1.53	1.29
3	59	2.15	1.31	1.53	1.47	1.53	1.29	1.45	1.32
Total	172	2.20	1.25	1.56	1.44	1.71	1.26	1.56	1.29

The ANOVA results for each item were as follows: MC-RT literal '*Wake not a sleeping lion*': $F(2,169)=.16$, $p=.86$; MC-RT metaphorical '*Wake not a sleeping lion*': $F(2,169)=.02$, $p=.98$; MC-PT literal '*If you climb the ladder, you must begin at the bottom*': $F(2,169)=1.02$, $p=.36$; MC-PT metaphorical '*If you climb the ladder, you must begin at the bottom*': $F(2,169)=.53$, $p=.59$. These results showed that the groups were not significantly different and that the benchmarks served their purpose.

Overall results of the tests of metaphorical competence: MC-RT and MC-PT

Since the different test items were allocated to the 3 groups, the results were shown accordingly in Tables 6-4 to 6-6.

Table 6-4 Means of the MC-RT and MC-PT (Group 1: N=57)

Test item	MC-RT literal (Max per item=3 points)				MC-RT metaphorical (Max per item=3 points)			
	1.lion	2.fish	3.let	4.off	1.lion	2.fish	3.let	4.off
Mean	2.18	0.98	2.05	1.54	1.57	1.1	2.31	0.33
Test item	MC-PT literal (Max per item=3 points)			MC-PT metaphorical (Max per item=3 points)				
	5.ladder	6.bird	7.spill	5.ladder	6.bird	7.spill		
Mean	1.85	1.74	0.56	1.69	1.08	0.13		

Table 6-5 Means of the MC-RT and MC-PT (Group 2: N=56)

	MC-RT literal (Max per item=3 points)				MC-RT metaphorical (Max per item=3 points)			
Test item	<i>1.lion</i>	<i>2.rotten</i>	<i>3.pain</i>	<i>4.stand</i>	<i>1.lion</i>	<i>2.rotten</i>	<i>3.pain</i>	<i>4.stand</i>
Mean	2.28	1.48	2.18	1.77	1.58	1.39	0.68	1.17
	MC-PT literal (Max per item=3 points)			MC-PT metaphorical (Max per item=3 points)				
Test item	<i>5.ladder</i>	<i>6.cat</i>	<i>7.head down</i>	<i>5.ladder</i>	<i>6.cat</i>	<i>7.head down</i>		
Mean	1.76	1.46	1.07	1.53	0.52	0.69		

Table 6-6 Means of the MC-RT and MC-PT (Group 3: N=59)

	MC-RT literal (Max per item=3 points)				MC-RT metaphorical (Max per item=3 points)			
Test item	<i>1.lion</i>	<i>2.pot</i>	<i>3.cake</i>	<i>4.head high</i>	<i>1.lion</i>	<i>2.pot</i>	<i>3.cake</i>	<i>4.head high</i>
Mean	2.15	2.82	0.7	0.82	1.53	2.3	0.82	0.7
	MC-PT literal (Max per item=3 points)			MC-PT metaphorical (Max per item=3 points)				
Test item	<i>5.ladder</i>	<i>6.baby</i>	<i>7.sun</i>	<i>5.ladder</i>	<i>6.baby</i>	<i>7.sun</i>		
Mean	1.53	0.47	1.02	1.45	0.15	0.38		

The overall mean scores indicate that some items obtained high mean scores, while others low mean scores. The receptive literal performance of the 7 target items (*lion*, *off head*, *rotten apple*, *pain*, *stand*, *pot* and *head high*) obtained higher means than the performance of the receptive metaphorical counterparts.

In the receptive test, the preceding literal passages and/or the clues in the context in the metaphorical passages themselves might help comprehension, for example, the contextual support in the item *let* was very strong, as stated earlier. The similar tendencies, though not so strong the contextual support was as in the item *let*, were found in the items, such as *pot* and *fish*. The mean scores of these items were higher, as shown in the tables.

In the productive test, the clues or meanings resided in the target expressions, therefore, the subjects had to interpret those implications and embed them into passages by themselves. In this sense, the productive test exemplified their metaphorical competence more overtly. Specific details are discussed in the Discussion section.

Overall results of the test of metaphorical competence: MC-XYT

Features of the 6 target adjectives

The results of the means and SDs of the 6 adjectives of XYT in Study 4 are shown in Table 6-7. The answers were assessed on a one point scale for each item in Study 4. If the results in Studies 3 and 4 are compared, the data in Table 5-13 in Study 3 needs to be doubled. It can be said briefly here that the answers in the two studies were slightly different and they showed similar phenomena in some cases but different in other cases. This will be investigated in the

analyses in Research Questions 1– 2.

In Study 4, too, most of the mean scores of the literal parts were higher than those of the metaphorical counterparts. The lowest in the literal use in Study 4 was the manipulation of the adjective *weak* and the highest the adjective *wild*. The highest in the metaphorical use was the adjective *bright* and the lowest the adjective *grey*. Table 6-7 shows these results of the literal and metaphorical answers of the 6 target adjectives.

Table 6-7 Means and SDs of the 6 adjectives of MC-XYT (N=172)

adjectives	literal (Max= 1)		metaphorical (Max= 1)	
	Mean	SD	Mean	SD
bright	0.49	0.33	0.54	0.38
dark	0.52	0.27	0.29	0.35
grey	0.46	0.36	0.22	0.31
high	0.44	0.34	0.33	0.37
weak	0.28	0.37	0.24	0.36
wild	0.56	0.42	0.32	0.35
Total (Max=6)	2.74		1.93	

The subjects were required to answer in a required format ‘X is an adjective Y’ in MC-XYT. The number of answers in a required format was counted first, second the ratio of the number of answered in a required format to the whole population (172) was calculated and it contrasted with the average of each item. Table 6-8 shows the raw number of answers in a required format, the ratios of the answers to the whole population and averages in the required format in the literal and metaphorical uses. This aimed to investigate the relation between the number of the answers in a required format and the quality of the answers (i.e. average).

Table 6-8 The answer ratios in the required format in the literal and metaphorical uses (N=172)

adjectives	No. of answers in literal use	Ratio of answers against the whole population(%)	Ave. (Max=1)	No. of answers in metaphorical use	Ratio of answers against the whole population(%)	Ave. (Max=1)
bright	58	33.7	0.49	51	29.6	0.54
dark	59	34.3	0.52	40	23.3	0.29
grey	45	26.2	0.46	30	17.4	0.22
high	52	30.2	0.44	38	22.1	0.33
weak	39	22.7	0.28	28	16.3	0.24
wild	59	34.3	0.56	34	19.8	0.32

The results of the means in Table 6-7 and those of the answer ratios written in the required

format (shown in Table 6-8) coincided to a degree though not exactly the same: the lowest answer ratio in the literal use was 22.7 % of the adjective *weak* with the average 0.28, while the highest 34.3 % of the adjectives *dark* and *wild* with the averages 0.52 and 0.56 respectively. The second to the highest was 33.7 % of the adjective *bright* with the average 0.49. The lowest answer ratio in the metaphorical use was 16.3 % of the adjective *weak* with the average 0.24, while the highest was 29.6 % of the adjective *bright* with the average 0.54, followed by the adjectives *dark* (23.3 %) and *high* (22.1 %) with the averages 0.29 and 0.33 respectively.

It was found that the averages in the two studies did not show a great difference (see Tables 5-12 and 5-13) although the number of answers written in the required format in Study 4 was larger than those in the previous study. The averages in the order from high to low in the metaphorical use were *bright*, *high*, *wild*, *dark*, *weak* and *grey*. The quality of answers coincided with this order, for example, the adjective *bright* provided numerous and interesting answers, while the *grey* scanty and poor. The answer ratio in the required format in the metaphorical use from high to low was: *bright*, *dark*, *high*, *wild*, *grey* and *weak*. A large number of the answers in a required format did not always mean the quality of the answers though there was some correspondence. It can be said all in all from these results that the EFL students felt more accessible to the adjectives *bright*, *dark*, *high* and *wild* but less accessible to *grey*, and finally that the adjective *weak* seemed to bring in some problems. This will be further delineated later.

The confusion of literal with metaphorical uses and vice versa

There was some confusion between literal and metaphorical uses found in the answers. The following are the ratios of the confusion of a literal use with a metaphorical (from high to low ratio): the adjective *weak* 22.7%, *wild* 10.5 %, *high* 9.9 %, *bright* 1.7%, *grey* 0.6%. There was no confusion of literal and metaphorical and vice versa found in the answers in the adjective *dark*, however, this does not mean that the manipulation of this adjective was perfectly ideal.

The ratios of the confusion of the metaphorical use with the literal (from high to low ratio) were *weak* 5.2%, *wild* 2.9 %, *high* and *dark* 1.7 % respectively, *grey* 1.2 % and *bright* 0.6%. The highest ratios were on *weak* and *wild*, followed by *high* and then by *dark*, *grey* and *bright*. Some examples from the answers which showed a typical confusion between the two uses are as follows.

- 1) the adjective *weak*: the confusion of a literal use with a metaphorical: weak point(s); that of metaphorical with literal: My pet is a weak dog. / They are weak dogs.
- 2) the adjective *wild*: the confusion of a literal use with a metaphorical: a wild man or guy; that of metaphorical with literal: The lions are wild animals.
- 3) the adjective *high*: the confusion of a literal use with a metaphorical: high score / high

tension; that of metaphorical with literal: a high nose / The mountain is high.

4) the adjective *dark*: the confusion of a literal use with a metaphorical: none; that of metaphorical with literal: She has dark eyes / the clouds are dark today.

5) the adjective *grey*: the confusion of a literal use with a metaphorical: My feeling is grey; that of metaphorical with literal: The cats are grey.

6) the adjective *bright*: the confusion of a literal use with a metaphorical: a bright person; that of metaphorical with literal: His head is a bright electric ball.

Correlations among the tests

Spearman's rho (rank-order-correlation) was used to discover the overall correlations between the 4 tests with a view to investigating a relationship between Japanese EFL students' metaphorical competence and linguistic competence. Tables 6-9 to 6-11 show the results of Spearman's rho (rank-order-correlation) coefficients for Met T (MC-RT plus MC-PT) and MC-XYT together with VLT and PolyT for the 3 groups.

Table 6-9 Correlation in Group 1 (N=57)

Test / Max	Met T/42	MC-XYT/12	VLT/120	PolyT/20
Met T/42	1.000	.533**	.582**	.674**
Sig.(2-tailed)	.	.000	.000	.000
MC-XYT/12		1.000	.503**	.591**
Sig.(2-tailed)		.	.000	.000
VLT/120			1.000	.735**
Sig.(2-tailed)			.	.000
PolyT/20				1.000
Sig.(2-tailed)				.

** : Correlation is significant at the .01 level (2-tailed).

Table 6-10 Correlation in Group 2 (N=56)

Test / Max	Met T/42	MC-XYT/12	VLT/120	PolyT/20
Met T/42	1.000	.534**	.784**	.820**
Sig.(2-tailed)	.	.000	.000	.000
MC-XYT/12		1.000	.588**	.405**
Sig.(2-tailed)		.	.000	.002
VLT/120			1.000	.691**
Sig.(2-tailed)			.	.000
PolyT/20				1.000
Sig.(2-tailed)				.

** : Correlation is significant at the .01 level (2-tailed).

Table 6-11 Correlation in Group 3 (N=59)

Test / Max	Met T/42	MC-XYT/12	VLT/120	PolyT/20
Met T/42	1.000	.375**	.499**	.523**
Sig.(2-tailed)	.	.003	.000	.000
MC-XYT/12		1.000	.606**	.515**
Sig.(2-tailed)		.	.000	.000
VLT/120			1.000	.806**
Sig.(2-tailed)			.	.000
PolyT/20				1.000
Sig.(2-tailed)				.

** : Correlation is significant at the .01 level (2-tailed).

The overall features are as follows: all of the correlations among the tests showed positive; especially, the correlations between VLT and PolyT were high.

The correlations among the metaphorical tests, VLT and PolyT are as follows.

- 1) A strong correlation (i.e. $r=.50 - 1.0$) between Met T (i.e. the metaphorical receptive & productive tests) and VLT was found in Group 2 ($r=.784$; $p<.01$) and in Group 1 ($r=.582$; $p<.01$) and the medium correlation (i.e. $r=.30 - .49$) in Group 3 ($r=.499$; $p<.01$).
- 2) a strong correlation between Met T (i.e. the metaphorical receptive & productive tests) and PolyT was found in all of the 3 groups: Group 2 ($r=.820$; $p<.01$), Group 1 ($r=.674$; $p<.01$) and Group 3 ($r=.523$; $p<.01$).
- 3) A strong correlation between MC-XYT and VLT was found in all of the 3 groups: Group 3 ($r=.606$; $p<.01$), Group 2 ($r=.588$; $p<.01$) and Group 1 ($r=.503$; $p<.01$).

These results indicate that the correlations of VLT and PolyT to the metaphorical tests were significant. However, since the above results include the literal parts, the specific results of the correlations of the metaphorical parts to the other tests will be discussed later in Research Question 4.

The linguistic competence of the subjects in Study 3 and Study 4

Since the subjects in Study 4 were not the same as those in Study 3, the linguistic competence of the subjects in the two studies was examined using the 2000 and 3000 word levels of VLT (Max=120 points). From the point of view of raw scores, the mean scores of the subjects in Study 3 were higher than those in Study 4 with a mean difference of 15.06. The mean score of Study 3 was 96.39 (80.33% score in 120 points in VLT) and that of Study 4 was 81.33 (67.78 % score in VLT). This indicates that the difference was not small. The t-test result also indicated that there was a difference between the subjects in Study 3 ($M=96.39$, $SD=14.69$) and those in Study 4 [$M=81.33$, $SD=19.84$; $t(266.75)=7.24$], $p<.05$. The linguistic ability of the subjects in the two studies was not homogeneous. Therefore, the re-testing will be

able to investigate whether or not there is any difference in the results of these two executions and in the long run, whether or not the tests of metaphorical competence can be universally used for any EFL subjects.

The homogeneity of the 3 groups demonstrated by VLT

The different metaphorical test items in the receptive and productive were allocated to the 3 groups, therefore, VLT was again used as an index to the other tests in order to discover whether or not homogeneity among the 3 groups was violated. If the homogeneity in VLT is guaranteed among the 3 groups, the results obtained in the tests can be treated equally across the groups in comparison of the results. For that purpose, the ANOVA/Levene procedure for the homogeneity of variance was conducted. The significance value in the Levene statistic for equality of variances (with the significance level .05) was $p=.82$. The results of the ANOVA with VLT showed $F(2,169)=.11$, $p=.90$, therefore, the homogeneity among the groups was demonstrated at least in terms of vocabulary size and it will ensure that discussion is possible.

6. 3. THE EFFECT OF STUDYING ABROAD AND THE GENDER DIFFERENCE

The effect of studying abroad

There were 5 subjects with study abroad experiences of 1 year or less. These 5 cases were compared with non-study abroad 5 subjects with vocabulary scores equivalent to the former's. The metaphorical test items used for the comparison were the benchmarks and all of the 6 items of MC-XYT. The results of the VLT mean score of the study abroad was 98.6 points (82.17 %) while that of non-study abroad was 95.4 points (79.5 %). The study abroad subjects' score was slightly higher. The averages of the metaphorical tests were shown in Table 6-12.

Table 6-12 The averages of the benchmarks and XYT 6 items

Study abroad or non-study abroad	N	Receptive (Max=3)		Productive (Max=3)		MC-XYT (Max=6)	
		literal	metaphorical	literal	metaphorical	literal	metaphorical
Study abroad	5	3	3	3	3	3.3	2.4
Non-study abroad	5	3	2.8	2.8	3	3.4	2.7

The averages of the receptive literal and metaphorical of the former were 3 points (100 %) each; the averages of the receptive literal and metaphorical of the latter were 3 (100 %) and 2.8 points (93.3%) respectively. The averages of the productive literal and metaphorical of the former were 3 points each while those of the latter were 2.8 (93.3%) and 3 (100 %) respectively. On the other hand, the averages of MC-XYT of the former and the latter were reversed on the receptive and productive tests. From a qualitative analysis of the answers (checking the answers again), no

significant difference was found. It may be too early to conclude because there were only 5 cases to compare, but the results probably indicate that there may not be a direct influence from the study abroad on metaphorical competence if it is a short period (1 year or less) as shown in the case of these subjects. However, this does not deny the possibility of influence from a greater amount and quality of exposure to a foreign language. It must be investigated in new research. This possibility aside, the metaphorical competence seems to be more related to the subjects' language proficiency, especially vocabulary knowledge, as will be seen in the later sections of this chapter.

The gender difference

To examine a gender difference, a t-test was computed on the scores of VLT, MC-XYT and the benchmark items of the metaphorical test. First the results of VLT and MC-XYT were summarised and then those of the receptive and productive tests of metaphorical competence.

The results of VLT and MC-XYT:

All the results were quoted from 'Equal variances assumed' column since the significance values of Levene's Test for Equality of Variances indicated more than $p=.05$.

- 1) There was no significant difference in scores for males VLT ($M=82.36$, $SD=19.89$), and female VLT [$M=80.81$, $SD=19.91$; $t(170)=-.48$, $p=.63$].
- 2) There was no significant difference in scores of the MC-XYT literal for males ($M=2.59$, $SD=1.24$), and females XYT literal [$M=2.83$, $SD=1.22$; $t(170)=-1.21$, $p=.23$].
- 3) There was no significant difference in scores of MC-XYT metaphorical for males ($M=2.0$, $SD=1.31$), females MC-XYT metaphorical [$M=1.94$, $SD=1.39$; $t(170)=.27$, $p=.79$].

The above results showed there was no significant difference in scores in VLT and MC-XYT between genders.

The results of MC-RT and MC-PT:

Concerning the results of the MC-RT and MC-PT, the 3 significance values of Levene's Test for Equality of Variances indicated less than $p=.05$ and the other more than $p=.05$. The former were the results of the MC-RT literal and MC-PT literal benchmark items (*lion L & M* and *ladder L*). Therefore, the t-test results for Equality of Means for these 3 items were quoted from 'Equal variances not assumed' in the following 4) – 6), while the significance value of the MC-PT metaphorical (*ladder M*) was $p=.22$, where the t-test result for 'Equal variances assumed' was quoted in the following 7).

- 4) There was no significant difference in scores of the MC-RT literal for males ($M=2.33$, $SD=1.12$), females MC-RT literal [$M=2.11$, $SD=1.33$; $t(123.41)=1.07$, $p=.29$].
- 5) There was no significant difference in scores of the MC-RT metaphorical for males ($M=1.85$,

SD=1.34), females MC-RT metaphorical [M=1.44, SD=1.47; $t(115.33)=1.81$, $p=.07$].

6) There was no significant difference in scores of the MC-XYT productive literal for males (M=1.89, SD=1.13), females MC-XYT productive literal [M=1.65, SD=1.31; $t(121.34)=1.24$, $p=.22$].

7) There was no significant difference in scores of the MC-PT metaphorical for males (M=1.69, SD=1.25), females MC-PT metaphorical [M=1.54, SD=1.32; $t(170)=.72$, $p=.47$].

The above results also showed there was no significant difference in scores of the benchmarks in MC-RT and MC-PT between genders.

6. 4. ANALYSIS AND DISCUSSION FOR RESEARCH QUESTION 1

The overall results in Study 4 were described in the previous sections. Analyses and discussions for the research questions are delineated hereafter.

Research Question 1) What results are obtained if the tests of metaphorical competence used in Study 3 are tested on different subjects? (i.e. re-testing of the same tests on different subjects)

Since the numerical data in Study 4 was shown in the previous sections, the main focus here is on analysis and discussion of the data with a view to discovering the features or characteristics of the answers together with the schemas employed in the interpretation and use of the targets expressions. The number of subjects in MC-RT and MC-PT in Study 3 was far smaller than that in Study 4, therefore, we should be careful about comparisons. When the numbers of the subjects differ, it may be better to take measures from both content-based qualitative analysis and numerical analysis.

The following first several sections discuss the similarities and differences found in the features in the receptive and productive tests in Study 4, referring to those in Study 3, with a focus on the schemas used by the EFL students. The later sections will consider the features of MC-XYT in the two studies with the same focus.

6. 4-1. THE FEATURES AND SCHEMAS FOUND IN THE ANSWERS

MC-RT (i.e. the receptive test)

Most of the features in the answers (i.e. phenomena of the schemas) in Study 4 were similar to those found in Study 3. Tables 6-13 to 6-16 summarise the answers in MC-RT in Study 4 in contrast with those in Study 3. As the different test items of MC-RT and MC-PT were allocated to the 3 different groups in Study 4, the results are shown accordingly. The results shown in red in the following tables indicate that there was a considerable discrepancy (20 % point difference) revealed in the two studies. The features of the answers in MC-RT are collectively described in the section of aspects of the schemas and features after Tables 13-16, because there are a few outstanding items to be focussed upon: first the benchmark item and then the items which showed a great discrepancy between the two studies.

The schemas employed in the benchmark *lion*

Table 6-13 shows the summary of the schemas in the benchmark *lion* in Study 4 in contrast with the summary of the same item in Study 3. The marks in the tables indicate the following classifications: ○=manifestation of literal interpretation in the Literal part and manifestation of metaphorical interpretation in the Metaphorical part; △=miscellaneous answers/partial error; ×=lack of manifestation of interpretation or misunderstanding; *=no answer. The same is applicable to

Tables 6-13 to 6-16.

Table 6-13 The schemas employed in the benchmark *lion*

MC-RT				
literal		metaphorical		
Items	Study 3	Study 4	Study 3	Study 4
<i>lion</i>	○80% ×20%	○81% ×17% * 2.3%	○Interpretation supported by knowledge & mapping: lion=she; wake not=leave her alone 60% △30% * 10%	○Interpretation supported by knowledge & mapping: lion=she; wake not=leave her alone 67% ×14% * 19%

(The number of subjects in Study 3 = 10; the number of subjects in Study 4=172, i.e. Groups 1-3)

The schemas employed in the items *fish, let cat* and *off head*

Table 6-14 shows the summary of the schemas in the items *fish, let* and *off head* in Study 4 in contrast with those in Study 3.

Table 6-14 The schemas employed in the items *fish, let cat* and *off head*

MC-RT				
literal		metaphorical		
Items	Study 3	Study 4	Study 3	Study 4
<i>fish</i>	○58% △8% ×33%	○43% △28% ×24% * 14%	○Mapping/analogy: head=boss; stink=collapse or trouble 50% ×16% * 33%	○Mapping/analogy: head=boss; stink=collapse or trouble 51% ×19% * 28%
<i>let cat</i>	○60% ×30% * 10%	○67% △3.5% ×18% * 13%	○Mapping: cat=secret; let...out=reveal 80% * 20%	○Mapping: cat=secret; let...out=reveal 77% △3.5% * 14%
<i>off head</i>	○89% △11%	○58% △26% * 16%	○Idiomatic interpretation 33% ×67%	○Idiomatic interpretation 21% ×54% * 25%

(The number of subjects in Study 3 : *fish*=12; *let cat*=10; *off head*=9; the number of the subjects in Study 4=57, i.e. Group 1)

The schemas employed in the items *rotten, pain* and *stand*

Table 6-15 shows the summary of the schemas in the items *rotten, pain* and *stand* in Study 4 in contrast with those in Study 3.

Table 6-15 The schemas employed in the items *rotten*, *pain* and *stand*

MC-RT				
literal		metaphorical		
Items	Study 3	Study 4	Study 3	Study 4
<i>rotten</i>	○57% ×43%	○55% △29% × * 16%	○Mapping: rotten=bad neighbour 29% ×14% * 57%	○Mapping: rotten=bad neighbour 50% ×25% * 25%
<i>pain</i>	○64% ×27% * 9%	○79% ×19% * 2%	○Analogy: pain in the neck=difficulty 55% ×27% * 18%	○Analogy: pain in the neck=difficulty 45% ×29% * 20%
<i>stand</i>	○67% ×33%	○59% ×34% * 7%	○Interpretation supported by the idiomatic knowledge & context 44% ×44% * 11%	○Idiomatic interpretation & analogy: way=obstacle 41% × 43% * 19%

(The number of subjects in Study 3 : *rotten*=7; *pain*=11; *stand*=9; the number of subjects in Study 4= 56, i.e. Group 2)

The schemas employed in items *pot*, *cake* and *head high*

Table 6-16 shows the summary of the schemas in the items *pot*, *cake* and *head high* in Study 4 in contrast with those in Group 3.

Table 6-16 The schemas employed in the items *pot*, *cake* and *head high*

MC-RT				
literal		metaphorical		
Items	Study 3	Study 4	Study 3	Study 4
<i>pot</i>	○63% ×18% * 18%	○95% △ 3% * 2%	○Mapping: pot=girl, woman; hot=grow up 73% * 27%	○Mapping: pot=girl, woman; hot=grow up 76% △14% * 10%
<i>cake</i>	○38% ×38% * 25%	○32% △54% * 14%	○Mapping/analogy 25% ×38% * 38%	○Mapping/analogy 27% △46% * 27%
<i>head high</i>	○36% ×55% * 13%	○29% △ 29% * 39%	○Idiomatic interpretation 36%, ×36% * 27%	○Idiomatic interpretation 14% △47% ×22% * 17%

(The number of subjects in Study 3 : *pot*=11; *cake*=8; *head high*=11; the number of subjects in Study 4= 59, i.e. Group 3)

Aspects of the schemas and features in MC-RT

Most of the phenomena of the answers in Study 4 were similar to those in Study 3. The following specific similarities and differences are found: the item *lion* showed similar features in the two studies, while the items which displayed a considerable discrepancy in the two studies are the items *off head* in Table 6-14, *rotten* in Table 6-15 and *pot* in Table 6-16. The discrepancies in the two items (*off head* and *pot*) were in the literal interpretations and the others (*rotten* and *head high*) in the metaphorical interpretations. The discrepancies in the item *off head* (the manifestation of proper

interpretation ratios were 89% in Study 3 and 58% in Study 4) and in the item *pot* (32 % point difference) in the literal counterpart. The incorrect answers provided in the literal part of the item *off head* varied from “the size and/or design of the hat does not fit the head” or “put on the hat.” The latter was interpreted as an opposite meaning. In the case of the item *pot*, there was confusion between the literal and the metaphorical, i.e. the metaphorical interpretation in the literal part, for example, “the child grows up quickly” or “the child has become a chef.”

The discrepancy in the item *rotten* between the literal and the metaphorical in the two studies was larger than in the rest of the items. The problem seemed to be caused by the vocabulary, such as *injure*, *rotten* and/or *neighbours*. It can be said from a qualitative analysis that the problem resided in the interpretations of these words in the metaphorical part. For example, there were answers in Study 4 in which the subjects interpreted *injure* as physical (body) injury not as having a metaphorical meaning. It was also found in the interview that some interviewees did not know the meanings of *rotten* and *neighbours*, either. In the case of *head high*, there were quite a few misunderstandings in the metaphorical meaning. And there was more zero answer ratio in this item in Study 3 than in Study 4. These phenomena probably caused the discrepancy.

As a whole, the more subjects there were in the tests, the greater the diversity may have been in the answers. However, it seemed that vocabulary knowledge was a great factor for the subjects to understand the meaning of a passage and a target expression.

MC-PT (i.e. the productive test)

Most of the phenomena in Study 4 were similar to those found in Study 3. Tables 6-17 to 6-20 summarise the representative answers in MC-PT in Study 4 in contrast with those of the same test items in Study 3, followed by analyses of the answers in the individual groups. The results shown in red in the following tables indicate a considerable discrepancy (20 % point difference) revealed in the two studies. Since the answers in MC-PT showed more specific features compared with those in the MC-RT, some outstanding schema features are individually described after the items of each group are shown.

The marks in the Tables 6-17 to 6-20 indicate the following classifications: ○=manifestation of literal use in the Literal part and manifestation of metaphorical use in the Metaphorical part; △ =miscellaneous answers/partial error; × =lack of manifestation of metaphorical use or ill-manipulation or misinterpretation of the item; *=no answer.

Since the features of the answers varied according to the items, a discrepancy is looked at first and then specific features on what schemas were employed and how they can be interpreted from the contents of the answers, first about the benchmark, then the rest of the items. A considerable discrepancy between Study 3 and Study 4 was with the item *baby*. This will be discussed later in the

section of *baby* and *sun*. First the benchmark *ladder* is looked at and then the other items. The contents preceded by a circle in the tables are looked at carefully and those by a triangle and an x are also taken up when the contents of the answers signify strong implications.

The schemas employed in the items *ladder*

Tables 6-17 shows the summary of the schemas employed in the benchmark item *ladder* in Study 4 in contrast with those in Study 3.

Table 6-17 The schemas employed in the benchmark *ladder*

MC-PT				
literal			metaphorical	
Items	Study 3	Study 4	Study 3	Study 4
<i>ladder</i>	○55%	○62%	○Mapping: ladder=stages of accomplishment; bottom=start; climb=action or efforts 82%	○Mapping: ladder=stages of accomplishment; bottom=start; climb=action or efforts 75%
	×36%	×16%	△9%	△9%
	*27%	*22%	*9%	*16%

(The number of subjects in Study 3=11; the number of subjects in Study 4=172, i.e. Groups 1-3)

Analysis of the schemas and features in the benchmark *ladder*

The breakdowns of the majority of mapping (75%) of the answers in the metaphorical part of the item *ladder* in Study 4 are

- learning languages and/or playing sports should be started from the basics—55%
- the basics is important in our life as a general moral—12%
- to go up to/be the top, for example, to be a big star or to be successful in business, the basic is important—8%

The majority of the answers were didactic, such as giving advice from someone to someone else or from oneself to oneself. The image mappings seemed to take place with physical and psychological implications. The features of the answers shared in the two studies were in common.

The schemas employed in the items *bird* and *spill*

Table 6-18 shows the summary of the schemas employed in the items *bird* and *spill* in Study 4 in contrast with those in Study 3.

Table 6-18 The schemas employed in the items *bird* and *spill*

MC-PT				
literal			metaphorical	
items	Study 3	Study 4	Study 3	Study 4
<i>bird</i>	○50% ×13% * 38%	○49% ×19% * 30%	○Mapping: bird=friend or fortune; fly away=lose 38% ×13% * 50%	○Mapping: bird=friend or fortune; fly away=lose 47% ×9% * 44%
<i>spill</i>	○56% * 44%	○21% △5% * 74%	○Mapping: spill=disclose; beans=secret 22% ×11% * 56%	○Mapping: spill=disclose; beans=secret 2% ×16% * 82%

(The number of subjects in Study 3 : *bird*=8; *spill*=9; the number of subjects in Study 4= 57, i.e. Group 1)

Analyses of the schemas and features in the items *bird* and *spill*

The item *bird*

The breakdowns of the mapping (47%) in the item *bird* are

- someone, e.g. child, lover or pet, is gone away—24%
- something important, e.g. money, peace, luck is lost—23%

The majority of the answers were descriptive or narrative, such as giving advice or telling a story.

There was a metonymic mapping, such as the one between bird and child or lover.

The item *spill*

The breakdown of the mapping (2%) in the item *spill* is

- in a quarrel, everything came out—2%

Though there was a 20% point difference between Study 3 and Study 4, any crucial causes could not be found in the answers. However, it can be said that the high incorrect answer ratio and no answer ratio may have statistically contributed to this low result but more fundamentally it may have been caused by the EFL students' unfamiliarity with the expression. The same phenomenon was found in the other idiomatic expression, *to throw out the baby with the bathwater*. This will be discussed later. The majority of the answers were descriptive or narrative.

The schemas employed in the items *cat jump* and *head down*

Table 6-19 shows the summary of the schemas employed in Study 4 in contrast with those in Study 3.

Table 6-19 The schemas employed in the items *cat jump* and *head down*

MC-PT				
literal		metaphorical		
Items	Study 3	Study 4	Study 3	Study 4
<i>cat jump</i>	○42% △ 8% * 50%	○43% △16% * 41%	○Mapping: cat=human; which way=selection 17% × 8% * 75%	○Mapping: cat=human; which way=selection 21% △5% × 9% * 64%
<i>head down</i>	○45% ×18% * 36%	○43% ×7% * 50%	○Mapping: head down=the posture of failure or disappointment 36% ×9% * 55%	○Mapping: head down=the posture of failure or disappointment, or to show humbleness 26% △14% ×5% * 55%

(The number of subjects in Study 3 : *cat jump*=12; *head down*=11; the number of subjects in Study 4= 56, i.e. Group 2)

Analyses of the schemas and features in items *cat jump* and *head down*

The item *cat jump*

The breakdowns of the mapping (21%) in the item *cat jump* are

- selection, i.e. to choose, as in gambling (e.g. a pachinko game) or in shopping—12%
- hard decision making—9%

The majority of the answers were descriptive. In the interview, the following information was discovered. The image of *cat* stimulated imagining something or someone that moved swiftly and the word *jump* stimulated the view of quick movement which linked to a quick alternative choice.

The item *head down*

The breakdowns of the mapping (26%) in the item *head down* are

- the posture of revealing or showing disappointment or repentance—12%
- the posture of showing respect or a salute—12%
- the posture of avoiding drawing attention—2%

The majority of the answers were descriptive or narrative. The image mappings seemed to take place in physical and psychological implications. There was only one answer in Study 4 which exemplified the original meaning of this idiom.

The schemas employed in the items *baby* and *sun*

Table 6-20 shows the summary of the schemas employed in Study 4 in contrast with those in Study 3.

Table 6-20 The schemas employed in the items *baby* and *sun*

MC-PT				
literal			metaphorical	
Items	Study 3	Study 4	Study 3	Study 4
<i>baby</i>	○50% ×40% *10%	○22% △15% ×12% *51%	○Mapping: baby=important thing/person; throw out=lose or abandon; bath water=unnecessary thing/person 30% ×30% *40%	△Partial mapping: baby=important thing or person; throw out=lose or abandon; bath water=unnecessary thing/person 11% *89%
<i>sun</i>	○36% ×9% *55%	○36% △8% ×8% *47%	○Analogous interpretation of the proverb 18% ×9% *73%	○Analogous interpretation of the proverb 17% ×7% *75%

(The number of subjects in Study 3 : *baby*=10; *sun*=11; the number of subjects in Study 4 = 59, i.e. Group 3)

Analyses of the schemas and features in the items *baby* and *sun*

The item *baby*

The quantity and quality of the mapping in the item *baby* (11 % in Study 4) was not high, because most of the answers in Study 4 could only involve a partial use of either of the expressions *to throw out the baby* or *with the bathwater*, for example, ‘the important person or thing’ was mapped to the *baby*, or ‘to lose or stop something’ to *to throw out*. It seemed to be hard for the subjects to combine the two elements at the same time in one passage. Therefore, there was no single answer evaluated as a full mark in Study 4. There was also no high answer ratio in this item in Study 4. The only one answer (the vocabulary score of this subject was 103) which attained a full mark was in Study 3, in which both the elements were successfully embedded in a passage: ‘the important things in the subject’s room’ was mapped to *the baby*; ‘to sweep away the important things with unnecessary things in the room’ to *to throw out the baby with the bathwater*.

The item *sun*

The breakdowns of the mapping (17%) of the item *sun* were -giving warnings, e.g. preparing for examination, economic slump or general advice for daily life. The majority of the answers were didactic.

It can be claimed as a whole that metaphorical manipulations of the conventional idiomatic expressions were poorly performed. Details concerning metaphorical competence are further discussed in the sections on Research Questions 2 to 4.

6. 4-2. SUMMARY OF THE DIFFERENCES BETWEEN STUDY 3 AND STUDY 4

The above sections analysed the schemas and features of the answers in MC- RT and MC-PT. This section will summarise the differences between Studies 3 and 4, reviewing the schema employment results revealed in the manifestation classification shown in Tables 6-13 to 6-20, together with the EFL students' literal and metaphorical performance.

The differences among the items of the MC-RT

The differences among the items of the MC-RT between Studies 3 and 4 can be summarised in the following 3 categories from the results of the schema classifications of Tables 6-13 – 6-16:

1) Items with less than 20 % point difference both in Literal and in Metaphorical parts:

Wake not a sleeping lion, to let the cat out of the bag, a pain in the neck, to stand in someone's way and You cannot eat your cake and have your cake.

2) Items with over 20 % point difference in Literal part:

Fish stinks at the head, to be off one's head and A little pot is soon hot

3) Items with over 20 % point difference both in Literal and Metaphorical parts:

The rotten apple injures its neighbours, and to hold one's head high

Summary of the features of the differences:

(i) Category 1. Items with less than 20 % point difference both in the literal and in the metaphorical parts:

Most of the correct answer ratios, i.e. positive aspects of the schemas, were higher in Literal parts than the Metaphorical counterparts. The first 3 items showed fairly good ratios of interpretation (mostly over 60 or 70 %) both in the literal and metaphorical parts, while the rest were lower than these. The reason for the higher answer ratios may be that the passages elicited the meanings easily. However, the item which revealed a difference with higher ratios of negative evaluations (marked with × and * in Tables 6-13 to 6-16) was the last item. The data is shown in Table 6-21.

Table 6-21 The negative results: negative aspects

items	Literal (marked with × & *)				Metaphorical (marked with ×&*)			
	Study 3 (%)		Study 4(%)		Study 3 (%)		Study 4 (%)	
	×	*	×	*	×	*	×	*
<i>You cannot eat your cake and have your cake.</i>	38	25	0	14	38	38	0	27

There seem to be two problems with this item: one may be of vocabulary and the other the contents of the passages. As for vocabulary, there are unfamiliar words such as 'reproachfully'

and/or 'indignantly' in the literal part and 'poverty' in the metaphorical part. Those with the mean score over 70 % in VLT (i.e. a threshold for metaphorical competence as stated in Chapter 5) obtained two times as high of mean score as those below 69 %, for example, in the item *cake*, the mean score of those with over 70 % in VLT was 1.21 points while that of less than 69 % was 0.42. Thus lack of knowledge of the words may have hindered the subjects' understanding and increased the zero answer ratios (marked with*).

Another important issue is metaphorical interpretation. As details will be delineated in Research Questions 3 and 4, here briefly are some possible reasons. The test consists of paired passages: one is literal and the other metaphorical. The subjects may have been assisted by this, however, it necessitates a metaphorical sensitivity for recognition or metaphorical/analogical reasoning and/or activation of mapping operative to interpret metaphorical meanings. In addition it also requires a wider vocabulary or lexical knowledge to understand what the expression means.

Investigating metaphorical recognition, some interviewees mentioned in the interviews that they understood the meaning of a certain expression by 'daburaseru' in their mind, which means 'overlapping' something on/over another thing. Overlapping could be a word, an image or a movement. This actually means 'mapping.' They were not conscious of 'mapping' nor knew the exact terminology of what they were doing but they actually followed the procedure of mapping when they dealt with the expressions metaphorically.

To sum up, the possible reasons for the higher interpretation ratios are as follows.

a) In the item *lion*, they utilised their knowledge of the world concerning this proverb as stated earlier. In the item *let*, there is a strong contextual support, as also stated earlier. In the item *pain*, the subtlety of the metaphorical meaning in the passage may have caused some difficulty compared with the clear meaning in the literal counterpart and the other items.

b) Contrary to the straightforward meaning in the literal part of the items *stand* and *cake*, the metaphorical counterpart may have been too subtle or complex for the EFL students.

All in all the elements which may be relevant to the higher ratios of interpretation are vocabulary knowledge, knowledge of the expressions (including the knowledge of the world), contextual support in the passages, and activation of metaphorical analogy.

(ii) Category 2. Items with over 20 % point difference in the literal part:

The differences were found in the correct answer ratios, i.e. positive aspects of the 2 items *off* and *pot* as shown in Table 6-22. There was no great difference in the item *fish* in both studies, however, it had a slight problem.

Table 6-22 The positive results: positive aspects

items	literal (marked with ○ & △)			
	Study 3 (%)		Study 4 (%)	
marks	○	△	○	△
<i>Fish stinks at the head</i>	58	8	43	28
<i>To be off one's head</i>	89	11	58	26
<i>A little pot is soon hot.</i>	63	0	95	3

Possible reasons for the differences are ambiguous interpretations, such as 'eat fish from the head' for the item *fish* and 'the daughter became a chef' for the *pot*. The most problematic was the item *off*. Therefore, the negative answer ratios of this item were looked at. The data is shown in Table 6-23.

Table 6-23 The negative results: negative aspects

items	metaphorical (marked with × & *)			
	Study 3		Study 4(%)	
marks	×	*	×	*
<i>To be off one's head</i>	67	0	54	25

The interpretation made in the literal passage of the item *off* did not cause as much hindrance as in the metaphorical counterpart as seen in Tables 6-22 and 6-23. The idiomatic expression 'to be off one's head' is an unfamiliar one to EFL students. This item could not elicit interpretation, as shown in the high ratios of misinterpretation and zero answers.

(iii) Category 3. Items with over 20 % point difference both in the literal and metaphorical parts:

To discover the causes of the differences, it is better to look at both the positive and negative aspects of the schema results at the same time. Table 6-24 shows the positive aspects and Table 6-25 the negative.

Table 6-24 The positive results: positive aspects

items	literal (marked with ○)				metaphorical (marked with○)			
	Study3(%)		Study 4 (%)		Study 3 (%)		Study 4 (%)	
marks	○	△	○	△	○	△	○	△
<i>The rotten apple injures its neighbours</i>	57	0	55	29	29	0	50	0
<i>To hold one's head high</i>	36	0	29	29	36	0	14	0

Table 6-25 The negative results: negative aspects

items	metaphorical (marked with × & *)			
	Study 3 (%)		Study 4 (%)	
<i>marks</i>	×	*	×	*
<i>The rotten apple injures its neighbours</i>	14	57	25	25
<i>To hold one's head high</i>	36	27	22	17

The passages and the answers were examined again. There seemed to be two problems: one was of vocabulary again, especially for those with smaller vocabulary and the other was a hindrance resulting from the words in the passages. The first item *rotten* includes the words *rotten* and *neighbours* in the literal and metaphorical passages and *reputation* in the metaphorical. The second item *head high* includes *majestic* in the literal and *drown* in the metaphorical. These words may have hindered interpretation, especially the word *drown* which might be confused by EFL students with the word *down*. These elements may have made interpretation difficult. The vocabulary size seemed to affect their interpretations, as seen in the results of the mean scores of those over 70 % in VLT and below, for example, in the item *rotten*, the former obtained 2.21 points vs. the latter 0.44 and in the item *head high*, the former 0.94 vs. the latter 0.38.

To sum up, the possible reasons for the lower interpretation ratios are as follows.

- a) misinterpretations of the literal passage, such as 'apples are stolen' or 'the apples belong to neighbours' in the answers to the item *rotten*. In addition, the answers were dispersed, for example, there were various interpretations in the answers to the item *head high*. This phenomena seemed to be caused by misunderstanding of the words and poor inference.
- b) confusions between the literal and metaphorical interpretations, for example, 'It/They look(s) like rotten apples' and 'to keep head high' or 'to hold the head high' were triggered by the metaphorical passages.

From these phenomena, it can be said that knowledge of vocabulary, knowledge of the expressions (including general knowledge) and the subtlety of the passages influenced the EFL students' performance in their literal and metaphorical interpretations.

The differences among the items of MC-PT

The differences among the items of MC-PT between Studies 3 and 4 can also be summarised in the following 3 categories:

- 4) Items with less than 20 % point difference both in Literal and in Metaphorical parts:

The bird has flown away, to see which way the cat jumps, to keep one's head down and Although the sun shines, leave not your coat at home.

5) Item with over 20 % point difference in Literal part:

If you climb the ladder, you must begin at the bottom

6) Items with over 20 % point difference both in Literal and Metaphorical parts:

to spill the beans and to throw out the baby with the bath water

Summary of the features found in the above categories:

(iv) Category 4. Items with less than 20 % point difference both in the literal and in metaphorical parts:

There were no great differences in the correct answer ratios in this category between Study 3 and Study 4. These 4 items may have stimulated subjects' cognition with clear images of motion and/or movement. The characteristics of the expressions may have led to the good results.

(v) Category 5. Item with over 20 % point difference in the literal part:

The difference in the item *ladder* was in the negative aspects in the literal part as shown in Table 6-26.

Table 6-26 The negative results: negative aspects

items	literal (marked with × & *)			
	Study 3 (%)		Study 4 (%)	
marks	×	*	×	*
<i>If you climb the ladder, you must begin at the bottom.</i>	36	27	16	22

Some interviewees in Study 4 suggested they had understood this expression metaphorically at first sight. However, the high misuse ratio of this item was caused by the confusion between its literal use and metaphorical uses. There were some subjects who could not distinguish the literal from the metaphorical, though this tendency was also generally applicable to the other items and also to MC-RT.

To sum up, the possible reason for a high performance in the metaphorical part compared with the other items is that this item *ladder* stimulates a clear visual image of movement. It seemed to be easier to manipulate the expression of bodily movement(s) metaphorically.

(vi) Category 6. Items with over 20 % point difference both in Literal and Metaphorical parts:

The items in this category provided several noteworthy insights: the positive and negative aspects indicate the performance differences in the two studies and in the literal and metaphorical manipulations, some of which had already been described. They are shown in Tables 6-27 and 6-28.

Table 6-27 The positive results: positive aspects

items	literal (marked with ○&△)				metaphorical (marked with ○&△)			
	Study 3 (%)		Study 4 (%)		Study 3 (%)		Study 4 (%)	
marks	○	△	○	△	○	△	○	△
<i>to spill the beans</i>	56	0	21	5	22	0	2	0
<i>to throw out the baby with the bath water</i>	50	0	22	15	30	0	0	11

Table 6-28 The negative results: negative aspects

items	literal (marked with × &*)				metaphorical (marked with × &*)			
	Study 3 (%)		Study 4 (%)		Study 3 (%)		Study 4 (%)	
marks	×	*	×	*	×	*	×	*
<i>to spill the beans</i>	0	44	0	74	11	56	16	82
<i>to throw out the baby with the bath water</i>	40	10	12	51	30	40	0	89

The positive answer ratios, especially in the metaphorical parts were low while the negative ratios were high. As stated earlier, these items are conventional idiomatic expressions, therefore, there seemed to be a discrepancy between those who knew the meanings and those who did not. This may have been a major cause.

To sum up, the possible reasons for the low ratio of the positive aspects repeated here, namely, lack of vocabulary, for example, 'spill' or 'beans' in the first item and unfamiliarity with the highly conventional idiomatic expressions.

Differences viewed from the means of the test items

Here the differences are looked at from the perspective of the means in Studies 3 and 4. The items which had a mean difference of more than 1 point between the two studies were the following 3 items. We must note here that there was a limitation to the data, for example, there were a fewer number of subjects in Study 3 and not all of the subjects answered the same test items in Study 4. However, this problem may be tolerated in data comparison because of the homogeneity result among the test groups as stated earlier.

MC-RT literal: *to be off one's head* (2.8 points in Study 3; 1.54 points in Study 4); *You cannot eat your cake and have your cake* (2.1 points in Study 3; 0.7 points in Study 4)

MC-RT metaphorical: *a pain in the neck* (1.8 points in Study 3; 0.68 points in Study 4)

Several words in the first 2 passages are not ordinary ones and the passages do not have as strong

contextual supports as in, for example, the item *let*. The vocabulary in the second passage, ‘reproachfully’ and ‘indignantly,’ may have been problematic for the EFL students with smaller vocabulary. This may have hindered their understanding. As a matter of fact, most of the subjects in Study 3 provided correct answers while some of those in Study 4, whose vocabulary size was a little smaller did not. The interpretations made by those with smaller vocabulary were widely spread, for example, ‘being not able to think’ or ‘not hit upon anything’ for the first item and ‘you cannot have or eat your cake’ or ‘you cannot eat your cake’ for the second.

The third item *a pain in the neck* caused misinterpretations such as ‘contradictory,’ ‘the person is nervous’ or ‘being suffocated’. The misinterpretation may have been caused by ignorance of the true meaning of this idiomatic expression.

In brief, the vocabulary, the knowledge of idioms and the metaphorical/analogical reasoning and its manipulation are primary issues in production as well as in interpretation.

MC-XYT

Some of the features in MC-XYT were described previously in the sections of results. Here are the data from the two studies compared and the features discussed.

The t-tests of the MC-XYT in the two studies

All the subjects took the same MC-XYT, therefore, a t-test was conducted. Firstly the descriptive statistics of MC-XYT of the two studies are shown in Table 6-29 and secondly the test for the equality of variances in Table 6-30. The L and M in the tables represent literal and metaphorical respectively.

Table 6-29 The Descriptive Statistics of MC-XYT in 2 studies

Study	Test (max points)	N	Mean	Std. Deviation
Study 3	MC-XYTL+M (12)	106	4.68	1.95
	MC-XYTL (6)	106	2.62	1.20
	MC-XYTM (6)	106	1.96	1.04
Study 4	MC-XYTL+M (12)	172	4.72	2.27
	MC-XYTL (6)	172	2.74	1.22
	MC-XYTM (6)	172	1.93	1.38

The mean scores in two studies differed. Therefore, an independent-sample-t-test was conducted to compare the scores in MC-XYT L+M, MC-XYT L and MC-XYT M in the two studies. The data of the Levene’s Test for Equality of Variances and the t-test for Equality of Means showed the following results.

Table 6-30 The Levene's Test and t-test for the MC-XYT in Studies 3 and 4

Tests Study 3 (S3)/ Study 4 (S4)		Levene's Test for Equality of Variances		t-test for Equality of means			
		F	Sig.	t	df	Sig.(2-tailed)	Mean Difference
MC-XYT L+M S3/ S4	Equal variances assumed	3.45	0.06	0.88	276	0.38	0.23
MC-XYT M S3 / S4	Equal variances assumed	1.07	0.30	0.02	276	0.99	0.00
MC-XYT L S3 / S4	Equal variances not assumed	5.16	0.02	1.72	250	0.01	0.24

The Levene's Test for Equality of Variances and the t-test for Equality of means in the MC-XYT L + M and MC-XYT M did not show significant differences ($> .05$), while MC-XYT L indicated a slight problem. Its significance level of Levene's Test was .02. It might violate the assumption of equal variance, as indicated by the equal variances not assumed and the significance value in the t-test (.01). Therefore, the effect size was investigated using the eta squared for the literal parts in the two studies. The partial eta squared showed .01, which was a small effect. These results guaranteed that comparisons between the two studies were possible.

The answers in the required format in the metaphorical use in Studies 3 and 4

Table 6-31 shows the number of answers and averages in the required format in the metaphorical use contrasting the data from the two studies. The answers which showed the confusion between the literal and metaphorical uses are excluded in the data.

Table 6-31 The number of answers and averages in the required format in the metaphorical use

adjectives	Study 3 (N= 106)			Study 4 (N= 172)		
	No. of answers	Ratio of answers in the requested format against the whole population(%)	Ave. (Max: converted to 1)	No. of answers	Ratio of answers in the requested format against the whole population(%)	Ave. (Max=1)
bright	21	19.5	0.56	51	29.6	0.54
dark	14	13.2	0.26	40	23.3	0.29
grey	4	3.8	0.22	30	17.4	0.22
high	19	17.9	0.28	38	22.1	0.33
weak	19	17.9	0.24	30	17.4	0.24
wild	13	12.3	0.40	34	19.8	0.32

The number of answers written in the required format in Study 4 was larger than those in Study 3, though the averages were similar. The highest averages in the two studies were on the adjective *bright*, the second and third highest were *wild* in Study 3 and *high* in Study 4, followed by *dark* and *weak* in both studies. The lowest averages were on *grey* in Study 3, and *grey* and *weak* in

Study 4. Viewing from the ratio of answers in the requested format, it seemed easier for the EFL students to manipulate the adjectives *bright*, *high* and *wild*. Specific features in the answers are looked at later in the sections of each adjective.

Figurativeness or metaphoricity in 'X is Y' concerns the quality of answers in MC-XYT, therefore, let me briefly review it before entering into detailed analysis and discussion.

Figurativeness/Metaphoricity in X is Y

The pattern 'X is Y' is used to describe a conceptual metaphor, for example, LIFE IS A JOURNEY. Therefore, MC-XYT is one of the easiest ways to measure metaphorical competence. In the sentence pattern of 'X is Y', figurativeness plays an important role in manipulation of metaphoricity as indicated by Malgady and Johnson (1980), Malgady (1975) and Aitchison (1987).

Malgady and Johnson (1980) attempted to quantitatively measure figurative language behaviour, utilising cognitive-feature model (Johnson, 1970), and found that "topic-vehicle similarity seems to play an important part in metaphor comprehension; that similarity, in turn, seems to translate into shared properties or features (1980: 241). Concerning the judgements of the figurativeness of sentences, they quote from Malgady (1975) as follows:

the judgements of the figurativeness of sentences are nonlinearly related to judgements of tenor-vehicle similarity when a broad range of properties are sampled from a potential anomaly-metaphor-tautology continuum. That is, sentences judged to be "figurative" (e.g. *Robes are justice.*), as opposed to "literal" (e.g. *Robes are garments.*) or "nonsense" (*Robes are trucks.*), occupy the middle range of the similarity continuum. As similarity increases or decreases (away from this middle range) "figurative" judgements decrease. The most typical metaphoric propositions seem to be those in which the topic and vehicle terms share a moderate degree of similarity, yet are not so transparent as to be trite, nor so remote as to stretch our imagination too far into the realm of impossibility. (Malgady and Johnson, 1980: 242)

A similar idea is alluded to by Aitchison (1987), as quoted in the previous chapter. These allusions suggest that if the subjects used a moderate degree of similarity between the topic and the vehicle in their answer, it should be an ideal answer. In the case of EFL students, however, all of the subjects did not necessarily give ideal answers. Although there was such a tendency in EFL students, some implications could be found in the answers, some of which have already been described in the previous chapter.

With the implications given by Malgady and Johnson (1980) and Aitchison (1987) in

mind, the metaphoricity/skills performed by the EFL students in the MC-XYT will be analysed and discussed in the following sections.

Features of the metaphoricity/skills using the 6 target adjectives

In the following sections, the metaphoricity/skills of the answers which were written in the required format *S (noun) + be-verb + (a) adjective N* are summarised first, followed by the answers not written in the required format *S (noun) + be-verb + (a) adjective N*.

The answers are roughly grouped according to the classifications used in Study 3, however, there were more variations to the answers in Study 4, hence, some other classifications are added in this study. Though there may be answers which might be better classified in other categories, the classifications are made by my interpretations or assessment of the contents of the answers. Several samples from the answers are listed in each group for discussion purposes. All of the answers are shown in Appendices 6-1 to 6-6. The number placed before the answer corresponds to that in the Appendices. A question mark placed at the head of a sample indicates that the answer has a nonsensical meaning or shows an ill manipulation (i.e. anomaly) and/or includes a grammatical error. L and M placed at the end of the answer respectively stand for Literal and Metaphorical. Errors (e.g. those of articles) are left as they were in the list due to the prevalence of the same errors (most of these errors are the ones caused by the EFL students' primitive linguistic ability).

Individual features of the metaphoricity/skills using the 6 target adjectives

The target adjective *bright*

1) the metaphoricity/skills in the answers which were written in the required format *S (noun) + be-verb + (a) adjective N*:

The answers are classified into the following 4 categories according to the implications of (i) cleverness/intelligence, (ii) warmth, liveliness or full of life, (iii) full of light, shining or bright colour and (iv) miscellaneous.

(i) the implications of cleverness/intelligence

1) Your eyes are bright stones. ~ 3-3) My uncle is a bright person. ~ 10) Mike is a bright robot.

(ii) the implications of warmth, liveliness or full of life

11-1) Her smile is the bright sun. (2 answers) ~ 12-1) Her mind is bright sun. ~ 13-1) Her heart is a bright sun.
14) The character of your teacher is a bright sun. ~ 16) The smile is bright star. ~ 21) The girl is a bright angel.

(iii) the implications of full of light, shining or bright colour

23) The moon light is a bright parl [sic] (i.e. pearl).

(vi) Miscellaneous (see Appendix 6-1)

The typical features in the above answers can be summarised as follows.

There were more answers written in the required format in Study 4 (51 answers = 29.6%) than in Study 3 (21 answers = 19.5 %). The means in the two studies are 0.56 in Study 3 (converted to a one point scale, and the same is applicable hereafter) and 0.54 in Study 4.

Although there were a larger number of the answers provided for this adjective in Study 4 than in Study 3, there were not as many successful metaphorical manipulations as expected. The following answers may be among the most successful manipulations: 23) The moon light is a bright pearl [sic] (i.e. pearl), the answers 11) ~16), and 21) The girl is a bright angel and 10) Mike is a bright robot. In the first case, there is a mapping between the colour and texture of the moon light and those of a pearl. No mapping was found between eyes and jewels or balls in Study 4 as in Study 3. In the answers 11~16), the state of smile, mind, heart, etc. was described by using the warmth, liveliness of the sun or the shining texture of a star. The subjects of the last two sentences (21. The girl is a bright angel and 10. Mike is a bright robot) are human, and the similarities between the topic and the vehicle are not so far apart and metaphorically well linked. The quality of the manipulations in the answers 1) ~ 6) was not especially good because they are the ordinary uses of the adjective *bright*: someone is a *bright* + human noun, though not wrong in metaphorical use.

2) the metaphoricity/skills in the answers which were not written in the required format: the answers in the headline 1) are included in the total of Tables 6-32 and 6-33.

2-1) Nexus features

Table 6-32 summarises the subjects of the sentences used in the answers.

Table 6-32 The subjects used in the sentence pattern of 'X is *bright* Y'

Subjects	Answers (number of answers)		Total	%
Nouns	Human-S	man(6), girl (6), student(s) (3), child,children (2), son (2), uncle (2), father (1), sister (1), person (1), friend(s) (1), champion (1), proper nouns, e.g. Tom (12)	38	28
	Non-human-S	smile (6), head (4) face (3), dog(s) (3), heart (2), mind (2), life (2), knowledge (1), thinking (1), character (1), behavior (1), way (1), future (1), light (1), eyes (1), check (1), hair (1), star (1)	33	24
Pronouns	Human-s	Personal pronouns: he(36), she(24), you(6)	66	48
	Non-human-S	it (1)	1	1

2-2) Junction features

Table 6-33 summarises the nouns connected to the target adjective *bright*.

Table 6-33 The nouns connected to the adjective *bright*

		Answers (number of answers)	Total	%
bright+	noun (human)	person(s) (20), boy (13), student(s) (13), man (11), girl(s) (7), child (1), foreigner (1), rookie (1)	67	59
	noun (non-human)	sun(16), star (3), ball (3), thinking (2), smile (2), animal(s) (2), dog (1), cat (1), monkey (1), God (1), angel (1), wife (1), robot (1), jewels (1), brain (1), eyes (1), face (1), character (1), future (1), choice (1), things (1), flower (1), orange (1), stone (1)	46	41

Typical features in the above answers can be summarised as follows.

In the Nexus features, the number of pronouns used as subjects was slightly larger than that of nouns, for example, He/She is a bright boy/girl. In the Junction features, the ratio of connections between the target *bright* to the human and non-human nouns showed equilibrium. The examples are: he is a bright man, the person is a bright man/boy/girl or her smile is the bright sun. These answers are the ordinary uses of *bright*.

The target adjective *dark*

1) the metaphoricity/skills in the answers which were written in the required format S (noun) + be-verb + (a) adjective N:

The answers are classified into the following 6 categories according to the implications of (i) something without light or the colour tending toward black or something concrete is black, (ii) being psychologically gloomy, (iii) being gloomy, secret, hidden or ambiguous in concrete and abstract meanings, (iv) having an evil, sinister or threatening quality, (v) secret or hidden ability and (vi) miscellaneous.

(i) the implication of something without light or the colour tending toward black or something concrete is black

5) Her hair is dark curtain.

(ii) the implication of being gloomy something abstract or psychological

10) Her heart is a dark room. 11) Today my heart is dark sea. 12) The boy's heart is a dark sky.

13) His mind is dark sea. 14) My life is dark sky. 15) The life without money is dark ocean.

16) His future is dark sky. 17) The road is a dark snake. 18) A night at New York City is a dark forests.

(iii) the implication of being gloomy, secret, hidden or ambiguous in concrete and abstract meanings

23) The person has a dark part.

iv) the implication of having evil, sinister or threatening quality

29) Her character is dark cloud. 30) Monster is a dark night. 31) That home is a dark zone.

v) the implication of secret or hidden ability

32) The winning person is a dark horse.

vi) Miscellaneous

35) ?Tom's friend is dark stomach.--L1 transfer

Typical features in the above answers can be summarised as follows.

There were more answers written in the required format in Study 4 (40 answers = 23.3%) than in Study 3 (14 answers = 13.2%). The mean in Study 4 was higher (0.29) than that in Study 3 (0.13).

The successful manipulations of *dark* in XY pattern in the above answers are probably 10) ~ 18) and 32). In the first 9 cases, the heart, mind, life and future as a container are mapped smoothly to such a space as the sea, ocean or sky. The answer 32) a *dark horse* appeared in this study but not in the previous one. It is a common English expression for English native speakers and is sometimes used by the Japanese in their discourse, too. The meaning of a dark horse is positive, but the original meaning is negative in the sense that the ability of the horse is not yet known and it may have a hidden power.

An interesting answer is 35) Tom's friend is dark stomach. The combination of *dark* with stomach seemed to originate in the L1 transfer. The student who wrote this answer might take advantage of their L1 knowledge. In Japanese there is an expression "haraguroi", in which "hara" means stomach or abdomen and "guroi," a mutation from "kuroi," meaning that someone has a black stomach. The colour black connotes something sinister or evil and the stomach is the organ in which living creatures preserve food. The food maps thought, as in "food for thought" in English. The parts of the body used in the expression differ (one is a stomach and the other a heart) and the colour gradation slightly differs (one black and the other dark), but the implication is shared. However, a question arises as to whether or not the sentence Tom's friend has a dark stomach makes sense in English. Two British informants mentioned it made no sense. The meaning of this sentence is, of course, Tom's friend is a black-hearted or evil-hearted person. As seen in this case in Study 4, there were more varieties of answers due to a larger number of subjects than in Study 3, which may provide some other interesting samples of L1 transfer in other target adjectives, as well.

2) the metaphoricity/skills in the answers which were not written in the required format:

the answers in the headline 1) are included in the total of Tables 6-34 and 6-35.

2-1) Nexus features

Table 6-34 summarises the subjects of the sentences used in the answers.

Table 6-34 The subjects used in the sentence pattern of 'X is *dark* Y'

Subjects		Answers (number of answers)	Total	%
Nouns	Human-S	person(s)(6), people(3), boy(2), friend(1), son(1), girl(1), worker(1), loser(1), Tom(1), Jane(1), character of Star Wars(1)	19	15
	Non-human-S	heart(8), character(5), future(5), mind(4), face(4), hair(3), life(2), eyes(2), personality(2), thinking(2), color of T-shirt(2), night(2), color of umbrella(1), feeling(1), idea(1), impression(1), atmosphere(1), voice(1), exam(1), society(1), Japan(1), NY City(1), road(1), mountain(1), home(1), room(1), diamond(1), clouds(1), monster(1), novel(1), today(1), running(1)	61	48
Pronouns	Human-s	personal pronouns: he(24), she(9), you(5), I(5), we(1)	44	34
	Non-human-S	it(3), this(1)	4	3

2-2) Junction features

Table 6-35 summarises the nouns connected the target adjective *dark*.

Table 6-35 The nouns connected to the adjective *dark*

		Answers (number of answers)	Total	%
dark +	noun (human)	person(5), man(3), girl(3), boy(2), student(1)	14	19
	noun (non-human)	sky(7), face(5), sea(3), world(3), feeling(2), future(2), character(2), expression(2), side(2), eyes(2), plan(2), horse(2), color(2), thoughts(1), image(1), idea(1), matter(1), point(1), part(1), atmosphere(1), room(1), hole(1), wing(1), night(1), deed(1), power(1), ocean(1), rock(1), cloud(1), angel(1), blue(1), stomach(1), stone(1), curtain(1), snake(1), tree(1), purposes(1)	60	81

Typical features in the above answers can be summarised as follows.

In the Nexus features, the descriptions of persons' gloomy or pessimistic states or their emotions using non-human nouns as the subject of a sentence were found slightly more often than human personal pronouns as the subject of a sentence.

In the Junction features, too, there were more answers connecting the target *dark* to non-human nouns.

The target adjective *grey*

1) the metaphoricity/skills in the answers which were written in the required format *S (noun) + be-verb + (a) adjective N*:

The answers are classified into the following 4 categories according to the implications of (i) a mixed colour of black and white, (ii) a gloomy or dull state without light, (iii) ambiguity, and (iv) miscellaneous.

(i) the allusion to a mixture of black and white

1) ?The stone is a grey sky.

(ii) the implication of being gloomy or dull without light

2-1) My heart is a grey sky. ~ 4) My feeling is a gray sky. / 5) My heart is grey water.

6) His father is grey ghost.

(iii) the implication of ambiguity

16-1) The problem is a grey zone. 16-2) The problem goes into grey zone.

(iv) miscellaneous (see Appendix 6-3)

The typical features in the above answers can be summarised as follows.

There were more answers and a greater variety of answers in the required format for the target *grey* in Study 4 than in Study 3, however, the quality of answers was not as high as that for the other target adjectives. The successful manipulations are probably 2), 4) and 16). In the cases of 2-1) and 2-2) My heart is a grey sky and 4) My feeling is a gray sky, it successfully implied the state of one's gloomy mood. In these sentences, a probable manipulation of the words and meanings is as follows: the heart and feeling as the topic and the combination of the sky as the vehicle, which stimulate our imagination of vastness, with the target *grey* as a hook or connector in between. On the contrary in the case of 5) My heart is grey water, the word *water* was a poor fit as a description because of its unclear meaning. The answer 6) His father is grey ghost (i.e. His father is a grey ghost) is primitive and childish, but better than the very worst answers. The expressions of a *grey zone* in 16-1) and 16-2) are commonly used in Japanese daily conversation. The word *grey* means ambiguity, as in the case of a *grey area*. All of the answers of the target *grey* conveyed negative images.

2) the metaphoricity/skills in the answers which were not written in the required format:

the answers in the headline 1) are included in the total of Tables 6-36 and 6-37.

2-1) Nexus features

Table 6-36 summarises the subjects of sentences used in the target *grey*.

Table 6-36 The subjects used in the sentence pattern of 'X is grey Y'

Subjects		Answers (number of answers)	Total	%
Nouns	Human-S	father(2), man(1), person(1)	4	5
	Non-human-S	heart(9), life(5), face(4), feeling(4), sky(4), problem(3), character(3), today(3), thought(2), mind(2), weather(2), eyes(2), world(2), answer(2), mood(1), memory(1), opinion(1), fact(1), color(1), color of this town(1), theory of evolution(1), day(1), rain(1), thread(1), house(1), office(1), stone(1), movie(1), ?bome(1)	62	73
Pronouns	Human-s	personal pronouns: I(6), he(2), she(3), you(3), we(1)	15	17
	Non-human-S	it(2), this(2)	4	5

The following were excluded from the total: cat(s)(L)(1), mouse(L)(1)

2-2) Junction features

Table 6-37 summarises the nouns connected to the target *grey*.

Table 6-37 The nouns connected to the adjective *grey*

Answers (number of answers)			Total	%
grey +	noun (human)	person(1)	1	2
	noun (non-human)	sky(8), day(s)(3), area(3), color(3), cloud(3), zone(2), atmosphere(2), , hair(2), life(2), water(2), stone(1), wall(1), ideas(1), image(1), mood(1), situation(1), ?sean[sic](i.e.scene)(1), heart(1), face(1), ghost(1), killer(1), literature(1), history(1), town(1), wall(1), sounds(1), scale(1)	47	98

Typical features in the above answers can be summarised as follows.

The Nexus features in the target *grey* show that nouns were used more often as the subject of a sentence than pronouns, for example, My heart/life is grey or My heart/life is grey sky. The Junction features show the target *grey* was connected overwhelmingly more to non-human nouns.

The target adjective *high*

1) the metaphoricity/skills in the answers which were written in the required format *S (noun) + be-verb + (a) adjective N*

The answers are classified into the following 5 categories according to the implications of (i) height, (ii) high standard/rank, skillfulness or importance in a concrete or abstract sense (iii) moral goodness or character, (iv) high feeling, state similar to drug ecstasy and (v) miscellaneous.

(i) the implication of height of concrete things

1-1) Ken is a high wall.

(ii) the implication of high standard/rank, skillfulness and of importance in an abstract sense

3) The computer is a high quality. / 3-1) The examination is high level. / 3-2) The boy's ability is high level.

(iii) the implication of moral goodness or character

12) His thought is a high opinion.

(iv) the implication of high feeling, similar to drug effect

14) His tension is high tension.–L1 transfer 15) My emotion is high sky.–L1 transfer

(v) miscellaneous (see Appendix 6-4)

The typical features in the above answers can be summarised as follows.

There were slightly more answers written in the required format in Study 4 (38 answers = 22.1%) than in Study 3 (19 answers = 17.9%). The means in the two studies did not differ greatly (0.33 in Study 4 and 0.28 in Study 3). The features are as follows.

The probable intention of most of the answers in category (i) seemed to emphasise the height of someone or something. These expressions are primitive and ordinary but successful to a degree. For the intention to mean high or a high standard, such as in the categories (ii) and (iv), most of the

answers (except for the answers with a question mark) were successful in the sense that they transferred the meaning of height in the concrete to that of abstraction.

There were some answers which seemed to be affected by L1 knowledge, for example, 14) His tension is high tension and 15) My emotion is high sky. There are similar expressions in Japanese, for example, someone's tension is high or someone's nerves or emotion is highly strung.

There were answers which were partially successful, for example, 12) His thought is a high opinion. In it, the portion of 'high opinion' makes sense, however, as a whole sentence, the topic and the vehicle are too close.

There was no answer which implied 'the most important point (of time)', for example, 'high time' provided in this study.

2) the metaphoricity/skills in the answers which were not written in the required format:

the answers in the headline 1) are included in the total of Tables 6-38 and 6-39.

2-1) Nexus features

Table 6-38 summarises the subjects of the sentences used in the answers.

Table 6-38 The subjects used in the sentence pattern of 'X is high Y'

Subjects		Answers (number of answers)	Total	%
Nouns	Human-S	man(3), boy(1), girl(1), mother(1), people(1), boss(1), Tom(1), Mike(1), Ken(1)	11	11
	Non-human-S	tension(5), building(4), feeling(s)(3), exam/examination(3), level(3), pride(2), tree(2), height(2), *tall(1), ability(1), score(1), position(1), price(1), game(1), soccer team(1), NBA player(1), computer(1), salary(1), life(1), lifestyle(1), emotion(1), thought(1), behavior(1), size(1), purpose(1), mountain(1), climbing mountain(1), wishes(1), illness(1), color(1), shirt(1), air(1), shoes(1), party(1), clock(1), jump(1), animals(1)	53	52
Pronouns	Human-s	I(12), he(11), she(9), you(2), they(2), we(1)	37	37
	Non-human-S			

2-2) Junction features

Table 6-39 summarises the nouns connected to the adjective *high*.

Table 6-39 The nouns connected to the adjective *high*

		Answers (number of answers)	Total	%
high +	noun (human)	person(1)	1	2
	noun (non-human)	mountain(s)(11), Fujiyama(1), tension(6), time(5), wall(s)(3), tree(2), position(2), opinion(2), level(2), score(2), society(2), risk(2), mood(1), spirit(1), quality(1), standard(1), class[sic] (i.e. class)(1), skill(1), price(1), hurdle[sic] (i.e. hurdle)(1), speed(1), *pressur (i.e. pressure)(1), crime(1), color(1), eyes(1), nose(1), fashion(1), building(1), tower(1), sky(1), fly(1), bird(1), giant(1), card(1), school(1)	63	98

Typical features in the above answers can be summarised as follows.

Non-human nouns were used more often as subjects of the sentences than human-nouns, for

example, my tension is high or the examination is a high hurdle. In the Junction features, too, the majority of the answers were those connecting the target *high* to non-human nouns, for example, *high mountain* or *high tension* to emphasise difficulty or unattainability. The following tendency was particularly noticeable: the combination of *high* + concrete nouns referring to an object at the position of high location; the combination of *high* + abstract nouns connoting high in level or standard. Both were manipulated well in the answers as metaphorical transfers.

The target adjective *weak*

1) the metaphoricity/skills in the answers which were written in the required format *S (noun) + be-verb + (a) adjective N:*

The answers are classified into the following 5 categories according to the implications of (i) physical or mental weakness or fragility in personality, (ii) lower skill or ability, (iii) lack of effectiveness, (iv) watery liquid, and (v) miscellaneous.

(i) the implication of physical weakness / the implication of mental weakness or fragility in personality

1-1) The person is a weak cat. / 1-2) Aki is a weak kitty. / 2) His heart is weak glass.

(ii) the implication of lower skill or ability

13) The man has a weak point. / 14) My friend describes my weak point. / 15-1) My weak point is sports.
15-2) English is my weak point.- L1 transfer / 16) ?Mike's brother is weak head. -L1 transfer

(iii) the implication of lack of effectiveness

19) The problem is a weak economy.

(iv) the implication of watery liquid

20) ?The drink is weak taste.

(v) miscellaneous

25) Your heart is a weak worm.

The typical features in the above answers can be summarised as follows.

The ratio of the answers written in the required format in Study 3 (19 answers = 17.9%) was slightly higher than that in Study 4 (30 answers = 17.4%). The Means in the two studies were the same (0.24). The following are the features of the answers.

The successful answers are 1-1), 1-2), 2) 13) and 14). In the first 3 answers, a human and his/her attributes were mapped to a weak animal or something easy to break to indicate fragility. The latter 2 answers used the combination of *weak* + point. Comments on these issues continue in the section of Junction features.

The noteworthy answers are 15-1) ~ 15-7), 16) and 25). All of these answers seemed to result

from L1 transfer. The expression ‘weak point’ (‘jakuten’ in Japanese, which consists of ‘jaku’, meaning weak, and ‘ten’ meaning point) means inferiority or something/someone lacking in ability or skills. The same tendency was found in the both studies.

Concerning the answers 16) ?Mike’s brother is weak head and 25) Your heart is a weak worm, there are Japanese expressions, such as “atama ga yowai,” ‘weak in head,’ meaning dull or slow in understanding, and “yowamushi,” ‘weak worm,’ meaning coward. Both concern the human organs’ ability of function: one refers to the brain and the other to the heart. Interestingly both describe these states metaphorically in the Japanese sense, however, it is a problem as to whether or not they make sense in English. One of the two British informants said these two answers made sense. He referred to “weak in the head” for the answer 16) (weak head) and commented on the communicability of ‘weak head’ to some extent and he also mentioned that the answer 25) (Your heart is a weak worm) made sense. On the other hand, the other informant said both were nonsense.

The answer 19) was partially successful, in the part of the expression *a weak economy*, however, there was a mismatch between the topic and the vehicle.

2) the metaphoricity/skills in the answers which were not written in the required format:

the answers in the headline 1) are included in the total of Tables 6-40 and 6-41.

2-1) Nexus features

Table 6-40 summarises the subjects of the sentences used in the answers.

Table 6-40 The subjects used in the sentence pattern of ‘X is weak Y’

Subjects		Answers (number of answers)	Total	%
Nouns	Human-S	man(4), woman(1), person(1), human(1), child(1), brother(1), grandmother(1), teacher(1), friend(1) Japanese(1) Tom(1)	14	15
	Non-human-S	heart(5), heartbeat(1), coffee(4), voice(4), stomach(2), point(3), brain(2), head(2), mind(2), mental(1), feeling(1), hope(1), imagination(1), life(1), ability(1), character(1), problem(1), legs(1), nose(1), eye(1), muscles(1), position(1), picture(1), power(1), sound(1), drink(1), smoking(1), stone(1), cat(1), pet(1), Aki(i.e. the name of cat)(1), English(1), mathematics(1)	49	52
Pronouns	Human-s	he(9) she(6) I(6), you(2)	23	24
	Non-human-S	this(6), it(2), they(1)	9	9

2-2) Junction features

Table 6-41 summarises the nouns connected to the target adjective *weak*.

Table 6-41 The nouns connected to the adjective *weak*

Answers (number of answers)		Total	%
weak + noun (human)	boy(2), person(1), baby(1)	4	6
noun (non-human)	point(s)(19), cat(5), voice(4), body(3), tea(3), dog(2), animal(s)(2), glass(2) heart(2), taste(2), head(1), brain(1), mind(1), ability(1), knowledge(1), argument(1), question(1), level(1), economic(1), sofa(1), coffee(1), worm(1), aunt(aunt?)(1), grass(1), bugs(1), kitty(1), bird(1), puppy(1), tiger(1)	63	94

The answer dog (L)(1) was excluded from the total.

Typical features in the above answers can be summarised as follows.

Non-human nouns were used more often as the subjects of the sentences as shown in the Nexus features. In the Junction features, too, the majority of answers connected the target *weak* to non-human nouns. Representative answers for this are someone's heart is *weak* or someone's voice is *weak*. However, most prominently mentioned is a *weak point*. There were 19 answers which used *a weak point*. This tendency was quite similar in the both studies.

The target adjective *wild*

1) the metaphoricity/skills in the answers which were written in the required format *S (noun) + be-verb + (a) adjective N*

The answers are classified into the following 4 categories according to the implications of (i) violence, uncontrollability of behaviour/feeling or thoughtlessness, (ii) violence or lack of thoughtfulness and/or excitement or eagerness, (iii) being untamed or uncultivated, and (iv) miscellaneous.

(i) the implication of violence, uncontrollability of behaviour and/or feeling, or lack of thoughtfulness

1) Today is a wild windy day. / 2-1) The wind is a wild animal. / 2-2) Men are a wild animal. (2 answers) ~
 2-10) Irabu is a wild pitcher. (Irabu is a professional baseball pitcher) ~ 4) His mind is a wild rock. /
 5) My boss is a wild lion. ~ 10) Mike Tyson is a wild horse.

(ii) the implication of violence or lack of thoughtfulness / the implication of excitement or eagerness

11) Your life is a wild life. / 12) The man's policy is wild living.

(iii) the implication of being not tame or cultivated

19) The land is a wild world.

iv) miscellaneous (see Appendix 6-6)

The typical features in the above answers can be summarised as follows.

There were far more answers written in the required format in Study 4 (34 answers = 19.8%)

than in Study 3 (13 answers = 12.3%). However, the means in the two studies were not far apart (0.32 in Study 4 and 0.40 in Study 3).

As for the features, the answers classified into 1) ~ 10) used dynamic images of the meaning of *wild* to emphasise the powerfulness of the wind, humans and their attributes (part of a body, mind and act). It is noteworthy that there were a considerable number of answers which used the word *wild* + animal, lion, monkey and horse. These animals are by no means weak in strength. In this sense, these answers implied power and were successful. The answer 19) does not give a strong impression, but it is successful in the sense that it connotes the vastness of space. Another characteristic of the use of this adjective is that there was a confusion between a literal and a metaphorical use in the answers. The subjects may not have been so conscious of literal and metaphorical uses.

2) the metaphoricity/skills in the answers which were not written in the required format:

the answers in the headline 1) are included in the total of Tables 6-42 and 6-43.

2-1) Nexus features

Table 6-42 summarises the subjects of the sentences used in the answers.

Table 6-42 The subjects used in the sentence pattern of 'X is *wild* Y'

Subjects		Answers (number of answers)	Total	%
Nouns	Human-S	man(5), men(1), son(1), boy(3), person(2), people(1), woman(1), boss(1), soccer player(1), Tom(1), George(1), Irabu(1), Takeshi(1)	20	19
	Non-human-S	life(4), character(3), lion(s)(3), way(2), act(2), face(2), sea(2), land(1), world(1), song(1), hair(1), hair style(1), fashion style(1), clothes(1), body(1), heart(1), spirit(1), mind(1), movement(1), action(1), looking(1), music(1), policy(1), wind(1), today(1), *daily(1), horse(1), Shiro(the name of a dog)(1)	39	36
Pronouns	Human-s	he(36), I(5), she(3)	44	41
	Non-human-S	this(2), it(2)	4	4

2-2) Junction features

Table 6-43 summarises the nouns connected to the target adjective *wild*.

Table 6-43 The nouns connected to the adjective *wild*

		Answers (number of answers)	Total	%
wild +	noun (human)	man(5), boy(5), person(4), human(1), lady(1), girl(1)	17	26
	noun (non-human)	animal(s)(11), lion(7), monkey(3), character(3), horse(s)(2), dog(2), style(2), hair style(1), life(2), world(2), atmosphere(2), guess(1), mind(1), body(1), skin(1), living(1), tiger(1), pitcher(1), *windy(1), rock(1), grass(1)	48	74

The following were excluded from the total: animal(s)(L)(3); fruit(L)(1).

Typical features in the above answers can be summarised as follows.

In the Nexus features, we can find the phenomena of uses of masculine nouns as noun

human subjects, followed by such words as life, human attributes and behaviours. As pronoun human subjects, there were a large number of uses of the masculine personal pronoun 'he'.

The Junction features showed that there were a great many connections of the target *wild* + animal(s)/lion. From these tendencies, we can see that the word *wild* stimulated the EFL students' image to map this word to something masculine. This is the same phenomena found in the previous study. Additionally, in this study, the word *wild* stimulated a desolate image.

Other features i.e. Phenomena of synesthesia among the 6 adjectives

The target adjectives used in this study have sensory meanings. The phenomena of synesthesia of words which have sensory meanings are often discussed in metaphor study. It is because metaphorical mappings occurs in different domains, in this case among sensory domains. Here are some phenomena of synesthesia found in the answers. Synesthesia phenomena were found more in the adjectives *bright*, *weak* and *wild* than in the rest. The adjective *bright* co-occurred with visual and thermal senses (abundant answers, such as a bright jewel or the bright sun), the *weak* with the auditory 'voice' (4 answers: My/His voice is weak, Mary's voice is weak animal, His singing voice is a weak puppy and ?The teacher is weak voice[sic]), with 'sound' (1 answer: The sound is weak voice) and 'heartbeat' (Her heart beat is weak), and with the gustatory sense 'taste' (2 answers: *weak* tea or coffee). Concerning the olfactory sense 'smell', there was an answer combined with 'nose', however, this answer (His nose is a weak point) did not convey any olfactory metaphorical implication. There was another answer which might be included in an auditory image (His heart is weak glass), because this answer seemed to tell of the fragility of his heart by using the word *weak* + glass metaphorically. The sentence has the effect of stimulating our sense as if we had heard the breaking sound of the glass.

The word *wild* co-occurred with the auditory image of 'music' (1 answer: The CD's music are wild atmosphere[sic]). Other combinations with the auditory images were found between *dark* (voice) and *grey* (grey sounds) (once respectively).

The adjectives *bright* and *high* seemed less effective in stimulating the synesthesia phenomena than the adjectives *weak* and *wild*. However, interestingly enough, the answers such as 'Your eyes are *bright* stones' and 'The man's face is *grey* stone' implied metaphorically that the eyes and the face were of a hard quality. In this sense, this visual meaning related to the tactile sense.

6. 4-3. SUMMARY OF MC-XYT

Most of the phenomena in the answers were similar to those in Study 3. From the view of the mean scores, the equality of variances for MC-XYT total and metaphorical mean scores

between Studies 3 and 4 did not show significant differences, however, the differences in the mean scores of MC-XYT literal between Studies 3 and 4 (2.62 and 2.74 respectively) seemed to be problematic. However, by the additional investigation by SPSS, the effect size showed a small effect (the partial eta squared was .01). This statistically indicates that there was no meaningful difference between the two studies. In the metaphorical parts, the results of Studies 3 and 4 were quite similar. The mean scores (in the order from high to low) of the target adjectives in Study 3 and Study 4 were as follows.

Study 3: *bright* 0.56; *wild* 0.40; *high* 0.28; *dark* 0.26; *weak* 0.24; *grey* 0.22

Study 4: *bright* 0.54; *high* 0.33; *wild* 0.32; *dark* 0.29; *weak* 0.24; *grey* 0.22

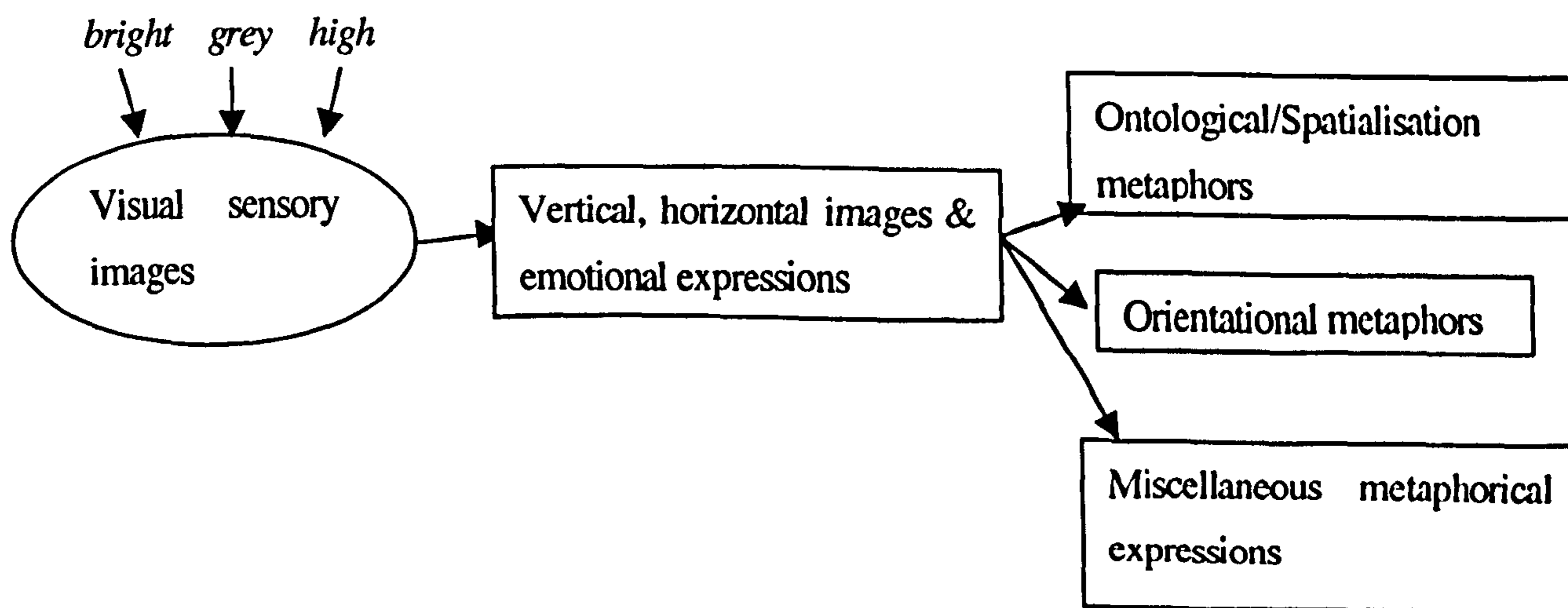
The rank order from high to low of the 4 items out of the 6 was the same and the mean scores were quite similar. The rest of the items (*high* and *wild*) replaced its positions with slight mean score differences. The adjectives *high* and *wild* may have stimulated a variety of L1 transfer or they may have triggered a variety of semantic fields, as stated earlier.

From the view of the content-based analyses, the quality of answers did not show a great difference, as described for the specific sections, for example, the images stimulated and/drawn by the target adjectives were similar in Studies 3 and 4. To conclude the discovery in MC-XYT, some phenomena found in Study 4 are summarised below.

The phenomena in Study 4 can be summarised as follows:

1) The adjectives which tended to be connected to visual images were *bright*, *grey* and *high*, of which the adjective *bright* connoted positive images, such as the connection between the smile and the bright sun; the adjective *grey* negative or pessimistic images, such as the connection between the feeling and the grey sky; and the adjective *high* vertical images, for example, the combination of *high* with examination or quality. The image schemas that the EFL students seemed to draw in their minds are illustrated in Figure 6-1.

Figure 6-1 Visual sensory images



2) The adjectives used to describe dynamic or static images were *wild*, *bright*, *dark*, *grey* and *weak*. The adjective *wild* tended to be connected to human or human attributes/ behaviours to imply strength or violence and the adjective *bright* also tended to be connected to human or human attributes, however, the word *bright* did convey a positive message.

The adjectives *dark*, *grey* and *weak* tended to be combined with static images. The adjectives *dark* and *grey* tended to link to spacious images especially when combined with the sky and the sea. The image schemas that the EFL students seemed to draw in their minds are illustrated in Figures 6-2 and 6-3.

Figure 6-2 Dynamic sensory images

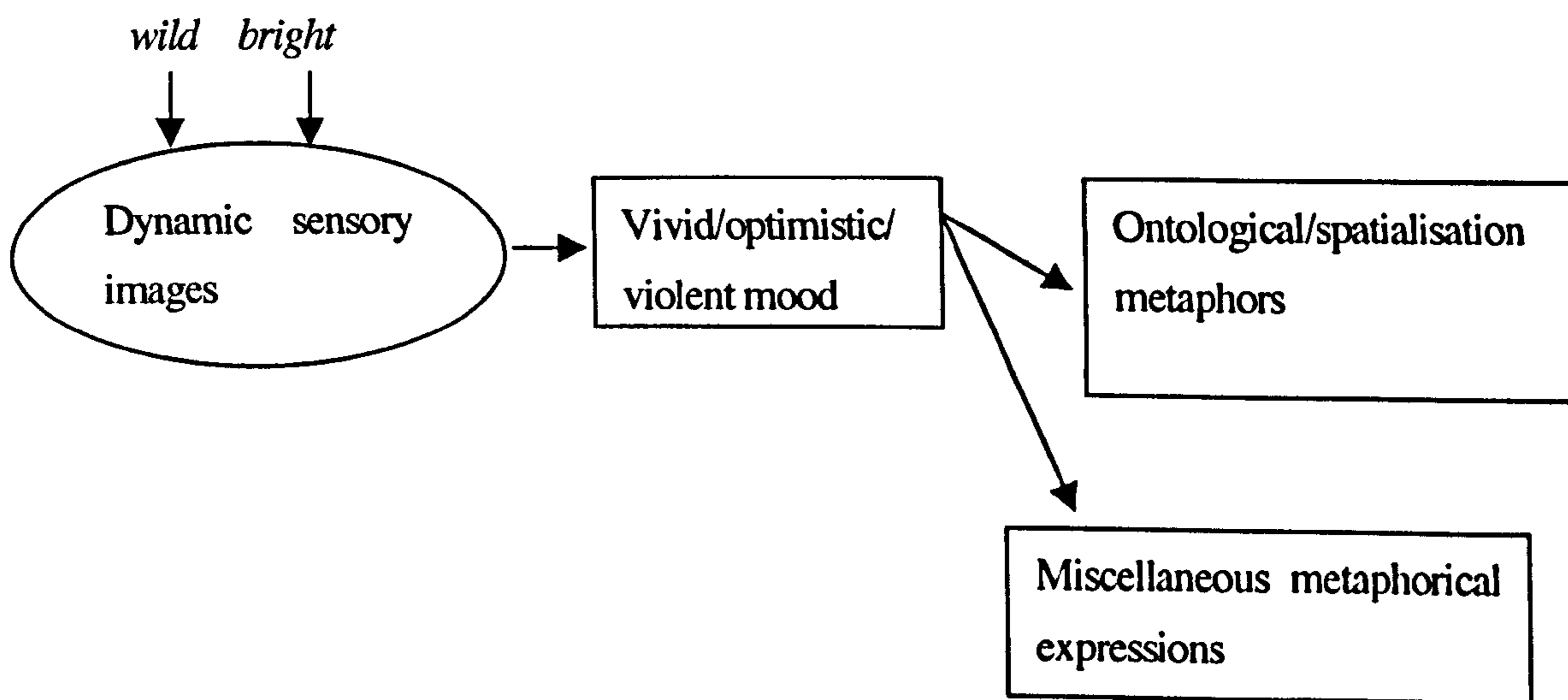
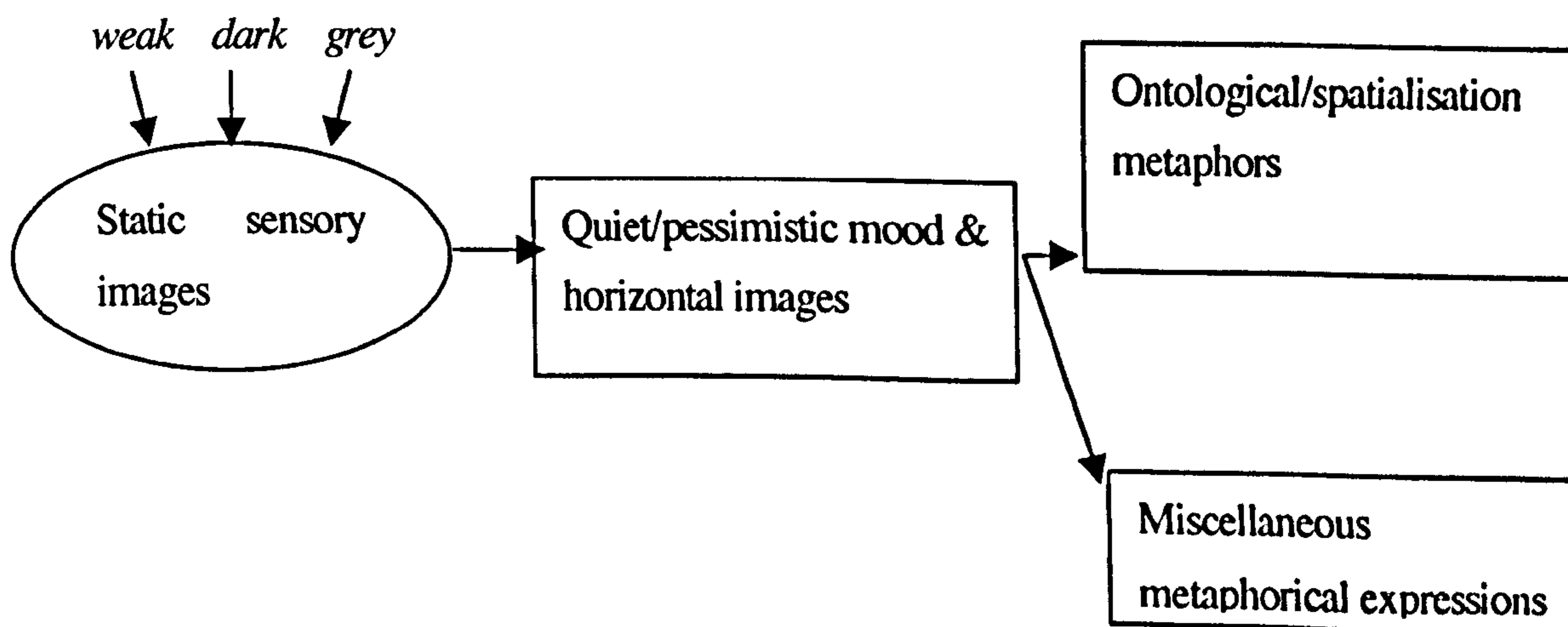


Figure 6-3 Static sensory images



6. 5. ANALYSIS AND DISCUSSION FOR RESEARCH QUESTION 2

Research Question 2) What aspects of metaphorical competence do EFL students display in Tests of Metaphorical Competence?

The following sections address specific features of the metaphorical competence with a view to answering the research question, using the quantitative test results of the 3 groups together with the qualitative interview results (21 volunteer students participated).

In brief, the literal performance of MC-RT and MC-PT showed higher mean scores than those of the metaphorical counterparts, which repeated the results obtained in the previous studies. As a whole, the EFL students' competence in the literal parts is higher than that in the metaphorical counterparts. In order to focus on Japanese EFL students' metaphorical competence, the metaphorical parts of the results from MC-RT and MC-PT are main focus of discussion hereafter.

6. 5-1. FEATURES OF METAPHORICAL COMPETENCE IN MC-RT AND MC-PT

Metaphorical competence in MC-RT

To view the features at a glance, the test results of the metaphorical parts were put in order from high to low mean scores in Table 6-44, from which we can see the tendency of the competence in the Japanese EFL students' interpretations.

Table 6-44 MC-RT metaphorical parts from high to low means

Labels	MC-RT test items	Group 1	Group 2	Group 3
I+	<i>to let the cat out of the bag</i>	2.31		
S	<i>A little pot is soon hot.</i>			2.3
S (benchmark)	<i>Wake not a sleeping lion.</i>	1.57	1.58	1.53
S	<i>The rotten apple injures its neighbours.</i>		1.39	
I	<i>to stand in someone's way</i>		1.17	
S/I	<i>Fish stinks at the head.</i>	1.1		
I	<i>You cannot eat your cake and have your cake.</i>			0.82
S	<i>to hold one's head high</i>			0.7
I	<i>a pain in the neck</i>		0.68	
I	<i>to be off one's head</i>	0.33		

The label "I": idiomatic/proverbial expression; "I+": idiomatic/proverbial expression with a strong contextual support in the passage; "S": expressions which share similar meanings with Japanese.

The test results indicate the following features: the passage with strong contextual support (*to let the cat out of the bag* indicated with I +) and the first three expressions which had similarities in implication in English and Japanese (indicated with S) obtained much higher

mean scores than the last two conventional idioms (the items *a pain in the neck* and *to be off one's head*).

The schemas employed in the metaphorical interpretation

The methods the subjects employed in their interpretations can be classified into three categories. These were discovered through analyses of the quantitative and qualitative results: (a) knowledge and application of Japanese to their interpretation (NL schema, hereafter) and (b) utilisation of cue words in passages and (c) employment of the metaphorical/analogical transfer (metaphorical schema, hereafter).

The NL schema was mostly employed in the items marked S in Table 6-44, while the metaphorical schema was mostly used in the other items, where the NL schema was not effective. Here are examples of the items *Wake not a sleeping lion* (S) and *to be off one's head* (I), which representatively explain how the interpretations took place. The analyses explicated here were confirmed in the interviews after the tests. In the case of *Wake not a sleeping lion* (S), their interpretations overlapped with the similar Japanese expression ('Don't wake up a sleeping child'). For the majority of the students NL schemas seemed to serve as a first aid for interpretation.

In the case of *to be off one's head* (I), none of the interviewees knew this idiom before this test, therefore, the mean score was very low, but a few who answered this test item correctly said that they interpreted this expression by such a metaphorical analogy as from the meaning of 'off head.' The words seemed to stimulate the image of 'head' + 'off' leading to 'blowing off the head,' which means that a person loses his/her reason or logical thinking. This mapping was successful to a great extent. Similar kinds of analogical methods were applied to the other expressions, such as the items *to stand in someone's way* (I), *You cannot eat your cake and have your cake* (I) and *a pain in the neck* (I).

Concerning the utilisation of the cues in the passages which were intended to infer metaphorical interpretations, it can be said from the analyses of the mean scores and the contents of the answers that the cues in the first 6 passages seemed to be effectively utilised (The cues in a passage and the expected interpretations, i.e. the implications, are summarised in Table 6-45). Surprisingly successful utilisations were the identifications of metonymy: the *cat* is a metonymy for secret; *pot* and *lion* for heroines; *apple* for problem and *rat* and *fish* for boss. However, the last 4 items with the low means in Table 6-44 were problematic. The cues not fully utilised (i.e. the cues in the 4 passages) are highlighted in red in the table.

Table 6-45 Cues in a passage and expected interpretations

items			Cues ("words") in a passage and the implications	eliciting effects
expressions	event	situation		
<i>let</i>	gossiping	home	*preceding sentence:"she can't keep secret"; "cat"=secret; "out"=disclosure; "bag"=container	high
<i>pot</i>	gossiping	cafeteria?	"hadn't seen"= year lapse; "18 yrs old now", "gorgeous"= adulthood; "pot"=metonymy for heroine; "hot"=mature	high
<i>lion</i>	advice	school	"offended her"=problem; "wake not", "sleeping"=avoid problem; "lion"=metonymy for heroine	medium
<i>rotten</i>	gossiping	community	"bad families"=source of problem; "bad reputation"=problem; "rotten"=bad; "apple"=metonymy for problem; "injures"=cause disgrace; "neighbours"=	medium
<i>stand</i>	campaign	election	"campaign", "election"=event; "rival"=obstacle; "stand in"= obstruct; "way", "road to re-election"=success; "popular"=problem	medium
<i>fish</i>	leakage	company	"huddled"=act of event, "quietly"=seriousness of the event; "rat"=metonymy for problem, i.e. boss; "system"=company; "leak"=problematic action; "boss"=core of problem; "fish"=metonymy for boss	medium
<i>cake</i>	world problem	Whitehouse	"President Clinton"=problem solver; "to end world hunger, etc."=to solve problems; "confused"=ignorance; "cannot eat/have"=fail to solve problems; "cake"=means to solve problems	low
<i>head high</i>	drowning & rescue	sea	"incident", "wave", "drowned"=problem; "saved"=solved problem; "head high"=praise for bravery	low
<i>pain</i>	home- work	school	"teacher", "cannot speak English", "not grasp the main ideas, etc."=problem; "pain"=problem; "neck"=receptacle of problem	low
<i>off head</i>	birthday plan	home or street	"birthday", "pub crawl", "Johnny's want"=events; "off head"=get drunk or lose reason	low

In addition to the problems of the words in the passages and the interpretation of idiomatic/proverbial expressions described earlier, another possible cause was that the cues did not seem to stimulate understanding well in the last 4 passages. It was found in the superficial interpretations provided in the answers: the *cake* could not be identified as means to solve problems, or the phrase "head high" was literally taken as the head held at the higher position. It was suspected first that the latter answer may have been affected by NL knowledge because the phrase "head high" in Japanese shares its implication with English: one of the Japanese meanings is being haughty (to hold one's head high) and the other being proud of oneself so that the problem was which implication had been applied to the meaning in the interpretation. However, it was found in the answers that the problem was not in the choice of the implications but at a more superficial level. Most of the misunderstanding was caused by the confusion between a literal and metaphorical meaning. As for the other 2 items, only a few answers could identify the *pain* as a problem and even fewer answers could identify the *pub crawl* as "to drink at one pub after another." No subjects connected this meaning to "hashigozake wo suru" in Japanese. The phrase "pub crawl" may be a culture specific expression. These elements in the passages seemed to hinder the interpretations.

Furthermore, the implications of the passages may have been too subtle and may have led to confusion or superficial understanding, as seen in the *cake* and *head high*. These phenomena possibly indicates that there are some passages where implication was so delicate that interpretation could not completely go into a metaphorical depth.

The schemas and/or image schemas in comprehension

The explanations made by the interviewees about the measures they took in reading the passages indicated that they connected the target expressions to the similar counterparts in Japanese (i.e. NL knowledge) and/or looked for cue words in the passages. Their explanation was that they first examined quickly if the expressions shared an idea or meaning of the target expression in both the languages and that if the expressions shared similarity, they connected them each other with the help of their past experience. In this procedure, they made use of the knowledge of the world. This was applied to the interpretation of *A little pot is soon hot*, *Wake not a sleeping lion*, *The rotten apple injures its neighbours* and *Fish stinks at the head*. They also pointed out that there was a clue in the context itself. The story or the context of the passage or the words in it assisted their interpretation, even though they did not have any previous knowledge about the expressions. A contextual support is beneficial to a great extent and especially in the case of metaphorical understanding. In conversations, we usually explicate before or after delivering a main message. In sum, they utilised all of their cognitive abilities in their interpretation.

Metaphorical competence in the MC-PT

Most of the phenomena in Study 4 were similar to those found in Study 3. Table 6-46 summarises the scores of the metaphorical answers in the MC-PT from high to low mean scores.

Table 6-46 The MC-PT metaphorical parts from high to low means

Labels	MC-PT test items	Group1	Group 2	Group 3
C (Benchmark)	<i>If you climb the ladder, you must begin at the bottom.</i>	1.69	1.53	1.45
C	<i>The bird has flown away.</i>	1.08		
C/I	<i>to keep one's head down</i>		0.69	
C/I	<i>to see which way the cat jumps</i>		0.52	
C/I	<i>Although the sun shines, leave not your coat at home.</i>			0.38
I	<i>to throw out the baby with the bathwater</i>			0.15
I	<i>to spill the beans</i>	0.13		

The label "C": expression with clear image(s) of movement or situation; "I": conventional idiomatic/proverbial expression.

A general feature of metaphorical competence in the productive test was that the items which

conveyed clear images (e.g. *If you climb the ladder, you must begin at the bottom* indicated with C) and a clear movement (e.g. *The bird has flown away* indicated with C) obtained higher mean scores. On the contrary, the images stimulated by the items *to see which way the cat jumps* (C/I) and *Although the sun shines, leave not your coat at home* (C/I) seemed to be weak, and the answers to the items *to throw out the baby with the bathwater* (I) and *to spill the beans* (I) were mostly unwritten. The reason for the low mean scores of the last two items is probably the students' unfamiliarity with the idioms. This will also be further discussed in the following section.

The schemas and/or image schemas employed in metaphorical use

It was discovered that the metaphorical competence was more overtly exemplified in the answers in the productive test than in those in the receptive test, because the subjects had to manipulate metaphorical expressions on their own. The following two examples show the characteristics of the answers written by the two subjects: one with a high VLT mean score and the other with low. The tendencies are explained using a metaphorical use of the target expression *If you climb the ladder, you must begin at the bottom*.

Example 1: Student MN: over 80 % in VLT, 75 % in PolyT and 3 points in MC-PT:

“Yesterday, I baked a cake but it tasted so bad.”

“Why?”

“Maybe, I skipped the first step that I had to do. It was really troublesome.”

“If you climb the ladder, you must begin at the bottom.”

Example 2: Student KN: 59-50% in VLT, 45 % in PolyT and 1 point in MC-PT:

I like Megumi. But she isn't kind to me. My friend said to me, “If you climb the ladder, you must begin at the bottom.”

In both examples, the situations are clear, however, a story in the first example was well organised. In this story he mentioned a cause of the failure and brought in the target expression as a precept. In other words, he made use of a story telling schema well. On the other hand, the second example lacked organisation and delineation. There was not sufficient explanation to link Megumi's unkindness to the target expression. The similar tendencies were also discovered in the rest of the answers. These tendencies possibly suggest that those who had higher vocabulary (and polysemy ability) basically could manipulate the language itself and it may have affected the metaphorical use in the end.

Next, the following sections summarise what schemas or methods the subjects employed in writing their answers. The representative methods employed by the subjects in the productive test were as follows: firstly they tried to understand the meanings of the target expressions by translating from English into Japanese and/or connecting its meaning to their knowledge or past experience. Then they composed a passage. For example, in the items *If you climb the ladder, you must begin at the bottom* (C) and *The bird has flown away* (C), they mapped *climb the ladder* to ‘begin something,’ for instance, ‘start to learn a foreign language’ or ‘play the piano’ and *begin at the bottom* to ‘begin from the initial stage.’ This suggests that this expression stimulated the image schema of UPWARD MOVEMENT referring to progress.

In the case of *the bird has flown away*, the word *bird* was personified and/or mapped to ‘something/someone leaving or going away’ and it was connected to ‘the movement of flying,’ as in the case of ‘a child’s leaving his/her parents’ nest’ or ‘spending money’ which is similar to the Japanese expression ‘Money flies away.’

If they did not understand the meanings, they abandoned their attempts due to the lack of clues, or they wrote what they thought might be correct. We should note that the crucial element here is, according to the interviewees’ comments, lexical knowledge. Lexical knowledge stimulated image schema, networking between words and networking from words to images and vice versa. However, if they lacked this, nothing happened in their mind. These phenomena were found in the targets *to spill the beans* (I) and *to throw out the baby with the bathwater* (I). These two were conventional idiomatic expressions, both of which are unfamiliar to Japanese EFL students. The few who could manipulate these idioms metaphorically indicated that they used an analogy from the words *spill* and *beans* in the idiom *to spill the beans*, and in the idiom *to throw out the baby with the bathwater*, they analogically interpreted the meaning from the combination of *baby*, *throw out* and *bathwater*. Here, too, the NL schema and metaphorical schema were also involved in answering the productive test. All in all, lexical knowledge and activation of NL and metaphorical schemas are crucial elements for manipulation of metaphorical expressions. The positive correlation of the subjects’ lexical knowledge (measured by VLT and PolyT) with metaphorical competence (measured by MC tests) was previously shown in Tables 6-9 to 6-11. Further details concerning the correlations will be discussed in Research Question 4.

The metaphorical manipulation, schemas and image schemas

The following few sections focus on the metaphorical manipulation and image schemas found in the answers in each item in the productive test. Tables 6-17 to 6-20 in Research Question 1) are referred to hereafter in this and the following sections, but for a matter of

convenience, Table 6-47 lists excerpts of the columns of Mapping in Tables 6-17 to 6-20.

Table 6-47 Excerpts of Mapping from Tables 6-17 to 6-20

items	Study 4 Metaphorical parts in Productive Test
ladder	○Mapping: ladder=stages of accomplishment; bottom=start; climb=action or efforts 75% (Table 6-17)
bird	○Mapping: bird=friend or fortune; fly away=lose 47% (Table 6-18)
spill	○Mapping: spill=disclose; beans=secret 2% (Table 6-18)
cat jump	○Mapping: cat=human; which way=selection 21% (Table 6-19)
head down	○Mapping: head down=the posture of failure or disappointment, to show humbleness or to avoid drawing attention 26% (Table 6-19)
baby	△Partial mapping: baby=important thing or person; throw out=lose or abandon; bathwater= unnecessary thing/person 11% (Table 6-20)
sun	○Analogous interpretation of the proverb 17% (Table 6-20)

The item *If you climb the ladder, you must begin at the bottom*

There was 75 % mapping in the answers, as shown in Table 6-47. From the point of view of metaphorical schemas, the details are as follows. The *ladder* in this target expression seemed to stimulate the majority of the EFL students (55%) to map it to the schema of progress or progress schema in learning languages or in playing sports, with the *bottom* relating to the basic, and they interpreted the whole expression to mean the basics are important in learning school subjects or playing sports. Some students (8 %) also took this expression to mean that in order to go up to/be the top, for example, in order to be a big star or to be successful in business, the basics are important. Some others (12 %) took this expression as an abstract precept meaning that the basics are important in life as a general moral principle. Thus the image schemas seemed to be activated in physical and psychological implications. As stated earlier, it can be said from the answers that the image schema they conceived in their minds stimulated by the progress schema was MORE IS UP, i. e. Orientational metaphor.

The item *The bird has flown away*

One of the main rhetoric used by the subjects was personification through metonymic manipulation: the *bird* was personified or mapped to the 'he' or 'she', lover, child, pet, luck, chance, peace, efforts or money (47%). The combinations of the word *fly away* stimulating a departure schema with the personification by the word *bird*, whether it is 'he,' 'she' or other personification, made up Ontological metaphor, 'He (i.e. an important person) has gone away.'

The item *to spill the beans*

We have to grope for some clue to the EFL students' general metaphorical manipulation of this item from scanty answers. The percentage of a full mark answer of the item was only 2 %. In this answer, the word *beans* was mapped to 'everything which took place in a quarrel' and the word *spill* to a phrase 'come out.' This suggested the subject's answer

tended toward Ontological metaphor or the image schema of CONTAINER. The rest of the answers varied from 'failure in lotto or examination', 'departing from a girlfriend', to 'negligence in doing homework', etc. These answers can be also included in Ontological or CONTAINER metaphor. Interestingly, all these answers connoted negative meanings.

The item to see which way the cat jumps

The representative manipulation of this expression was that the subjects tried to describe the situation in which the decision was made on selecting from the two or several choices (21%). The image of *cat* stimulated them to imagine something or someone that moved swiftly (i.e. a cat schema), and the word *jump* stimulated the quick movement which linked to a quick alternative choice. The subjects did not clarify any judgmental decision on which choice was better but their bewildered mental state. There are many occasions in their life when it is hard to make alternative choice. They described such experiences in daily life. The answers may be classified into the image schema of MOTION.

The item to keep one's head down

Judging from the contents of the answers, the subjects used this expression to describe their experiences, for example, the posture of revealing or showing disappointment or repentance, the posture of showing respect or salute or the posture of avoiding drawing attention (26%). The image mappings seemed to take place in physical and psychological implications. The physical state, i.e. a body schema, is mapped to the psychological state, and it led to the implications conveying Orientational metaphor, especially EMOTION IS DOWN (24%).

The item to throw out the baby with the bathwater

As stated earlier, the quantity and quality of the answers in the item *to throw out the baby with the bathwater* in the two studies were low. To manipulate this idiom metaphorically, we have to interweave three topics and three vehicles in a passage: *baby*, *bathwater* and *throw out*. Most of the EFL students' answers could only involve (a) partial use(s) of the three elements, for example, 'the important person or treasure' was mapped to the *baby*, or 'to lose or stop something' to *to throw out*. The most difficult element to manipulate seemed to be the use of *bathwater*. In an interview, several students said they could not imagine what it could mean metaphorically. The only one answer (this subject's VLT score was 103) attained a full mark was in Study 3, in which the three elements were successfully interwoven in a passage: 'the important things (i.e. treasure) in the subject's room' was mapped to *the baby*; 'to sweep away these important things with unnecessary things, i.e. *bathwater*, in her room' to *to throw out the baby with the bathwater*. She wrote about her experience that her mother threw away her

important paper with some other wastes in her room when she cleaned her room. There were such a small number of answers for this item, however, it can be said that this item stimulated the schema of taking a bath, a bath schema, and involved the schema of disposal and that therefore involved a metaphorical schema of displacement of objects. It can be categorised in MOTION, i.e. Ontological metaphor.

The item *Although the sun shines, leave not your coat at home*

The mapping (17 %) indicated that the students delineated their experiences, such as giving advice or warnings in preparing for examination, economic slump, and giving general advice in daily life. The portion of *the sun shines*, i.e. the sun schema, arose the image of a favorable condition, the word *coat*, i.e. a protection schema, arose the image of a necessary thing and the part of *leave not ... at home* the caution to negligence (another protection schema). The answers were didactic and it may be categorised in CONTAINER metaphor.

The following are the summaries of the schemas and image schemas used in the manipulation.

items	stimuli	"schemas" / analogy	IMAGE SCHEMAS/ Metaphor
<i>ladder</i> (C)	climb (action) + ladder (metonymy) + begin (action) + bottom (metonymy)	"ladder schema" leading to progress / movement	MORE IS UP
<i>bird</i> (C)	bird (metonymy) + fly away (action)	personification / departure	MOVEMENT/Ontological metaphor
<i>spill</i> (I)	spill (action) + beans (metonymy)	(Not specified) / disclosure	container/Ontological metaphor
<i>cat jump</i> (C/I)	see (action) + which way (choice) + cat (metonymy) + jump (action)	"cat schema" / choice or departure	MOTION/Ontological metaphor
<i>head down</i> (C/I)	keep (state) + head (metonymy) + down (location)	"body schema" / emotion	EMOTION IS DOWN
<i>baby</i> (I)	throw out (action) + baby (metonymy) + with + bath water (metonymy)	"schemas of baby, bath" / treasure, disposal	MOTION/Ontological metaphor
<i>sun</i> (C/I)	sun shines (protection) + leave not (caution) + coat (protection) + home (location)	"schemas of sun, coat" / protection	warmth/container

6. 5-2. SUMMARY FOR MC-RT AND MC-PT

As a whole, the target items which had clear images and/or which indicated clear situations were better manipulated metaphorically (i.e. the competence can be judged high or moderate), for example, the benchmark *If you climb the ladder, you must begin at the bottom* and the item *The bird has flown away*, then followed by the items which shared the similar meanings between NL and English, for example, *to keep one's head down* and finally by the conventional idioms. The conventional idiomatic expressions were poorly performed in both receptive and productive tests. In the case of conventional idioms, it is necessary to know the lexical, semantic and cultural meanings. This may be a crucial point for EFL students to overcome not

only in metaphorical manipulation but in general performance in English.

To conclude the EFL students' metaphorical competence examined in the MC-RT and MC-PT, it can be said that their metaphorical competence partly relates to the quality or characteristics of the target items, mainly to their analogical reasoning and vocabulary knowledge.


The tendency discovered in the two studies indicates that EFL students had higher metaphorical competence for the target items which conveyed the similar ideas between their native and target languages in the receptive test and for the target items which had clear images and/or which indicated movements or clear situations in the productive test. On the other hand, their metaphorical competence was low in the conventional idioms. It was found from the answers that conventional idioms concerned two elements: one involved cultural elements, for example, *to be off one's head* in the receptive test and *to throw out the baby with the bathwater* and *to spill the beans* in the productive test; the other involved universal elements, for example, *to stand in someone's way* and *to hold head high* in the receptive test and *to keep one's head down* in the productive test. The last two idioms are universal, body-oriented or "the body in the mind" type of metaphorical expressions. They were understood and manipulated better in the tests.

The studies also indicate that those who have stronger vocabulary knowledge showed higher metaphorical competence, as we will see more in the results of research Question 4 (Table 6-57).

Finally, the following lists show salient and non-salient rank orders of the metaphorical expressions used in this study. The salience refers to ease of understanding and manipulation in the words and idioms and at the contextual levels, and the non-salience refers to the opposite conditions.

MC-RT

Salient

- 
- + A little pot is soon hot.
 - + Wake not a sleeping lion.
 - The rotten apple injures its neighbours.
 - to stand in someone's way
 - Fish stinks at the head.
 - You cannot eat your cake and have it.
 - to hold one's head high
 - a pain in the neck
 - Non-salient** to be off one's head

MC-PT

Salient

If you climb the ladder, you must begin at the bottom.

+

The bird has flown away.



to keep one's head down

to see which way the cat jumps

Although the sun shines, leave not your coat at home.

-

to throw out the baby with the bathwater

Non-salient

to spill the beans

6. 5-3. METAPHORICAL COMPETENCE IN MC-XYT

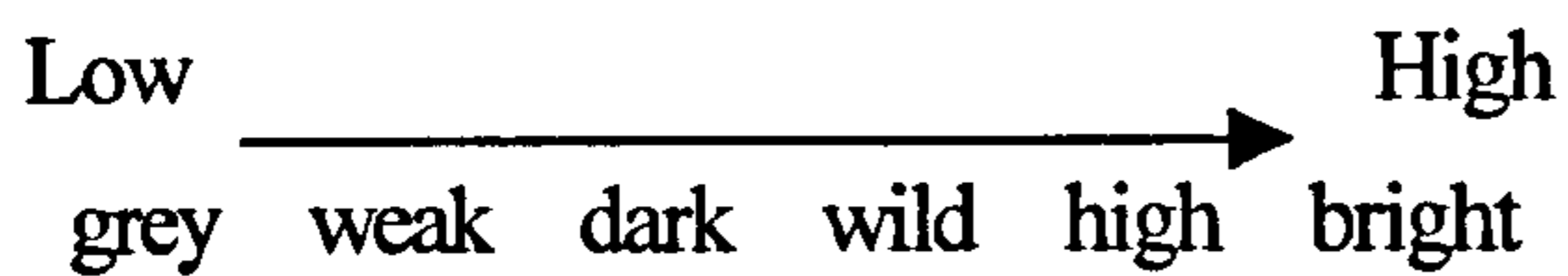
The overall features of MC-XYT in Study 4 revealed that the means of the metaphorical parts of MC-XYT (1.93) were lower than those of the literal counterparts (2.74). These results were quite similar to those in Study 3: the means of the metaphorical parts of MC-XYT (1.96) were lower than those in the literal counterparts (2.62). The following metaphoricity features were found in the quantitative data and qualitative analysis in the two studies: the answers to the target adjectives which have strong visual, sensory and psychological meanings (i.e. *bright* and *high*) and which stimulate dynamic images (i.e. *wild*) were better in quality than the other target adjectives.

The rank order from high to low mean scores of the metaphorical manipulations of the 6 target adjectives (Max=1) in Study 4 was *bright*: 0.54, *high*: 0.33, *wild*: 0.32, *dark*: 0.29, *weak*: 0.24 and *grey*: 0.22 and the rank order in Study 3 was *bright*: 0.56, *wild*: 0.40, *high*: 0.28, *dark*: 0.26, *weak*: 0.24 and *grey*: 0.22. These results probably indicate that familiar and stronger sensory stimulus words stimulated the subjects' imagination better than unfamiliar and quieter words, and that these high performance words may elicit more powerful use than the other words.

6. 5-4. SUMMARY FOR MC-XYT

MC-XYT is one of the easiest ways to measure metaphorical competence. In the sentence pattern of 'X is Y', figurativeness plays an important role in metaphorical manipulation as stated earlier. There were only 6 adjectives examined in this study, but it can be concluded from the results that the visual and sensory meanings of the 3 adjectives (*bright*, *high* and *wild*) stimulated expansions from their sensory and/or psychological nuances to metaphorical expressions, while the answers of the remaining 3 adjectives showed that the characteristics of the nuances of each word were to a degree utilised in metaphorical ways, even if these were not refined. This also indicates that the EFL students performed their metaphorical competence quite well in the strong sensory word *bright*, and fairly well in the familiar words *high* and *wild*, however, they revealed a considerable number of problems in such a word as *weak* and in other sensory words (e.g. L1

transfer and confusions). The following diagram shows the adjectives in the order from low to high performance.



In addition, we must note that there may be some other elements to acquire higher metaphorical competence, such as the knowledge of collocation or word combination, for example, the word *bright* basically connects better with the meaning of cheerfulness or collocates metaphorically better with mental phenomena. This word tendency was better exemplified in the answers ‘Her heart is a bright sun’ and ‘Her smile is a bright sun’ than in the answer ‘Her face is a bright flower.’

Finally but most importantly, EFL students’ metaphorical competence correlates to their vocabulary knowledge. Further details will be discussed in Research Question 4. Metaphorical competence concerns all of lexical, semantic and cultural elements. In a word, metaphorical competence involves all of the cognitive elements.

6. 5-4. CONCLUSION

This study attempts to make what is covert overt by measuring some aspects of metaphorical competence in a non-native language. Metaphorical expressions are understood and used in a native language without much difficulty and probably unconsciously, while those in a non-native language are sometimes difficult to understand and other times misunderstood. When it comes to using them, it is even more difficult for non-native speakers.

The results of my studies indicate that some EFL students whose vocabulary knowledge was stronger could cope with metaphorical manipulation unexpectedly well, although there were others who may have had difficulty in coping with it. Interestingly, those who volunteered to participate in the interviews seemed to be more interested in metaphorical expressions and their metaphorical manipulation was medium or higher than the others. There are still some limitations in the present study, the details of which will be discussed in Chapter 7, however, it has demonstrated certain aspects of EFL students’ metaphorical competence. What assists metaphorical comprehension and use is mental lexicon, semantic connections of words, analogical reasoning and general knowledge. The subjects on whom the studies were conducted are young, therefore, as they encounter with more of these expressions in the future, they will nurture their ability and certainly attain more successful manipulation of metaphorical expressions.

6. 6. ANALYSIS AND DISCUSSION FOR RESEARCH QUESTION 3

Research Question 3) Are the test items suitable as test items of metaphorical competence for Japanese EFL students? (i.e. to scrutinise the reliability and validity of MC-RT and MC-PT)

6. 6-1. THE RELIABILITY ANALYSIS

The reliability of the tests of metaphorical competence (MC-RT and MC-PT)

The MC-RT and MC-PT of this study had a larger number of subjects than the previous studies with more than 50 subjects for each group, however, a problem may reside in the number of the test items: 10 in MC-RT and 7 in MC-PT. An appropriate method to determine reliability in this study, as the test items were as such, is to assess internal consistency using Cronbach alpha. Cronbach alpha was computed for MC-RT and MC-PT with special attention paid to the results of the mean inter-item correlations due to the few test items. The Cronbach alpha coefficient should ideally be above .7. According to *SPSS survival manual* (Pallant, 2002), Cronbach alpha values are quite sensitive to the number of items in the scale. With short scales (e.g. scales with less than ten items) it is common to find quite low Cronbach values (e.g. .5). In the case of a few test items it may be more appropriate to report the mean inter-item correlation for the items. Optimal mean inter-item correlation values range from .2 to .4 (quoted from Briggs and Cheek, 1986: 85). This advice was taken in analysis. The alpha values and the values of the mean inter-item correlations in MC-RT are shown in the tables 6-48 to 6-50, followed by those of the MC-PT in the tables 6-51 to 6-53. In the following tables, the abbreviation of the test items are the same as the one employed in the previous sections, L stands for literal and M for metaphorical.

Reliability Analysis of MC-RT

Tables 6-48 to 6-50 show the reliability analysis of MC-RT.

Table 6-48 Reliability Analysis of MC-RT for Group 1

Group 1 RELIABILITY ANALYSIS - SCALE (ALPHA): Item-total Statistics						
	Scale	Scale	Corrected			
	Mean	Variance	Item-	Squared	Alpha	
	ifItem	ifItem	Total	Multiple	ifItem	
	Deleted	Deleted	Correlation	Correlation	Deleted	
Lion L	9.8689	33.9825	.4134	.4553	.7381	
Lion M	10.4754	32.2869	.4721	.3807	.7276	
Fish L	11.0656	32.1956	.4966	.4785	.7227	
Fish M	10.9672	31.5989	.5406	.4377	.7141	
Let L	10.0000	31.8333	.5295	.4007	.7164	
Let M	9.7377	33.0634	.5013	.4420	.7227	
Off L	10.5082	33.5208	.3591	.2067	.7508	
Off M	11.7213	37.8044	.3226	.1227	.7518	
Reliability Coefficients	8 items					
Alpha =	.7566	Standardized item alpha =		.7562		
Inter-item	Mean	Minimum	Maximum	Range	Max/Min	Variance
Correlations	.2794	.0682	.5594	.4911	8.1997	.0145

Table 6-49 Reliability Analysis of MC-RT for Group 2

Group 2 RELIABILITY ANALYSIS - SCALE (ALPHA): Item-total Statistics					
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	Scale	Scale	Corrected			
	Mean	Variance	Item-	Squared	Alpha	
	if Item	if Item	Total	Multiple	if Item	
	Deleted	Deleted	Correlation	Correlation	Deleted	
Lion L	10.4655	47.7619	.5430	.3302	.8394	
Lion M	11.1552	41.8878	.7391	.5586	.8143	
Rotten L	11.2069	43.1494	.6395	.6356	.8276	
Rotten M	11.2931	41.2985	.7666	.7019	.8104	
Pain L	10.5345	46.8497	.5132	.3230	.8427	
Pain M	12.0345	48.6304	.5390	.3367	.8404	
Stand L	10.9310	46.2408	.4922	.3491	.8461	
Stand M	11.5690	46.2145	.5081	.3109	.8439	
Reliability Coefficients		8 items				
Alpha = .8515		Standardized item alpha = .8510				
Inter-item	Mean	Minimum	Maximum	Range	Max/Min	Variance
Correlations	.4166	.2158	.7647	.5489	3.5437	.0140

Table 6-50 Reliability Analysis of MC-RT for Group 3

Group 3 RELIABILITY ANALYSIS - SCALE (ALPHA): Item-total Statistics						
	Scale	Scale	Corrected			
	Mean	Variance	Item-	Squared	Alpha	
	if Item	if Item	Total	Multiple	if Item	
	Deleted	Deleted	Correlation	Correlation	Deleted	
Lion L	9.6833	20.8980	.4176	.3529	.6182	
Lion M	10.3000	21.7051	.2763	.3193	.6616	
Pot L	9.0167	26.3218	.1140	.1830	.6766	
Pot M	9.5333	22.5921	.2798	.1163	.6549	
Cake L	11.1333	23.5073	.2691	.3927	.6546	
Cake M	11.0167	20.0506	.5256	.4264	.5884	
Head up L	11.0167	21.1014	.4296	.3707	.6153	
Head up M	11.1333	21.1684	.5458	.5292	.5924	
Reliability Coefficients	8 items					
Alpha =	.6652	Standardized item alpha =		.6580		
Inter-item	Mean	Minimum	Maximum	Range	Max/Min	Variance
Correlations	.1939	-.2245	.5551	.7797	-2.4722	.0345

The alpha values of Groups 1 and 2 (Tables 6-48 and 6-49) were of .7566 and .8515 (higher than the reliability threshold value of .7), while that of Group 3 (Table 6-50) was .6652 (less than .7). One of the problems may have resided in the test item of the literal part of the item *a little pot is soon hot* in Group 3, with an 'alpha if item deleted' of .6766, which was slightly higher than the final 'reliability coefficient alpha' (.6652). The 'corrected item-total correlation' was .1140. The result indicates that it measured something different to the scale as a whole. Therefore, the answers in this item were checked qualitatively. The following feature was found in the answers: most of the students gave correct answers to this item, therefore it received the highest mean score (2.82) of all the items.

In order to look at the results from another aspect, the mean inter-item correlations for the 3 groups were checked. The values of the 'mean inter-item' for Groups 1, 2 and 3 were .2794, .4166 and .1939 respectively. The values of Groups 1 and 3 were in the recommended optimal range for the inter-item correlation of .2 (the value was .1939, therefore, slightly lower, but nearly .2) to .4, while that of Group 2 was slightly higher (.4166). Taking the results as a whole, the reliability figures were not particularly high, but acceptable for such a short test.

Reliability Analysis of MC-PT

Tables 6-51 to 6-53 show the reliability analysis of MC-PT.

Table 6-51 Reliability Analysis of MC-PT for Group 1

Group 1 RELIABILITY ANALYSIS - SCALE (ALPHA):Item-total Statistics						
	Scale	Scale	Corrected			
	Mean	Variance	Item-	Squared	Alpha	
	if Item	if Item	Total	Multiple	if Item	
	Deleted	Deleted	Correlation	Correlation	Deleted	
LADDERL	5.1967	14.2273	.4806	.4901	.6885	
LADDERM	5.3607	12.4011	.7213	.6169	.6048	
BIRDL	5.3115	12.3847	.6776	.6726	.6186	
BIRDM	5.9672	14.3989	.4994	.5730	.6820	
SPILL	6.4918	16.3874	.3219	.3818	.7312	
SPILLM	6.9180	20.1432	.0043	.3366	.7720	
Reliability Coefficients 6 items						
Alpha =	.7301	Standardized item alpha =		.6864		
Inter-item	Mean	Minimum	Maximum	Range	Max/Min	Variance
Correlations	.2673	-.1353	.7366	.8718	-5.4453	.0827

Table 6-52 Reliability Analysis of MC-PT for Group 2

Group 2 RELIABILITY ANALYSIS - SCALE (ALPHA):Item-total Statistics						
	Scale	Scale	Corrected			
	Mean	Variance	Item-	Squared	Alpha	
	if Item	if Item	Total	Multiple	if Item	
	Deleted	Deleted	Correlation	Correlation	Deleted	
Ladder L	5.3621	21.2175	.5760	.4020	.7849	
Ladder M	5.5862	20.9486	.5474	.3632	.7913	
Cat L	5.6207	19.3975	.6210	.4498	.7751	
Cat M	6.6034	23.1909	.5083	.2756	.7998	
Head down L	6.0000	18.8070	.6990	.5825	.7551	
Head down M	6.4310	22.0039	.5158	.4438	.7973	
Reliability Coefficients 6 items						
Alpha =	.8141	Standardized item alpha =		.8134		
Inter-item	Mean	Minimum	Maximum	Range	Max/Min	Variance
Correlations	.4208	.2566	.6317	.3751	2.4616	.0114

Table 6-53 Reliability Analysis of MC-PT for Group 3

Group 3 RELIABILITY ANALYSIS - SCALE (ALPHA): Item-total Statistics						
	Scale	Scale	Corrected			
	Mean	Variance	Item-	Squared	Alpha	
	if Item	if Item	Total	Multiple	if Item	
	Deleted	Deleted	Correlation	Correlation	Deleted	
Ladder L	3.4667	9.5751	.4360	.2890	.5760	
Ladder M	3.5500	8.1161	.6496	.4459	.4651	
Baby L	4.5333	13.4056	.0701	.0335	.6927	
Baby M	4.8500	14.5703	-.0228	.0605	.6860	
Sun L	3.9833	8.7624	.5930	.4537	.4991	
Sun M	4.6167	11.3929	.4621	.3930	.5780	
Reliability Coefficients	6 items					
Alpha =	.6434	Standardized item alpha =		.5777		
Inter-item	Mean	Minimum	Maximum	Range	Max/Min	Variance
Correlations	.1856	-.0966	.5847	.6812	-6.0541	.0574

The alpha values of Groups 1 and 2 in the MC-PT (Tables 6-51 and 6-52) were .7301 and .8141 respectively, while that of Group 3 (Table 6-53) was .6434. There seems to be no major problems on the surface with the alpha values in Groups 1 and 2, however, the values for the 'alpha if item deleted' and 'corrected item-total correlation' in the metaphorical part of the item *to spill the beans* in Group 1 did identify a weak item: the result of the 'alpha if item deleted' was .7720 (more than the final 'reliability coefficients alpha' value of .7301) and that of the 'corrected item-total correlation' in this metaphorical use of *to spill the beans* was .0043 (less than .3). Therefore, the item *to spill the beans* was the least reliable item in the battery and would be deleted if the test were reused further. A further weakness seemed to reside in the item *to throw out the baby with the bathwater* in Group 3. The 'alpha values if item deleted' of the item *to throw out the baby with the bathwater* in the literal and metaphorical use were .6927 and .6860 respectively, more than the final 'reliability coefficients alpha' of .6434. The values of the 'corrected item-total correlation' for the literal and metaphorical were also quite low: the literal use of *to throw out the baby with the bathwater* had a value of .0701 and the metaphorical use of *to throw out the baby with the bathwater* a value of -.0228 (i.e. far below .3).

As a next step, the values of the 'mean corrected item-total correlation' in the 3 groups were examined: the value in Group 1 was .2673, that in Group 2 was .4208 and that in Group 3 was .1856. These values showed the same tendency in the item *to throw out the baby with the bathwater* in Group 3 as mentioned before.

From the above values, it can be said that most of the test items, excluding the highly

conventional idioms, such as *to spill the beans* or *to throw out the baby with the bathwater*, were reliable. Highly conventional idioms should be inspected attentively as test items, especially for productive test.

6. 6-2. THE VALIDITY ANALYSIS

Since there was no past research similar to this study and there were limited test items in the MC tests, the validity analysis is made quantitatively and qualitatively. The most important analysis was to discover whether or not MC tests could serve as intended. The tests aimed to measure metaphorical comprehension and manipulation. Did the tests fulfill these aims? To answer this question, the tests and the test results are looked at quantitatively and qualitatively firstly. Secondly the feedback from the subjects and then EFL teachers' opinions of MC tests are analysed.

Quantitative and qualitative examinations of MC tests

Most of the results revealed by the executions of the tests are as I anticipated. The aims of investigating metaphorical comprehension in MC-RT were fulfilled by obtaining the following results. The test items with clear meanings and/or with strong contextual supports displayed higher mean scores, i.e. were well understood. The test items with conventional idiomatic expressions showed lower mean scores, i.e. were less well understood (see Table 6-44 in Chapter 6). The L1 application had ambivalent effects. These were all expected results.

The aims of the investigation of metaphorical use were also fulfilled by obtaining the following results in MC-PT and MC-XYT. In MC-PT, the expressions with clear images showed higher mean scores, i.e. they were manipulated easily, while the highly conventional idioms showed very low mean scores, i.e. they involved problems in use (see Table 6-46 in Chapter 6). These were expected results. The MC-PT also provided evidence of Japanese EFL students' semantic fields and their operations of mapping. This was more than I expected.

The MC-XYT served as the metaphorical test and at the same time it revealed the lexical, semantic and image schemas of the Japanese EFL students. I had not imagined until the final stage that I would be able to achieve such prominent results as stated in 6.4-3 SUMMARY, Chapter 6. The adjectives with sensory meanings stimulated visual, temporal and spatial images by their specific meanings. It was also more than I expected and a great discovery. However, the studies contain limitations. If there were more test items in the studies, they would have been better.

Although there were some statistical problems such as those mentioned above, most of the subjects treated the items as metaphorical items except for certain idiomatic expressions. The

qualitative analyses show that the items were representative samples of metaphorical language and these items (although few) can be used to measure metaphorical knowledge.

As for the components of the test items for metaphorical competence, it depends upon the aims of the tests, for example, what aspects of metaphorical competence are to be measured. If a test attempts to simply measure metaphorical recognition, a receptive type (MC-RT) may be appropriate. If it attempts to measure only identification or distinctions between literal and metaphorical expressions, a contrastive test may be appropriate. If it attempts to measure a genuinely metaphorical production, it must have productive test items (MC-PT). The purpose of my study is to develop a comprehensive test of metaphorical competence, therefore, it has three kinds, each of which consisted of literal and metaphorical parts and included lexical, semantic and cultural aspects of the language.

Feedback from the subjects

I asked students to participate in my questionnaire for the tests. There were 13 volunteers. I asked them the following questions.

- (1) Are the tests hard to answer?
- (2) Which is easier to answer, MC-RT or MC-PT?
- (3) Which is more interesting, comprehension of metaphorical expressions or use of them?
- (4) Have they ever thought of literal and metaphorical expressions?

The important implication from the first question was that the difficulty or ease depended upon whether or not they knew the meanings of the targets or words in the passages. I also asked why they could answer even if they did not have a previous knowledge about the expressions. Majority of the students said that they inferred the meanings from the words surrounding the target or the contexts or they could infer the intention of a message intuitively. The tests were not difficult in general.

To the second and third questions, the majority (77%) of them answered that it was easier to answer reading comprehension and half (46%) of them answered it was more interesting to use the expressions metaphorically. The reason for the former was that they were used to reading comprehension in high school English lessons, especially in English lessons which weighed comprehension for entrance examinations. The reason for the latter was that they could use their own ideas and make up their own stories and gained more satisfaction when they could express what they wanted to say. They said that the most interesting part of the manipulation of metaphorical expressions was in seeing how well they could employ transfers of the meaning and where to place the transfers in a story. These comments imply that some EFL students enjoyed using metaphorical expressions.

Answers to the final question revealed that one third of them (38%) had never learnt about or thought about such differences in English lessons, but half (46%) of them had in Japanese lessons.

Evaluation by Japanese EFL teachers

I asked two experienced Japanese EFL teachers (a senior male and a middle aged female) to evaluate MC tests on the following points:

- (1) Are the aims of the tests to measure the comprehension and use of metaphorical expressions fulfilled in the tests?
- (2) Are the tests meaningful?
- (3) How do test takers feel?

With regard to (1), the evaluations of both teachers were positive in respect of the purpose and usability of MC tests. They assured me that it could measure metaphorical competence. The target expressions embedded in the passages can measure metaphorical comprehension in a broader sense and the target items in MC-PT and MC-XYT can measure metaphorical use. However, they pointed out that there might be some problems with idioms.

Both of them mentioned that vocabulary knowledge may relate to understanding and use of linguistic competence, and it may also be the case for metaphorical competence. One of the teachers added that linguistic ability and background knowledge aid recognition and production in another language. My studies attempted to investigate a relationship between vocabulary knowledge and metaphorical competence. This supports my study in investigation of their relationship. However, there was an important suggestion provided by one of the teachers. The suggestion was that there might be some problematic passages. This overlaps with my analysis stated in the earlier part of this chapter. Among MC-RT passages, the literal and metaphorical parts of the passages embedded with *to count heads* and *You cannot eat your cake and have your cake* may not be sufficiently clear for those who do not have a rich vocabulary, wide knowledge or intuitive analogical ability.

The comments on idioms from one of the teachers was that idioms are problems for non NSs but at the same time if we have a wide awareness of idioms, we appreciate the language better.

As for (2), both teachers mentioned that MC tests and these kinds of investigations in language education were the first in this field. In Japan, this means it is a pioneering study. This study goes beyond past research, for example, relationship between the vocabulary and reading.

Finally, regarding (3), there is no problem in general, however, the instructions in the tests may be too special for general language learners and the levels of the tests seem to be high.

6. 6-3. CONCLUSION

Most of the test items seem to work reasonably well. However, there were several problematic idioms and/or expressions for EFL students. The items, such as *to spill the beans*, *to throw out the baby with the bathwater*, and *a pain in the neck* seemed to cause problems as illustrated in the sections for ANALYSIS AND DISCUSSION of 6.4 and 6.5. Another characteristic of these expressions is that they are conventional idiomatic expressions, which may have caused difficulty in interpretation and use. The answers written on the papers were checked and the interviews carried out. In fact, a considerable number of the papers had no written answer and the interviewees commented on these items, stating that they did not know the meanings of the expressions, and therefore, most of them had abandoned inferring or manipulating the expressions. It is probable that highly conventional idiomatic expressions unfamiliar to EFL students are problematic. To avoid this problem, I suggest that the ideal components of the test items should include a wider range of linguistic levels and content quality in the target expressions. Levels should range from easy comprehension levels and/or easy inference levels to medium and higher levels, because the test items would not serve per se if testees do not understand all of the meanings of idioms/expressions.

The analyses so far answer the test of suitability of the test items for Japanese EFL students to a degree. Although the target items in the tests were not numerous, the levels of the items ranged from easy to difficult and there were a variety of items in the tests. In this sense the quality, contents and levels of the test items seemed to be satisfactory. The main problem is that a truly reliable test would require more items, and this would cause problems in administration, since the test would require too long for practical administration. From the applied linguistic point of view, quantitative data, i.e. more test items, is necessary; however, from the metaphor research view, qualitative data, i.e. detailed specific data is necessary. As is often the case, research faces the dilemma of how to keep the balance between these two requirements.

6. 7. ANALYSIS AND DISCUSSION FOR RESEARCH QUESTION 4

Research Question 4) Is there any relationship between Japanese EFL students' metaphorical competence and other linguistic competence, for example, vocabulary size and polysemy ability?

The following sections address Research Question 4, followed by a brief conclusion and implications for EFL education.

6. 7-1. CORRELATIONS

Correlations among the tests

Spearman's was used to discover the correlations between the tests with a view to investigating Japanese EFL students' metaphorical competence. Here Spearman's rho (rank-order-correlation) coefficients were used because the data was non-normal data. According to Philips (1988, p.65), the Spearman rank-difference (rho) procedure places all subjects in order from smallest to largest on the basis of their scores on X (i.e. one variable), then it ascertains how nearly their Y scores (i.e. another variable) approximate that order. Tables 6-54 to 6-56 show the results of Spearman's rho for the metaphorical parts of MC-RT, MC-PT and MC-XYT (all excluding the literal parts) together with VLT and PolyT for the 3 groups. The overall features are: all of the correlations among MC-RT, MC-PT, MC-XYT, VLT and PolyT showed positive; and the correlations between VLT and PolyT were high.

Table 6-54 Correlation in Group 1(N=57)

Test / Max	MC-RT/12	MC-PT/9	MC-XYT/6	VLT/120	PolyT/20
MC-RT/12	1.000	.328*	.439**	.483**	.584**
Sig.(2-tailed)	.	.013	.001	.000	.000
MC-PT/9		1.000	.289*	.388**	.421**
Sig.(2-tailed)		.	.029	.003	.001
MC-XYT/6			1.000	.410**	.478**
Sig.(2-tailed)			.	.002	.000
VLT/120				1.000	.735**
Sig.(2-tailed)				.	.000
PolyT/20					1.000
Sig.(2-tailed)					.

The asterisks in the tables 6-54 to 6-56: *: Correlation is significant at the .05 level (2-tailed);

** : Correlation is significant at the .01 level (2-tailed).

Table 6-55 Correlation in Group 2 (N=56)

Test / Max	MC-RT/12	MC-PT/9	MC-XYT/6	VLT/120	PolyT/20
MC-RT/12	1.000	.556**	.355**	.726**	.745**
Sig.(2-tailed)	.	.000	.007	.000	.000
MC-PT/9		1.000	.427**	.600**	.729**
Sig.(2-tailed)		.	.001	.000	.000
MC-XYT/6			1.000	.382**	.326*
Sig.(2-tailed)			.	.004	.014
VLT/120				1.000	.691**
Sig.(2-tailed)				.	.000
PolyT/20					1.000
Sig.(2-tailed)					.

Table 6-56 Correlation in Group 3 (N=59)

Test / Max	MC-RT/12	MC-PT/9	MC-XYT/6	VLT/120	PolyT/20
MC-RT/12	1.000	.370**	.094	.421**	.417**
Sig.(2-tailed)	.	.004	.477	.001	.001
MC-PT/9		1.000	.284*	.275*	.307*
Sig.(2-tailed)		.	.029	.035	.018
MC-XYT/6			1.000	.516**	.449**
Sig.(2-tailed)			.	.000	.000
VLT/120				1.000	.860**
Sig.(2-tailed)				.	.000
PolyT/20					1.000
Sig.(2-tailed)					.

The correlation coefficients of Spearman's rho observed among MC-RT, MC-PT, MC-XYT, VLT and PolyT of the 3 groups can be summarised as follows.

Overall results:

1. All of the correlations among MC-RT, MC-PT, MC-XYT, VLT and PolyT were positive.
2. The correlations between VLT and PolyT were the largest of all the tests:
($r = .860^{**}$, $p < .01$) in G3; ($r = .735^{**}$, $p < .01$) in G1; ($r = .691^{**}$, $p < .01$) in G2.

Specific results:

All of the following showed positive correlation results.

3. The correlation of MC-RT to VLT: large in G2 ($r = .726^{**}$, $p < .01$); medium in G1 ($r = .483^{**}$, $p < .01$) and G3 ($r = .421^{**}$, $p < .01$) in G3.
4. The correlation of MC-RT to PolyT: large in G2 ($r = .745^{**}$, $p < .01$) and G1 ($r = .584^{**}$, $p < .01$), and medium in G3 ($r = .417^{**}$, $p < .01$).
5. The correlation of MC-PT to VLT: large in G2 ($r = .600^{**}$, $p < .01$), medium in G1 ($r = .388^{**}$, $p < .01$) and small in G3 ($r = .275^*$, $p < .05$).
6. The correlation of MC-PT to PolyT: large in G2 ($r = .729^{**}$, $p < .01$), medium in G1 ($r = .421^{**}$, $p < .01$) and G3 ($r = .307^*$, $p < .05$).

7. The correlation of MC-XYT to VLT: large in G3 ($r = .516^{**}$, $p < .01$), and medium in G1 ($r = .410^{**}$, $p < .01$) and G2 ($r = .382^{**}$, $p < .01$).
8. The correlation of MC-XYT to PolyT: all medium in G1 ($r = .478^{**}$, $p < .01$), G3 ($r = .449^{**}$, $p < .01$) and G2 ($r = .326^*$, $p < .05$).
9. The correlation of MC-RT to MC-XYT: medium in G1 ($r = .439^{**}$, $p < .01$) and G2 ($r = .355^{**}$, $p < .05$) and very small in G3 ($r = .094^*$, $p < .05$).
10. The correlation of MC-PT to MC-XYT: medium in G2 ($r = .427^{**}$, $p < .01$), and small in G1 ($r = .289^*$, $p < .05$) and G3 ($r = .284^*$, $p < .05$).
11. The correlation of MC-RT to MC-PT: large in G2 ($r = .556^{**}$, $p < .01$), and medium in G3 ($r = .370^{**}$, $p < .01$) and G1 ($r = .328^{**}$, $p < .05$).

As for the relationship of MC-RT to VLT or to PolyT, G2 showed a significantly strong correlation in MC-RT to VLT and to PolyT and the other groups gave medium correlations. Concerning the correlation of MC-PT to PolyT, G2 also showed a significantly strong correlation. Most of the other results gave medium correlations.

With regard to the relationship of MC-XYT to VLT or to PolyT, the result of one group (G3) indicated a slightly stronger relationship to VLT, whereas the others had medium correlations. Two results of the relationship of MC-RT to MC-XYT reported medium correlations, while the result of G3 was problematic. It is probably because MC-RT measured interpretation, whereas MC-XYT was concerned with production ability. One result showed that the correlation between MC-RT and MC-PT was large, and two others had medium correlations. It can be concluded from these summaries that vocabulary and polysemy are strongly related to metaphorical competence, which can be contributory factors to metaphorical competence. Details concerning vocabulary knowledge will be delineated in the following sections. It can be also said from the correlations of MC-RT to MC-PT that the subjects who could interpret metaphorical expressions well could use metaphorical expressions best of all. Interpretation and use may go hand in hand with each other.

6. 7-2. VOCABULARY KNOWLEDGE AND METAPHORICAL COMPETENCE

Vocabulary size and metaphorical competence

Since the subjects were divided into 3 groups in this study, the distribution of the same test items to the whole population was checked first. The distribution ratio of 33% would be ideal. VLT was used as an index throughout this study. It was used for the scrutiny of the distribution of the test items, too. In this and the following scrutiny, the 10% blocks of VLT population, that is, 8 blocks, i.e. over 90% (over 108 points) score in VLT, 89-80% (107-96 points), and so on, were used as an axis. The result of the distribution was that seven out of the eight blocks were very near the

expected 33/33/33% distribution, but one did not. It was the block belonged to the block 50 –59 % (i.e. 60 – 71 points) in the VLT. In this block, the highest and lowest ratios of the distribution were 48 %, 28% and 24 %. The 24 % of the subjects in this block answered the tests designated to Group 1 (see the earlier section of the test items in 3 groups), 28 % answered those of Group 2 and 48% Group 3. This was the only flaw found in the distribution of the tests of the population.

Second, as to discovering the EFL students' metaphorical competence which may relate to vocabulary knowledge, the ratios of the correct (or appropriate) answers to the distribution population of the 10 percent block of VLT were calculated. In this method the 10% blocks of VLT population were used as an axis. Table 6-57 shows the data in percentage of correct (or appropriate) answers. VLT in the second column in the same table shows raw scores.

Table 6-57 The correct (or appropriate) answer ratios of every 10 % block VLT population (N=172)

VLT points converted to %	VLT raw points (Max= 120 p)	N (% in the whole)	PolyT	MC							
				RT+PT	RL	RM	PL	PM	XYL+M	XYL	XYM
over 90%	over 108	10 (5.8%)	77.5	64.1	83.0	63.3	58.9	45.5	47.5	55	40
89-80%	107-96	39 (22.7%)	71.6	57.5	74.8	61.1	50.7	36.4	47	56.5	37.7
79-70%	95-84	46 (26.7%)	59.6	51.8	67.9	50.0	49.8	34.4	47	54	40
69-60%	83-72	26 (15.1%)	47.5	42.0	54.5	40.4	44.0	28.7	40.1	41.3	38.8
59-50%	71-60	25 (14.5%)	34.4	30.5	37.0	29.0	34.7	19.6	25.3	31.7	19
49-40%	59-48	12 (6.9%)	36.3	22.2	37.5	19.4	16.7	11.1	23.6	30.5	16.7
39-30%	47-36	12 (6.9%)	23.4	21.8	34.8	13.9	32.4	4.7	19.1	27.8	10.5
below 29	below 35	2 (1.2%)	25.0	10.7	25.0	12.5	0	0	25	20.8	25

The figures in the table are shown in percentage of correct answers, except for the second column of VLT raw points.

As a whole, the answers to the literal parts of the tests of metaphorical competence accumulated higher scores than those of the metaphorical counterparts in both the receptive and productive tests, as is shown in Table 6-57. In the MC-RT (indicated as RT + PT, RL and RM in Table 6-57), those who scored 70 % or higher in VLT (2000-3000 levels) attained more than 50 % correct answers; those with the scores of 60-69 % in the VLT attained more than 40%; those of 50-59 % more than approximately 30 %; those below 59% less than the others. As to the productive parts of MC-PT (indicated as RT + PT, PL and PM in Table 6-57), the overall attainment was lower than that of the receptive. As stated earlier, EFL students' writing or production in English involves not only metaphorical competence but also other linguistic skills, such as grammar, syntax and other elements, and therefore, these tests resulted in lower scores than the receptive tests. However,

those who scored 70% or higher in the VLT achieved more than 50% correct answers or obtained adequate ratings in most of the tests. These results possibly suggest that 70% knowledge of words in the 2000-3000 frequency levels in the VLT is a prerequisite for developing metaphorical ability in English. Those subjects who had 60% or less of the vocabulary might have the potential to develop their ability to understand and use metaphorical expressions with the assistance of teachers or by other means. However, those who were short of vocabulary would need to broaden their vocabulary range.

MC-XYT and vocabulary size

MC-XYT was distributed to all the subjects and it concerned writing performance in the sentence pattern of 'X is an adjective Y'.

The columns of XY L+M (Literal and Metaphorical), XY L (Literal) and XY M (Metaphorical) of Table 6-57 indicate similar phenomena to the other results: the literal performance achieved higher scores, the metaphorical lower. Greater vocabulary competence seemed to enable better manipulation of both the literal and metaphorical use in this test, too. It seems that the subjects whose VLT score was more than 60 % could distinguish the literal from the metaphorical rather more easily.

Vocabulary size, polysemy ability and metaphorical competence

The subjects' attainment in VLT and PolyT also indicate that those who scored more than 80 % in the VLT obtained more than 70 % in PolyT and that those who attained 70 % in the VLT attained more or less than 60 % in PolyT. There was a gap between those at the 70% level in VLT and those below that level. If these results are viewed together with the correlations between the vocabulary and metaphorical competence, as shown in Tables 6-54 to 6-56, it may be inferred that vocabulary knowledge (including polysemy ability) can greatly assist metaphorical competence.

6. 7-3. CONCLUSION AND IMPLICATIONS FOR EFL EDUCATION

Low (1988: 138) suggests metaphor awareness lessons and teaching inventory metaphors and conventional metaphors to improve metaphorical understanding and use. In teaching the use of inventory metaphors, he emphasises the systematicity of metaphors. In the case of conventional metaphors, he suggests two traditional approaches: memorising individual expressions and the 'Polysemy method,' providing an example of learning the meanings of 'foot' in the target language (ibid.). His suggestions for teaching the systematicity of metaphor and the 'Polysemy method' are noteworthy because in an EFL situation learners may not ever encounter all of the idiomatic expressions nor even encounter metaphorical implications made

by such idiomatic expressions.

As shown in the correlations of VLT and PolyT to MC-RT, MC-PT and MC-XYT, vocabulary knowledge can provide an aid to comprehension and use of metaphorical expressions. A broader vocabulary expands into richer semantic fields, which may stimulate or activate mapping items between different domains in metaphorical manipulation. If lessons in metaphor use and/or metaphoricity awareness are provided for learners, the learners' deeper appreciation of the language and context will be enhanced and it will nurture holistic language competence.

The studies carried out so far have concentrated only on some lexical and semantic aspects of EFL students' metaphorical competence. Most language learning also involves cultural aspects. Further study is therefore necessary to investigate all aspects of metaphorical competence. However, the studies in this research at least indicate that further study in this regard is warranted.

CHAPTER 7

CONCLUSION

The overall results of the tests executed in Study 3 (Chapter 5) and Study 4 (Chapter 6) indicate that the students' larger vocabulary knowledge (breadth, i.e. size, and depth i.e. polysemy), the richness of their semantic fields and the wider networking of words and/or expressions of deeper appreciation were all related to better understanding and use of metaphorical expressions. This chapter addresses the implications of those results in an EFL situation. It will then discuss the limitations of the research. The chapter concludes with some suggestions for enhancing metaphorical knowledge in EFL lessons.

7. 1. VOCABULARY KNOWLEDGE AND METAPHORICAL COMPETENCE

Vocabulary knowledge and metaphorical competence

Vocabulary knowledge is focussed on as one of the linguistic competences in this thesis. It was used as an index in the studies. We have discovered that all of the correlations between the subjects' vocabulary ability (vocabulary breadth and depth) and metaphorical competence examined in the tests of metaphorical competence are positive (see Tables 6-54 to 6-56 in Chapter 6). As discussed in the first two sections of 6.7 in Chapter 6, the correlations of vocabulary and polysemy to metaphorical competence were strong and the correlations between MC-RT and MC-PT were of medium strength. It can be said from these results that those who had a wider vocabulary and who could interpret metaphorical expressions successfully may have exercised their ability to understand and use metaphorical expressions. We have also discovered that those who scored 70% or over in the VLT and 60% or over in the PolyT accumulated higher mean scores in the metaphorical tests. Further investigations are necessary, for example, for the test items, the test formats and/or the number of subjects, however, the present studies indicate that the measurements used in the studies may serve as components of the tests.

The following sections address the reasons why vocabulary ability serves as one of the main factors for metaphorical comprehension and manipulation.

Knowledge of words as an initiator and stimulus for metaphorical comprehension

We have discovered in Chapters 5 and 6 that in comprehending metaphorical meanings in passages, EFL students employed (a) knowledge and application of Japanese to their interpretation (i.e. NL schema) as basic or background knowledge, (b) utilisation of cue words in passages and (c) metaphorical/analogical schemas. Vocabulary knowledge concerns all of these three utilisations. In their application of NL schemas and utilisation of

cue words to enable understanding, they must first of all know the meanings of words in test items or passages. Once the meaning of the input is understood, it stimulates or activates their metaphorical/analogical expansion. Vocabulary serves as an initiator, and vocabulary knowledge extends the meanings of input to polysemy ability, which also works as a stimulus or an activator to expand meanings and link the networks of meanings. In this sense I emphasise that vocabulary is one of the main factors in comprehension, although this is applicable to all of understanding whether it concerns literal or metaphorical expressions.

In understanding the metaphor *Love (target) is a battle (source)*, the source *battle* stimulates our cognition. We grasp its meaning from some options of the word *battle*, and search for a specific meaning by connecting several meanings of 'battle' to 'love.' If the stimulus from the word or the network from the word to other words (usually in the same semantic field) is weak or lacking, the width and depth of the word does not expand. In this sense, semantic fields relate to the comprehension of metaphorical expressions.

We will briefly look at an example from the test item *Wake not a sleeping lion* in MC-RT from the point of view of vocabulary and comprehension then the rest of the items, followed by schema operations.

She had had a lot on her mind lately. Especially at home, and school only made things worse. He knew he had offended her but desperately needed to speak to her. His friend advised him saying "Wake not a sleeping lion."

There are some words which may hinder EFL students' understanding (the shaded words). The frequency level of these words was checked in the *JACET 4000 Basic Words* (1993) (*JACET 4000*, hereafter) where the frequency is classified in 5 ranks. There is no statistical comparison between VLT and JACET 4000 but my scrutiny of the inclusive ratio of the VLT words in *JACET 4000* revealed that the inclusive ratio of the VLT 2000 word level in *JACET 4000* is 97.5%; the VLT 3000 word level in it is 77.5%; the VLT 2000-3000 word levels in it is 87.5%. It can be estimated from these ratios that the inclusive ratios are relatively high. Hence it can be used as a contrastive index. The word 'worse' is ranked at the 3rd level; those of 'lately,' 'offend' and 'desperate' at the 5th level (no inclusion of an adverb 'desperately') (*JACET 4000*). The frequencies of these words are medium or low. The above passage included these problematic words for the EFL students, though it accumulated high mean scores. One of the probable reasons for this, discovered in the interview, was the format of the tests. A paired literal passage may have provided some aid for understanding of the counterpart (i.e. metaphorical) passage. Another reason was the subjects' cognitive device, i.e. how well the mental lexicon worked and how wide and

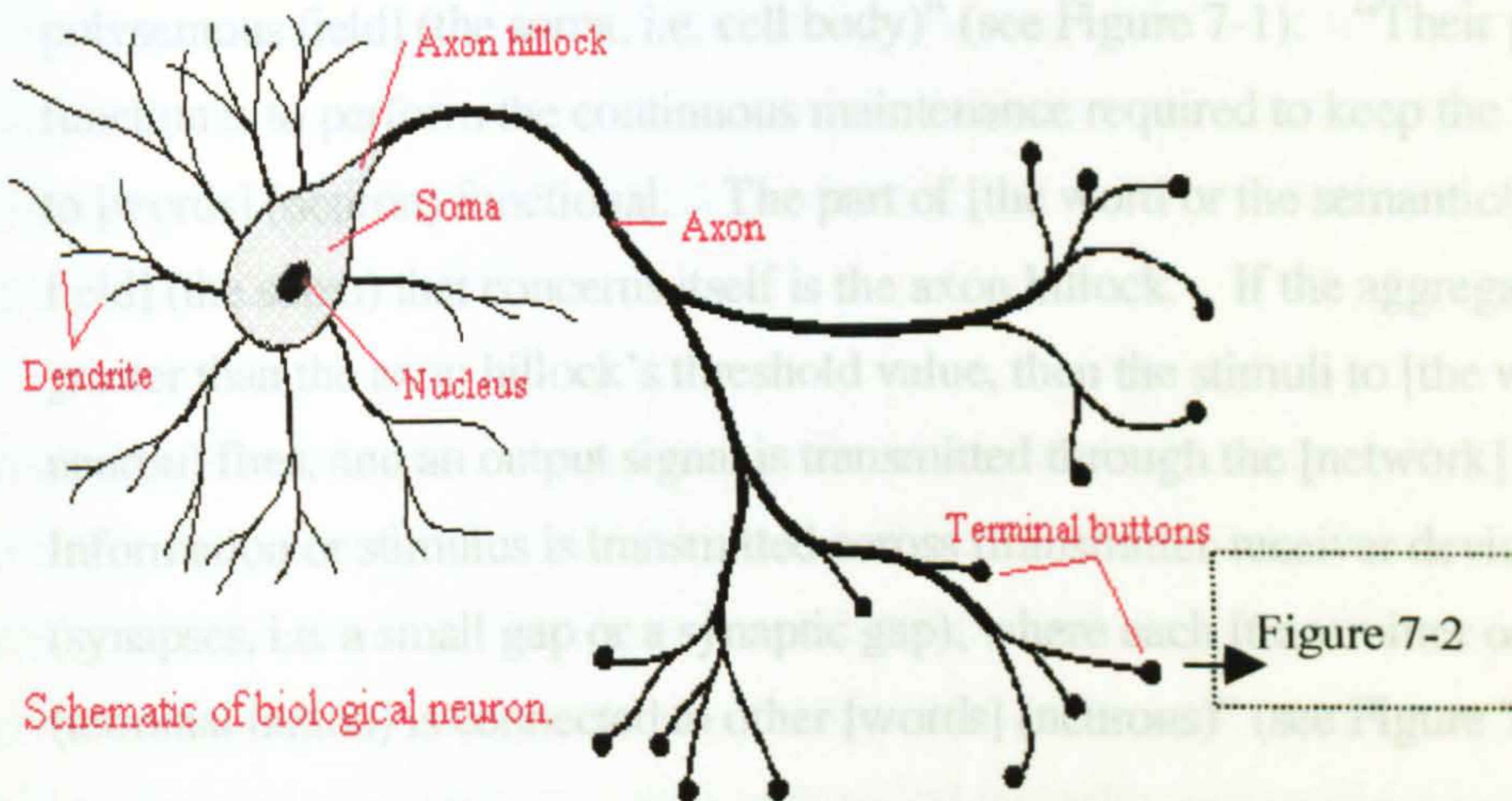
deep its extended networks are. The following is my interpretation from the students' answers in the tests with their comments in the interview after the tests. They connected the meanings of the 'mind' + 'worse' to 'something wrong happens,' and they could expand the meaning of 'offend' to 'angry' if they knew a partial meaning of this word as in sports jargon. Most of the interviewees said that they did not know the exact meaning of 'desperate' but inferred the meaning from the situation in this story. On the contrary, those whose vocabulary ability was low abandoned their attempts.

As a whole, the interpretations of the passages composed of familiar words and the passages including sufficient contextual support, for example, *to let the cat out of the bag*, *A little pot is soon hot*, *Wake not a sleeping lion*, *The rotten apple injures its neighbours* and *to stand in someone's way* and *Fish stinks at the head*, EFL students' interpretations were successful. On the other hand, *You cannot eat your cake and have it*, *to hold one's head high* and *a pain in the neck* were problematic for EFL students. In these passages, the cues may not have been sufficiently strong. The least understood was *to be off one's head*. The words themselves belong to the 1st level in *JACET 4000*. They appear in many authorised textbooks used in middle schools. As stated in the previous two chapters, this idiom is a highly conventional, culture-bound idiomatic expression. The high mean score, i.e. the high interpretation rate in the literal passage (1.54) indicates that the literal part seems to be understood well, on the contrary, the mean score in the metaphorical passage was the lowest (0.33). This indicates there is a particular problem in this expression. Misunderstandings found in the answers were 'being surprised,' 'unthinkable' or 'erasing a memory or something from his mind.' These answers possibly imply that the subjects interpreted 'off' as 'taking away' and 'head' as 'mind,' i.e. a container. As far as metaphorical mappings from one word onto the other word were concerned, their interpretations were completed. This process makes interpretation (whether it is literal or metaphorical) possible. We must note here again that there is a possibility of failure in correct interpretation of highly conventional idioms.

It can be concluded that vocabulary and polysemy ability seem to provide an aid for understanding words and expressions at the initial comprehension stage and at the same time it seems to provide an aid to stretching their tentacles to reach out and expand semantic networks which may connect or expand the initial stimuli to other potential meanings. This operation is similar to that of the transmission of information in neural networks in the brain which is illustrated by neurologists, when they explain the mechanisms of transmission of neural activation among the parts of the brain. I have modified one of the neurological network illustrations (Fraser, 1998) to adjust it to my interpretation of the network of words and semantic/polysemous expansion to other words, as shown below.

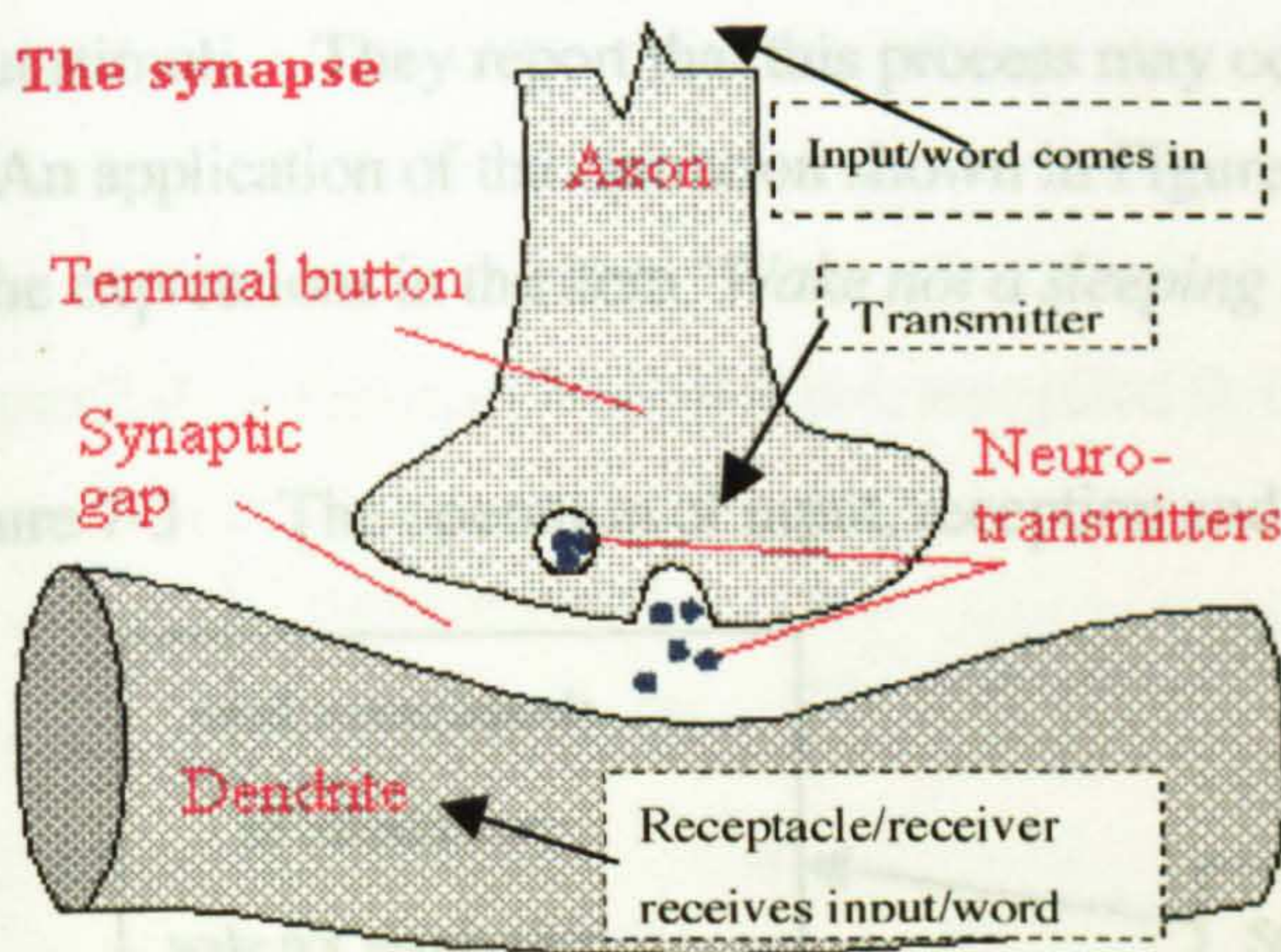
My modifications added to Fraser (1998) are indicated in the dotted boxes with arrows in Figures 7-1 and 7-2.

Figure 7-1 The network of words and semantic/polysemous expansion to other words (adapted from Fraser, 1998)



(“Schematic of biological neuron,” Fraser, 1998)

Figure 7-2 Transmitter-receiver devices (adapted from Fraser, 1998)



(“The synapse,” Fraser, 1998)

Modifying the original statement made by Fraser (ibid.) by adding my interpretation of an operation of comprehension [indicated by square brackets] results in the following description of comprehension (original wording in parentheses):

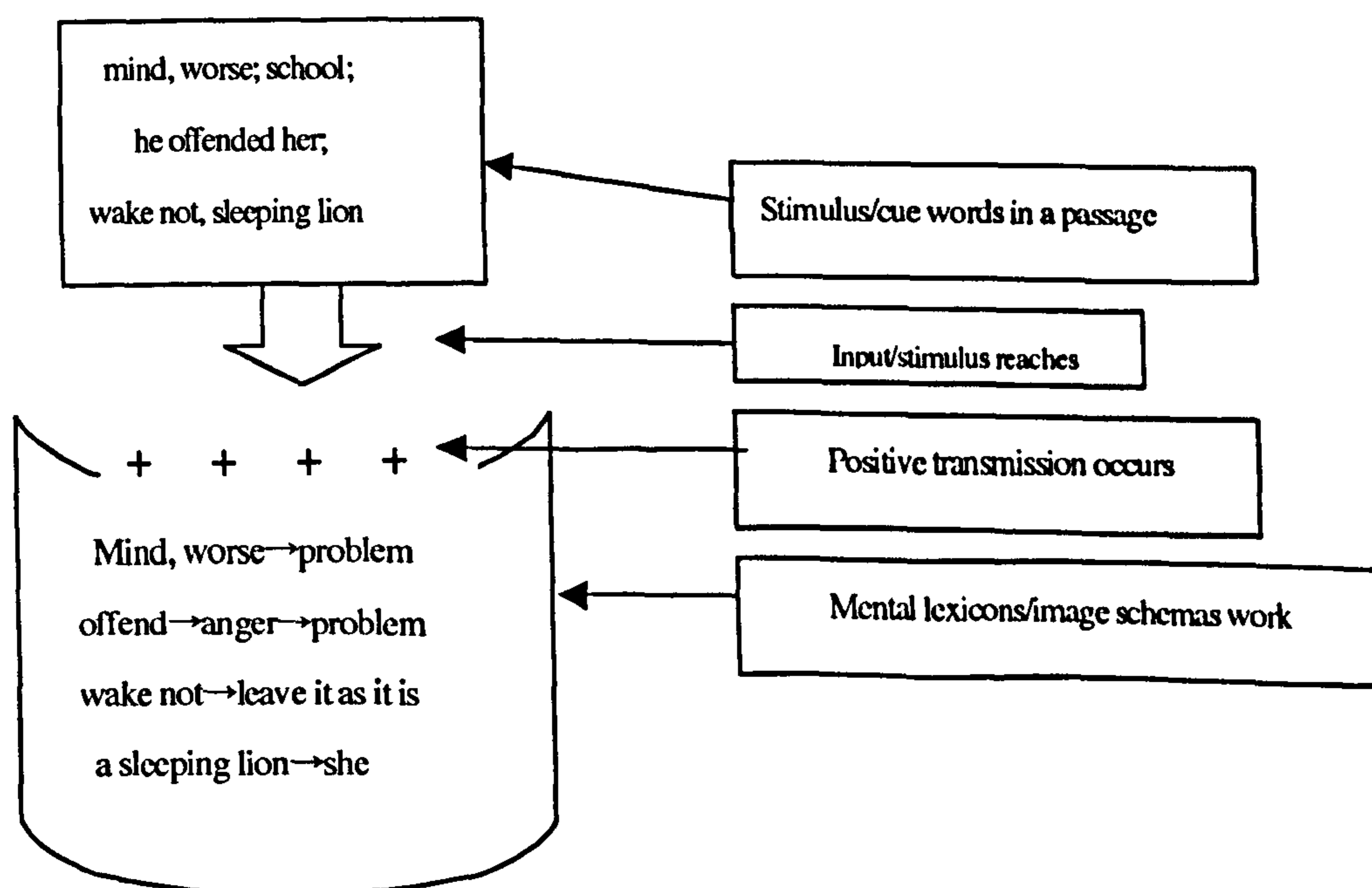
“[a word or mental lexicon] (a neuron’s dendritic tree) is connected to a thousand neighbouring [words] (neurons). Each [word] (neuron) is a

[receptacle or receiver](cell) that uses [mental] (biochemical) reactions to receive, process and transmit information. When one of [the words is stimulated] (neurons fires), a positive or negative charge is received by one of the [words or mental lexicon] (dendrites). The strengths of all the received charges are added together through the processes of spatial and temporal summation. The aggregated input is then passed to [a word or a semantic/polysemous field] (the soma, i.e. cell body)” (see Figure 7-1). “Their primary function is to perform the continuous maintenance required to keep the stimulus to [words] (neuron) functional. The part of [the word or the semantic/polysemous field] (the soma) that concerns itself is the axon hillock. If the aggregate input is greater than the axon hillock’s threshold value, then the stimuli to [the word] (the neuron) fires, and an output signal is transmitted through the [network] (axon). Information or stimulus is transmitted across [transmitter-receiver devices] (synapses, i.e. a small gap or a synaptic gap), where each [transmitter or receiver] (terminal button) is connected to other [words] (neurons)” (see Figure 7-2).

In addition, neurologists observed from nerve gas effects that once a neuron fires, it keeps on triggering all the neurons in the vicinity. Matsuzaki, Kasai, et al. (2004) who investigate memory and learning in rat experiments discovered that dendritic spines were enlarged by input stimuli. This possibly means that the transmitter-receiver devices were activated by the input stimuli. They report that this process may occur in human brains.

An application of the operation shown in Figure 7-2 to that in the receiving and transmitting of the expressions in the item ‘*Wake not a sleeping lion*’ can be illustrated as shown in Figure 7-3.

Figure 7-3 The operation of input, reception and transmission

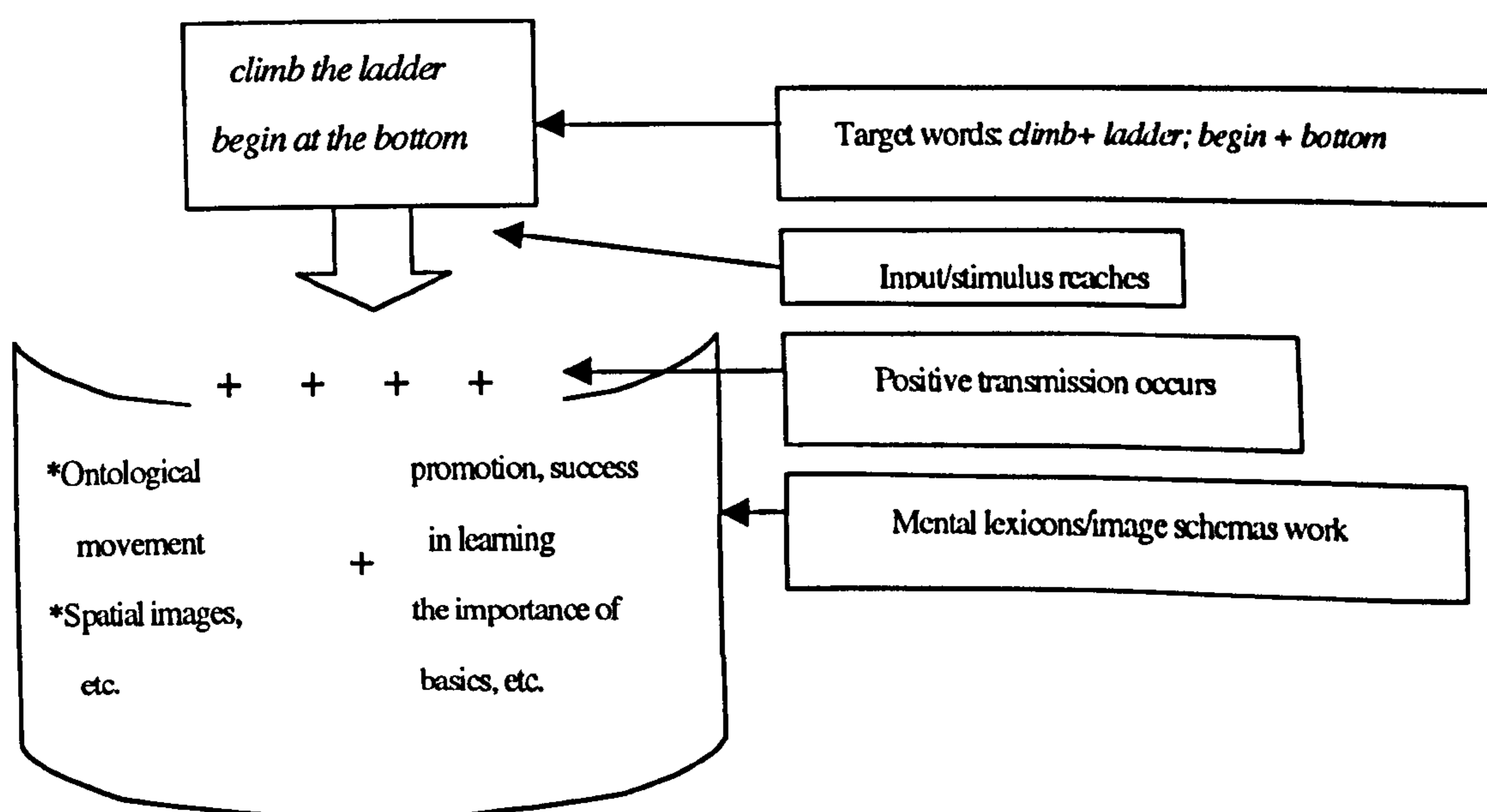


Positive transmissions may naturally or unconsciously occur in one's native language. In the case of non-native languages, weak mental lexicons, small semantic fields or a lack of polysemous ability may prevent an appropriate execution of interpretation or manipulation, i.e. positive transmission. Metaphorical comprehension may be easier if there are some dendrites to function as a hook or connector, as is illustrated as neuro-transmitters in Figure 7-2, leading to smooth mapping between words, expressions or metaphorical concepts. Thus, polysemy or association with target words functions as a transmitter and a receiver. If polysemy ability is weak or an association of a word with other words fails, comprehension may also fail.

Knowledge of words and image schemas in metaphorical manipulation

From the results of the MC-PT, it can be said that manipulation of metaphorical expressions concerns image schemas, semantic fields and mapping/networking. However, more basically, vocabulary plays an initial key role in the case of EFL students. Nothing would emerge unless expressions were understood lexically, nor would they work as stimuli. This was discovered in the interviews. Where there was something to stimulate subjects' cognition, whether it was a meaning of the word or an image drawn from that specific word, they seemed to make an effort to use expressions metaphorically. A successful example was summarised from the item *If you climb the ladder, you must begin at the bottom*. Figure 7-4 illustrates the operation of input, reception and transmission discovered in its answers.

Figure 7-4 The operation of input, reception & transmission



Another successful example was the item *to see which way the cat jumps*. All the words in this expression are familiar to EFL students and this made it easier for them to compose a passage. The 'cat' schema was evident in their passages along with the mappings from 'which way' to 'selection.' Those from 'cat' to 'personification' and 'jump' to 'movement' were also prominent.

However, there were some problematic expressions. One of them was the test item *to spill the beans*. The problems may reside in the words and the meaning of the idiom. As for the word level in *JACET 4000* (ibid.), the rank of the word 'bean' is the 4th level. The word 'spill' is not included in *JACET 4000* but included in the later edition of *JACET 8000* (2003), which has similar categories of classification as the former but not precisely the same. In it, the word is ranked at the 3rd level. This may inform us of the word 'spill' belonging to the medium level. We must note here that a more crucial problem is its meaning as an idiom, i.e. the quality of a culture-bound idiom. As stated earlier in the section 6. 5-1 in Chapter 6, a very small number of answers employed successful image schemas which enabled good mapping. The process the subjects followed in their composition seemed to be as follows: inferring the meaning from both or either of the words 'spill' and/or 'beans,' even though they did not correctly understand the whole idiomatic meaning, they attempted to infer its idiomatic meaning, setting up a schema of 'spreading beans' in the literal answer. This schema then linked to image schemas such as the departure of someone or something in the metaphorical answer. Although most of the answers did not show a correct interpretation of the idiom, the subjects' answers did employ image schemas of CONTAINER and/or Ontological metaphor. The employment of the image schema CONTAINER was found in the answer, for example, 'water splashing out of the faucet,' and the employment of Ontological metaphor appeared in the answers, for example, 'departure from a friend,' 'water splashing out of the faucet,' 'failure in an entrance examination or study', and 'telling the truth in a quarrel' (an appropriate answer) and 'crashing the beans' (least appropriate). A similar process of image creation (though appropriate answers were few) was found in the item *to throw out the baby with the bathwater*.

In summary, with regard to metaphorical manipulation as a whole, metonymic manipulation seemed easier for EFL students to employ. As for metaphorical manipulation, bodily schemas and certain image schemas, such as MOTION and MOVEMENT seemed easier to employ. These results may have been affected partly by the author's selection of the test items, however, the purpose of the MC-PT are fulfilled in the sense that the test was intended to investigate this aspect of metaphorical manipulation.

The metaphorical manipulation in MC-XYT also concerns the knowledge of words, the semantic fields of the words and their networking. The following section briefly summarises the tendencies which the EFL students showed in the test and then reviews the semantic fields and networks discovered in the answers with a view to establishing why rich semantic fields assist metaphorical manipulation.

First let me summarise the aspects of the answers for the 6 target words in MC-XYT. The mean scores of the answers in the metaphorical parts were as follows. The mean scores are listed in order of high to low mean scores:

Study 3 Chapter 5: bright 0.56; wild 0.40; high 0.28; dark 0.26; weak 0.24; grey 0.22

Study 4 Chapter 6: bright 0.54; high 0.33; wild 0.32; dark 0.29; weak 0.24; grey 0.22

The successful metaphorical use of the adjective *bright* by the EFL students (top rank) was in the sensory meaning of this adjective, for example, *her eyes are bright jewels* or *my friend is a bright person*. The overlapping of the uses by the EFL students with those of NSs in the COBUILD top 40 collocations are similar to a great degree. The 2nd highest rank in Study 3 and the 3rd in Study 4 was the adjective *high*. The ontological physical meaning of *high* maps onto Ontological metaphor represented by MORE IS UP, where a mental and abstract implication is expressed. This word was used to mean a vertical position, for example, the high standard of an examination, high tension, high quality, high level, and so forth. The EFL students' use of this word was similar to the COBUILD top 40 collocations collected from NSs.

The metaphorical use of the *wild* (ranked 3rd in Study 3 and 4th in Study 4) showed that the EFL students' semantic web stretched to a variety of words, so there were a variety of expressions. The meaning of the adjective *wild* seemed to transmit and stimulate a dynamic image. The analogy from the image of *wild animal* seemed to influence the use of *wild*. The similarity of the EFL students' answers with the COBUILD top 40 collocations implies universal human cognition in the use of this word.

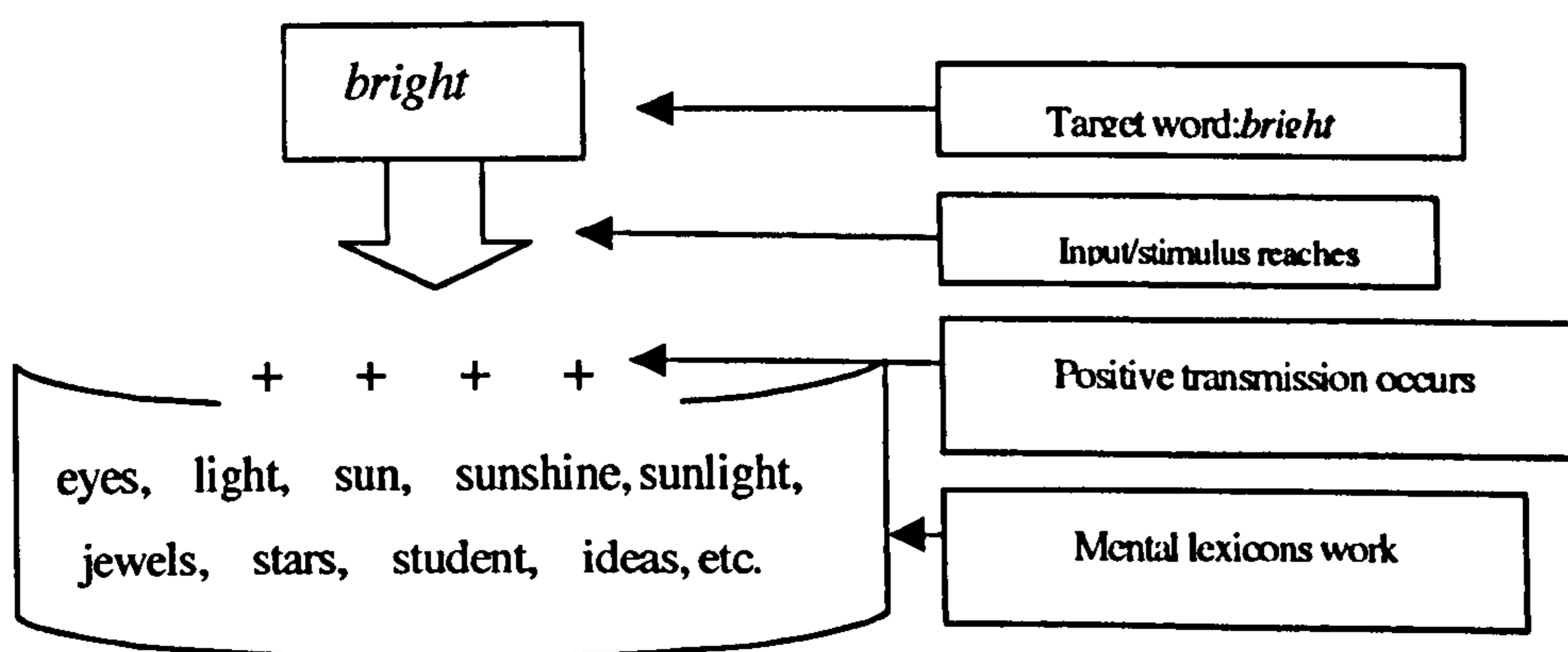
As for the adjective *dark*, the successful metaphorical use of *dark* retains its core meaning, i.e. the meaning of a limited degree of brightness which seems to stimulate our sensory organ to map from visual cognition to a mental/psychological implication, pessimistic, unfathomable states of mind. There was not much similarity between the EFL students' answers and the COBUILD top 40 collocations which include, for example, mind, character, personality, mood, atmosphere, future, surroundings and relationship. This phenomena indicates some characteristics of Japanese EFL students' use of the word.

Another word that overlapped less between the EFL students and NSs use was the adjective *weak* (2nd rank from the bottom). As described in the earlier chapters, this adjective tended to be used from L1 transfer. This may cause communication problems in discourse.

In the final word *grey* ranked lowest, with zero answer ratios being the most common. The EFL students used this adjective to describe heart, feeling, mind and ways of thinking in the two studies. The overlapping uses by the EFL students and NSs in the COBUILD corpus top 40 collocations are only for 'hair' and 'hairs.' This word also indicates that there may be problems in discourse.

Figure 7-5 illustrates the operation of input, reception and transmission of the adjective *bright*, representing all the other adjectives.

Figure 7-5 The operation of input, reception and transmission of the adjective *bright*



7. 2. IMPLICATIONS/SUGGESTIONS FOR AN EFL SITUATION (SPECIFICALLY FOR JAPANESE EFL EDUCATION)

There is only limited research on metaphor, the metaphorical concept and its application in an EFL situation in Japan. To improve this situation, this section advocates the importance of enhancing metaphorical competence in an EFL situation.

Is metaphorical competence necessary for EFL students to have?

The importance of metaphorical competence, or figurative competence in a broader sense, will be addressed with regard to the implications from several English lessons. One of the first two cases was from reading comprehension classes taught by myself and the other was from composition classes: one taught by Omori (presented at JACET, 2004) and the other by myself.

Learners encounter figurative expressions in reading comprehension. The following

excerpt is from an English textbook (Taniguchi, 2001: 11-2, adopted from Louis Forsdale, 1981). In the excerpt cited below, the underlined words indicate metonymic expressions and the shaded words metaphorical expressions.

Every person is an island, isolated from all others in his or her self, forever physically *1separated after the umbilical cord is cut. The anxiety, the loneliness of the isolation moves us to create bridges between our islands. We extend our hands, fingers touching; we span the distance with our eyes. We speak; we smile. *2Through such strivings, we construct transitory bridges, pathways of signals, that carry delicate freight of meaning. In fair weather the bridges hold, in foul weather they collapse. We work a lifetime keeping the bridges open between our personal islands. *3The tolling bell signals the death of an island, the collapse of a bridge, *4punctuating the eternal state of isolation that we endure, seeking always to alleviate.

The message of the above passage was grasped with the aid of metonymic expressions, for example, the words like 'island' and 'bridge,' and/or the clause 'in fair weather the bridges hold,' etc. However, difficulty resided in the expressions marked with the asterisked numbers 1 to 4. There are some unfamiliar words in the passage, for example, 'umbilical' in the asterisk 1. I supplied its meaning in Japanese, which ensured some students comprehended the meaning of 'the umbilical cord,' but not all of those who comprehended it understood its full implication. It may be that they lacked a schema for child-birth or a mapping of it onto the target domain. The most crucial misunderstanding occurred with the asterisk 3 'the tolling bell.' These two words are not too difficult to understand. However, there was some misinterpretation. The image that almost all students had was of a scene of a church bell ringing in a wedding ceremony. Their schema for 'the bell + toll' was far from the original intention. At this stage they did not pay attention to the combination of 'The tolling bell' with 'signals the death of an island....' If the scene in their minds were a scene of a wedding ceremony, the ends would not meet. This may be a result of their cultural experience. The confusion here may be due to linguistic and socio-cultural competence. It can be said that linguistic, schematic and cultural factors involve the understanding of this expression. Other misunderstandings were caused by unfamiliar words in the expressions, such as 'umbilical,' 'striving' and/or 'punctuating.'

After reading this passage, I asked the students if they had ever thought of 'hiyuteki hyogen' (figurative expressions) in English. Only a few answered positively, but most of them answered negatively. In addition, nowadays there are fewer authorised textbooks for

'kokugo' (mother tongue) which include a variety of expressions, such as learning 'hiyuteki hyogen.' Japanese people may lose an opportunity to teach/learn the beauty of the language.

Still a further example of reading comprehension is from another English lesson where I used the same textbook. In the passage describing the characteristics of Japanese schools, there is a passage starting with the following sentences: "You must adjust.... This is the legend imprinted in every school-book, the invisible message on every blackboard. Our schools have become vast factories for the manufacture of robots" (Taniguchi, 2001: 16). Some students in a class actually thought that schools produce mechanical robots. They did not think of it figuratively. Incredible as this seems it actually occurred. There are numerous similar cases. In some cases, these kinds of misunderstanding may lead to serious problems. These examples suggest the necessity of dealing with figurative or metaphorical expressions in language lessons.

The following examples are from two composition classes: one is a lesson using metonymic expressions given by me and the other a lesson using metaphor by Omori (2004).

To reduce such monotony in students' composition as described in the *anger* expressions in Chapter 1 and to make their composition more interesting and expressive, I used two approaches: one using similes and the other using metaphorical expressions. The uses of similes seemed to be easier for the EFL students to manipulate. The latter was similar to the lessons given by Omori (ibid.), where she used several conceptual metaphors to improve her students' compositions, providing the ideas of conceptual metaphor with its metaphorical expressions. The impression of her lessons as well as mine of the similar lessons was that after learners had learned conceptual metaphors, their compositions became more expressive using metaphorical expressions, and their expressions provided clearer images. Although these experiments were limited, it suggested that such lessons strengthen or enliven students' communicability. Taking advantage of conceptual metaphor in language lessons, Boers's (2001) small scale experiments on a contributory effect of the association of figurative idioms with a concrete image on vocabulary retention is noteworthy, and at the same time, Omori's (2004) and my experiments in composition classes also imply the importance of figurative, metaphorical lessons.

More importantly, I discovered in the interview with the volunteer students that they were interested in learning figurative (metaphorical) language and the functions and expressive ways of using the language. Most of the interviewees said that they enjoyed the lessons about metaphorical expressions and the concepts behind them. They stated

that the metaphorical ideas could be applied to the comprehension and production of language use. Some who did not participate in the interview claimed that metaphorical manipulation was difficult, because they were not accustomed to doing it. Thus, I can conclude that it is meaningful to enhance metaphorical competence in EFL situations and at the same time to provide opportunities for pleasure and appreciation of the language. Their awareness of expressions may then go beyond the classroom, for example, figurative language realisations of the languages in commercials.

Littlemore (presented at Researching And Applying Metaphor, RAAM V, 2003) suggested the importance of figurative thought as “the ability to create and understand metaphorical and metonymic relations between ideas.” Based upon her experience of teaching ESL, she maintains figurative or metaphorical knowledge is one of the communicative language abilities.

These examples suggest that we might pay more attention to the linguistic and cognitive aspects of metaphorical expression.

For metaphorical recognition, linguistic competence is essential. By linguistic competence what one hears or reads is recognised as untruth, i.e. something expressed beyond literal meaning, and by pragmatic competence one reinterprets what one have heard or read, i.e. true meaning. To recognise metaphorical meaning, one needs to activate one’s schemas, image schemas and mapping in addition to drawing upon linguistic ability.

7. 3. RETROSPECTIVE VIEWS ON THE STUDIES AND LIMITATIONS OF THE PRESENT RESEARCH

Problems at an initial stage and the results

A major problem in the initial stages of the research was lack of past research in EFL contexts, unlike that in ESL. It is probably because in ESL situations, exposure to metaphorical expressions occurs more often than in EFL, hence, the necessity for research. Research on metaphor involves many disciplines, for example, linguistics and cognitive linguistics to investigate the functions of cognition and history of language; applied linguistics to study language scientifically; psychology, psycholinguistics and neurology to investigate the human mind; anthropology to investigate the relationship between humans and culture and regions, to name just a few. It was overwhelming at first. Therefore, I limited the area of my study to applied linguistics and its closely related fields. This limitation narrowed my research, and at the same time, it made me focus on specific aspects of metaphorical study in an EFL context, i.e. linguistic, semantic and to some extent cultural aspects of EFL students’ understanding and use of metaphorical expressions.

A further problem was to adopt an appropriate measurement for metaphorical

competence. After several experimental testings, I finally settled on the present format, although it was not perfect. Since the number of subjects was limited, the allocation of the subjects had to take place by dividing them into groups. The participation of about 50 subjects in the final study provided me with a reasonable amount of statistical data. The contents of the tests were also a problem. In EFL situations, linguistic ability is usually classified into the receptive and the productive though the productive does not mean genuine creativity in use of metaphor. The test types followed this convention. Metaphorical expressions are often used in a context, therefore, target metaphorical expressions were embedded in passages in the receptive type test. The underlying idea was that a contextual support might provide schemas. The preceding passages with contextual supports were used as specimens for the productive type. Both types consisted of literal and metaphorical parts to make examinees aware of the differences. On the other hand, the MC-XYT made use of the idea of conceptual metaphor. The selection of target words was concentrated on the words of sensory meanings. My assumption was that the EFL students' vocabulary knowledge might strongly correlate with linguistic ability. The present studies aimed to demonstrate this in relation to metaphorical competence. Therefore, the studies concentrated on the relationship between these two abilities.

The most important result in the studies was that I could prove the relationship of EFL students' metaphorical competence to vocabulary knowledge, among which size and polysemy were two major factors. What I am anxious about is the effect of cultural elements upon metaphorical competence. The cultural elements have ambivalent effects: positive if they are appropriately utilised and negative if they are misused. When using metaphorical expressions in non-native languages, a lack of awareness of correct usage, especially of idioms may lead to misleading utterances. To avoid this risk we can use metaphorical expressions in context. The context supports the meaning.

An interesting incidental finding in the studies was the answer to when and how the term 'metaphor' was first used in Japan. It was interesting to find that the time coincided with the time (in the Meiji Era) when more occidental ideas were imported to Japan by literary figures through the device of rhetoric.

Limitations of the present research and implications for the future

There were several limitations in the present studies. The major limitations were the number of test items and subjects. I knew that the availability of subjects was limited, therefore, certain measures of allocation of subjects had to be taken, such as dividing them into certain groups. The participation of about 50 subjects in the final study provided me with fair amount of statistical data, but more subjects would have allowed a better research

design.

Future research should have more test items and subjects. To execute this kind of test, MC-XYT with more items can be recommended. This type of test takes the pattern of conceptual metaphors and can investigate schemas and image schemas specific to Japanese who learn English.

Due to the scarcity of the number of test items, the cultural aspects of metaphorical competence could not be fully examined. This should be investigated in future research.

Since the format of MC-RT and MC-PT consisted of contrastive pairings in the present studies, a possible experiment in the future could focus on metaphorical expressions alone so that genuine metaphorical competence could be investigated. We must also consider the practicability and feasibility of such a test. It was estimated that writing a passage embedding a target expression took up too much of the subjects available time, which meant the experimental tests could not include a sufficient number of the test items. In this sense, too, future research may include only metaphorical components.

7. 4. SUGGESTIONS FOR ENHANCING METAPHORICAL COMPETENCE

The importance of enhancing metaphorical competence in a broader sense was stated earlier. This section proposes some suggestions to enhance learners' metaphorical competence. As stated repeatedly, metaphorical competence involves linguistic, semantic and cultural aspects of language use. One of my proposals concerns the enhancement of vocabulary, polysemy and schemas and another concerns that of semantic, image schemas and mapping.

Vocabulary, polysemy and schemas

From the perspective of semantic fields relationship to metaphorical network, teaching vocabulary in semantic organisation (in contrast to thematic organisation) may be effective. Lindstromberg (1985: 241) proposes schemas for ordering the teaching and learning of vocabulary. For example, in teaching the word 'move,' the words 'run' and 'fly' can be taught at the same time. In this way learners' vocabulary may be enriched.

Carter (1998: 215) alludes to a semantic grid for components of words and collocations of words, although he cautions that there may be a problem in the natural order of acquisition for this grid approach. However, it can be used to enlarge learners' vocabulary if the agenda is well planned. As for vocabulary and metaphor teaching, Carter (ibid. :219) supports the teaching of metaphor sets for learners' vocabulary enlargement through associative bonding. This means that the lexical items in a metaphor set, for example, ARGUMENT IS WAR, can be taught in terms of associate bonding. The examples of the

linguistic realisations of this conceptual metaphor provided by Carter (ibid.) are 'his criticisms were *on target*' and 'he *attacked* his argument using a subtle *strategy*.' The reasons for the use of *on target*, *attack* and *strategy* can be clarified by explaining the source-target relations.

Another perspective of Carter's (ibid.: 163) concerns polysemy and collocations. His caution on polysemy is the distinction between polysemy and homonyms. His view on polysemy and collocation citing Moon's (1984) 10 examples of the collocation to *light* is that meanings are highly context-dependent. The meaning gradations change depending upon the contexts. In my present studies, I could not examine collocations, however, I have noticed that the manipulations of the target 6 adjectives in XYT involved this aspect of the language use. McCarthy (2001: 13) also places an importance on collocations in language teaching/learning, indicating that what is problematic for non-native speakers is some collocations with language-specific features. The higher one's linguistic ability may become, the better one's collocation ability may be, and the quicker and stronger the mapping may be performed.

Semantic, image schemas, network and mapping

Aitchison (1987: 195) views finding a word in one's mental lexicon as following a path through a complex network. Some of the paths are wide enough to access the target, while others are too narrow. If it is easy to reach the target, the link or connection from that word to other words may be quick and strong. On the contrary, if it is hard to get to the target, the link or connection may be slow or weak or nothing may be found. Networks in one's neural systems, which require more investigation, are said to be interwoven in complicated ways as if they were spiders' webs. Links stretch around the neighbours and build up neighbourhood links. Networks may form topological maps of the space of input data, by which one infers the meaning(s) of a specific input.

In comprehending input, i.e. what is said or heard, we consciously or unconsciously utilise schemas. If we are short of or lack them, input processing may be affected and an effective inference may not be evoked. In such a case, we may not be able to make use of our knowledge of the world stored in our mind and body (Bransford, Barclay & Franks, 1972)

In summary, in an EFL situation, the most important element is students' linguistic competence, i.e. mental lexicons. The enhancement of vocabulary knowledge is therefore a priority. Secondly it is important to provide lessons for raising awareness of and dealing with metaphorical expressions and/or metaphor mechanisms. The teaching of

conceptual metaphor and its mechanisms is a handy resource. It may be possible to teach metaphorical relations between the source and the target domains using a conceptual metaphor like LIFE IS A JOURNEY. Teaching individual metaphorical expressions suggested by Low (1998) is a further option.

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Notes

1. the original poem:

...ますらおと思へる我も 草枕 旅にしあれば 思いやる たづきも知らに多胡の浦
の 海人処女らが 焼く塩の 思ひぞ焼くる 我が下心 (万葉集5)

2. (若紫、Waley chose ‘Murasaki’ as its title of the chapter, but I prefer ‘Young Murasaki’, because the story is about the growth of a young girl into a beautiful court lady)

3. & 4. The original description: 髪は扇をひろげたるように、ゆらゆらとして、顔はいと赤くすりなりして立てり Her hair, thick and wavy, stood out fanwise about her head. She was very flushed and her lips were trembling. (translated by Arthur Waley, 1955)

5. いづれの御時にか。女御・更衣、あまたさぶらひけるなかに、いと、やむことなき際にはあらぬが、すぐれて時めき給ふ、ありけり (源氏物語、?1001-1008?) At the Court of an Emperor (he lived it matters not when) there was among the many gentlewomen of the Wardrobe and Chamber one, who though she was not of very high rank was favoured far beyond all the rest; (translated by Waley, 1955)

6. Lakoff & Johnson (1981); Lakoff (1987) explain the systematicity of metaphors. Their contribution to metaphor study is the categorisation and conceptualisation of metaphors. Here is one of the examples (ANGER IS WAR) to explain how our concept of argument is structured by the two elements, anger and war.

The essence of metaphor is understanding and experiencing one kind of thing in terms of another. Arguments and wars are different kinds of things—verbal discourse and armed conflict—and the actions performed are different kinds of actions. But ARGUMENT is partially structured, understood, performed, and talked about in terms of WAR (Lakoff and Johnson, 1981: 5).

In the metaphor ARGUMENT IS WAR, we associate the words ‘war’ (and ‘argument’) through imagination with other words and concepts. Conceptual networks expand. The conceptual network of war or battle (partially at least) characterises the concept of an argument and connects it to the expression. Lakoff and Johnson state that metaphorical expressions in everyday language give us insight into the metaphorical nature of the concepts that structure our everyday activities. They give another example of the metaphorical concept TIME IS MONEY: You’re *wasting* my time. As you waste money, so do you time. In this metaphor, time is meant to be a valuable

commodity and money is also valuable and its resources are limited. This way the conceptualisation of time is connected to that of money and we understand its meaning. They also state that our concept is deeply rooted in our experience.

7. The only first three stanzas are quoted from the poem here, preserving in this quotation the following references to her indications for the italics and the bold letters: a word in italics, e.g. *fish*, indicates that the word belongs to the semantic field of fishing and that one in bold, e.g. **enamoured**, indicates that the word is used metaphorically to describe the word from the topic field of courtship (Kittay, 1987: 264).

The Bait

Come live with me and be my love
And we will some new pleasure prove
Of **golden** sands and **crystal** *brooks*,
With **silken** lines, and **silver** *hooks*.

There will the *river* whispering *run*
Warm'd by thy eyes more than the sun
And there the **enamour'd** *fish* will stay
Begging themselves they may betray.

When thou wilt *swim* in that live *bath*
each *fish*, which every *channel* hath,
Will amorously to thee *swim*,
Gladder to catch thee, than thou him.

She interprets the courtship as mockingly spoken of in terms of the extended metaphor of fishing, and the metaphor develops by playing out the relations between the elements in the vehicle field.

She points out that one of the characteristics of the semantic field of fishing in this poem has syntagmatic relations. A syntagmatic field of fishing would have to include the verb 'to fish'; an AGENT, such as 'fisherman'; the PATIENT, or that to which the action of fishing applies, the 'fish'; and the INSTRUMENT, or means by which the fishing is accomplished, the 'hook', 'line', 'bait', etc. The first three elements, the verb, the AGENT, and the PATIENT, are essential to structuring the semantic field of fishing. She also adds MANNER (adverbs in the poem) and LOCATIVE (a location

where fishing takes place) and shows a figure in which the above elements and the words in the poem are listed (ibid.: 263-75). When we read a poem, our mind works to interpret it literally and metaphorically. In the quoted and unquoted stanzas, we find some words, for example, *fish* or *fishing*, used literally in some cases and metaphorically in others. The term of the enamoured fish is figurative, and in her interpretation of the line, 'Begging themselves they may betray,' she states that the 'fish' is a vehicle for 'lovers,' and the terms 'enamoured' and 'begging themselves they betray' is a literal talk about these lovers. Thus she shows that there is a shift from the literal meaning to the figurative.

In addition to the syntagmatic elements classified under VERB, MANNER, AGENT, PATIENT, INSTRUMENT and LOCATIVE, she also refers to a paradigmatic element. She illustrates it as the paradigmatic relations of the semantic field of fishing (ibid.: 274): the movement in the poem from an idyllic fishing scene in the first three stanzas to the nasty struggle of the last two stanzas. We could apply these syntagmatic and paradigmatic relations in metaphor or metaphorical expressions to our interpretations of metaphor.

8. The eight principles (Searle, 1994: 104-8) are as follows:

Principle 1: Things which are P are by definition R. If the metaphor works in the utterance *Sam is a giant*, it can be taken to mean "Sam is big." In this case, the giants are by definition big. This is an example of the salient defining characteristics of P.

Principle 2: Things which are P are contingently R. If the metaphor works in the utterance *Sam is a pig*, it can be taken to mean "Sam is filthy," etc. In this case, the property or attribute R should be a salient or well known property or attribute of P. The principles 1 and 2 can be expressed by using "like," for example, Sam is like a giant and Sam is like a pig. In that case, they belong to similes.

Principle 3: Things which are P are often said or believed to be R, however, both speaker and hearer may know R is false of P. The utterance *Richard is a gorilla* can be interpreted as "Richard is mean, nasty, etc."

Principle 4: Things which are P are not R, nor are they like R, nor are they believed to be R, but we perceive a connection based upon our sensibility or we associate P with R. The utterance *Sally is a block of ice* or *I am in a black mood* can be taken to mean "Sally is unemotional" or "I am angry and depressed."

Principle 5: P things are not like R things, and are not believed to be like R things, but the condition of being P is like the condition of R. The utterance, for example, *You have become an aristocrat*, spoken to someone who has received a huge

promotion can metaphorically be taken to be the status of becoming an aristocrat.

Principle 6: P and R are the same or similar in meaning but usually P is restricted in its application and does not literally apply to S. The word ‘addled’ literally used for eggs can be used metaphorically in the utterance *That Parliament was addled*.

Principle 7: Application from Principle 1 through 6 to simple cases such as ones not of the form “S is P” but relational metaphors and metaphors of other syntactical forms (e.g. verbs and predicate adjectives). The examples are *Sam devours books* or *The ship ploughs the sea*. The noun phrases “The ship” and “the sea” are literal, while *ploughs* is a metaphor. The principle which works here is an inference from “S P-relation S” to “S R-relation S’,” where P-relations are by definition R-relations.

Principle 8: In metonymy and synecdoche, “S is P” means “S is R.” The P and R in these cases are associated by such relations as the part-whole, the container-contained or the clothing and wearer relation.

9. Regarding ‘salience,’ the following studies by Giora, Peleg and Fein (2001) and Giora (2002; 2003) are noteworthy. “Salience is not an either-or notion ... but it admits degrees” (Giora, 2003:15). The graded salience hypothesis (Giora, Peleg and Fein, 2001) examined processing in the comprehension of literal and non-literal words and phrases, and found that highly salient meanings are processed during the initial stages of figurative language comprehension. Giora (2002; 2003) claims that in the graded salience hypothesis, salient meanings are processed initially, regardless of either literality or contextual fit. Context may affect comprehension immediately, but it is ineffective in blocking (contextually incompatible) salient meanings, since it does not interact with lexical processes but runs in parallel. Giora (2002: 490-491) further indicates that “to be salient, meanings of words, phrases, or sentences (e.g. conventional interpretations of idioms or proverbs) have to be coded in the mental lexicon and, in addition, enjoy prominence due to their conventionality, frequency, familiarity, or prototypicality. Meanings not coded in the mental lexicon ... are nonsalient. Coded meanings that are less familiar or less frequent are less-salient.” The examples provided are *bank* and *surf*. The meaning of the ‘institution’ of a *bank* is more salient and that of ‘riverside’ is less salient for the people in the urban societies; the nonliteral meaning of *surf* is salient and the literal meaning is less salient for Internet enthusiasts. The graded salience hypothesis also postulates that aptness in metaphors compensates for low salience (ibid.:495). It posits that salience involves initial processing in comprehension. Gibbs (2001: 319) praises the graded salience hypothesis “as a hybrid view of figurative language processing in that it provides more flexibility in accounting for people quickly or slowly interpreting figurative language.”

PAGE/PAGES
EXCLUDED
UNDER
INSTRUCTION
FROM
UNIVERSITY

WORD ASSOCIATION TEST

BioData:

*Age (circle): under 20, 21-25, 26-30, 31-35, 36-40, 41-45, 46-50, 51-55, 56-60, over 61

*Sex (circle): Male, Female

In each item, there are four words listed after the target word. Three words out of four are strongly linked to the target word and to the other three words but a fourth one is not. Put a cross on the one that is not linked to either the target word or the other three words.

Example:

The target word: grieve: 1()mourn 2()cry 3(X)smile 4()weep

1. absorb: 1()alcohol 2()diet 3()heat 4()water
2. anger: 1()fury 2()mistake 3()rage 4()violence
3. bake: 1()biscuits 2()bread 3()cake 4()oven
4. black: 1()cat 2()dress 3()tie 4()white
5. break: 1()close 2()crack 3()destroy 4()smash
6. burden: 1()ease 2()load 3()stress 4()worry
7. calm: 1()exciting 2()peaceful 3()quiet 4()relaxed
8. create: 1()design 2()dictionary 3()mood 4()story
9. deliver: 1()baby 2()man 3()speech 4()package
10. distance: 1()direction 2()journey 3()length 4()miles
11. huge: 1()enormous 2()gigantic 3()massive 4()minute
12. imagine: 1()dream 2()speak 3()suppose 4()think
13. loud: 1()drum 2()music 3()novel 4()voice
14. mad: 1()angry 2()crazy 3()dangerous 4()hot
15. mood: 1()bad 2()happy 3()hard 4()good
16. rigid: 1()firm 2()hard 3()square 4()stiff
17. sharp: 1()knife 2()pencil 3()razor 4()ruler
18. smooth: 1()marble 2()sandpaper 3()silk 4()skin
19. sorrow: 1()anguish 2()grief 3()pain 4()rejoice
20. strike: 1()bell 2()iron 3()grass 4()hammer

Specific figures (Figures 4-5 to 4-14) and the syntagmatic and paradigmatic features of the 10 target items

Barren and *Empty* (Figures 4-5 and 4-6)

The outstanding feature of the native speakers' answers to the adjective *barren* was that they were more in the paradigmatic field (similarity, synonym, and features) (83%) and that the image of *barren* was *desert* (21%). The synonyms *empty* (17%) and *infertile* (8%) then follow. The percentage was as high as 21% if *childbearing* and *women* were included in the category of *infertile*. The native speakers collocated the word *barren* to *landscape* and *land* and they associated it with *wasteland* (17% in total). Therefore their image of *barren* was mostly spatial, a *void* in the vast, limitless expansion of the space. On the other hand, the adjective *empty* in the synonymous answers was 42% in the native speakers' responses, in which *nothing*, *void*, *hollow* and *bare* were outstanding (33%). The answer which collocated to *glass* was not negligible (13%). The similar collocation was with *house*, *space* and *stomach* (13% respectively). The antonym answer *full* was 13%. Contrary to *barren*, the image of the adjective *empty* created *nothingness* in the limited space, and it was anticipated to be filled with something, for example, *glass* (i.e. *container*) to be filled with *wine*.

In the Japanese answers to the adjective *barren*, the outstanding feature was that there were 30%

Figure 4-5: barren: syn/par
(outer ring: NS; inner ring: J)

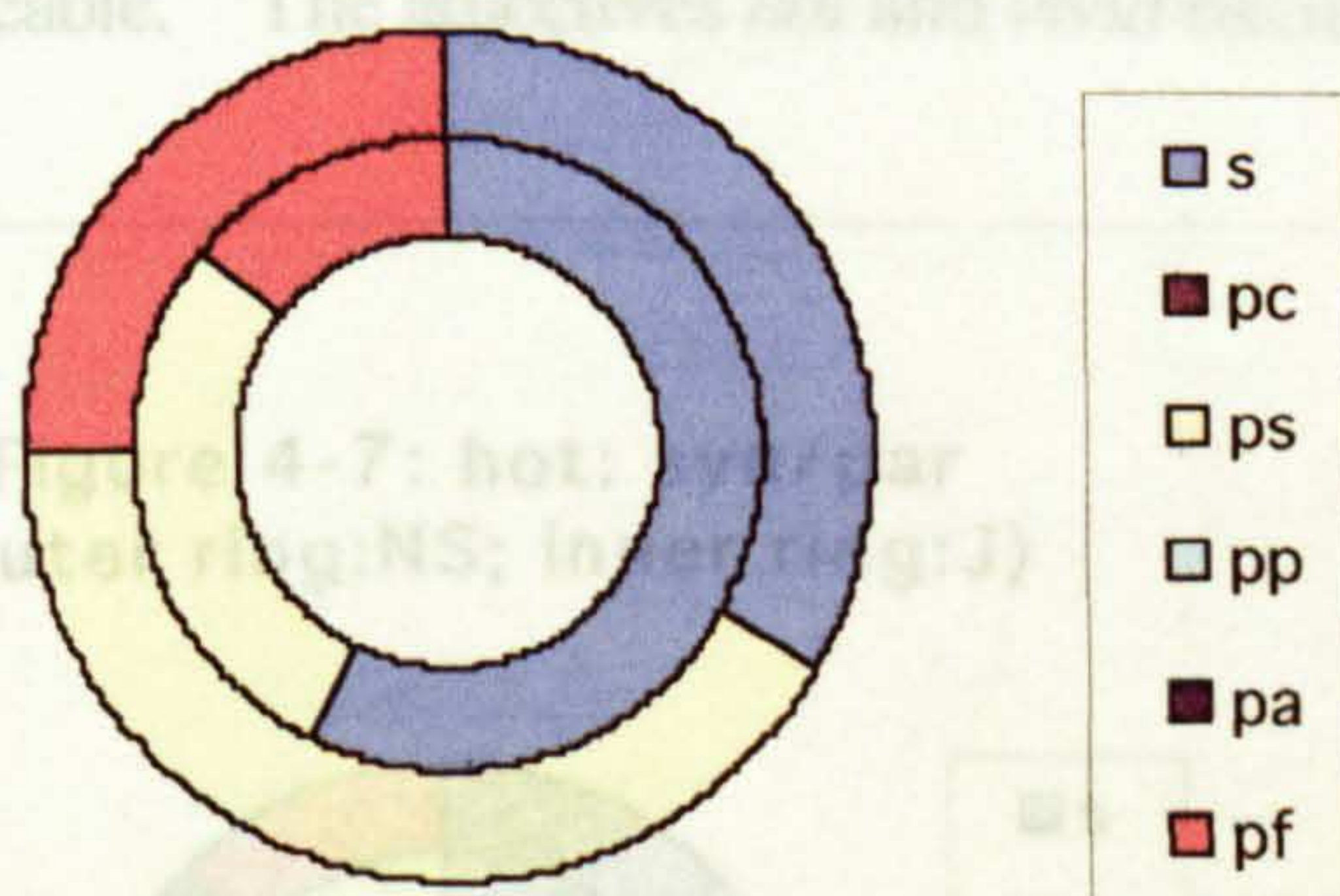
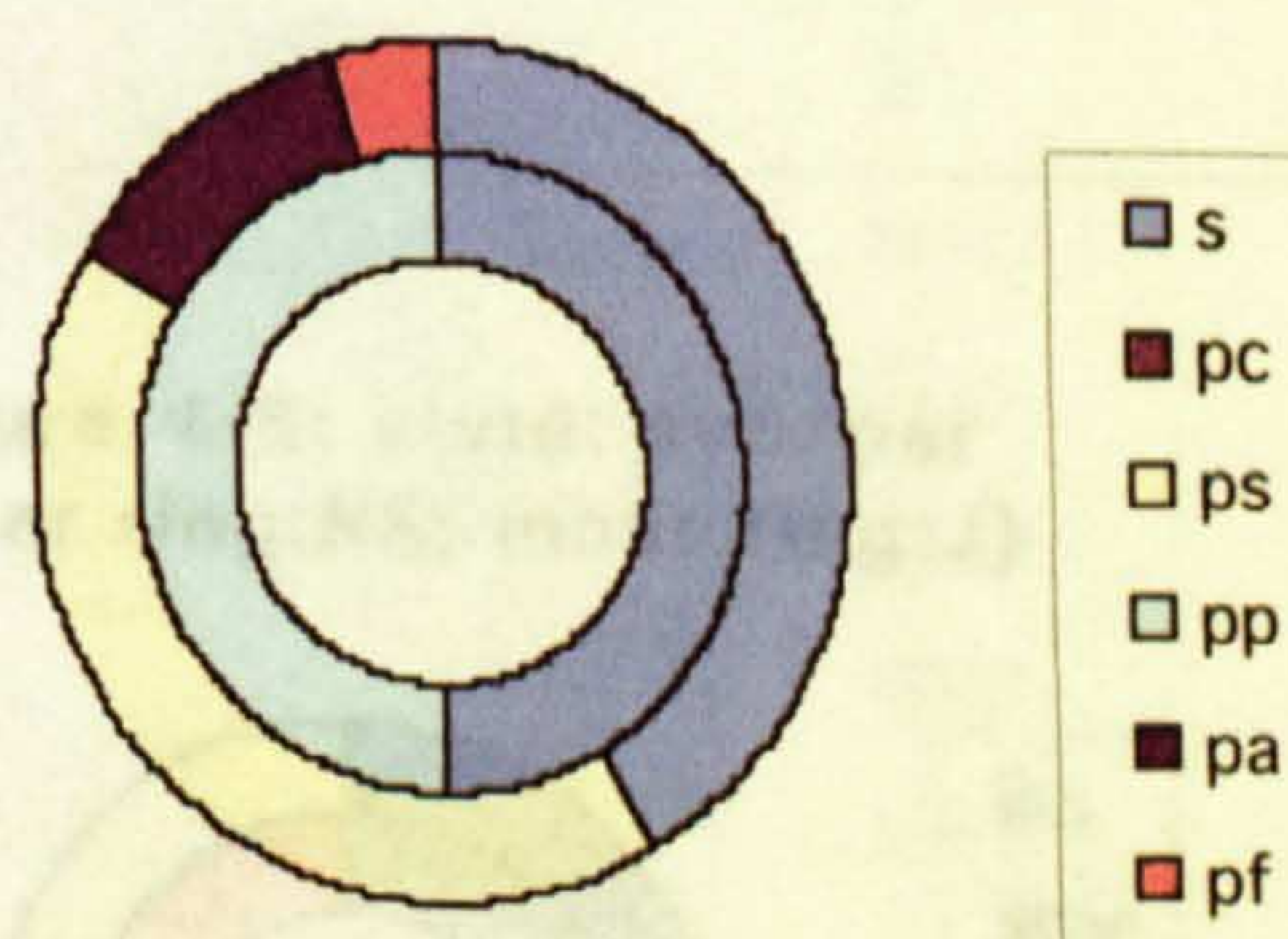


Figure 4-6: empty: syn/par
(outer ring: NS; inner ring: J)



unanswered. It seemed to be because the adjective *barren* is low frequency vocabulary to the ESL/EFL learners. The answers diverged, but they indicated that the image of this adjective created a vast *field* or *land* in their mind, which was the same as the native speakers'. Concerning the adjective *empty*, there were

more nouns in the Japanese answers, one of which was synonymous *nothing* (30%), and the other of which collocated to *empty*, for example, *empty+room*, *+hole* and *+bottle* (30%). Therefore their answers also indicated that the adjective *empty* was *nothingness*, but *nothingness* in the limited space.

Hot and Vivid (Figures 4-7 and 4-8)

The word class ratio of nouns and adjectives in the native speakers' answers to *hot* and *vivid* was approximately 50% each, while there were more nouns in *hot* in the Japanese answers (80%). In the Japanese answers, there was a high ratio of syntagmatic answers (70%), such as *hot+water*, *hot+summer* and *hot+weather*, and no antonyms, while in the native speakers' answers there was an antonym, *cold* (25%) and the synonyms, *warm* and *humid* (13% in total). Both the native speakers and the Japanese associated this adjective with *weather*, or something warm or hot to eat (*hot curry*:8%) or drink. The word *hot* also had associations with *fire* and the source of the heat (the *sun*) (13%) in the native speakers. Therefore the adjective *hot* either stimulated more sensory and physical feelings than the other stimuli, or it triggered temperature related associations.

The native speakers' answers to the adjective *vivid* were quite different from those of the Japanese. In the case of native speakers there were more answers in nouns, which collocated to *imagination* (33%), and there were the synonymous *clear* (17%) and *colourful* (8%, the allusion to *colour(s)* is 17% in total). On the other hand, there was no *imagination* in the Japanese answers, but *dream* polled 30% (3 Japanese) and 4% (1 native speaker). The allusion to *colour(s)* in Japanese was 30%. Both the native speakers and Japanese conceived *strong*, *clear*, *bright* and *lively* images from the adjective *vivid*. It can be said that this adjective *vivid* was associated with the visual images. Additionally, strong associations with colours was also noticeable. The adjectives *hot* and *vivid* elicited more dynamic images from the respondents.

Figure 4-7: hot: syn/par
(outer ring:NS; inner ring:J)

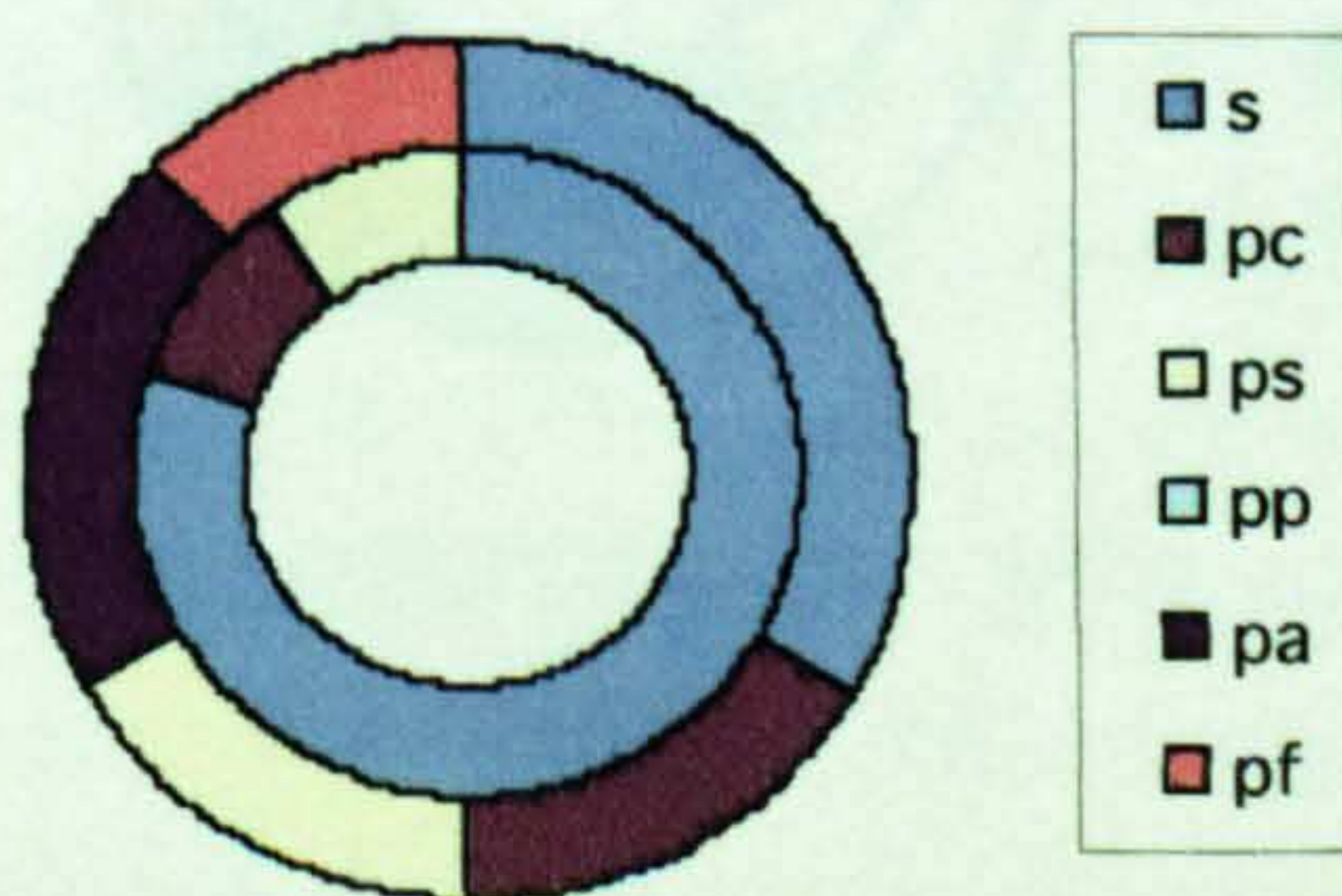
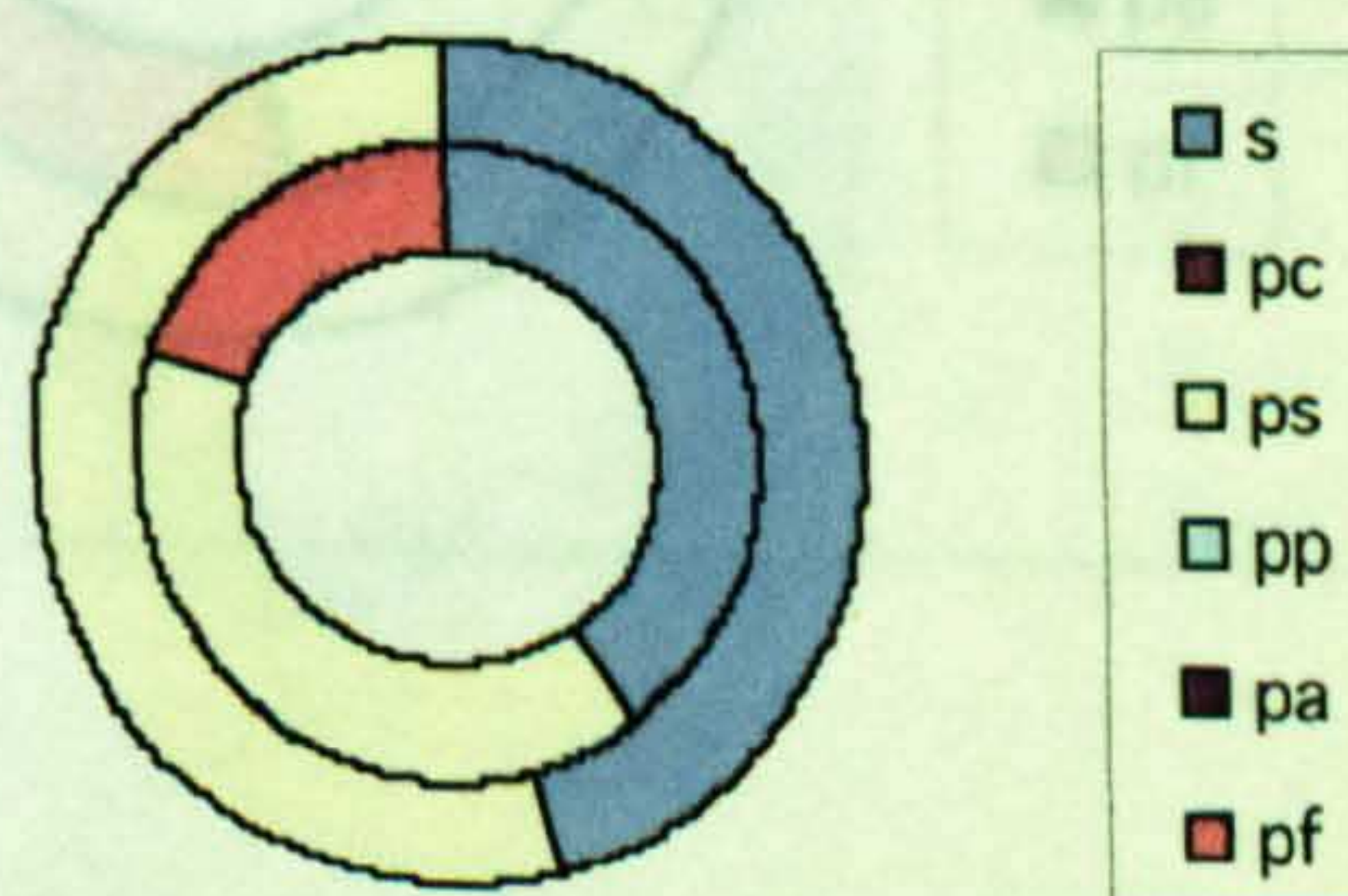


Figure 4-8: vivid: syn/par
(outer ring:NS; inner ring:J)



Poor and Pure (Figures 4-9 and 4-10)

The adjective *poor* attracted synonymous adjectives, which varied from person to person in the native speakers (for example, *homeless*, *bereft* and *skint*: 25%). The image of *homeless(ness)* (17%) for the native speakers was greater than any other images. The collocations to a human or the features of the *poverty*, such as *people*, *lad*, *bastard* and *beggar* came next (25%). The antonym *rich* was also notable (13%) in the native speakers' answers. On the other hand, in the answers given by the Japanese, the syntagmatic answers occupied half of the answers, there was no *homeless*, but there was something in collocations which could be interpreted as similar images, such as *people*, *woman* and *girl*. In the case of *girl*, they probably hear the expression "*Poor Girl*" in their daily conversations.

Figure 4-9: poor:syn/par
(outer ring:NS; inner ring:J)

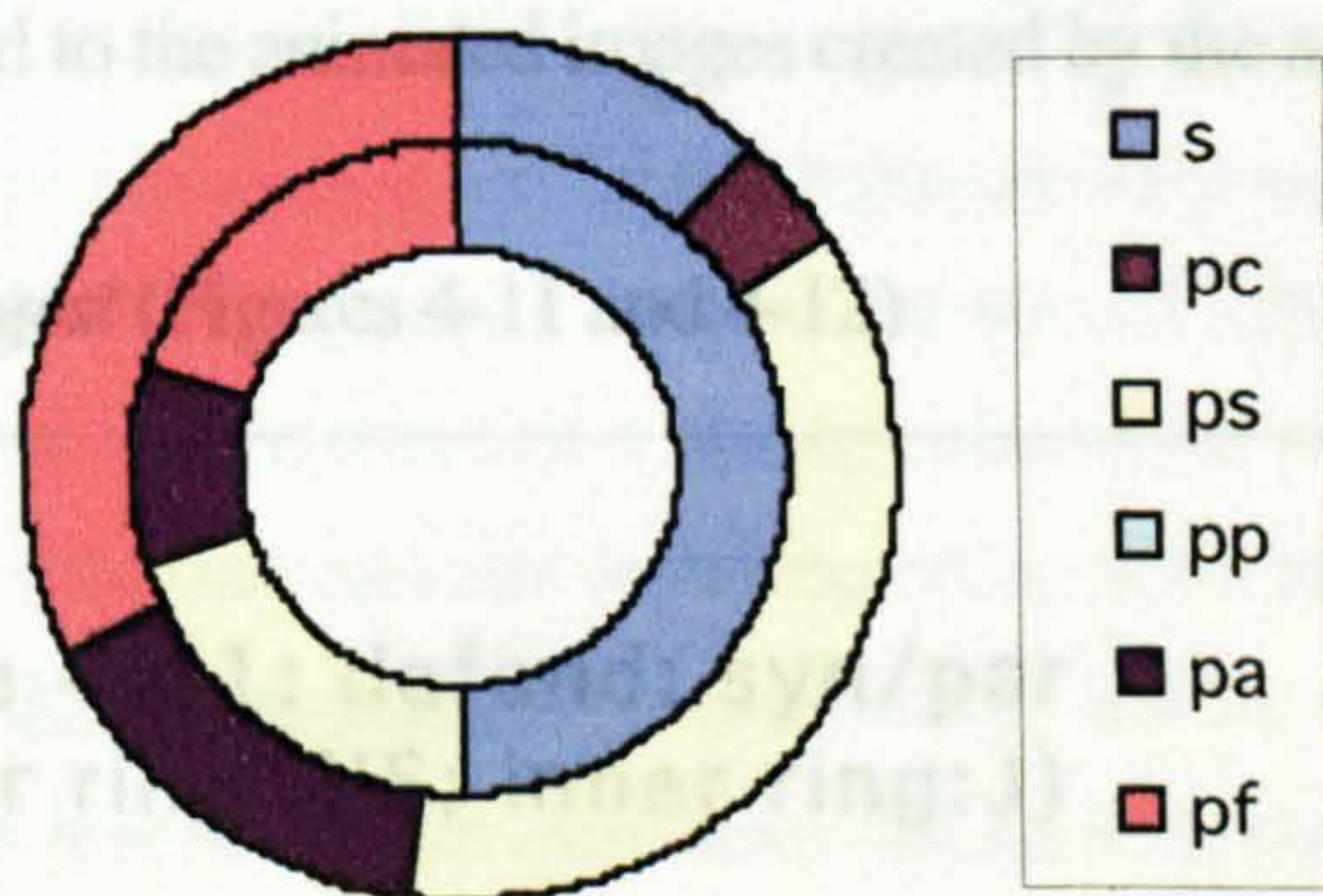
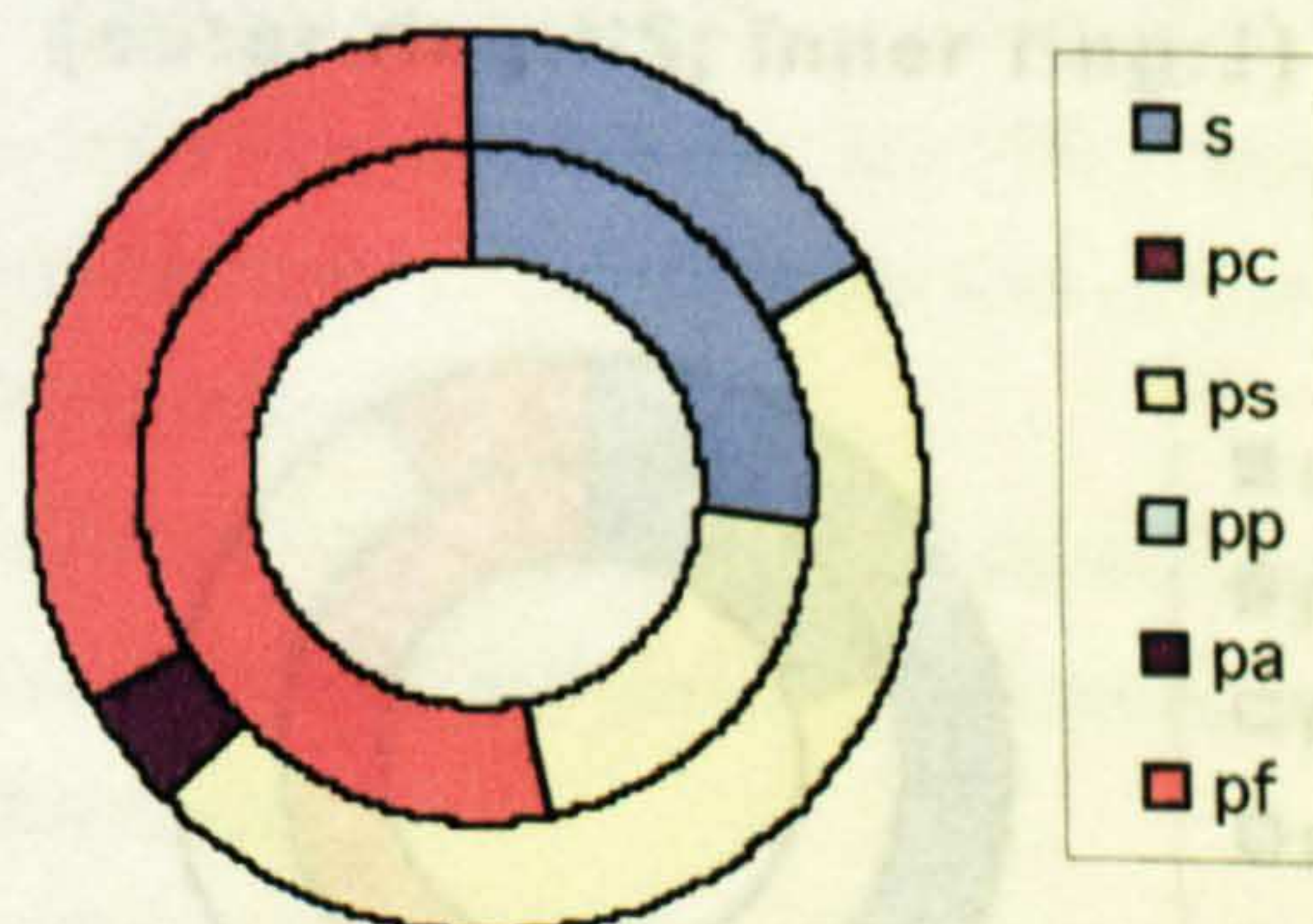


Figure 4-10: pure: syn/par
(outer ring:NS; inner ring:J)



The connection to *money* also appeared in the answers of the both parties (8% in the native speakers; 10% in

the Japanese). Their imagination and semantic field expand to the state of poverty and to that which is symbolised by *money*. Thus, the image of *poor* was to some extent associated with financial and materialistic poverty by both the native speakers and the Japanese.

Both the native speakers' and the Japanese answers given to *pure* shared a similar ratio in nouns and adjectives. There were the syntagmatic answers *pure+water* (17%) and more synonymous answers (totalled 76%), such as *virgin* and *virginal* (17%, if the answers *virtue* and *chaste* were included in this category, the answers would rise to 25%), *clear*, *untainted*, *unmixed* (21%) and *innocent*, *innocence* (13%) in the native speakers than in the Japanese (30%). In the Japanese answers, there is no mention of *virgin*, though there was *innocent* and *unmixed* (20%). The collocation to *water* (*pure+water*) in the Japanese answers was only 10%. It is obvious that people are anxious about their health, judging from the answer (*pure+water*). There was no antonym given by the Japanese, however, there was an answer *evil* given by a native speaker (4%). The answer *white*, which belongs either to the syntagmatic or to the paradigmatic was given by the native speakers 17% and the Japanese 10% respectively. The word *pure* appears to create an *angelic* image for both native speakers and Japanese. They both associated it with *pure* person(s) or *pure* thing(s), and with the colour *white*. These two adjectives seem to create static images in the respondents' mind, compared to the animated images created by the adjectives *hot* and *vivid*.

Defend and Digest (Figures 4-11 and 4-12)

Figure 4-11: defend: syn/par
(outer ring: NS; inner ring:J)

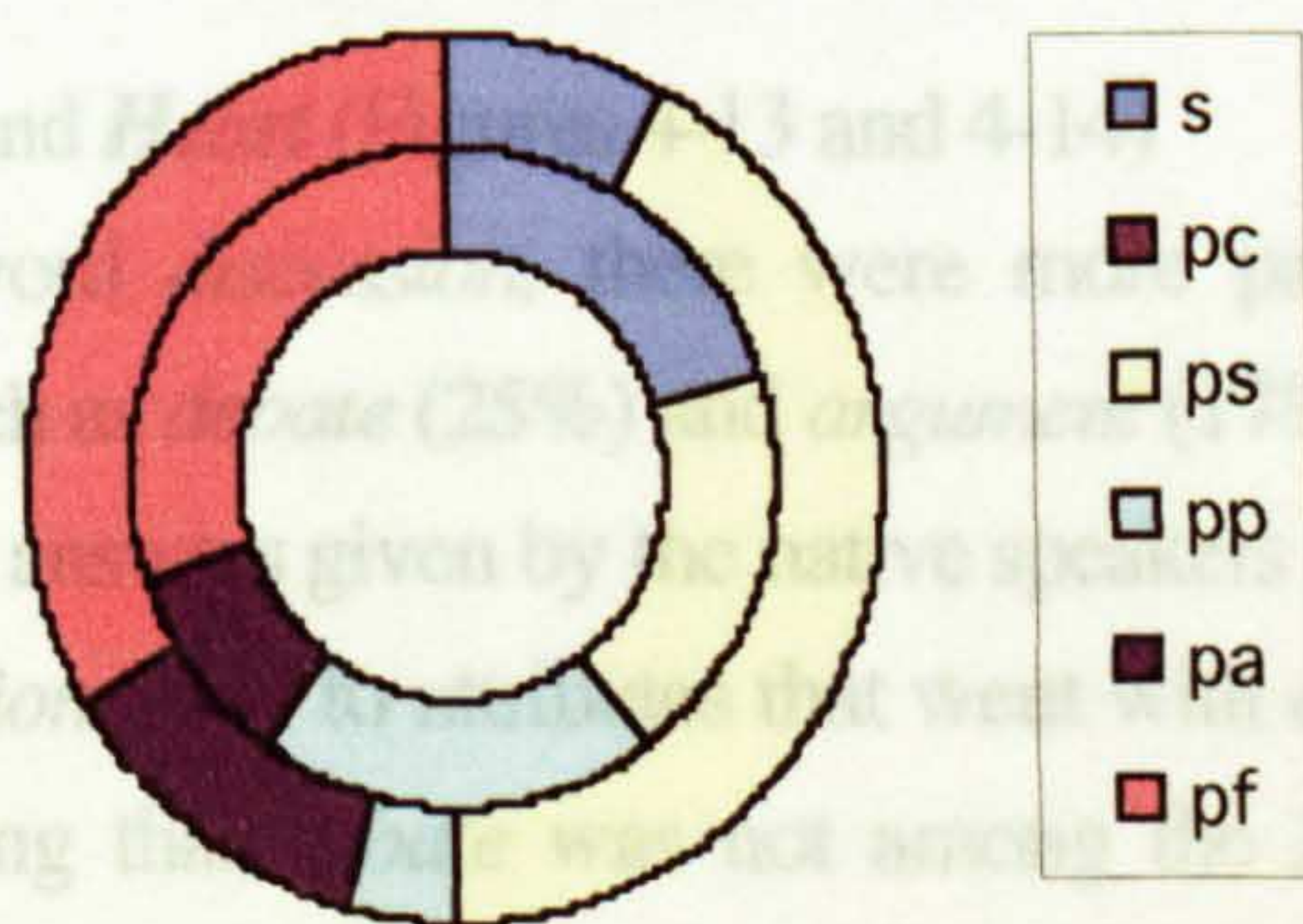
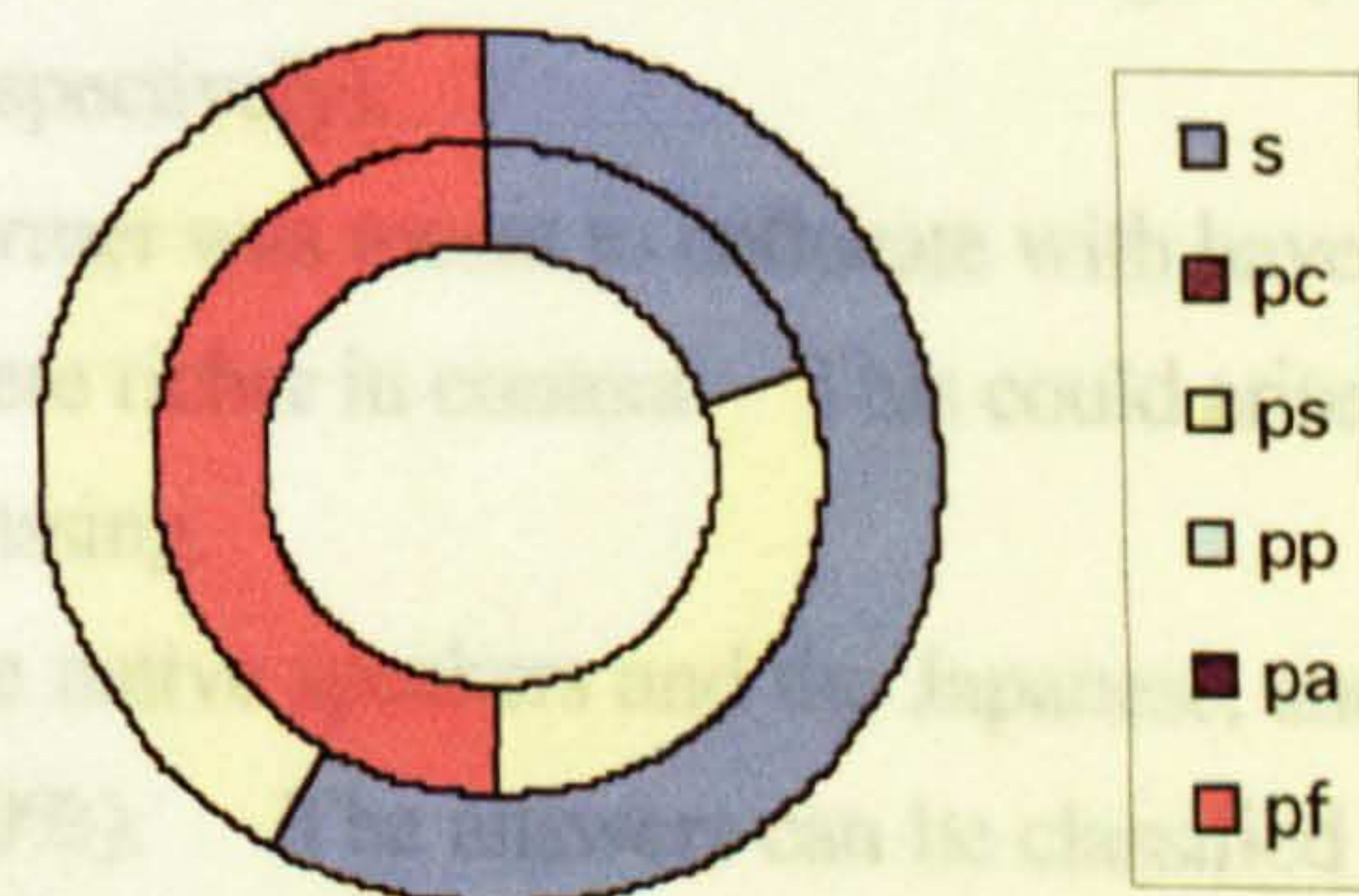


Figure 4-12: digest: syn/par
(outer ring: NS; inner ring: J)



The syntagmatic answers to *defend* by the native speakers were *defend+criminal* (17%) and *+castle*(4%).

The paradigmatic (synonymous) answers were *protect* (17%), *fight* (8%) and *guard, support* and *uphold* (4% respectively). The syntagmatic answers by the Japanese are *defend+self* (10%), the syntagmatic/paradigmatic were *border* (10%) and *fence* (10%). The synonymous answers given by the Japanese were *protect* (10%) and sports related reactions, such as *football, offence* and *offend*: 10% respectively. This tendency was strongly influenced by broadcasting in Japan. They often hear or read the English words in sports journalism. There was no such sports related reaction in the native speakers' answers. Their answers were more strongly related to jurisdiction, such as *court, courtroom, justice* and *lawyer*, which indicated that the native speakers' semantic fields were more closely connected to the protection of human rights and the guarantee of *justice*. The antonym *attack* was given by both a native speaker and a Japanese. Thus, the semantic field and image of the verb *defend* was significantly different between the native speakers of English and the Japanese.

The native speakers' answer to the verb *digest* tended towards *digest+food* (syntagmatic: 46%). The total answers of synonyms were 58%. There was a collocational *digest+information* (4%) and *digest+biscuits* (4%). In the paradigmatic (synonymous) answers, there were the verbs: *eat* (8%), *absorb* (8%) and *swallow, break down* (4% respectively).

The attributes/feature related answers given by the native speakers were *understand* (8%) and *stomach* (8%). The same answers given by the Japanese respondents, such as *stomach* (20%) and *understand* (10%). The paradigmatic (synonymous) answer *eat* scored 20% and the collocational *biscuits* formed 10% of the Japanese answers. There was not a single collocation to *information* in the Japanese answers. In general, both the native speakers and the Japanese recognised the verb *digest* as *eat* and *understand*. As a whole, both native speakers and Japanese seem to share the similar semantic field in their associations with the verb *digest*, however, it seemed that their associations with the verb *defend* differ.

Discussion and Heart (Figures 4-13 and 4-14)

In the word *discussion*, there were more paradigmatic (synonymous) answers given by the native speakers, such as *debate* (25%) and *argument* (17%). The word *debate* shares two word classes (noun and verb). The answers given by the native speakers ranged from the synonym *talk* (17%), *conversation* (8%), *communication* (4%) to attributes that went with *debate*, such as *group* and *meeting* (4% respectively). It was surprising that *debate* was not among the Japanese answers. Instead there was *argue* (10%) and attributes, such as *class* (20%), *meeting* and *seminar* (10% respectively).

The unique Japanese answers were *have* and *of*. The former was meant to collocate with *have+* and the latter with *+of*. As a whole, the native speakers' answers were richer in content. This could arise from the fact that the Japanese are not accustomed to debating or discussing.

The noun *heart* stimulated more reaction to nouns in the native speakers and the Japanese, and more to the paradigmatic (the native speakers: 54%; the Japanese: 90%). The answers can be classified into heart (related) disease, the function of the heart and the heart as related to emotion. There were some answers relating to the hierarchical system (*middle, centre*: 4% respectively) but only in the native speakers' responses. The answers given by the native speakers were *disease* 21% (*attack* 17% and *bypass* 4%), function 21%

(*beat* 13%, *life* and *blood* 4% respectively), *emotion* 52% (*love* 38%, *break* 8%, *soul* and *emotions* 4% respectively) and *system* 8% (the *middle* of the physical position and the *centre* of psychological importance 4% respectively). In the Japanese answers, the emotion came first (70%, including *feeling*, *mind*, *love* 20% respectively, and *break* 10%). There was an answer *disease*, but no specific name of a disease was given and there was no answer relating to a hierarchical system. One Japanese answered *organ* (10%) relating to the function of a *heart*.

Figure 4-13: discussion:syn/par
(outer ring:NS; inner ring:J)

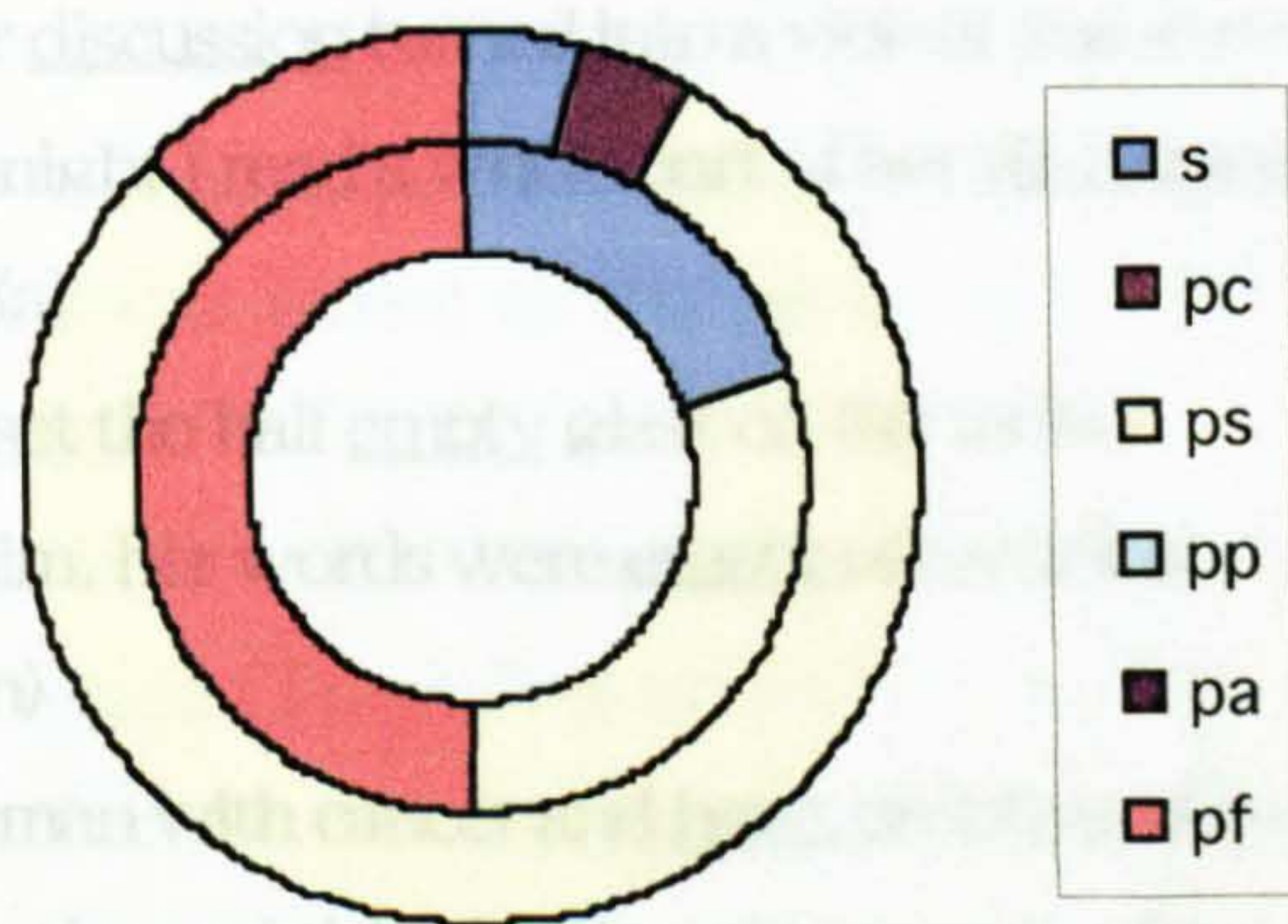
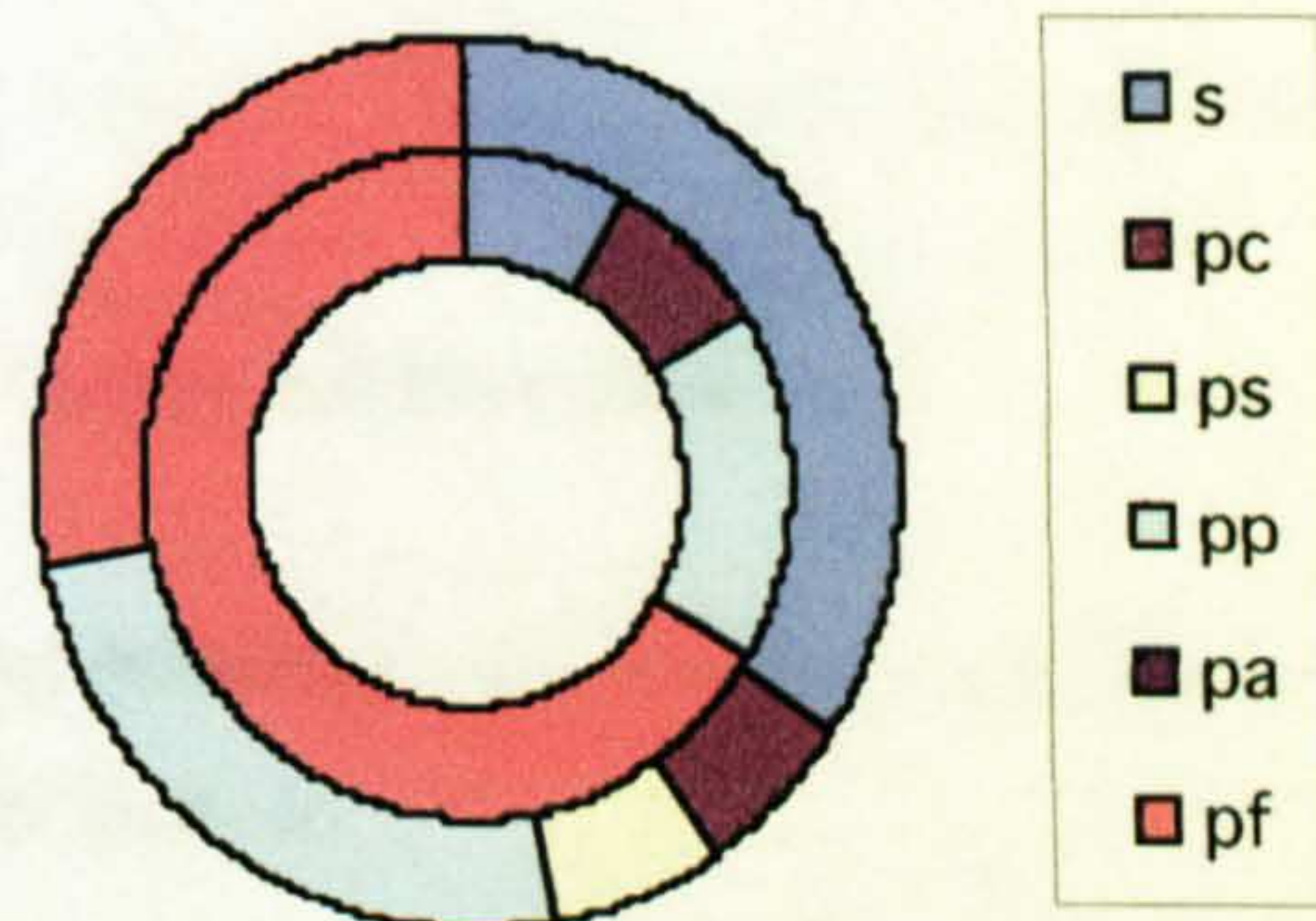


Figure 4-14: heart: syn/Par
(outer ring:NS; inner ring:J)



4-3

Polysemy Test

下線部の語の意味を書きなさい。(1と2の文で語の表す意味に違いがある場合は、どのような状況を表わすのに使われているのか、説明しながら意味の違いを述べてください)

defend (v)

- 1) They defended their goal with great skill.
- 2) The lawyer is defending his client's right in the court. (注 : client=依頼人)

digest (v)

- 1) When I am hungry, my stomach seems to digest food quickly.
- 2) It took me some time to digest the news that I had heard from my friend.

discussion (n)

- 1) Their discussion turned into a violent argument.
- 2) Last night I read a whole part of her discussion in her thesis. (注 : thesis=論文)

empty (a)

- 1) She set the half empty glass on the table.
- 2) To him, her words were empty of meaning.

heart (n)

- 1) The man with cancer and heart problems is recovering well.
- 2) The prime minister has long been at the heart of power. (注 : prime minister=首相)

hot (a)

- 1) Guests may choose from 10 hot dishes, 10 cold dishes, salad and desserts.
- 2) The bill is a hot consumer issue. Many Americans have to pay more in gasoline consumption. (注 : issue=論点、問題)

pure (a)

- 1) This bottle contains pure water.
- 2) The band played the music in a sweet, high and pure pitch.

poor (a)

- 1) The family is very poor now that the father has no work.
- 2) They were selling off poor quality vegetables at a cheap price.

vivid (a)

- 1) She bought a vivid pink T-shirt in Hawaii.
- 2) We used to have vivid reports from the journalists in Kuwait at the time of the Gulf War. (注 : the Gulf War=湾岸戦争)

barren (a)

- 1) A barren battlefield was littered with clothes, bags, guns and helmets.
(注 : battlefield=戦場)
- 2) The students were left feeling unsatisfied after an hour-long barren lecture.

(1) *A little pot is soon hot.*

a) The head chef and assistant were in the kitchen with the boss's daughter. She was only five years old. She wanted to be a chef when she was older. She was about to grab a pot from the cooker, when the chef exclaimed, "A little pot is soon hot."

b) Harry hadn't seen his mate, Frank's sister Kerry in years. He had been away at university. The last time he saw her she was a spoilt, cheeky 14 years old. She was 18 years old now. Harry thought Kerry looked gorgeous now. Frank realised this and smilingly nudged Harry and said, "A little pot is soon hot!"

(2) *The rotten apple injures its neighbours.*

a) Sally and Tom had a beautiful garden. At the bottom of the garden there was an apple tree. On Sunday afternoon they picked all the apples and put them in the box. However, a rotten apple had been put in by mistake and it turned all the others bad. When Sally realised this, she said "The rotten apple injures its neighbours."

b) Somerville used to be such a nice area," said Anne.

"Yes," agreed Cheryl, "but once a few bad families started to move in the area got a really bad reputation."

"The problem is that the rotten apple injures its neighbours," replied Anne.

(3) *a pain in the neck*

a) I had just bought a new sweater but the collar was very tight. So much so that it was giving me such a pain in the neck. My whole neck was bruised.

b) One of our teachers cannot ever speak English, so that, as we don't grasp any of the main ideas, getting the essay done is such a pain in the neck, since we have no notes.

(4) *to be off one's head*

a) Dave and Graham are gardeners, and were discussing headgear. Graham said, "I don't want to wear a hat to the garden party this year."

"But I wore it last year, and it's a tradition. We've been wearing that hat for almost thirty years."

"I'll make someone else wear it this year. It's itchy." "Well, as long as it can be off my head."

b) Bob and James were discussing Johnny's Birthday plans.

"So, we'll do a pub crawl then. How many pubs are there in London?" said Bob.

"Too many to count," replied James.

"Oh well, the main thing Johnny wants for his Birthday is to be off his head."

(5) *to count heads*

a) At the meeting, Sarah had to fix the catering. She lost the files of RSVPs. She didn't know how many people were coming. She was struck. Alan joked and told her to "count heads."

* A note is provided for RSVP

b) Sam and James were discussing their love lives. Both had ended their respective relationships. They were feeling quite down. They noticed some good-looking girls on the side table. The girls winked at them and beckoned them over. Sam cheered up and told James to "count heads" in their lives at the moment.

(6) to hold one's head high

a) Sally loved to watch all the horses go down her street. They looked so majestic and elegant but she could not work out why. When she told her friend she said "It is the way they hold their head up high." Sally agreed.

b) Everyone was talking about an incident that had happened down at the sea. A sudden wave had appeared and nearly drowned a boy. However, luckily a man had jumped in and saved him. "Well," said Gloria, "that man can hold his head up high."

(7) to let the cat out of the bag

a) "Mr. Brown's fed up with the cat killing his birds. He says he's going to put it in a sack and drown it," she said.

"How awful!" Joan replied. "When he's not looking you'll have to let the cat out of the bag."

b) "I told Jane everything." Mickey said.

"I told you she can't keep a secret." Ruth said, "She always lets the cat out of the bag."

(8) to stand in someone's way

a) Sophie was at the station, in a hurry to catch a train. On that way the station was extremely busy. There were too many people about and every time she changed direction she bumped into people standing in her way, so as a result she was delayed and consequently missed the train.

b) The mayor was preparing his campaign speech for the forthcoming election. He was running against his rival Mr. Thompson who stood in his way on the road to reelection because he was becoming more popular by the second since proposing to clean up the city.

(9) Wake not a sleeping lion.

a) In the zoo the warden explained how aggravated and violent the animals get when provoked. He addressed the visitors "Wake not a sleeping lion".

b) She had had a lot on her mind lately. Especially at home, and school only made things worse. He knew he had offended her but desperately needed to speak to her. His friend advised him saying "Wake not a sleeping lion."

(10) Fish stinks at the head.

a) Laura, Sally and Peggy were preparing a meal.

"Is the fish still alright to eat for dinner?"

"Smell it to see."

"If you smell the head it is the best way."

"Fish begins to stink at the head."

b) The four men stood huddled together talking quietly.

"There is a rat in the system somewhere."

"Private information is being leaked to other companies."

"I don't trust the boss myself. He may not be involved, but he is a part of the problem."

"Fish begins to stink at the head."

(11) *You cannot eat your cake and have your cake.*

a) Johnny and his mother were organizing his birthday party. They were in the supermarket, and Johnny pointed to a large chocolate cake.

"There'll be enough for me and all my friends," he said.

"You can't have any cake, Johnny," said his mother reproachfully.

"Why not?" cried Johnny indignantly.

"You cannot eat your cake and have your cake," she said.

b) President Clinton was talking to his aides, and asked if they could end world hunger, poverty and war before the New Year.

"Of course not, Mr. President," said one aide, surprised by the question.

"Why ever not?" asked Clinton, confused.

"You cannot eat your cake and have your cake."

5-1

MC-RT test items 1~11:

R-1 *to let the cat out of the bag* [I +] = (7) in Appendix 4-2

R-2 *A little pot is soon hot.* [S] = (1) in Appendix 4-2

R-3 *Fish begins to stink at the head.* [S/I] = (10) in Appendix 4-2

R-4 *to stand in someone's way* [I] = (8) in Appendix 4-2

R-5 *to be off one's head* [I] = (4) in Appendix 4-2

R-6 *a pain in the neck* [I] = (3) in Appendix 4-2

R-7 *The rotten apple injures its neighbours.* [S] = (2) in Appendix 4-2

R-8 *to hold one's head high* [S] = (6) in Appendix 4-2

R-9 *to count heads* [S/I] = (5) in Appendix 4-2

R-10 *Wake not a sleeping lion.* [S] = (9) in Appendix 4-2

R-11 *You cannot eat cake and have your cake.* [I] = (11) in Appendix 4-2

5-2 The answers in MC-XYT-M which were written in the required format *S (noun) + be-verb + (an) adjective N.*

The target adjective *bright*

- a) Her eyes are bright jewels.
- b) Her eyes are bright balls.
- c) Your smile is a bright sun.
- d) Lucy's smile is bright sun.
- e) His character is bright sun.
- f) Her smile is bright star.
- g) Walt Disney is a bright man.
- h) Stephen is a bright man.
- i) Your brother is a bright man.
- j) My friend is a bright person.
- k) The teacher is a bright person.
- l) The teachers of school are bright people.
- m) My teacher is bright English teacher.
- n) The boy is a bright student.
- o) ?Dog is a bright animal.
- p) ?Miki's dress is bright jewelry.
- q) ?His head is bright light.
- r) ?Afternoon is a bright sky.
- s) ?Her smile is bright floor.

The target adjective *dark*

- a) My heart is a dark stone.
- b) My mind is a dark hole.
- c) My feeling is dark sea.
- d) Miki's feeling is dark sky.
- e) Her eyes are like the bottom of dark sea.
- f) Your eyes are like a dark sky.
- g) My life is dark stairs.
- h) ?The prison is in a dark hell.
- i) ?Her hair color is dark woods.
- j) ?Her eye's color is dark ocean.
- k) ?The score in exam is dark one.
- l) ?My brother is dark character.
- m) ?The action is his dark side.
- n) ?My brother is a dark man.

The target adjective *grey*

- a) The sky was grey curtain.
- b) My heart is grey sky.
- c) ?My favorite color is grey color.
- d) ?The mouse is grey color.

The target adjective *high*

- a) Her guard is so high wall.
- b) This examination is a high wall.
- c) ?My eyes are high quality. (4 answers)
- d) His height is high building.
- e) Her skill playing the piano is high level.
- f) ?My intelligence is high level.
- g) ?The examination is high level.
- h) ?This test is high revel.
- i) ?Today's test is high revel.
- j) ?His joke is high level.
- k) ?Your house is high class.
- l) ?The apartment is a high cost.
- m) ?My test is high score.
- n) ?My grandfather was in high place.
- o) ?My friend's hair is high color.
- p) ?Lucy's pride is high nose whose Pinokio.

The target adjective *weak*

- a) The lady was a weak little child. b) John's feet are weak sticks.
 c) ?My head is a weak stone. d) ?My character is a weak dog.
 e) ?His bone is weak tree.
 f) ?Particnt is a weak baby. (Particnt is a misspelling. It should be the patient.)
 g) ?Her heart is weak mind. h) ?The point is a weak man.
 i) The voice was a very weak voice. j) My weak point is to swim in the sea.
 k) His weak point is being shy. l) ?My weak point is shy.
 m) Math is my weak point. n) His weak point is girlfriends.
 o) My weak point is legs. p) my weak point is my eyes.
 q) His weak point is rudeness. r) My weak point is left side.
 s) ?Shoji is a weak paper.

The target adjective *wild*

- a) The wind is a wild wind. b) The way of his eating is a wild animal.
 c) Ben's attitude is wild animal. d) His behaving at the party was a wild animal.
 e) His action is a wild animal. f) His character is wild hunter.
 g) ?The personality is wild animal. h) ?Her eyes are like wild animal.
 i) ?His face is wild animal. j) Tarzan is a wild man.
 k) My boyfriend is a wild man. l) ?Her hair style is wild shape.
 m) ?My life is wild evening.

5-3 The individual answers in the Nexus and Junction features

Table 5-14 The subjects used in the sentence pattern of 'X is *bright* Y'

Subjects	Answers (numbers of answers)	Total	%	
Nouns	Human-S	Friend (2), girl (1), Disney (1)	4	58
	Non-human-S	smile (6), future (4), ?character (3) eyes (3) ?career (1) ?grade (1), ?technique (1), head (1), dress (1)	21	
Pronouns	Human-S	Personal pronouns such as he or she, etc. (18)	18	42

Table 5-15 The noun connected to the adjective *bright*

	Answers (number of answers)	Total	%	
bright +	noun (human)	man (13), person (6), students (4), girl (4), woman (2), child (1), teacher (1), guy (1), people (1)	33	67
	noun (non-human)	Sun/sunshine/sunlight (3), jewels/jewelry (2), light (2), star (1), brain (1), idea (1), image (1), success (1), world (1), ?hair (3), ?mood (1), ?personality (1),	16	33

Table 5-16 The subjects used in the sentence pattern of 'X is *dark* Y'

Subjects		Answers (number of answers)	Total	%
Nouns	Human-S			
	Non-Human-S	heart (7), face (5), feeling (3), eyes (3), mind (2), life (2), hair/hair colour (3), atmosphere (1), future (1), prison (1), sky (1), skin (1), hole (1), story (1), ?personality (1), ?character (1), ?relationship (1), ?result (1), ?surroundings (1), ?score (1)	38	61
pronouns	Human-S	Personal pronouns, such as he or she, etc. (24)	24	39
	Non-human			

Table 5-17 The nouns connected to the adjective *dark*

Adjective		Answers (number of answers)	Total	%
dark +	noun (human)	Girl (3), man (2), person (2), figure (1)	8	22
	noun (non-human)	side (5), ?character (4), mood (4), sea/ocean(3), sky (2), point (1), past (1), stone (1), hole (1), hell (1), stairs (1), dress (1), doll (1), woods (1), ?result (1),	28	78

Table 5-18 The subjects used in the sentence pattern of 'X is *grey* Y'

Subjects		Answers (number of answers)	Total	%
Nouns	Human-S		6	16
	Non-human-S	heart (5), feeling (3), mind (3), world (3), answer (2), weather (2), all things (1), hair (1), face (1), idea (1), what she said (1), way of thinking (1), decision (1), judge (1), atmosphere (1), truth (1), brain (1), ?problem (1), ?character (1),	31	84
pronouns	Human-S			
	Non-human			

Table 5-19 The nouns connected to the adjective *grey*

Adjective		Answers (number of answers)	Total	%
grey +	noun (human)	woman (1)	1	11
	noun (non-human)	Mood (4), feeling (1), spirit (1), life (1), answer (1) L—excluded: hair (1), sky (1), paint (1), T-shirt (1)	8	89

Table 5-20 The nouns connected to the adjective *high*

Subjects		Answers (number of answers)	Total	%
Nouns	Human-S	Everybody (1), student (1), king (1), Tom (1)	4	7
	Non-human-S	tension (6), feeling (2), mood (1), ability (1), intelligence (1), joke (1), skill of piano (1), blood pressure (1), temperature (1), percentage of alcohol (1), price (1), examination (2), TOEFL score (1), test (1), guard (1), wall (1), king (1), ?eyes (1)	25	43
pronouns	Human-S	I, you, he, she, .	28	50
	Non-human			

Table 5-21 The nouns connected to the adjective *high*

Adjective		Answers (number of answers)	Total	%
high +	noun (human)	girl (1), guy (1),	2	4
	noun (non-human)	tension (8), level (6), quality (6), scores (3), wall (4), place (2), position (1), class (1), knowledge (1), education (1), pressure (1), color (1), price (1), cost (1), time (1), ball (1), heel (1), nose (1), tree (1), ?maker (1), schools (3)	46	96

Table 5-22 The subjects used in the sentence pattern of 'X is weak Y'

Subjects		Number of answers	Total	%
Nouns	Human-S	lady (1), the patient (1),	2	6
	Non-human-S	body (3), mind/mental (2), wind (2), coffee (2), imagination (1), sight (1), eyes (1), character (1), ?head (2), legs (1), feet (1), bone (1), ?shoji (1)	19	54
pronouns	Human-S	I, he, she, etc.	14	40
	Non-human			

Table 5-23 The nouns connected to the adjective *weak*

Adjective		Number of answers	Total	%
weak +	noun (human)	man (1), boy (1), child (1), baby (1),	4	10
	noun (non-human)	Points (23), mind (1), will (1), voice (2), dog (3), cat (1), ant (1), sticks (2), stone (2), tree (2),	38	90

Table 5-24 The subjects used in the sentence pattern of 'X is wild Y'

Subjects		Number of answers	Total	%
Nouns	Human-S	Man (3), Tarzan (1)	4	6
	Non-human-S	Behavior (4), character (3), action (2), way of eating (1), lifestyle (2), way of hairstyle (2), Africa (1), temper of the lion (1), face (1), fashion (1), game* (1),	19	30
pronouns	Human-S	He (35), she (3), I (1), you (1),	40	63
	Non-human			

*The game in this answer does not refer to the 'game' in card games nor to the 'wild card' in a metaphorical sense.

Table 5-25 The nouns connected to the adjective *wild*

Adjective		Number of answers	Total	%
wild +	noun (human)	man (8), boy (2), person (2), guy (1), ?hunter (1),	15	41
	noun (non-human)	animal (11), lion (2), monkey (2), cat (1), wind (2), appetite (1), clothes (1), hair (1), character (1), floor* (1)	22	59

6-1 bright

(i) the implications of cleverness/intelligence

1) Your eyes are bright stones.

2-1) My uncle is bright man. 2-2) Tom is a bright man.

3-1) My English teacher is a bright person. 3-2) His father is a bright person.

3-3) My uncle is a bright person. 3-4) The man is a bright person. 3-5) One of my friends whose name Sanac is bright person. 3-6) Ken is a bright person. 3-7) John is a bright person. 4-1) The girl is bright student.

4-2) His students are bright students. 4-3) The person is a bright student. 4-4) Akiko is a bright student.

4-5) Tom is a bright student.

5-1) The student is bright boy. 5-2) Tom is a bright boy. 5-3) Kate studying abroad in America is a bright girl. 5-4) Tom's sister is bright girl.

6) The man has bright brain. 7-1) The dogs are bright animals. 7-2) ?The dog is bright animal.

8) The children are bright monkey. 9) The dishwasher is a bright house wife. 10) Mike is a bright robot.

(ii) the implications of warmth, liveliness or full of life

- 11-1) Her smile is the bright sun. (2 answers) 11-2) Her smile is a bright sun. 11-3) Her smile is bright sun.
12-1) Her mind is bright sun. 12-2) Her mind is a bright sun. 12-3) My mind is a bright sun.
13-1) Her heart is a bright sun. 13-2) His haret[sic] (i.e. heart) is bright sun.
14) The character of your teacher is a bright sun. 15) Audorey [sic] (i.e. Audrey) Hepburn is bright sun.
16) The smile is bright star. 17) A[sic] beautiful girls are bright star.
18) The champion is a bright God. 19) Her face is a bright flower.
20) The woman's cheek is bright orange. 21) The girl is a bright angel.

(iii) the implications of full of light, shining or bright colour

- 22) The star is a bright jewlies [sic] (i.e. jewel). 23) The moon light is a bright parl [sic] (i.e. pearl).
24-1) ?His head is a bright electric ball. 24-2) ?That man's head is a bright ball.
25) ?Her hair is bright foreigner.

(iv) miscellaneous

- 26) ?The boy's knowledges are bright things. 27) ?His thinking is bright thinking.
28) ?Soccer player is bright thinking. 29) ?The way is a bright choice.

6-2 dark

(i) the implication of something without light or the colour tending toward black or something concrete is black

- 1) ?The mountain is dark trees. 2) Her diamond is dark stone. 3) ?The color of your umbrella is dark sky.
4) ?Every night are dark world. (This answer can be in another classification)
5) Her hair is dark curtain. 6) ?Asian people are dark eyes. 7) ?The person is a dark student.
8) Tom is a dark boy. 9) ?The boy is dark faice[sic](i.e. face).

(ii) the implication of being gloomy something abstract or psychological

- 10) Her heart is a dark room. 11) Today my heart is dark sea. 12) The boy's heart is a dark sky.
13) His mind is dark sea. 14) My life is dark sky. 15) The life without money is dark ocean.
16) His future is dark sky. 17) The road is a dark snake. 18) A night at New York City is a dark forests.
19) The exam is dark forest. 20) ?Life's looser is dark face. 21) ?The lost worker is a dark face.
22) ?His son is a dark character.

(iii) the implication of being gloomy, secret, hidden or ambiguous in concrete and abstract meanings

- 23) The person has a dark part. 24) The person is a dark world. 25) ?Her personality is a dark color.
26) The person who will try to comit[sic](i.e. commit) a suicide has dark feeling.
27) ?His face is a dark feeling. 28) ?John's face is a very dark expression.

iv) the implication of having evil, sinister or threatening quality

- 29) Her character is dark cloud. 30) Monster is a dark night. 31) ?That home is a dark zone.

v) the implication of secret or hidden ability

- 32) The winning person is a dark horse. 33) ?His running is dark horse.
34) ?The Darth Vader who is character of "Star Wars" is the dark matter.

vi) Miscellaneous

- 35) ?Tom's friend is dark stomach.--L1 transfer 36) ?My impression of him was his dark expression.
37) ?I think you idea is dark purposes. 38) ?Your thinking is a dark rock.
39) ?The boy is very dark midnight's sky. 40) ?Today is a dark holl[sic](i.e. hole or hall).

6-3 grey

(i) the allusion to a mixture of black and white

1) ?The stone is a grey sky.

(ii) the implication of being gloomy or dull without light

- 2-1) My heart is a grey sky. 2-2) My heart is grey sky. 2-3) ?My heart is gray of night's sky.
3) His heart is gray heart. 4) My feeling is a gray sky. 5) My heart is grey water.
6) His father is grey ghost. 7) The person is a grey cloud.
8) ?Her eyes are grey croud[sic](i.e. cloud, probably). 9) The man's face is grey stone.
10) His life is grey days. 11) ?The rainy day is a gray sean[sic](i.e. scene, probably).
12-1) ?Rainy weather are grey sky. 12-2) Today's weather is a grey sky.
13-1) Today is a grey sky. 13-2) Today is grey day. (2 answers)
14) The rain is gray water.
15-1) This office is a grey atmosphere. 15-2) My house is grey atmosphere.

(iii) the implication of ambiguity

- 16-1) The problem is a grey zone. 16-2) The problem goes into grey zone.
17) The theory of evolution is a grey area. 18) ?Japanese's opinion is grey cloud.
19) ?His life is gray history. 20) ?This problem's answer is grey scale.

(iv) miscellaneous

- 21) The man is a grey wall. 22) ?The nafe is a grey killer. 23) ?My father is grey hair.L

6-4 high

(i) the implication of height of concrete things

- 1-1) Ken is a high wall. 1-2) ?A life is a high walls. 1-3) ?His purpose is high wall.
2-1) The tall man is a high tree. 2-2) Hie height is high tree.
2-3) The building is high mountain. (3 answers) 2-4) His height is high mountain.
2-5) NBA player is high mountain. 2-6) The man is a high Fujiyama. 2-7) ?The tree is high mountain Fuji. 2-8) ?The tall boy is high mountain. 2-9) ?His tall is high mountain.
2-10) The tree in the forest is a high tower.

(ii) the implication of high standard/rank, skillfulness and of importance in an abstract sense

- 3) The computer is a high quality.
3-1) The examination is high level. 3-2) The boy's ability is high level.
3-3) The exam is a high hardle[sic] (i.e. hurdle). 3-4) The life style of Japan is a high standard.
4-1) Climbing mountain has high risk. 4-2) His illness is ?the high risk.

- 5) My boss is a high position. 6) The shirt is high price.
 7-1) The color is high color. 7-2) ?The girl is high fashion.
 8-1) The soccer team is a high giant. 8-2) Your jump is a high bird.
 9) This clock is high building. 10) ?Rich people is like high quality food.

(iii) the implication of moral goodness or character

- 11) A high opinion is good thing. L? 12) His thought is a high opinion. 13) The man belongs to high society.

(iv) the implication of high feeling, similar to drug effect

- 14) His tension is high tension.--L1 transfer 15) My emotion is high sky.--L1 transfer
 16) ?Air is high pressure. 17) ?The party was high mood.

(v) miscellaneous

- 18) ?Jery's mother is high nose. L1 transfer? 19) ?The animals are high fly.

6-5 weak

1) the implication of physical weakness / the implication of mental weakness or fragility in personality

- 1-1) The person is a weak cat. 1-2) Aki is a weak kitty. 2) His heart is weak glass.
 3) This man is weak body. 4) ?A baby's legs are weak sofa[sic](i.e. sofa?).
 5) His feeling is a weak heart. 6) Your mind is weak animals[sic] (i.e.. animal's).
 7) Mary's voice is weak animal. 8) His character is weak bird. 9) Her singing voice is a weak puppy.
 10) The power is a weak aunt[sic] (i.e. ant?) 11) ?The teacher is weak voice.
 12) ?My grandmother is weak heart. LM

(ii) the implication of lower skill or ability

- 13) The man has a weak point. 14) My friend describes my weak point.
 15-1) My weak point is sports. 15-2) English is my weak point.
 15-3) Mathematics is her weak point. L1 transfer 15-4) Smoking is my weak point.L1 transfer
 15-5) Head is a weak point. L1 transfer 15-6) His nose is a weak point.L1 transfer
 15-7) Stomach is his weak point. L1 transfer
 16) ?Mike's brother is weak head. L1 transfer 17) ?The man is a weak knowledge in this subject.
 18) ?The person's ability is weak level.

(iii) the implication of lack of effectiveness

- 19) The problem is a weak economy.

iv) the implication of watery liquid

- 20) ?The drink is weak taste. 21) ?The coffee is a weak taste.

v) miscellaneous

- 22) Japanese are weak bugs. 23) My pet is a weak dog.L?M? 24) ?Her eye is weak cat.
 25) Your heart is a weak worm. 26) My heart is weak baby.

6-6 wild

(i) the implication of violence, uncontrollability of behaviour and/or feeling, or lack of thoughtfulness

- 1) Today is a wild windy day.
- 2-1) The wind is a wild animal. 2-2) Men are a wild animal. (2 answers) 2-3) The man is a wild animal.
- 2-4) The boy is wild animal. 2-5) His act is wild animal. 2-6) Mike's life is a wild animal.
- 2-7) People who eat with hands is wild animals. 2-8) ?The boy gotten angry is wild monkey.
- 2-10) Irabu is a wild pitcher. (Irabu is a professional baseball pitcher)
- 2-11) My son is a wild boy. 2-12) George is wild person.
- 3-1) The person is a wild character. 3-2) ?The boy is wild clactor[sic]. (i.e. character)
- 3-3) The person is wild caractor[sic]. (i.e. character)
- 4) His mind is a wild rock. 5) My boss is a wild lion. 6) Her face is a wild lion.
- 7) The sea is a wild lion. 8) Takeshi is wild lion. (Takeshi is a popular Japanese tv personality)
- 9-1) His character is like wild monkey. 9-2) Our life in the forest is a wild monkey.
- 10) Mike Tyson is a wild horse.

(ii) the implication of violence or lack of thoughtfulness / the implication of excitement or eagerness

- 11) Your life is a wild life. 12) The man's policy is wild living. 13) Her clothes are wild style.
- 14) ?The daily is wild skin. 15) ?His spirit is wild grass.
- 16) ?The man has wild atmosphia[sic](i.e. atmosphere). 17) ?The CD's music are wild atmosphere.
- 18) ?His fusionstyle is a wild close. (i.e. His fashion is a wild clothes)

(iii) the implication of being not tame or cultivated

- 19) The land is a wild world.

iv) miscellaneous

- 20) ?Shiro is wild dog. (Shiro is a common dog's name meaning white. The colour of the dog is probably white) LM
- 21-1) Lion is wild animal.L 21-2) The lions are wild animals.L 21-3) The horse is a wild horse.L

