

A corpus-based analysis of conceptual metaphors with BITE and CHEW in English and Korean*

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Kim, Jungsoo. 2022. A corpus-based analysis of conceptual metaphors with BITE and CHEW in English and Korean. *Linguistic Research* 39(1): 55-93. The purpose of this research is to examine conceptual metaphors with BITE and CHEW in two typologically different languages, English and Korean (BITE and CHEW in English and MWUL- 'BITE' and SSIP- 'CHEW' in Korean). There has been some research on conceptual metaphors with EAT and other words that depict general eating processes; however, little attention has been paid to conceptual metaphors with words that describe specific processes of eating events. This study first discusses key grammatical properties of BITE and CHEW and their conceptual metaphors in English and Korean based on an analysis of authentic corpus data. This study then shows that although the two verbs BITE and CHEW in each language can license some metaphors in common, overall they are more different than similar in terms of metaphor types, frequency distribution patterns, and preferred syntactic and semantic properties. This study further shows that although the pairs of the English verb and its Korean counterpart (i.e., BITE in English vs. MWUL- 'BITE' in Korean and CHEW in English vs. SSIP- 'CHEW' in Korean) can induce some conceptual metaphors in the same manner, their conceptual metaphors are also more different than similar with respect to metaphor types, frequency distribution patterns, and strong collocates. Taken together, the findings suggest that it is crucial to explore authentic uses of conceptual metaphors with specific verbs involved in eating processes in more detail across different languages, making use of attested corpus data, and that in this way we can make a significant contribution to the body of literature on conceptual metaphors. (Kyung Hee University)

Keywords conceptual metaphor, corpus, BITE, CHEW, MWUL- 'BITE', SSIP- 'CHEW', comparative linguistic perspective

1. Introduction

Eating is a universal practice of human beings and this is so since food consumption

* I thank anonymous reviewers of *Linguistic Research* for their constructive feedback and suggestions that substantially improved this paper. The usual disclaimer applies here.

is a fundamental aspect of human life and survival (Newman 1997, 2009; Næss 2009; Wierzbicka 2009). As ‘eating’ is associated with a universal and essential human nature, expressions involving this concept are frequently used in real life and this naturally leads to a wide variety of conceptual metaphors to express other more conceptually abstract experiences or acts (Lakoff and Johnson 1980; Lakoff 1987; Newman 1997, 2009; Song 2009; Wierzbicka 2009; Kövecses 2010).

As noted in Newman (1997), eating can be divided into at least seven stages: 1) hunger, 2) intake, 3) mastication, 4) swallowing, 5) digestion, 6) nourishment, and 7) pleasant gustation. Previous literature has also noted that conceptual metaphors with EAT can be classified into three different types depending on which participant is mainly involved in the metaphors: 1) agent-oriented, 2) patient-oriented, and 3) both agent- and patient-oriented (Newman 1997, 2009; Song 2009; Ye 2010; Taljard and Bosman 2014; Agyepong et al. 2017). For example, agent-oriented conceptual metaphors with EAT emphasize the internalization by the agent (i.e., taking something into the agent’s personal and private space). Many of the agent-oriented conceptual metaphors with EAT, therefore, concern the intake of swallowing stages. By contrast, patient-oriented conceptual metaphors with EAT focus on the effect on the food. Thus, many of them are related to the mastication stage with particular emphasis on the destruction of the object. Meanwhile, some conceptual metaphors with EAT build upon both agent- and patient-oriented aspects of eating. As an illustration, consider the following examples:

- (1) a. The dryer ate my money.
- b. The fire ate up the house.
- c. Mary ate my words.

In (1a), the emphasis is on the inanimate subject entity *the dryer* taking in the non-food entity *my money*. This way, the verb EAT is used as a conceptual metaphor, focusing the internalization by the subject. On the other hand, in (1b), the same verb is metaphorically used to highlight the destruction effect imposed on the object entity *the house*. In the meantime, in (1c), the expression *eat one’s words* whose idiomatic meaning is ‘withdraw one claims’ focuses on the destruction of the linguistic entities in a metaphorical way. At the same time, however, it also gives rise to an unpleasant image of the agent taking in something vile, indicating that the agent experiences something displeasing.

Newman (1997) enhanced our understanding of conceptual metaphors with EAT in English and subsequent works have been conducted on the topic in other languages as well (Newman 2009; Song 2009; Yamaguchi 2009; Ye 2010; Taljard and Bosman 2014; Agyepong et al. 2017; Choi 2017a, b; Kim et al. 2018). However, such previous literature has mainly focused on introspective data or a small number of examples gleaned in a rather haphazard manner (see, among others, Newman 1997, 2009; Song 2009; Yamaguchi 2009). Moreover, previous literature, in general, has provided conceptual metaphor examples with a variety of verbs related to ‘eating’ in a random way (Newman 1997, 2009; Choi 2017a) or only discussed conceptual metaphor examples with EAT (Song 2009; Yamaguchi 2009; Ye 2010; Kim et al. 2018). As an attempt to fill the research gap, in this paper I investigate conceptual metaphors with BITE and CHEW in two typologically different languages, English and Korean, on the basis of large, balanced corpora in the two languages. Since these two verbs are both associated with the mastication stage in eating, this corpus-based research is expected to allow us to figure out similarities and differences of their metaphorical uses in real life situations in each of the two languages and between the two languages (Charteris-Black 2004; Deignan 2005, 2008, 2009; Stefanowitsch 2006; Kim 2017).

The rest of this paper is organized as follows. On the basis of authentic corpus data, I first discuss basic grammatical properties of the two verbs BITE and CHEW in English and examine their conceptual metaphors. I then discuss basic grammatical properties of MWUL- ‘BITE’ and SSIP- ‘CHEW’ in Korean and explore their conceptual metaphors. In doing so, I show that both English and Korean employ BITE and CHEW each as source domain in certain respects and the two verbs in each of the languages and each pair in the two languages share some conceptual metaphors; however, overall they are more different than similar in terms of metaphor types, frequency distribution patterns, and preferred syntactic and semantic properties.

2. BITE and CHEW in English

2.1 Corpus used and search methods

In order to explore real life uses of two English verbs BITE and CHEW including their basic grammatical properties and conceptual metaphors, I conducted a corpus

investigation, using COCA (Corpus of Contemporary American English) (Davies 2008-).¹ I first searched for all tokens with their lexical verb uses from COCA, using the following simple string searches with the part-of-speech specification.

- (2) a. [bite]_vv
b. [chew]_vv

Square brackets in COCA string searches indicate the lemma form of the expression within them and _vv means "lexical verb". The string search in (2a) thus was used to search for all the tokens with all the lexical verb variants derived from the lemma form BITE (i.e., *bite*, *bit*, *bitten*, *bites*, and *biting*) while the one in (2b) was used to search for all the tokens with all the lexical verb variants derived from the lemma form CHEW (i.e., *chew*, *chewed*, *chews*, and *chewing*). These simple string searches provided a total of 14,908 BITE tokens and a total of 8,395 CHEW tokens from the five traditional registers in COCA.

I then collected 500 random samples for each lexical verb variant for BITE (2,500 tokens in total) and CHEW (2,000 tokens in total) with the built-in FIND SAMPLE function in the corpus and manually filtered out irrelevant and idiomatic examples like the following:

- (3) a. You picked Peggy Chew for your partner in the pageant.
b. Benj did not look the least bit excited, but nobody expected him to.
c. The online cosmetics company bit the dust within 10 months.
d. He comes down to the locker room to chew the fat with you.

In these examples, the words BITE and CHEW are not used as main verbs or they are used as part of idiomatic expressions. For example, these words are used as proper names, common nouns, and adjectives as in (3a) and (3b) and they are used to introduce

¹ COCA (Corpus of Contemporary American English) is the largest structured corpus of Contemporary American English. It is freely available online at <https://www.english-corpora.org/coca/> and it continues to be updated. When the corpus searches were carried out for this research in 2020, the corpus contained more than one billion words of text from 1990 to 2019 and it was divided into eight different registers (i.e., the five traditionally used registers: spoken, fiction, magazines, newspapers, and academic; the three recently added informal registers: blog, web, and TV/movie scripts) in a balanced manner with almost equal corpus sizes. For this research, however, I restricted the registers to the five traditional ones.

idiomatic expressions as in (3c) and (3d) (*bite the dust* = ‘end in failure’; *chew the fat* = ‘have a friendly conversation’).

2.2 Basic key properties of BITE and CHEW with literal usage

In this section I discuss some key grammatical properties of the two English verbs BITE and CHEW with literal usage on the basis of the identified corpus examples from COCA. First, the two verbs are commonly used as transitive verbs taking an agent subject and a patient direct object, as shown below:

- (4) a. Mary **bit** a sausage then frowned.
b. A dozen men on a back porch **chew** thick slices of delivered pizza between rat-a-tat banter.
- (5) a. The stewardess walks away as Jacob sits back and starts to **bite** his nails.
b. He never hummed or **chewed** his pencil or muttered to himself.

These two verbs typically describe a food-consumption event with the agent subject acting upon the patient direct object, involving their mouth and teeth, as in (4). However, the direct object does not have to be an edible food entity as in (5). In such cases, the focus is simply on the crushing event involving the agent subject’s mouth and teeth.

In addition, BITE and CHEW can both be used as intransitive verbs, taking no internal argument, as illustrated in the following:

- (6) a. Raccoons, on the other hand, appear approachable, and are more likely to **bite**.
b. If he’s in a movie theater and someone’s **chewing** too loudly or talking, we get up and move.
- (7) a. Suck on the shell. Do not **bite**.
b. She shoved the blueberries in her mouth and **chewed**.

When the two verbs BITE and CHEW are used intransitively, their internal argument can be understood as an indefinite entity as in (6) or a definite entity from the preceding linguistic context as in (7). For instance, the bitten or chewed entity can be construed

as an indefinite pronoun like *someone* or *something* in (6); on the other hand, the bitten or chewed entity in (7) corresponds to an overtly realized linguistic expression in the context (i.e., *the shell* in (7a) and *the blueberries* in (7b)).

Furthermore, the two verbs BITE and CHEW can also be used with an internal argument which can be syntactically realized as diverse PPs and particles. Consider the examples in (8) and (9):

- (8) a. She leaned in and **bit** at his exposed ear even as Jurgon yanked her away from his master.
- b. He looked like he was going to **bite** his mustache off.
- c. Eva dithered as she **bit** down into her slice of pizza.
- (9) a. But sometimes squirrels or other wild animals get inside the boxes and **chew** on the wires.
- b. They keep on munching the grass, ripping it out of the ground and **chewing** it up.
- c. As we carved and **chewed** away at our steaks, I mentioned that I had run into Sally Nussdorf at Marshall Field's earlier in the week.

The verb BITE can select a variety of PPs introduced by *at*, *on*, *into*, and *through* as in (8a) and it can also take a particle such as *off*, *down*, and *in* as in (8b). The verb further can occur with a particle, typically *down*, and a PP headed by *into* or *on* as in (8c). In a similar manner, the verb CHEW can take diverse PPs introduced by *at*, *on*, *upon*, and *through* as in (9a) and it can also combine with a particle like *up*, *away*, *down*, and *off* as in (9b). In addition, it can take a particle, especially *away*, and a PP headed by *at* or *on* as in (9c).

The examples discussed thus far indicate that when the two verbs BITE and CHEW involve literal usage, they show similar argument realization patterns in several respects but they also exhibit different patterns in certain respects. For example, both the verbs typically have transitive and intransitive uses and they share a certain set of PPs and particles as their internal argument; however, some PPs and particles can occur only with one of them, but not with the other.

2.3 Conceptual metaphors with BITE and CHEW

In this section, I provide an analysis of the conceptual metaphors with BITE and CHEW, focusing on their similarities and differences, on the basis of the authentic data extracted from COCA to the exclusion of the irrelevant and literal examples discussed in Sections 2.1 and 2.2.

2.3.1 Conceptual metaphors with BITE

The filter-out and exclusion processes for the irrelevant and literal examples provided a total of 285 conceptual metaphor examples with BITE, out of 2,500 BITE tokens extracted from COCA. Consider then the table below, which presents the conceptual metaphor types involving BITE and their frequency numbers from the attested COCA examples:

Table 1. Conceptual metaphor types with BITE and their frequencies from COCA

Rank	Conceptual metaphor	Frequency
1	BITING IS DESTROYING/DAMAGING/HURTING	141
2	BITING IS SHOWING/TRIGGERING INTEREST	67
3	BITING IS HOLDING BACK	44
4	BITING IS VERBALLY EXPRESSING	9
5	BITING IS CAUSING A NEGATIVE EFFECT	8
6	BITING IS CRITICIZING	6
7	BITING IS BOTHERING	5
7	BITING IS CONSUMING RESOURCES	5
	TOTAL	285

As illustrated in Table 1, the identified COCA examples where BITE has a metaphorical use can be broadly grouped into eight major types. Among these eight major types, the conceptual metaphor BITING IS DESTROYING/DAMAGING/HURTING has the highest frequency and some representative examples of this conceptual metaphor are given below:

(10) BITING IS DESTROYING/DAMAGING/HURTING

- a. I guess it's true what they say – the past always **bites** you in the ass just when you think you're done with it.

- b. Meanwhile, Savannah's muscles were starting to complain. Bitterly. "This **bites**," she told Tammy.
- c. Jim and Wayne have broken down barriers by **biting** into the binary world of computers.
- d. The most impressive thing is, he usually finds someone to invite him in to **bite** off another piece of Lebanon, be it the Arab League or, as was the case last weekend, Lebanon's President Elias Hrawi.

In BITING IS DESTROYING/DAMAGING/HURTING examples as in (10), the emphasis is on the destruction or damage of an entity. Among 285 BITE conceptual metaphor examples extracted from COCA, 141 belong to this type, accounting for 49.5% of the entire examples. The majority of these BITING IS DESTROYING/DAMAGING/HURTING examples involve either a typical transitive use as in (10a) or an intransitive use with no dependent at all as in (10b) (85 out of 141 examples). Other frequent dependents with them are a PP introduced by *into* as in (10c) (25 examples) and a particle *off* as in (10d) (15 examples). Minor dependents include PPs introduced by *at* and *on* (e.g., *The cold air rushes in, biting at her bare wrists and ankles but Wendy does not care*), and particles *down* and *away* (e.g., *Like a page with the edges bitten away, rounded*).

The second most frequent conceptual metaphor with BITE is BITING IS SHOWING/TRIGGERING INTEREST (67 of 285 conceptual metaphor examples with BITE), as exemplified below:

(11) BITING IS SHOWING/TRIGGERING INTEREST

- a. Manufacturers and retailers tried to boost prices in 1990, but consumers didn't **bite**.
- b. Starting with the 1988 Morris Worm, this flaw has **bitten** everyone from Linux to Windows.
- c. She was **bitten** by the acting bug when most toddlers are learning their ABC's.

Most examples in this type have either an intransitive use without any dependent as in (11a) or a canonical transitive use with a direct object NP as in (11b) (62 out of 67 examples). One notable observation about this conceptual metaphor is that many of these examples contain an expression "a certain type of bug" as in (11c). A few BITING IS

SHOWING/TRIGGERING INTEREST examples involve a PP dependent introduced by *on* or *at* (e.g., *The conditions were said to be \$ 2 million to \$ 3 million a year, and the Saints didn't bite on that*).

Another relatively frequent conceptual metaphor with BITE is BITING IS HOLDING BACK, as shown in (12):

(12) BITING IS HOLDING BACK

- a. Cayden **bit** back a despairing moan.
- b. He hopped up and down, holding one shin, trying to **bite** down on his pain, his eyes lifted heavenward, his lips moving silently.
- c. Repugnance, he claims, is the other word for hell. High hell. "Let's," I say, preparing myself for surprise, **biting** off what I really want to say, what I'm thinking.

This conceptual metaphor BITING IS HOLDING BACK describes an event where someone holds back a certain emotion, a sound, and a facial expression. The dependent is typically associated with something negative such as *pain*, *despair*, *moan*, *curse*, and *tear*, but in some cases it is a positive one like *smile* and *grin*. All the identified BITING IS HOLDING BACK conceptual metaphor examples have a dependent. The most frequent dependent is a particle *back* as in (12a) in that out of 44 BITING IS HOLDING BACK conceptual metaphor examples, 34 contain this particle dependent. Meanwhile, 8 examples involve a particle *down* and a PP introduced by *on* together as in (12b) whereas the remaining 2 examples take a particle *off* as in (12c).

There are other conceptual metaphors with BITE whose occurrences are not as frequent as the three discussed so far. For instance, BITING IS VERBALLY EXPRESSING is another conceptual metaphor found in the data from COCA. As an illustration, consider the following:

- (13) a. "That was unnecessary," he **bit** out, as Kent's gun slipped from his hand with a clatter.
- b. "Maybe I should have left well enough alone and stopped coming around. Maybe she wouldn't have left." "Maybe." Quinn **bit** off the word.

Nine examples belong to this type and this conceptual metaphor places an emphasis on

the agent making an utterance. These examples typically involve a dependent in the sense that four of them have a particle *out* as in (13a) and another four occur with a particle *off* and the NP dependent is typically a word-related expression as in (13b). In the meantime, one example has a particle *down* as well as a PP headed by *on* (e.g., *In the slow hurt of "Life Is Hard," Dylan bites down gently on each syllable, over soft-shoe drums and weeping pedal steel*).

An additional minor conceptual metaphor is BITING IS CAUSING A NEGATIVE EFFECT, as demonstrated below:

(14) BITING IS CAUSING A NEGATIVE EFFECT

- a. But even for Gen Xers, the current environment does, indeed, **bite**. Not only have most Gen Xers saved and invested enough to be hurt badly by the breathtaking downdraft in the market, they now have cash-hungry obligations on top of that.
- b. And for rhinos and tigers, any sanctions might not **bite** until it is too late.

All eight examples of this conceptual metaphor involve an intransitive use of the verb BITE, typically describing a unfavorable or unfortunate event where the subject triggers a negative effect.

One more minor conceptual metaphor concerns BITING IS CRITICIZING, as exemplified in (15):

(15) BITING IS CRITICIZING

- a. Well, whether or not Trump actually thinks there's a problem, he saw that the media was **biting** and it's really tight in Iowa.
- b. Later - clearly **biting** Perry's breakfastinspired style - Gwen Stefani partied in Los Angeles in a knockoff egg frock.

Six examples involve this conceptual metaphor and it emphasizes the entity that gets criticized. In five examples the verb BITE is used as an intransitive one with no dependent as in (15a) or a transitive one as in (15b); on the other hand, in one example it occurs with a PP headed by *at* (e.g., *Everyone started biting at everyone else within the conference*).

Moreover, five examples of the conceptual metaphor BITING IS CONSUMING

RESOURCES are identified, as shown in (16):

(16) BITING IS CONSUMING RESOURCES

- a. And with a widely publicized laptop battery recall **biting** into its revenues, Sony is in need of a success story.
- b. Like a hungry shark, the Pixar beast stays in constant movement, **biting** off huge chunks of box office bucks along the way.

This conceptual metaphor depicts consumption of an inedible resource entity but in the identified examples, the inedible entity is rather restricted to something related to money. Four of the five examples here contain a PP introduced by *into* as in (16a), while the remaining example involves a particle *off* as in (16b).

Lastly, five examples of the conceptual metaphor BITING IS BOTHERING are observed as well, as in (17):

(17) BITING IS BOTHERING

- a. "Finding and emphasizing common ground can, by itself, help the money issue move into the background," though it will come up and **bite** a couple periodically," notes Dym.
- b. I think that this reaction, a very strong reaction in the West, really **bites** him right now.

This conceptual metaphor describes a bothering event where an inanimate event/entity disturbs an animate entity. In all five BITING IS BOTHERING conceptual metaphor examples, the verb BITE is used as a transitive one, taking a direct object NP, as in (17).

2.3.2 Conceptual metaphors with CHEW

Let us now discuss conceptual metaphors with CHEW. Note first that the filter-out and exclusion processes for the irrelevant and literal examples provided a total of 311 conceptual metaphor examples with CHEW, out of 2,000 CHEW tokens extracted from COCA. The table below summarizes the conceptual metaphor types with CHEW and their frequency numbers from the identified COCA examples:

Table 2. Conceptual metaphor types with CHEW and their frequencies from COCA

Rank	Conceptual metaphor	Frequency
1	CHEWING IS DESTROYING/DAMAGING/HURTING	141
2	CHEWING IS THINKING/DISCUSSING	80
3	CHEWING IS CRITICIZING	62
4	CHEWING IS CONSUMING RESOURCES	26
5	CHEWING IS ENJOYING ACTIVITIES	2
	TOTAL	311

As shown in Table 2, the identified COCA examples where CHEW is used metaphorically can be classified into five major types. The most frequent conceptual metaphor with CHEW is CHEWING IS DESTROYING/DAMAGING/HURTING and some representative examples of this conceptual metaphor are presented in (18):

(18) CHEWING IS DESTROYING/DAMAGING/HURTING

- a. Gunfire **chews** up the doorframe.
- b. Though she stood far away, Zishe could hear the tchak-tchak-tchak of the shears **chewing** Ikva's tresses.
- c. The 15-inch steel saw **chews** through branches up to four inches thick and slips into a slot in the handle when it's time to put the five-inch hatchet to use.

In CHEWING IS DESTROYING/DAMAGING/HURTING examples as in (18), the focus is on the destruction or damage of an entity. Out of 311 CHEW conceptual metaphor examples extracted from COCA, 141 are of this conceptual metaphor, accounting for 45.3% of the entire examples. The majority of the CHEWING IS DESTROYING/DAMAGING/HURTING examples involve a particle *up* as in (18a) (85 examples), followed by the examples with a canonical direct object NP as in (18b) (28 examples) and those involving a PP introduced by *through* as in (18c) (15 examples). Other minor dependents include a particle *away* and a PP headed by *at* at the same time (e.g., *Cliffside collapses are not unusual as the ocean chews away at the base of the sandstone, authorities said*) or individually (e.g., *The floor vibrates as the cranes outside chew at the remains of the World Trade Center*), and a PP introduced by *into* (e.g., *GRGGRRGR – the tip of the central drill chews into the stone wall*).

The next most frequent conceptual metaphor with CHEW is CHEWING IS THINKING/

DISCUSSING, as exemplified in (19):

(19) CHEWING IS THINKING/DISCUSSING

- a. By my count seven different shows on the network spent a combined 26 minutes **chewing** on Obama's comment and emphasizing how unfair it was.
- b. But we've barely begun to **chew** over Gandhi's advice.

This conceptual metaphor CHEWING IS THINKING/DISCUSSING emphasizes a cognitive thinking or discussing activity in a careful manner. Among 80 CHEWING IS THINKING/DISCUSSING conceptual metaphor examples, 51 involve a PP introduced by *on* as in (19a) and 24 involve a particle *over* as in (19b). Other infrequent dependents are a direct object NP (e.g., *There isn't much debate over it, since almost everyone chews and rechews the same supposed causes*) and a PP headed by *upon* (e.g., *Those words were remembered and chewed upon and discussed and denied*).

Another frequent conceptual metaphor with CHEW concerns CHEWING IS CRITICIZING, as demonstrated in the following:

(20) CHEWING IS CRITICIZING

You don't usually see sergeants **chewing** out captains in the U.S.

This conceptual metaphor focuses on the entity that gets criticized, and 61 examples are of this conceptual metaphor. Most of these examples involve a particle *out* as in (20) (52 examples). The rest of the examples contain a simple direct object NP, a PP introduced by *on*, and a particle *up* or *off* (e.g., *Kipler ordered this hearing so he could formally chew Drummond's ass, and get it on the record/Coach chewed on us for a while about losing, but he got disgusted early and dismissed the team*). Another observation related to these examples is that almost all of them have an animate referent (e.g., *captains* and *him*) or a possessive expression + *ass/butt* (e.g., *Drummond's ass and your butt*) as the criticized entity.

An additional identified conceptual metaphor with CHEW is CHEWING IS CONSUMING RESOURCES, as shown in (21):

(21) CHEWING IS CONSUMING RESOURCES

- a. The case was dropped after **chewing** up \$ 12 million in legal costs.
- b. Multitype Battery Recharger Flashlights with halogen bulbs and electronic devices such as digital cameras have a huge appetite for energy and quickly **chew** through your house's battery supply.

The number of CHEWING IS CONSUMING RESOURCES examples as in (21) is lower than those of the three conceptual metaphors discussed above but their occurrences are not rare (26 examples). This conceptual metaphor describes consumption of an inedible resource entity such as time, money, energy, etc. The majority of these examples involve a particle *up* as in (21a) (19 examples), followed by the ones with a PP headed by *through* as in (21b) (5 examples). Other minor dependents are also found with a particle *down* and a PP introduced by *on* (e.g., *Your turntable spits out analog signals and your computer chews on digital signals-somewhere along the way you have to convert them*).

The last conceptual metaphor with CHEW found in the data extracted from COCA is CHEWING IS ENJOYING ACTIVITIES, as illustrated below:

(22) CHEWING IS ENJOYING ACTIVITIES

- a. There's something very comforting about when you're like five episodes into a 13-episode season of something that you're just **chewing** through one episode after another.
- b. In exchange, you get 5,632 stream processors, 8GB of RAM with a 512-bit bus, a 1018MHz clock speed, and enough firepower to chew **through** any game without breaking a sweat.

Only two examples belong to this conceptual metaphor, indicating that this is an infrequent conceptual metaphor with CHEW, as opposed to the four noted earlier. This conceptual metaphor depicts an enjoyable activity performed by the agent and both the examples syntactically have a PP introduced by *through*.

2.3.3 Discussion

Thus far, I have discussed the identified conceptual metaphors with BITE and CHEW on the basis of data extracted from COCA and noted that some conceptual metaphors

can be licensed by the two verbs in common, but not others, and that each conceptual metaphor shows some idiosyncratic syntactic and semantic properties. Their salient properties can be summarized as follows:

Table 3. Summary of salient properties of the identified conceptual metaphors with BITE from COCA

Conceptual metaphor	Salient properties
BITING IS DESTROYING/DAMAGING/HURTING	DO; no dependent; PP[<i>into</i>]; particle <i>off</i>
BITING IS SHOWING/TRIGGERING INTEREST	no dependent; DO; frequent 'bug'-expressions
BITING IS HOLDING BACK	particle <i>back</i> ; particle <i>down</i> + PP[<i>on</i>]; frequent negative expressions
BITING IS VERBALLY EXPRESSING	particle <i>out</i> ; particle <i>off</i> ; 'word'-related expression
BITING IS CAUSING A NEGATIVE EFFECT	no dependent; unfavorable events
BITING IS CRITICIZING	no dependent; DO
BITING IS CONSUMING RESOURCES	PP[<i>into</i>]; 'money'-related expressions
BITING IS BOTHERING	DO; inanimate subject and animate DO

Table 4. Summary of salient properties of the identified conceptual metaphors with CHEW from COCA

Conceptual metaphor	Salient properties
CHEWING IS DESTROYING/DAMAGING/HURTING	particle <i>up</i> ; DO; PP[<i>through</i>]
CHEWING IS THINKING/DISCUSSING	PP[<i>on</i>]; particle <i>over</i>
CHEWING IS CRITICIZING	particle <i>out</i> ; animate referent; possessive + <i>ass/butt</i>
CHEWING IS CONSUMING RESOURCES	particle <i>up</i> ; PP[<i>through</i>]; 'time/money/energy'-related expressions
CHEWING IS ENJOYING ACTIVITIES	PP[<i>through</i>]

As discussed in Table 1 and Table 2 above, BITE has more conceptual metaphor types (eight types) than CHEW (five types) but more conceptual metaphor examples are found with CHEW (311 examples) than BITE (285 examples) and this frequency difference becomes more pronounced given the fact that BITE conceptual metaphor examples are from 2,500 BITE tokens while CHEW conceptual metaphor examples are from 2,000 CHEW tokens.² Note also that the majority of the BITE and CHEW conceptual metaphor

2 The Fisher exact test revealed that their metaphorical/non-metaphorical usage difference is statistically

types are rather negative; however, this tendency is stronger with BITE than with CHEW in that six of the eight BITE conceptual metaphor types are negative (i.e., except BITING IS SHOWING/TRIGGERING INTEREST and BITING IS VERBALLY EXPRESSING) while three of the five CHEW conceptual metaphor types are negative (i.e., except CHEWING IS THINKING/DISCUSSING and CHEWING IS ENJOYING ACTIVITIES).

Next, as shown in Table 3 and Table 4, BITE and CHEW share three conceptual metaphors: 1) BITING/CHEWING IS DESTROYING/DAMAGING/HURTING, 2) BITING/CHEWING IS CRITICIZING, and 3) BITING/CHEWING IS CONSUMING RESOURCES. Among these, both BITE and CHEW are most strongly associated with destroying/damaging/hurting in their metaphorically extended uses, in terms of frequency numbers, as noted earlier in Table 1 and Table 2. Nonetheless, even when the conceptual metaphors with BITE and CHEW are related to destroying/damaging/hurting, they show significant differences with respect to their frequent dependent types. To be more specific, in BITING IS DESTROYING/DAMAGING/HURTING examples, BITE frequently takes a canonical direct object NP or no dependent at all and other frequent dependents are a PP[*into*] and a particle *off*; on the other hand, in CHEWING IS DESTROYING/DAMAGING/HURTING examples, CHEW frequently occurs with a particle *up*, a canonical direct object NP, and a PP[*through*].

In addition, the other two common conceptual metaphors with BITE and CHEW, namely, BITING/CHEWING IS CRITICIZING and BITING/CHEWING IS CONSUMING RESOURCES, exhibit some notable differences in their raw frequency numbers, preferred dependent types, and collocates. For one thing, their raw frequencies are higher with CHEW than with BITE. Furthermore, in BITING IS CRITICIZING examples, BITE typically takes no syntactic dependent at all or a canonical direct object NP and the criticized referent is either an animate or inanimate entity; however, in CHEWING IS CRITICIZING examples, CHEW frequently occurs with a particle *out* and/or a possessive + *ass/butt* and the criticized referent is an animate entity in almost all cases. In BITING IS CONSUMING RESOURCES examples, BITE frequently takes a PP[*into*] and the resource expressions are rather restricted to ‘money’-related ones; on the other hand, in CHEWING IS CONSUMING RESOURCES examples, CHEW typically occurs with a particle *up* and a PP[*through*] and the resource expressions have a wider range such as those associated with time, money, energy, etc.

significant ($p < .001$).

Of course, some conceptual metaphors are found with only one of the two verbs, BITE and CHEW. In particular, BITING IS SHOWING/TRIGGERING INTEREST, BITING IS HOLDING BACK, BITING IS VERBALLY EXPRESSING, BITING IS CAUSING A NEGATIVE EFFECT, and BITING IS BOTHERING are only applicable to BITE, while CHEWING IS THINKING/DISCUSSING and CHEWING IS ENJOYING ACTIVITIES are only applicable to CHEW. The observations made thus far clearly indicate that the two verbs BITE and CHEW show more differences than similarities in terms of their uses of conceptual metaphors and their differences become more prominent when we consider the frequency distribution patterns and the preferred dependent types and collocates and this holds true even for the common metaphors.

3. MWUL- ‘BITE’ and SSIP- ‘CHEW’ in Korean

3.1 Corpus used and search methods

In order to investigate authentic uses of two Korean verbs MWUL- ‘BITE’ and SSIP- ‘CHEW’ including their key grammatical properties with literal usage and conceptual metaphor uses, I performed a corpus investigation, using SJ-RIKS (Sejong-Research Institute of Korean Studies) Corpus.³ I first searched for all tokens involving the simple root forms MWUL- ‘BITE’ and SSIP- ‘CHEW’ in the morpheme search box and collected examples with their verb uses. These string searches provided a total of 3,163 MWUL- ‘BITE’ tokens and a total of 1,108 SSIP- ‘CHEW’ tokens. I then filtered out irrelevant and idiomatic examples like the following:

- (23) a. nay-ka ica mwu-nun-ke ani-nikka.
 I-NOM interest pay-REL-thing not-DECL
 ‘It is not the case that I am paying for the interest.’
 b. Kang Inae-ssip-nita.

3 SJ-RIKS (Sejong-Research Institute of Korean Studies) Corpus is a tagged corpus consisting of contemporary Korean data and it is freely available online at <http://riksdb.korea.ac.kr>. The corpus has two versions: the original version and its extended version. The original version contains approximately 15 million ejeols (words separated by a space) and its data only come from written registers; on the other hand, the extended version contains about 116 million ejeols and its data come from spoken and written registers, including pure spoken, semi-spoken, newspaper, magazine, and book registers. For this research, I used data from the original version and the pure spoken and semi-spoken registers of the extended version.

Kang Inae-HON.COP-DECL

‘This is Ms. Inae Kang.’

- c. onkac uymwun-kwa uymwul-i kkoli-ey kkoli-lul mwul-ess-ta.
all question-and question-NOM tail-at tail-ACC bite-PST-DECL
‘All kinds of questions arose one after another.’

- d. kipwun ttong ssip-un phyoceng-i-ess-e.
mood poop bite-REL look-COP-PST-DECL
‘She looked as if she was in a bad mood.’

In these examples, the Korean words MWUL- and SSIP- are used as different lexemes from the target expressions under discussion (i.e., homonyms) and they are used as part of idiomatic expressions. For instance, the verb *mwul-* in (23a) has a meaning ‘paying’ while the word *-ssip-* in (23b) is a combination of a nominal honorific marker *ssi* and a copula verb. In addition, in (23c) MWUL- ‘BITE’ is used to introduce an idiomatic expression (*kkoli-ey kkoli-lul mwul-ta* = ‘happen one after another’) and in (23d) the verb SSIP- ‘CHEW’ is used as part of an idiomatic expression (*ttong ssip-un phyoceng* = ‘sour face’).

3.2 Basic key properties of MWUL- ‘BITE’ and SSIP- ‘CHEW’ with literal usage

In this section I discuss some basic grammatical properties of the two Korean verbs MWUL- ‘BITE’ and SSIP- ‘CHEW’ with literal usage based upon the identified authentic examples from SJ-RIKS Corpus. First, just like their English counterparts, the two Korean verbs are mostly used as transitive verbs which take an agent subject and a patient direct object, as illustrated in the following:

- (24) a. ocinge tali-lul **mwul**-ko soju-lul masi-mye ...
squid leg-ACC bite-and soju-ACC drink-while ...
‘While he bit a squid leg and drank soju,’
b. Kumnye-nun ppang-ul **ssip**-umye keli-lul heymay-ss-supnita.
Kumnye-TOP bread-ACC chew-while street-ACC wander-PST-DECL
‘Kumnye wandered around the street while chewing bread.’
(25) a. Dabi-nun kapyepkey ipswul-ul **mwul**-ess-ta.

- Dabi-TOP lightly lip-ACC bite-PST-DECL
‘Dabi lightly bit her lips.’
- b. mych pen-iko hyekkuth-ul **ssip**-kon hay-ss-ta.
several time-even tongue.tip-ACC chew-CONN do-PST-DECL
‘I chewed on the tip of my tongue several times.’

The two Korean verbs MWUL- ‘BITE’ and SSIP- ‘CHEW’ can be used to describe a food-consumption event with the agent subject acting upon the patient direct object as in (24); however, the direct object does not necessarily have to be a edible food entity as in (25), where the emphasis is on the crushing situation involving the agent subject’s mouth and teeth. In fact, the two verbs show a sharp contrast with respect to the preference for the direct object type in that MWUL- ‘BITE’ dominantly occurs with a direct object referring to a non-food entity while SSIP- ‘CHEW’ dominantly occurs with a direct object denoting a food entity.⁴

Next, the two Korean verbs MWUL- ‘BITE’ and SSIP- ‘CHEW’ also have an intransitive use, taking no internal argument, as shown below:

- (26) a. khukey cic-nun kay-nun **mwul**-ci anh-nun-ta-nun
loudly bark-REL dog-TOP bite-CONN not-PRES-DECL-COMP
mal-to iss-canha.
saying-also COP-DECL
‘There is also a saying that dogs that bark loudly do not bite.’
- b. emma, kkokkkok **ssip**-ese tusey-yo.
mom tightly chew-and eat.HON-DECL
‘Mom, chew well and then eat.’

4 The Korean verb MWUL- ‘BITE’ has an additional transitive use with a literal meaning. Consider the following example:

- (i) mwul han mokum ip-ey **mwul**-ko hanul han pen chyetapo-ko.
water one sip mouth-in bite-and sky one time look-and
‘Having one sip of water in mouth and looking up the sky.’

In this example, the verb MWUL- has a transitive use with a literal meaning “hold something in mouth”. This use of MWUL- ‘BITE’ does not describe a crushing event as opposed to the examples with MWUL- ‘BITE’ and SSIP- ‘CHEW’ in (24).

In examples as in (26), the internal argument of MWUL- ‘BITE’ and SSIP- ‘CHEW’ is not linguistically overtly expressed but it can still be understood from the context. For instance, the bitten entity denotes people in general in (26a) whereas the chewed entity refers to what the speaker’s mom is eating. Such examples where the two verbs are used intransitively without the internal argument are infrequent as compared to examples with their transitive use.

Moreover, the two Korean verbs MWUL- ‘BITE’ and SSIP- ‘CHEW’ can be used with a prefix and as part of a complex predicate, as demonstrated in (27) and (28):

- (27) a. Lee kwukcang-i ttangkhong-ul wutwutwuk kkay-**mwul**-ess-ta.
 Lee Director-NOM peanut-ACC hard break-bite-PST-DECL
 ‘Director Lee bit down the peanut hard.’
 b. hepekci-lato **mwul**-e ttut-ko siph-ess-ta.
 thigh-even bite-CONN tear-CONN want-PST-DECL
 ‘I even wanted to bite off his/her thigh.’
- (28) a. mwuysik cwungey sonthop-ul cis-**ssip**-ko iss-ta.
 unconsciousness in nail-ACC hard-chew-CONN COP-DECL
 ‘He bit his nail hard unconsciously.’
 b. kuliko ku kimpap-ul **ssip**-e mek-ess-ta.
 and the Korean.roll-ACC chew-CONN eat-PST-DECL
 ‘And he ate the Korean roll by chewing.’

The verb MWUL- ‘BITE’ can combine with another verb such as *kkay*- ‘break’ in its preceding position and *ttut*- ‘tear’ in the following position to form a complex predicate as in (27). The verb SSIP- ‘CHEW’ can also occur with a prefix such as *cis*-, which expresses a manner of an action meaning ‘hard’, and another verb like *mek*- ‘eat’ in the following position, as in (28).

3.3 Conceptual metaphors with MWUL- ‘BITE’ and SSIP- ‘CHEW’

In this section, I offer an analysis of the conceptual metaphors with MWUL- ‘BITE’ and SSIP- ‘CHEW’, with particular focus on their similarities and differences, on the basis of the attested data extracted from SJ-RIKS Corpus, excluding the irrelevant and

literal examples noted in Sections 3.1 and 3.2.

3.3.1 Conceptual metaphors with MWUL- ‘BITE’

The filter-out and exclusion processes for the irrelevant and literal examples provided a total of 256 conceptual metaphor examples with MWUL- ‘BITE’ among 3,163 MWUL- ‘BITE’ tokens extracted from SJ-RIKS Corpus. Observe then the table below, which shows the conceptual metaphor types with MWUL- ‘BITE’ and their frequency numbers from the identified SJ-RIKS Corpus examples:

Table 5. Conceptual metaphor types with MWUL- ‘BITE’ and their frequencies from SJ-RIKS Corpus

Rank	Conceptual metaphor	Frequency
1	BITING IS DESTROYING/DAMAGING/HURTING	76
2	BITING IS EXPRESSING EMOTIONS	43
3	BITING IS GAINING	42
4	BITING IS CONNECTING	41
5	BITING IS HOLDING	24
6	BITING IS HOLDING BACK	20
7	BITING IS CRITICIZING	6
8	BITING IS SHOWING/TRIGGERING INTEREST	4
	TOTAL	256

As illustrated here in Table 5, the MWUL- ‘BITE’ conceptual metaphor examples extracted from SJ-RIKS Corpus can be categorized into eight major types. The most frequent conceptual metaphor with MWUL- ‘BITE’ is BITING IS DESTROYING/DAMAGING/HURTING, as shown in (29):

(29) BITING IS DESTROYING/DAMAGING/HURTING

- a. mom-ul wumciki-lye ha-l ttay-mata thongcung-i kay-ttey-chelem
 body-ACC move-to do-FUT time-every pain-NOM dog-pack-like
 on-mom kwusekkwusek-ul **mwul**-e-ttut-umye tempyetul-ess-ta.
 entire-body corner-ACC bite-CONN-tear-while attack-PAST-DECL
 ‘Whenever I moved my body, the pain attacked my entire body, biting
 and tearing it, like a pack of dogs.’

- b. *salang-i-la-nun* *ilum-ulo* *mayc-e-ci-nun* *kwankye-ka*
 love-COP-DECL-TOP name-as form-CONN-become-REL relationship-NOM
mwul-ko *mwul-li-nun* *kwankye-lo* *cenlakha-nun* *il-i*
 bite-and bite-PASS-REL relationship-to fall-REL thing-NOM
elmana *manh-unka?*
 how many-QUE

‘How often does a relationship that has been formed in the name of love fall down to one where the couple hurt each other?’

- c. *phato-ka* *sengna-n* *tulkay-ttey-chelem* *millyewa-se*
 wave-NOM violent-REL wild.dog-pack-like surge-and
phyesen-uy *yepkhwuli-lul* *mwul-ess-ta*.
 abandoned.ship-GEN side-ACC bite-PAST-DECL
 ‘Waves surge and bite the sides of the abandoned ship like a pack of violent wild dogs.’

Out of 256 MWUL- ‘BITE’ conceptual metaphor examples from SJ-RIKS Corpus, 76 are of this type. The majority of these conceptual metaphor examples involve complex predicates with MWUL- ‘BITE’. For instance, 34 of them have *mwul-e ttut-* and *mwul-ko ttut-* ‘bite and tear’ as in (29a) and 26 of them contain *mwul-ko mwul-li-* ‘bite and be bitten’ as in (29b). Another interesting observation concerns the uses of body parts in that six examples involve a body part like *yepkhwuli* ‘side’, *twuikkwumchi* ‘heel’, and *moktelmi* ‘back of the neck’ as in (29c).

The next frequent conceptual metaphor with MWUL- ‘BITE’ is classified as BITING IS EXPRESSING EMOTIONS, as demonstrated in (30):

(30) BITING IS EXPRESSING EMOTIONS

- a. *ku ttay ssunwusum-ul* *mwul-myense* *na-n* *sayngkakha-yss-ci*.
 the time wry.smile-ACC bite-while I-TOP think-PAST-DECL
 ‘Then, I thought while making a wry smile.’
- b. *mwun-ul* *ye-n* *yeca-nun* *haphwum-ul* *pey-e* *mwul-ko*, ...
 door-ACC open-REL woman-TOP yawn-ACC cut-CONN bite-and, ...
 ‘The woman who opened the door yawned and ...’
- c. *kyocang-uy* *macimak* *mal-ey* *myechmyech* *sensayng-tul-i*

school.president-GEN last word-at several teacher-PL-NOM
 wusum-ul kkay-**mwul**-ko iss-ess-ta.
 smile-ACC break-bite-CONN COP-PAST-DECL
 ‘Several teachers smiled when the school president made the last word.’

The conceptual metaphor BITING IS EXPRESSING EMOTIONS expresses the agent’s emotions frequently along with collocates like *wusum* ‘smile’, *wulum* ‘crying’, and *haphwum* ‘yawn’. Among 43 examples of this conceptual metaphor, 14 involve a canonical transitive use of the verb MWUL- ‘BITE’ as in (30a) while 11 contain the complex predicate *pey-e mwul*- ‘cut and bite’ as in (30b). Other less frequent verb forms include *kkay-mwul*- ‘break and bite’, *kkay-mwul-e-cwu*- ‘break, bite, and give’ (= adore someone), *mwul-ko ppal*- ‘bite and lick’ (= cherish someone), and *mwul-li*- ‘be bitten’ with 2 to 6 occurrences, as in (30c).

Another quite frequent conceptual metaphor with MWUL- ‘BITE’ is BITING IS GAINING and some representative examples are given below:

- (31) a. nay mokswum kel-ko thukcong hana **mwul**-eta-cwu-lita.
 my life risk-and scoop one bite-CONN-give-DECL
 ‘I will get you a scoop, risking my life.’
 b. kakey cwuin-un icey i tol-saca-ka khu-n ton-ul
 store owner-TOP now this stone-lion-NOM big-REL money-ACC
 mwul-e o-l kes-man-ul pala-ko iss-ess-supnita.
 bite-CONN come-FUT thing-only-ACC hope-CONN COP-PAST-DECL
 ‘The store owner was now hoping that this stone lion would get him a
 large amount of money.’
 c. ccasik, koaynchanh-un akassi-lul **mwul**-ess-nunkel.
 dude good-REL woman-ACC bite-PAST-seem
 ‘Dude, you seem to have gotten a good woman.’

This conceptual metaphor depicts a gaining situation and 42 examples belong to this type. More than half of these BITING IS GAINING examples involve a complex predicate. For example, 18 examples contain *mwul-eta-cwu*- ‘bite and give’ as in (31a) while 10 have *mwul-e o-* and *mwul-ko o-* ‘bite and come’ as in (31b). The rest 14 examples simply

involve the canonical use of MWUL- ‘BITE’ as in (31c). Another notable fact about these examples is that their internal arguments are either human-denoting entities like *akassi* ‘woman’, *namca* ‘man’, and *hokwu* ‘pushover’, or inanimate, beneficial entities like *ton* ‘money’, *thukcong* ‘scoop’, and *hayngwun* ‘luck’.

An additional comparatively frequent conceptual metaphor with MWUL- ‘BITE’ concerns BITING IS CONNECTING, as illustrated in the following:

(32) BITING IS CONNECTING

- a. capon-kwa kwenlyek-eycaykal-i tantanhi **mwul**-ly-e-iss-nun
 money-and power-at gag-NOM tightly bite-PASS-CONN-COP-REL
 kos-i enlon-i-ta.
 place-NOM press-COP-DECL
 ‘It is the press where money and power are tightly connected.’
- b. selo koli-lul **mwul**-ko iss-nun hyengsik-ulo nathana-pnita.
 each.other link-ACC bite-CONN COP-REL pattern-as appear-DECL
 ‘They appear as a pattern where they are connected with each other.’

The conceptual metaphor BITING IS CONNECTING describes an event where an entity is connected to or involved in another entity or situation. Out of 41 examples of this metaphor, 21 contains the passive form *mwul-li*- ‘be bitten’ as in (32a) whereas 9 have the simple active form *mwul*- as in (32b). In the meantime, the remaining examples involve a complex predicate such as *mwul-ko tul-e-ka*- ‘bite and enter’ and *mwul-ko mwul-li*- ‘bite and be bitten’.

One more relatively frequently found conceptual metaphor with MWUL- ‘BITE’ is BITING IS HOLDING, as represented in (33):

(33) BITING IS HOLDING

- a. han kwupi phato-ka huy-n kephwum-ul **mwul**-ko hayan-ul
 one curve wave-NOM white-REL foam-ACC bite-and seashore-ACC
 hyanghay tally-e-o-ko iss-ess-ta.
 toward run-CONN-come-CONN COP-PAST-DECL
 ‘One curving wave with white foam was coming toward the seashore.’
- b. patak-ey tteleci-n pongthwu akali-ey-n 500-franc-ccali ciphye-ka
 floor-at fall-REL envelope mouth-at-TOP 500-franc-worth bill-NOM

yele-cang **mwul**-ly-e iss-ta.
 several-piece bite-PASS-CONN COP-DECL
 ‘Several 500 franc bills were held at the opening of the envelope that
 fell down to the floor.’

This conceptual metaphor seems to be extended from its literal use discussed in footnote 4 but this conceptual metaphor does not involve the animate agent’s mouth to hold an entity. All the 24 examples of this conceptual metaphor have a canonical use of MWUL- ‘BITE’ as in (33a) (18 examples) and its passive counterpart *mwul-li-* ‘be bitten’ as in (33b) (6 examples).

A less frequent conceptual metaphor with MWUL- ‘BITE’ found in the corpus is BITING IS HOLDING BACK, as in (34):

(34) BITING IS HOLDING BACK

- a. anak-un cakkwu thecy-e-nao-lyenun hanswum-ul kkok
 woman-TOP repeatedly blow.up-come.out-to sigh-ACC tightly
 kkay-**mwul**-ess-ta.
 break-bite-PAST-DECL
 ‘The woman held back the sigh that was about to come out over and
 over.’
- b. ipswul-ul cilkulcilkun ssip-umye wulkhekwulkhek nem-e
 lip-ACC chewing chew-while bursting cross-CONN
 o-nun wulum-soli-lul kkay-**mwul**-e samkhy-ess-ta.
 come-REL crying-sound-ACC break-bite-CONN swallow-PAST-DECL
 ‘I held back the crying sound coming out my mouth while chewing my
 lips.’

The conceptual metaphor BITING IS HOLDING BACK describes an event where someone suppresses a feeling. The dependent is predominantly associated with a negative expression such as *hanswum* ‘sigh’, *wulum* ‘crying’, *nwunmwul* ‘tear’, and *kwulyok* ‘humiliation’. Another prominent property about this conceptual metaphor concerns the verb form in that in all the 20 examples, the verb form used is *kkay-mwul-* ‘break and bite’.

A minor conceptual metaphor with MWUL- ‘BITE’ is BITING IS CRITICIZING and

some examples of this conceptual metaphor are presented in (35):

(35) BITING IS CRITICIZING

- a. kay-chelem **mwul**-e-ttut-nun sinmwun
 dog-like bite-CONN-tear-REL newspaper
 ‘newspapers that criticize like dogs’
- b. sasakenken selo-ka selo-lul **mwul**-ko ttut-ko
 everything each.other-NOM each.other-ACC bite-and tear-and
 yatan-i-o.
 commotion-COP-DECL
 ‘It is chaotic in that they criticize one another in every case.’

Only six examples are instances of this conceptual metaphor and in all the six examples, the verb MWUL- ‘BITE’ is used as part of a complex predicate in *mwul-e-ttut*- ‘bite and tear’ as in (35a) (3 examples) and *mwul-ko ttut*- ‘bite and tear’ as in (35b) (3 examples).

The last conceptual metaphor with MWUL- ‘BITE’ is BITING IS SHOWING/TRIGGERING INTEREST as illustrated below:

(36) BITING IS SHOWING INTEREST

- uytoha-n mikki-lamyen **mwul**-e-cwu-nun kes-i cikum ku-ka
 intend-REL bait-if bite-CONN-give-REL thing-NOM now he-NOM
 cheha-n hyengphyen-i-ess-ki ttaymwun-i-ta.
 face-REL situation-COP-PAST-NMLZ because-COP-DECL
 ‘If it is an intended bait, he should take it because of the current situation
 he is facing.’

Four examples of this conceptual metaphor are found in the corpus. They all involve a canonical use of MWUL- ‘BITE’ and have an expression *mikki* ‘bait’.

3.3.2 Conceptual metaphors with SSIP- ‘CHEW’

Let us now move on to the discussion on the conceptual metaphors with SSIP- ‘CHEW’. Out of 1,108 SSIP- ‘CHEW’ tokens extracted from SJ-RIKS Corpus, 217

conceptual metaphor examples are found, excluding the irrelevant and literal examples with the word. First, consider the following table, which shows the conceptual metaphor types with SSIP- ‘CHEW’ and their frequency numbers from the identified SJ-RIKS Corpus examples:

Table 6. Conceptual metaphor types with SSIP- ‘CHEW’ and their frequencies from SJ-RIKS Corpus

Rank	Conceptual metaphor	Frequency
1	CHEWING IS THINKING	75
2	CHEWING IS CRITICIZING	50
3	CHEWING IS DESTROYING/DAMAGING/HURTING	37
4	CHEWING IS HOLDING BACK	27
5	CHEWING IS IGNORING	15
6	CHEWING IS ENJOYING ACTIVITIES	7
7	CHEWING IS REPEATING	6
	TOTAL	217

As represented here, 217 conceptual metaphor examples with SSIP- ‘CHEW’ from SJ-RIKS Corpus can be classified into seven types. Among these seven types, the one with the highest frequency number is CHEWING IS THINKING, as exemplified in (37):

(37) CHEWING IS THINKING

- a. kuceyseyā insayng-kwa cwukum-uy uymi-tul-ul
 then life-and death-GEN meaning-PL-ACC
 toy-SSIP-e-po-kon ha-yess-supnita.
 again-chew-CONN-try-CONN do-PAST-DECL
 ‘Then I used to keep thinking about the meanings of life and death.’
- b. kulentey kuttay il-ul kop-SSIP-e po-ni nay-ka
 but then thing-ACC multiply-chew-CONN try-because I-NOM
 nemwu kyengwu-ka eps-ess-ten kes kath-ta.
 much rationality-NOM NEG.COP-PAST-CONN thing seem-DECL
 ‘But, thinking about the thing then, it seems that I was irrational.’

The conceptual metaphor CHEWING IS THINKING focuses the cognitive activity by the agent and 75 examples belong to this type. One notable observation about these examples concerns the fact that the majority of them involve a prefix emphasizing the thinking

event in a repeated manner or for a prolonged period of time. To be more specific, 36 of them have a verb form *toy-ssip*- ‘chew over’ as in (37a) and 29 of them contain a verb form *kop-ssip* ‘keep thinking about’ as in (37b). The remaining 10 examples involve a canonical use of SSIP- ‘CHEW’.

Next, the second most frequent conceptual metaphor with SSIP- ‘CHEW’ is CHEWING IS CRITICIZING and some illustrative examples are given below:

(38) CHEWING IS CRITICIZING

- a. nwuka na-l **ssip**-ess-tako?
 who.NOM I-ACC chew-PAST-QUE
 ‘Who criticized me?’
- b. ne ttaymey sensayngnim-man **ssip**-hi-key sayngky-ess-canha.
 you because teacher-only chew-PASS-CONN seem-PAST-DECL
 ‘It seems that the teacher would be criticized because of you.’

This conceptual metaphor describes a criticizing event and 50 examples are of this type. Almost all of these examples involve a typical use of SSIP ‘CHEW’ as in (38a) in that 48 of them have this use of the verb and the remaining 2 examples involve a passive use of the verb as in (38b). Another salient property of this conceptual metaphor is that the criticized entity has an animate referent in 48 examples and in only 2 examples it is realized as an inanimate entity.

An additional conceptual metaphor with SSIP- ‘CHEW’ is categorized as CHEWING IS DESTROYING/DAMAGING/HURTING, as demonstrated in (39):

(39) CHEWING IS DESTROYING/DAMAGING/HURTING

- a. kulehtakwu Moklae-ka chinkwu nom-ul **ssip**-ul swu-to
 but Moklae-NOM friend punk-ACC chew-ACC can-even
 (milkoha-ta, haychi-ta) eps-kwu michi-nun ke-ci.
 rat.on-DECL damage-DECL NEG-and crazy-CONN thing-DECL
 ‘But Moklae can’t rat on/harm his friend and it drives him crazy.’
- b. ni-tul-i na-lul mos cwuk-imyen nay-ka ni-tul-ul **ssip**-e
 you-PL-NOM I-ACC NEG kill-if I-NOM you-PL-ACC chew-CONN
 mek-ul ke-ya.
 eat-FUT thing-COP.DECL

‘If you can’t kill me, I will destroy you all.’

This conceptual metaphor emphasizes the destruction or damage of an entity and 37 examples are related to this type. The majority of these examples (24 out of 37 examples) have a canonical use of SSIP- ‘CHEW’ as in (39a). Other minor verb forms include a passive form *ssip-hi*- ‘be chewed’, complex predicates such as *ssip-e mek*- ‘chew and eat’, *ssip-e samkhi*- ‘chew and swallow’, and the form with a prefix *cis-ssip*- ‘chew hard’, as in (39b), with 2 to 4 instances for each.

Another conceptual metaphor with SSIP- ‘CHEW’ is classified as CHEWING IS HOLDING BACK, as shown in (40):

(40) CHEWING IS HOLDING BACK

- a. Okja-ka wulum-ul **ssip**-umye pi sok-ulo talli-n-ta.
 Okja-NOM crying-ACC chew-while rain inside-to run-PRES-DECL
 ‘Okja is running in rain, holding back crying.’
- b. ku kakkakha-n insim-ey nammollay nwunmwul-ul hwumchi-mye
 the heartless-REL human.mind-at secretly tear-ACC wipe-while
 selewum-ul kop-**ssip**-nun ttay-ka han-twu pen-i
 sorrow-ACC multiply-chew-REL time-NOM one-two time-NOM
 ani-ess-ta.
 NEG-PAST-DECL
 ‘There were not just one or two times when I wiped tears away and held back sorrow in the heartless world.’

This conceptual metaphor CHEWING IS HOLDING BACK depicts a situation where someone holds back a certain feeling. The dependent is typically something negative like *selewum* ‘sorrow’, *aphum* ‘pain’, *sulphum* ‘sadness’, *wulum* ‘crying’, *kotok* ‘loneliness’, *cilwuham* ‘boredom’, and *haphwum* ‘yawn’. The verb is realized as its canonical form SSIP- ‘CHEW’ in most cases (20 out of 27 examples), as in (40a). Other verbs forms are predicates with a prefix like *kop-ssip*- ‘chew multiple times’, *toy-ssip*- ‘chew again’, and *cis-ssip*- ‘chew hard’ with 2 to 3 occurrences each, as in (40b).

A less frequent conceptual metaphor with SSIP- ‘CHEW’ is CHEWING IS IGNORING, as in (41):

(41) CHEWING IS IGNORING

- a. yetongsayng-i cakkwu nay mal **ssip**-ese hwakana-n-ta.
 younger.sister-NOM repeatedly my word chew-because angry-PRES-DECL
 ‘That my younger sister keeps ignoring my words makes me angry.’
- b. insa-lul ha-myen **ssip**-eyo.
 greeting-ACC do-if chew-DECL
 ‘When I say ‘hi’ to him, he ignores it.’

The conceptual metaphor CHEWING IS IGNORING describes an event where an animate agent entity ignores a verbal expression like *mal* ‘word’, *mwunca* ‘text message’, and *insa* ‘greeting’. All the 15 examples of this type simply involve a canonical use of SSIP- ‘CHEW’.

There are two other conceptual metaphors with SSIP- ‘CHEW’ with low frequency numbers observed in the corpus and one of them is CHEWING IS ENJOYING ACTIVITIES, as can be seen in the following:

(42) CHEWING IS ENJOYING ACTIVITIES

- a. cengsincek-i-n hwyusik-ul wuyhan tose-nun maum-ulo
 spritual-COP-REL rest-ACC for book-TOP mind-with
ssip-e-ka-myense ilk-nun chayk-i-ta.
 chew-CONN-go-while read-REL book-COP-DECL
 ‘Books for spiritual rest are those that we enjoy with all heart and read.’
- b. iyaki-lul **ssip**-e-po-ko ummi-to mos-ha-myense
 story-ACC chew-CONN-try-and appreciation-even NEG-do-while
 khe-ka-nun elini-ka elmana pwulhaynggha-n-ci al-aya
 grow-go-REL child-NOM how unlucky-PRES-QUE know-CONN
 ha-pnita.
 do-DECL
 ‘We should know how unlucky children are if they grow without enjoying and savoring stories.’

Only seven examples are of this conceptual metaphor type, indicating that it is a minor conceptual metaphor with SSIP- ‘CHEW’. All the seven identified examples have a canonical use of SSIP- ‘CHEW’ and they typically involve a verbal expression like *chayk*

‘book’, *tose* ‘book’, *si* ‘poem’, and *iyaki* ‘story’.

The last conceptual metaphor with SSIP- ‘CHEW’ identified in the corpus with a low frequency number is CHEWING IS REPEATING, as demonstrated below:

(43) CHEWING IS REPEATING

- a. way cakkwu kkuthna-n yayki-l toy-ssip-eyo, toy-ssip-kil!
why repeatedly end-REL story-ACC again-chew-QUE gain-chew-QUE
‘Why do you keep bringing up the done deal over and over?’
- b. onul nay-ka ne-lul cingchiha-nun kes-un nay-ka cetul-eykey
today I-NOM you-ACC discipline-REL thing-TOP I-NOM they-by
ssangkes soli-lul kop-ssip-e tul-ess-ki
untouchable sound-ACC multiply-chew-CONN hear-PAST-NMLZ
ttaymwun-i ani-ta.
reason-NOM NEG.COP-DECL
‘It is not because I have been repeatedly called an untouchable (a member of the lowest social class) by them that I am disciplining you today.’

The conceptual metaphor CHEWING IS REPEATING simply focuses the repetition of a certain event. This is not frequently used in that only six examples are found in the corpus. In these conceptual metaphor examples, the verb forms are those with a prefix expressing a repeated manner like *toy-ssip-* and *kop-ssip-* ‘chew over’, and the repeated entity is typically a verbal expression such as *mal* ‘word’ and *iyaki* ‘story’.

3.3.3 Discussion

I have thus far examined the conceptual metaphors with MWUL- ‘BITE’ and SSIP- ‘CHEW’ based on the identified examples from SJ-RIKS Corpus and noted that some conceptual metaphors are extended from the two verbs in common but others are licensed by one of them but not the other, and that each conceptual metaphor exhibits peculiar properties in terms of preferred verb forms and collocates. Their prominent properties can be summarized as follows:

Table 7. Summary of salient properties of the identified conceptual metaphors with MWUL- 'BITE' from SJ-RIKS Corpus

Conceptual metaphor	Salient properties
BITING IS DESTROYING/DAMAGING/HURTING	<i>mwul-e-ttut-/mwul-ko ttut-; mwul-ko mwul-li-; body part expressions</i>
BITING IS EXPRESSING EMOTIONS	canonical <i>mwul-; pey-e mwul-</i>
BITING IS GAINING	<i>mwul-e-ta-cwu; canonical mwul-; mwul-e- o; human and inanimate, beneficial expressions</i>
BITING IS CONNECTING	<i>mwul-li-; canonical mwul-</i>
BITING IS HOLDING	canonical <i>mwul-; mwul-li-</i>
BITING IS HOLDING BACK	<i>kkay-mwul-; negative feeling expressions</i>
BITING IS CRITICIZING	<i>mwul-e ttut-/mwul-ko ttut-</i>
BITING IS SHOWING/TRIGGERING INTEREST	canonical <i>mwul-; mikki 'bait'</i>

Table 8. Summary of salient properties of the identified conceptual metaphors with SSIP- 'CHEW' from SJ-RIKS Corpus

Conceptual metaphor	Salient properties
CHEWING IS THINKING	<i>toy-ssip-; kop-ssip-</i>
CHEWING IS CRITICIZING	canonical <i>ssip-; mostly animate referents</i>
CHEWING IS DESTROYING/DAMAGING/HURTING	canonical <i>ssip-</i>
CHEWING IS HOLDING BACK	canonical <i>ssip-; negative feeling expressions</i>
CHEWING IS IGNORING	canonical <i>ssip-; verbal expressions</i>
CHEWING IS ENJOYING ACTIVITIES	canonical <i>ssip-; verbal expressions</i>
CHEWING IS REPEATING	<i>toy-ssip-; kop-ssip-; verbal expressions</i>

As noted in Table 5 and Table 6 earlier, MWUL- 'BITE' has more conceptual metaphor types (eight types) than SSIP- 'CHEW' (seven types) and more conceptual metaphor examples are identified with MWUL- 'BITE' (256 examples) than SSIP- 'CHEW' (217 examples). Notice, however, that 256 conceptual metaphor examples with MWUL- 'BITE' are from 3,163 MWUL- 'BITE' tokens while 217 conceptual metaphor examples with SSIP- 'CHEW' are from 1,108 SSIP- 'CHEW' tokens from SJ-RIK Corpus. This then indicate that overall SSIP- 'CHEW' is more likely to be used metaphorically than MWUL- 'BITE'.⁵

5 The Fisher exact test indeed confirmed that their metaphor/non-metaphor distributional difference is

Next, as shown in Table 7 and Table 8, MWUL- 'BITE' and SSIP- 'CHEW' have three conceptual metaphors in common: 1) BITING/CHEWING IS DESTROYING/DAMAGING/HURTING, 2) BITING/CHEWING IS HOLDING BACK, and 3) BITING/CHEWING IS CRITICIZING. However, although the two verbs MWUL- 'BITE' and SSIP- 'CHEW' license these same types of metaphors, they display different behavior in certain respects including their raw frequency numbers, favored verb forms, or strong collocates. For example, the conceptual metaphor with MWUL- 'BITE' BITING IS DESTROYING/DAMAGING/HURTING is the most frequent type while its counterpart with SSIP- 'CHEW' CHEWING IS DESTROYING/DAMAGING/HURTING is the third most frequent type, followed by CHEWING IS THINKING and CHEWING IS CRITICIZING. The two conceptual metaphors have different preferred verb formation patterns and collocates as well in that in BITING IS DESTROYING/DAMAGING/HURTING examples, MWUL- 'BITE' is frequently used as part of a complex predicate as in *mwul-e ttut-/mwul-ko ttut-* 'bite and tear', and *mwul-ko mwul-li-* 'bite and be bitten' along with collocates denoting body part expressions; on the other hand, in CHEWING IS DESTROYING/DAMAGING/HURTING examples, SSIP- 'CHEW' is typically used as its canonical form with no such strong collocates. The two verbs MWUL- 'BITE' and SSIP- 'CHEW' are also metaphorically used to describe a situation where the agent holds back a negative feeling; however, in BITING IS HOLDING BACK examples, MWUL- 'BITE' is dominantly used as part of a complex predicate *kkay-mwul-* 'break and bite' while in CHEWING IS HOLDING BACK examples, SSIP- 'CHEW' is most frequently used as its canonical form. Furthermore, although the two verbs can be used to depict a criticizing event, it is much more frequently used with SSIP- 'CHEW' than MWUL- 'BITE', and SSIP- 'CHEW' in CHEWING IS CRITICIZING examples is typically used as its canonical form whereas MWUL- 'BITE' in BITING IS CRITICIZING examples is used as part of a complex predicate *mwul-e ttut-/mwul-ko ttut-* 'bite and tear'.

Some conceptual metaphors are observed with one verb, but not with the other. To be more specific, BITING IS EXPRESSING EMOTIONS, BITING IS GAINING, BITING IS CONNECTING, BITING IS HOLDING, and BITING IS SHOWING/TRIGGERING INTEREST are conceptual metaphors extended only from MWUL- 'BITE' whereas CHEWING IS THINKING, CHEWING IS IGNORING, CHEWING IS ENJOYING ACTIVITIES, and CHEWING IS REPEATING are extended only from SSIP- 'CHEW'. The observations made

statistically significant ($p < .0001$).

so far then show that the two verbs MWUL- 'BITE' and SSIP- 'CHEW' are more different than similar with respect to their uses in conceptual metaphors and their differences become more salient when we take into account their general frequency distribution patterns and the favored verb forms and collocates and this holds true even for the conceptual metaphors they share.

4. Comparisons between English and Korean

Above, I have looked into similarities and differences with respect to authentic uses of conceptual metaphors extended from BITE and CHEW in English and those extended from MWUL- 'BITE' and SSIP- 'CHEW' in Korean, respectively, on the basis of corpus data. In this section, I discuss their similarities and differences between English and Korean. First, eight different conceptual metaphor types are identified with the English verb BITE and its Korean counterpart MWUL- 'BITE', each. As for these conceptual metaphors with BITE in English and MWUL- 'BITE' in Korean, the most significant similarity comes from the most frequent conceptual metaphor they have in common, BITING IS DESTROYING/DAMAGING/HURTING. This means that in the two languages, the two verbs are most frequently used in a metaphorical sense to emphasize the destruction or damage of an entity.

The two verbs, BITE in English and MWUL- 'BITE' in Korean, have other common conceptual metaphors as well, BITING IS SHOWING/TRIGGERING INTEREST, BITING IS HOLDING BACK, and BITING IS CRITICIZING. Among these conceptual metaphors, the two verbs in English and Korean are similar when they license BITING IS HOLDING BACK in that their frequency numbers are not quite low and their preferred collocates are negative expressions. The two verbs also show similar behavior when they are used in BITING IS CRITICIZING in the sense that their occurrences are rather infrequent. On the other hand, although BITING IS SHOWING/TRIGGERING INTEREST is found with the two verbs, their uses are rather different. In English, the conceptual metaphor is frequently used while in Korean, it is comparatively rarely used. In addition, its dependent frequently contains a "bug" in English whereas its dependent has a *mikki* 'bait' in Korean. Note then that those three conceptual metaphors with BITE and MWUL- 'BITE' exhibiting similar behavior in terms of frequency distributions and collocates, BITING IS DESTROYING/DAMAGING/HURTING, BITING IS HOLDING BACK, and BITING

IS CRITICIZING, describe some kinds of negative situations. This suggests that the conceptual metaphor uses of the two verbs are most strikingly similar when they depict negative events.

Other conceptual metaphors are identified with only one of BITE in English and MWUL- 'BITE' in Korean. To be specific, BITING IS VERBALLY EXPRESSING, BITING IS CAUSING A NEGATIVE EFFECT, BITING IS BOTHERING, and BITING IS CONSUMING RESOURCES are available only with BITE in English while BITING IS EXPRESSING EMOTIONS, BITING IS GAINING, BITING IS CONNECTING, and BITING IS HOLDING are available only with MWUL- 'BITE' in Korean. Observe here that three of the four conceptual metaphors with BITE in English describe negative events while none of the four conceptual metaphors with MWUL- 'BITE' in Korean expresses negative situations. Therefore, overall, conceptual metaphors with BITE in English show the tendency to be associated with negative events while such a tendency is not clear with conceptual metaphors with MWUL- 'BITE' in Korean.

As for conceptual metaphors with CHEW in English and SSIP- 'CHEW' in Korean, more conceptual metaphors with SSIP- 'CHEW' in Korean (seven types) are found than with CHEW in English (five types). The two verbs share four conceptual metaphors, CHEWING IS DESTROYING/DAMAGING/HURTING, CHEWING IS THINKING/DISCUSSING, CHEWING IS CRITICIZING, and CHEWING IS ENJOYING ACTIVITIES. Out of these four conceptual metaphors in common, the most similar one is CHEWING IS CRITICIZING in that the conceptual metaphor is comparatively frequent with the two verbs, respectively, and the criticized entity typically refers to an animate entity. However, the other three common metaphors show some differences. For instance, CHEWING IS DESTROYING/DAMAGING/HURTING is the most frequent conceptual metaphor with CHEW in English, but it is the third most frequent conceptual metaphor with SSIP- 'CHEW' in Korean. Note, at this juncture, that among the four different verbs in English and Korean under discussion only SSIP- 'CHEW' in Korean does not license the most frequent conceptual metaphor for destroying/damaging/hurting. In this respect, the Korean verb SSIP- 'CHEW' is different from the rest three verbs in their most frequent conceptual metaphor types. Instead, the most frequent conceptual metaphor with SSIP- 'CHEW' in Korean is CHEWING IS THINKING. It is also quite frequently used with CHEW in English. However, the English one has wider coverage in that it is better categorized as CHEWING IS THINKING/DISCUSSING. Moreover, although CHEWING IS ENJOYING ACTIVITIES is found both with CHEW in English and SSIP- 'CHEW' in

Korean and their examples are rather infrequent in a similar manner, they differ in that the one with SSIP- ‘CHEW’ frequently occurs with verbal expressions but such a collocate pattern is not observed with its English counterpart.

Some other conceptual metaphors are found with CHEW in English or SSIP- ‘CHEW’ in Korean, but not with both. In particular, CHEWING IS CONSUMING RESOURCES is available only with CHEW in English whereas CHEWING IS HOLDING BACK, CHEWING IS IGNORING, and CHEWING IS REPEATING are available only with SSIP- ‘CHEW’ in Korean. In general, these conceptual metaphors are not major ones in each language in terms of their frequency numbers.

Note also that some minor conceptual metaphors with SSIP- ‘CHEW’ in Korean frequently involve verbal expressions as their strong collocates (i.e., CHEWING IS IGNORING, CHEWING IS ENJOYING ACTIVITIES, and CHEWING IS REPEATING); however, such conceptual metaphors are not found with CHEW in English (i.e., CHEWING IS IGNORING and CHEWING IS REPEATING) or that collocate pattern is not seen (i.e., CHEWING IS ENJOYING ACTIVITIES). This implies that conceptual metaphors are more widely extended with SSIP- ‘CHEW’ in Korean than with CHEW in English but those that are available only with SSIP- ‘CHEW’ in Korean are strongly associated with its literal meaning in that their strong collocates are verbal expressions, which require the mouth and the articulatory parts in it.

5. Conclusion

In this paper I have examined real life uses of conceptual metaphors with BITE and CHEW in English and their Korean counterparts MWUL- ‘BITE’ and SSIP- ‘CHEW’, based on attested data from COCA and SJ-RIK Corpus. The corpus-based observations made here point to the following: 1) conceptual metaphors with BITE and CHEW in English are more different than similar with respect to conceptual metaphor types, frequency distribution patterns, favored syntactic dependent types, and collocates and similar reasoning applies to those with MWUL- ‘BITE’ and SSIP- ‘CHEW’ in terms of conceptual metaphor types, frequency distribution patterns, preferred verb formation patterns, and collocates; 2) conceptual metaphors with BITE in English and MWUL- ‘BITE’ in Korean are show more differences than similarities and the same reasoning applies to metaphors with CHEW in English and SSIP- ‘CHEW’ in Korean, in terms of

conceptual metaphor types, frequency distribution patterns, collocates, and preferences for negative connotations.⁶

The research presented here constitutes the first empirical study on the basis of large, balanced corpus data to explore authentic uses of conceptual metaphors with specific verbs involved in eating events, BITE and CHEW in English and MWUL- ‘BITE’ and SSIP- ‘CHEW’ in Korean, from a comparative linguistic perspective. The present research can thus serve as a pioneer corpus-based study inviting subsequent corpus-based studies on uses of conceptual metaphors with other verbs related to eating processes in English and Korean and uses of conceptual metaphors with BITE and CHEW in other languages.

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6 A reviewer suggests that one should analyze the salient differences in conceptual metaphors between English BITE and CHEW and their Korean counterparts MWUL- ‘BITE’ and SSIP- ‘CHEW’ from a cultural perspective as well and I leave it to future research.

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Received: 2022. 02. 01.

Revised: 2022. 03. 01.

Accepted: 2022. 03. 08.