

Are They Arguing or Not? A Corpus-based Study

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Abstract

This study reports a corpus-based analysis on the verb ARGUE in written texts. By adopting Frame Semantics, we analyzed 1385 instances from the corpus and investigated (a) the distribution of each semantic frame; (b) the patterns occurred in each semantic frame; and (c) the topics argued over by arguers. The study presents the distribution of frames in written texts and demonstrates the findings in terms of the common or unique patterns in each frame. In addition, some common topics are found among arguers.

Introduction

ARGUE¹ is a verb containing controversial perspectives. It means to express incompatible opinions emotionally; at the same time, it also means to discuss in a rational way. These two meanings are captured in the Oxford Advanced Learner's Dictionary (OALD), where ARGUE can be either 'to speak angrily to somebody' as in (1.1), or 'to give reasons to persuade people you are right' (see 1.2).

(1.1) *We are always **arguing** with each other about money.* (OALD)

(1.2) *She **argued** the case for bringing back the death penalty.* (OALD)

The subject *we* quarrels with each other angrily in (1.1), while *she* argues with reasons to persuade others in (1.2).

In addition to these word senses, in academic writing, Hyland (2002:8) suggested that ARGUE "signal[s] a supportive role for the reported information in the writer's argument, often by

attributing a high degree of confidence to the proposition" as in (1.3).

(1.3) *Keynesians **argue** that *V* tends to vary inversely with *M*, but also rather unpredictably.* (J152036)²

In (1.3), ARGUE serves as the verb to report the proposition from the arguer, which could be the writer or the subject of ARGUE (i.e., *Keynesians*) in academic writing. From the above, three word senses of ARGUE (including the writer's unique use of ARGUE) have been demonstrated. In this paper, we are interested to investigate the componential details of ARGUE that give rise to its different uses in written texts.

Literature Review

Levin (1993) discussed the syntactic behaviors of ARGUE by categorizing it with other semantically related verbs into a verb class based on the assumption that "various aspects of the syntactic behaviors of the verbs are tied to their meanings" (p.5). ARGUE is semantically related to verbs that refer to "group activities which inherently involve more than one participant" (p.200), and hence is categorized into 'Verbs of Social Interaction'. Some syntactic behaviors were listed, including (a) when the subject refers to a single person, the sentence usually contain a *with*-phrase to indicate other participants (see 2.1a), and (b) when the subject is a collective noun phrase, it sometimes does not need a *with* phrase (see 2.1b). Based on the observation of Levin, we can see that ARGUE

¹ In this study, ARGUE is in capitals as a lemma including the word forms of *argue*, *argues*, *argued*, and *arguing*.

² Sentences from the corpus are attached with their filenames.

in (2.1) present these two syntactic behaviors in the sense of quarreling with others.³

- (2.1) a. *Beal is **arguing** with Helen.*
 (Levin, 1993:202)
 b. ***Beal and Helen** are **arguing**.*
 (Levin, 1993:202)

In addition to ‘Verbs of Social Interaction’, ARGUE also belongs to ‘Verbs of Communication’ which highlight the “communication and the transfer of ideas” (p.202). And, among the subcategories of this verb category, ARGUE is classified into ‘chitchat verbs’ which is featured with not taking sentential complements (see 2.2a). However, unlike *chitchatted* in (2.2a), ARGUE is compatible with this construction in another word sense of expressing a proposition (see 2.2b).

- (2.2) a. **Ellen⁴ **chitchatted** that the party was tomorrow.* (Levin, 1993:202)
 b. *Ellen **argued** that the party was terrible.*

Even though *argue* and *chitchat* are both members of ‘chitchat verbs’, ARGUE is polysemy in nature. In other words, since the word sense of ARGUE in (2.2b), expressing a proposition, is not covered in ‘chitchat verbs’, ARGUE could take a sentential complement regardless the syntactic constraint in ‘chitchat verbs’. However, this word sense of ARGUE and its syntactic behaviors are absent in Levin (1993).

A thorough investigation of the syntactic behaviors of ARGUE is still in need.

Biber et al. (1999:362) is another resource that categorized ARGUE, along with *explain*, *announce*, etc., into ‘communication verbs’. Based on the findings (Biber et al., 1999:378), about 20% of ‘communication verbs’ are used with inanimate subjects in academic prose. Biber et al. (1999:663) also indicated that ARGUE is a relatively common verb to control a *that*-clause complement (see 2.2b).

Although some syntactic behaviors of ARGUE have been indicated by Levin (1993) and Biber et al. (1999), limited understanding of ARGUE was discovered with respect to the preferred patterns in each word sense. In order to fill this gap, we look into the meaning of each sense by adopting Frame Semantics (Fillmore, 1985).

³ In actual communication, not all the elements are always present. For instance, one might say ‘I am tired of arguing’ and the *with*-phrase can be omitted sometimes without affecting the meaning of the verb. We thank the reviewer for bringing this up. However, in this paper, we discussed the possible elements of a verb.

Fillmore (1985) proposed ‘frame’ as a schematic and conceptual representation which entails the necessary properties, experiences, and knowledge to understand the semantic structures and meanings of the verb. For example, the meanings of a set of semantically related verbs, including *buy*, *sell*, *spend*, etc. can be understood by knowing what actually takes place in commercial transaction in the COMMERCIAL TRANSACTION⁵ frame (Fillmore & Atkins, 1992:78). Then, with the knowledge of the frame as the basis, some necessary elements at the semantic level are indicated as the ‘core Frame Elements’ (core FEs); for instance, ‘Buyer’⁶ is considered the core FE in the COMMERCIAL TRANSACTION frame. Then, based on the recognized FEs at the semantic level, the syntactic realizations (e.g., NP or PP) of the FEs are investigated to “document the range of semantic and syntactic combinatory possibilities of each word in each of its senses” (Ruppenhofer et al., 2016:7). This lexical analysis based on Frame Semantics has been developed in the Berkeley FrameNet project with corpus evidence.

According to FrameNet, ARGUE evokes three frames including REASONING, EVIDENCE, and QUARRELING. Each frame contains its description and FEs as demonstrated in Table 1.

Frame	Description	Core FEs
REASONING	An Arguer presents a Content, along with Support, to an Addressee.	Arguer
		Content
EVIDENCE	The Support, a phenomenon or fact, lends support to a claim or proposes the Proposition.	Support
		Proposition
QUARRELING	A group of Arguers (also expressible as Arguer1 and Arguer2) express incompatible opinions or beliefs about an Issue.	Arguers
		(Arguer1)
		(Arguer2)
		Issue

Table 1: Frames and Core FEs in ARGUE

⁴ The asterisk indicates that the construction of the sentence is not found in natural language.

⁵ Note that the name of frames is presented in lower capitals in the study.

⁶ In this study, the FEs are presented in first-letter capital.

Based on the description, REASONING and EVIDENCE cover the word senses of ‘to give reasons to persuade people you are right’ and ‘to report the proposition from the arguer’, respectively, while EVIDENCE specifically requires an inanimate ‘Support’ which expresses the ‘Proposition’ (e.g., *the paper* in 2.3).

(2.3) *The paper argues that these various mechanisms now need to be harmonized.*
(HBM1960)

Then, as for QUARRELING, it covers the word sense ‘to speak angrily to somebody’.

From previous studies, we saw that pieces of information were found for the use of ARGUE, still, limited understanding of this verb was discovered. When ARGUE is seen as part of a big group, its characteristics are not showing. By using Frame Semantics, we hope to see how each sense and each frame is presented in written texts. We also intend to see when the arguers involve in real arguing, what issues (Core FE) are debated over. We formulate our research questions as follows:

- (a) How is the distribution of each frame of ARGUE?
- (b) What preferred patterns does ARGUE have in each frame?
- (c) What issues do arguers argue about?

3 Methodology

This section illustrates (a) the corpus; (b) the method for extracting data; and (c) data analysis in the study.

3.1 The Corpus

We used the British National Corpus (BNC) as the source to retrieve the written data. We use BNCweb as the platform to retrieve the BNC data. For the written corpus in the BNC, it includes extracts from newspaper, journals, academic books, popular fictions, unpublished letters, and other kinds of texts.

3.2 The Method for Extracting Data

In this study, we used ‘{argue}_V*’ as the query term to cover all the verb forms of ARGUE in written texts. The result of the search returned 13,992 hits in 1,922 different texts with the frequency of 159.17 instances per million words.

Then, we used the ‘thin’ function to downsize the number of hits into 10% of all, which returned 1,399 hits, by random selection. After data extraction, we manually filtered out any repeated concordance lines, resulting in 1,385 hits to be included for analysis.

3.3 Data Analysis

Each frame of ARGUE requires its own core FEs at the semantic level, and each concordance line was manually annotated.

Annotation of frame elements: We manually tagged each concordance line in accordance with the descriptions in the frames evoked by ARGUE (see Table 1). For REASONING and EVIDENCE, both frames present a ‘Content’ or ‘Proposition’, but are distinct in terms of whether the subject is animate (REASONING) or inanimate (EVIDENCE). On the other hand, QUARRELING denotes a quarrel among people with incompatible opinions. Then, we mapped the core FEs required by each frame onto the correspondent sentence constituents. Sentence (3.1) exemplifies the annotation of core FEs in the QUARRELING frame.

(3.1) [ARGUERS *Gardeners*] *have been arguing*
[ISSUE *about this*] *for years.* (AC1987)

Annotation of syntactic realizations: On the selected constituents of core FEs, we also labeled their syntactic features to demonstrate how the core FEs are realized at the syntactic level, particularly the phrase types.

Although detailed phrase types are proposed in FrameNet, in this study, we only used the general term to annotate ‘noun phrase’ (NP), ‘prepositional phrase’ (PP), and several clause types (see 3.2).

(3.2) [ARGUERS:NP *Gardeners*] *have been arguing*
[ISSUE:PP *about this*] *for years.* (AC1987)

Then, within the clause types, we further annotated the finite clauses – ‘that clause’ (*that-C*) in (3.3a), ‘*wh*-clause’ (*wh-C*) in (3.3b), and whether/if-clause (*whether/if-C*) in (3.3c)

(3.3)a. [ARGUERS:NP *Psychologists*] *argue*
[ISSUE:WHETHER-C *whether problem solving is the same as or just part of thinking or learning*]. (BD738)

b. [ARGUERS:NP *They*] *still argue, argue,*
[ISSUE:WH-C *who gone pay*]. (CJA77)

c. [ARGUER:NP *Keynesians*] *argue*
[CONTENT:THAT-C *that V tends to vary inversely with M, but also rather unpredictably*]. (J152036)

Although core FEs are required at the semantic level by their frames, in some circumstances, they may be absent at the surface level. In other words, they are not presented in the sentence, but exist at the semantic level. For example, (3.4) in the QUARRELING frame requires ‘Arguers’ and ‘Issue’ as its core FEs, but no constituent corresponds to ‘Issue’. Therefore, ‘Issue’ is absent at the syntactic level in (3.4).

(3.4) *Yesterday, [ARGUERS the couple] were seen arguing outside the cottage. [ISSUE ABS]*
(CH26688)

FrameNet recognizes three circumstances of absence, including ‘Definite Null Instantiation’ (DNI), ‘Indefinite Null Instantiation’ (INI), and ‘Constructional Null Instantiation’ (CNI). DNI and INI specify the lexical and discourse reasons (Ruppenhofer *et al.*, 2016, p.28) for the absence of FEs. In our purpose to investigate the preferred patterns of ARGUE, these annotations were too detailed. Therefore, we integrated them together with a new label of ‘ABS’ (as the abbreviation of ‘Absence’) to represent the absent core FEs.

As for CNI, it specifies the absence of the core FEs due to the requirement of grammatical construction. Passive construction is a typical construction which gives rise to CNI as in (3.5).

(3.5) *It can be argued [CONTENT:THAT-C that biological differences become biological inequalities when people define them as such]. [ARGUER CNI]*
(FB6799)

In (3.5), we can see that the ‘Content’ is presented in a *that*-clause, but no sentence constituents fulfill the description of another mandatory FE, ‘Arguer’. We attributed this situation to passive construction which renders that the ‘Arguer’ is absent in the sentence. Since the absence of the core FE, ‘Arguer’, results from the grammatical construction of passive construction, we annotated the syntactic realization of ‘Arguer’ as CNI.

With the annotation of the core FEs at the semantic level and their syntactic realizations at the syntactic level, we conducted the analysis on the 1,385 concordance lines.

4. Results

4.1 Distribution of Frames in ARGUE

Table 2 presents the distribution of frames of the 1,385 concordance lines.

Frame	Number	Percentage
REASONING	1168	84.3%
EVIDENCE	83	6.0%
QUARRELING	134	9.7%
Total	1385	100.0%

Table 2: Distribution of Frames in ARGUE

Apparently, REASONING accounts for 84.3% which shows that most uses of ARGUE in written texts present a ‘Content’ to persuade others. Then, QUARRELING accounts for 9.7% to express the quarreling among a group of ‘Arguers’. At last, EVIDENCE takes 6.0% use which calls for the ‘Support’ to present the ‘Proposition’.

4.2 Syntactic Realizations and Patterns

In this section, we present the syntactic realizations of core FEs and the preferred patterns in each frame.

Syntactic Realizations of REASONING: Table 3 demonstrates the syntactic realizations of ‘Arguer’ and ‘Content’ in the REASONING frame. It shows that most ‘Arguer’ are realized by NP (78.1%), while 21.1% are absent (i.e., CNI) and 0.8% in *by* phrases. Almost 20% of ‘Arguer’ are presented in non-referential-*it* which makes the subject hidden but at the same time it expresses the ‘Content’ (see 4.1b). Then, as for ‘Content’, it is mostly realized by *that*-C (87.2%), and we found 17 instances without ‘Content’ (ABS) in sentences. It demonstrates the emphasis on the event of making arguments by ‘Arguer’ rather than ‘Content’.

Core FEs	Realization	No.	Sub-category	No.
Arguer	NP	912 (78.1%)		
	CNI	247 (21.1 %)	Non-referential <i>it</i>	217
			Others	30
	<i>by</i> + NP	9 (0.8%)		
Total	1168 (100.0%)			
Content	<i>that</i> -C	1018 (87.2%)		
	PP	81 (6.9 %)	<i>for</i>	53
			<i>against</i>	22
			<i>in favor of</i>	4
			<i>up to</i>	1
			<i>towards</i>	1
	NP	45 (3.8%)		
	ABS	17 (1.4%)		
<i>if</i> -C	5 (0.4%)			
QUO	3 (0.3%)			
Total	1168 (100.0%)			

Table 3: Syntactic Realizations of Core FEs in REASONING

Patterns in REASONING: Table 4 demonstrates the pattern, the combination of the syntactic realizations of core FEs, in the REASONING frame. It shows that [Arguer (NP) + Content (*that-C*)] accounts for 67.3% as the most commonly seen pattern in the frame (see 4.1a). Then, [Arguer (CNI) + Content (*that-C*)] takes 19.3% as the second one in which ‘Arguer’ is missing as in (4.1b). The pattern of [Arguer (NP) + Content (PP [*for*])] accounts for 4.2% as the third preferred pattern which shows the arguer’s stance to the content (see 4.1c). At last, interestingly, both ‘Arguer’ and ‘Content’ are found missing in [Arguer (CNI) + Content (ABS)] due to the imperative construction (see 4.1d). In certain grammatical construction, ARGUE belongs to the REASONING frame even though both Core FEs are absent.

Arguer	Content	Number	(%)
NP	<i>that-C</i>	786	67.3%
	PP [<i>for</i>]	49	4.2%
	NP	33	2.8%
	PP [<i>against</i>]	19	1.6%
	ABS	14	1.2%
	Others	11	0.9%
CNI	<i>that-C</i>	225	19.3%
	NP	10	0.9%
	PP [<i>for</i>]	3	0.3%
	PP [<i>against</i>]	3	0.3%
	ABS	3	0.3%
PP [by]	<i>that-C</i>	6	0.5%
	NP	2	0.2%
	PP [<i>for</i>]	1	0.1%
Total		1168	100.0%

Table 4: Patterns in REASONING

- (4.1) a. [ARGUER:NP *He*] **argues** [CONTENT:THAT-C *that societies change by a process of structural differentiation*]. (F9S1037)
 b. *It can be argued* [CONTENT:THAT-C *that biological differences become biological inequalities when people define them as such*]. [ARGUER CNI] (FB6799)
 c. [ARGUER:NP *Mr Barabash*] **argues** [CONTENT:PP *for a hefty transfer*]. (CRC2618)
 d. *Do not argue with outrageous statements*. [ARGUER CNI] [CONTENT ABS] (HKT57)

Syntactic Realizations of EVIDENCE: Table 5 presents the syntactic realizations of ‘Support’ and ‘Proposition’ in the EVIDENCE frame. It shows that all of the ‘Support’s are realized by NP. Then, as for ‘Proposition’, 78.3% lines are realized by *that-C*, 20.5% by PP, and only 1.2% by NP.

Core FEs	Realization	No.	Subcategory	No.
Support	NP	83 (100.0%)		
	Total	83 (100.0%)		
Proposition	<i>that-C</i>	65 (78.3%)		
	PP	17 (20.5%)	<i>for</i>	10
			<i>against</i>	7
	NP	1 (1.2%)		
Total		83 (100.0%)		

Table 5: Syntactic Realizations of Core FEs in EVIDENCE

Patterns in EVIDENCE: Within the patterns, [Support (NP) + Proposition (*that-C*)] accounts for 77.1% as the prevailing one (see 4.2a). Then, [Support (NP) + Proposition (PP[*for/against*])] shows its stance towards the proposition (see 4.2b). The ‘Proposition’ as an NP can be seen in (4.2c). From the total 83 instances, all of them contain ‘Support’, indicating the topic being discussed is often needed when ARGUE is used. It is very unlikely that one argues without pointing out what is being argued.

Support	Proposition	No.	(%)
NP	<i>that-C</i>	64	77.1%
	PP [<i>for</i>]	8	9.6%
	PP [<i>against</i>]	7	8.5%
	NP	4	4.8%
Total		83	100.0%

Table 6: Patterns in EVIDENCE

- (4.2) a. [SUPPORT:NP *Freud’s psychoanalytic theory*] **argued** [PROPOSITION:THAT-C *that people are innately possessive*]. (HRM585)
 b. [SUPPORT:NP *The report*] **argued** [PROPOSITION:PP *against the imposition of bans on imports from countries with low environmental standards*]. (HLG2530)
 c. [SUPPORT:NP *Standing rules*] **determine entitlement to raise and argue** [PROPOSITION:NP *the issue of illegality*]. (EBM646)

Syntactic Realizations of QUARRELING: Table 7 demonstrates the syntactic realizations of ‘Arguer1’, ‘Arguer2’, ‘Arguers’, and ‘Issue’ in the QUARRELING frame. Most ‘Arguer1’ are presented by NP (83.8%), while 16.2% of them are not presented. As for ‘Arguer2’, over half of them are not presented (i.e., ABS), and 48.8% are realized by PP, mostly in *with* phrase. The *with* phrase refers to the one(s) holding different opinions contrary to ‘Arguer1’. In other words, almost half of the sentences indicate different opinions between ‘Arguer1’ and ‘Arguer2’. Then, with respect to ‘Arguers’, mostly, they are realized by NP (88.9%) which stands for arguers quarreling within a group of a shared discipline (e.g., *psychologists*). Lastly, the result shows that 62.8% ‘Issue’s are missing in the sentence, 30.6% are presented by PP, and 3.7% are by NP. It seems that most ‘Issue’s do not co-occur with ARGUE in sentences but lie in the context.

Core FEs	Realization	No.(%)	Subcategory	No.
Arguer1	NP	67 (83.8%)		
	CNI	13 (16.2 %)	Non-referential- <i>it</i>	3
			Others	10
	Total	80 (100.0%)		
Arguer2	ABS	41 (51.2%)		
	PP	39 (48.8 %)	<i>with</i>	38
			<i>past</i>	1
	Total	80 (100.0%)		
Arguers	NP	48 (88.9%)		
	CNI	6 (11.1%)		
	Total	54 (100.0%)		
Issue	ABS	84 (62.8%)		
	PP	41 (30.6 %)	<i>about</i>	26
			<i>over</i>	13
			<i>as to</i>	2
	NP	5 (3.7%)		
	others	4 (2.9%)		
Total	134 (100.0%)			

Table 7: Syntactic Realizations of Core FEs in QUARRELING

Patterns in QUARRELING: In Table 8, [Arguer1(NP) + Arguer2 (PP[*with*]) + Issue (ABS)] accounts for the most use (24.6%) in which both ‘Arguer1’ and ‘Arguer2’ are presented (see 4.3a). Then, [Arguer1 (NP) + Arguer2 (ABS) + Issue

(ABS)] occupies 15.7% in which ‘Arguer2’ and ‘Issue’ are understood in contexts (see 4.3b). As for the plural ‘Arguers’, [Arguers (NP) + Issue (PP [about])] accounts for 13.4% (see 4.3c) in which ‘Issue’ is present, while ‘Issue’ can be absent in [Arguers (NP) + Issue (ABS)] (see 4.3d). By the demonstration of patterns in QUARRELING, most ‘Issue’s (66 out of 80) remain absent with ‘Arguer1’ and ‘Arguer2’; however, more than half (20 out of 37) are present with ‘Arguers’ (plural). We may suggest that ‘Issue’ exhibits the tendency to present and co-occur with ‘Arguers’. This shows that when two parties disagree or argue, the issue needs not be present in same sentence. However, when a group of people serve as the arguers, the issue becomes almost crucial.

Arguer 1	Arguer2	Arguers	Issue	No. (%)
NP	PP[<i>with</i>]		ABS	33 (24.6%)
			NP	2 (1.5%)
			PP [<i>over</i>]	1 (0.7%)
			<i>Whether-C</i>	1 (0.7%)
NP	ABS		ABS	21 (15.7%)
			PP [<i>about</i>]	6 (4.5%)
			PP [<i>over</i>]	1 (0.7%)
			<i>Whether-C</i>	1 (0.7%)
CNI	ABS		ABS	10 (7.5%)
			PP [<i>about</i>]	1 (0.7%)
			PP [<i>over</i>]	1 (0.7%)
CNI	PP[<i>with</i>]		ABS	1 (0.7%)
		NP	PP [<i>about</i>]	18 (13.4%)
			ABS	17 (12.7%)
			PP [<i>over</i>]	7 (5.2%)
			NP	2 (1.5%)
			PP [<i>as to</i>]	2 (1.5%)
			<i>Whether-C</i>	1 (0.7%)
			<i>Who-C</i>	1 (0.7%)
		CNI	ABS	2 (1.5%)
			PP [<i>over</i>]	2 (1.5%)
			PP [<i>about</i>]	1 (0.7%)
			NP	1 (0.7%)
NP	PP[<i>past</i>]		ABS	1 (0.7%)
Total				134 (100%)

Table 8: Patterns in QUARRELING

- (4.3)a. [ARGUER1:NP I] *am not going to argue* [ARGUER2:PP with you]. [ISSUE: ABS] (B3J1890)
- b. [ARGUER1:NP You] *can argue until you are blue in the face, my girl.* [ARGUER2: ABS] [ISSUE: ABS] (FPK1514)

- c. *Anyway , let [ARGUERS:NP 's] stop arguing [ISSUE:PP about his merits]. (AT71846)*
- d. *Yesterday, [ARGUERS the couple] were seen arguing outside the cottage. [ISSUE: ABS] (CH26688)*

4.3 Topic of Issue

To reveal the topic of ‘Issue’, which is argued over in the QUARRELING frame, we investigated the presented ‘Issue’ at the sentence level with the result displayed in Table 9. It shows that, among the 50 lines from the total 134 ‘Issues’ that are non-ABS, the topics are diverse. The top four most commonly seen topics are money (see 4.4), law (see 4.5), academy (see 4.6), and politics (see 4.7).

Issue (Topic)	Number	(%)
Money	6	12.0%
Law	4	8.0%
Academy	4	8.0%
Politics	4	8.0%
Request	3	6.0%
Future plan	3	6.0%
Meaning or Definition	3	6.0%
Others	23	46.0%
Total	50	100.0%

Table 9: Distribution of the Content of Issue

- (4.4)*Those who argue about this (about how much should be spent on Arts faculties in universities, for example) tend to debate whether it does or does not help the economy. (CS2495)*
- (4.5)*Much of the Act was fiercely argued over because of the very real conflicts of opinion that exist in these areas. (FS61045)*
- (4.6)*Psychologists argue whether problem solving is the same as or just part of thinking or learning. (B7D38)*
- (4.7)*Lenin had to argue policy questions with them publicly. (BMA525)*

From the sentences, we found that we were misguided in believing that the QUARRELING frame only works for literal verbal quarrelling. Many of the arguers are not verbal ‘Arguers’ and many of the ‘Issues’ are not necessarily issues that may cause any two ordinary people to argue. The ‘Issues’ could be rather formal which might be due to the genre of the written text. Yet, it is also not

possible to find many uses of ARGUE in spoken text because it could be a speech act (that someone argues without mentioning the word ARGUE) rather than a description of the act. In general, the QUARRELING frame returns examples that contain more metaphorical meaning of ARGUE than its literal one.

5 Discussion and Conclusion

Based on the results, it shows that most occurrences of ARGUE in written texts are used in the REASONING frame to present the ‘Content’ with *that*-clause. Although most ‘Content’s are present in *that*-clause, 20% were absent (see 5.1) to highlights the action of making arguments instead of expressing a ‘Content’ to persuade others. This finding indicates that the matter being argued may not be important in all situations; rather the ability of doing so is more crucial (cf. the ability of children to argue in 5.1).

In addition, almost 20% of ‘Arguer’s are substituted with non-referential-*it* (see 5.2). The substitution allows the ‘Content’ to be expressed without mentioning a definite ‘Arguer’. It provides the writer a hedge to report propositions from criticism. While this ostensibly contradicts previous research (Hyland, 2002:8) that ARGUE attributes a high degree of confidence to the proposition (since seeking a hedge for a widely accepted proposition may be redundant), the co-occurrence of non-referential-*it* and ARGUE is accountable. By not specifying the arguer, non-referential-*it* implies that the content should be well-recognized. In other words, since the user considers or assumes the content to be well-accepted, there is no need to specify the exact arguer but use non-referential-*it*. Furthermore, even if the content is attacked, the writer remains intact with the hedge. The use of non-referential-*it* means to indicate the prevailing acceptance to the content, while at the same time offers a hedge from criticisms.

- (5.1)*It is argued that [ARGUER children] are quite aware of the elements of discourse, are able to argue, and to rearrange the sequence of their stories. [CONTENT ABS] (J8728)*
- (5.2)*It can be argued [CONTENT:THAT-C that biological differences become biological inequalities when people define them as such]. [ARGUER CNI] (FB6799)*

In the EVIDENCE frame, the ‘Support’s are all realized in NPs (e.g., *the report, the results*) which serve to strengthen the credibility of the ‘Propositions’ (cf., *the theory* in (5.3)). However, obviously, the frequency of the EVIDENCE frame is the least among the three frames. The reason for this is unknown although it might be possible that the verb ARGUE is less suitable in a metonymic way in (5.3) to show how *the report* or *theory* argues. More often, writers prefer *the report presents/shows/demonstrates* to *argue*, unless there is a pre-supposed opposition that the writers would like to argue against. This may cause the lower frequency of the EVIDENCE frame as compared with the ARGUE in the REASONING or the QUARRELLING frame.

(5.3)[SUPPORT:NP *Freud 's psychoanalytic theory*]
argued [PROPOSITION:THAT-C *that people are innately possessive*]. (HRM585)

In the QUARRELING frame, the arguers are present in two ways. On the one hand, the arguers are mostly realized in [Arguer1 (NP) + Arguer2 (PP [*with*])] to specify two groups of people with incompatible opinions (see 5.4). On the other hand, the arguers are also realized by a group of people quarrelling within the group (e.g., *the judges argue over the case* means that the judges disagree among themselves, not with others). Sentence 5.5 is another example. Although the two realizations of arguers may be considered as two different linguistic expressions, we found they possibly relate to the presence of ‘Issue’. Among all the ‘Issue’s in the frame, while 82.5% ‘Issue’s are absent with [‘Arguer1’+‘Arguer2’], fewer ‘Issue’s (54.1%) are missing with ‘Arguers’. In other words, ‘Issue’ prefers to co-occur with ‘Arguers’ rather than [‘Arguer1’+‘Arguer2’]. This could be interpreted by the different emphases of the patterns. Arguers are expressed in [‘Arguer1’+‘Arguer2’] to accentuate the event of quarrelling by specifically indicating two groups of people with controversial opinions. By contrast, arguers are realized in ‘Arguers’ to emphasize the ‘Issue’ which is argued over in the shared discipline. The disparate emphases in the patterns are possibly the reasons that give rise to the difference of ‘Issue’ between patterns.

(5.4)[ARGUER1:NP *I*] **will not argue** [ARGUER2: PP *with you*], *Khan.* [ISSUE: ABS] (G17314)

(5.5)[ARGUERS:NP *Gardeners*] **have been arguing** [ISSUE:PP *about this*] *for years.* (ACX1978)

At last, various topics of ‘Issue’ are found in the QUARRELING frame. Unexpectedly, most of them are rather formal (e.g., law and academy) possibly due to the genre of written texts. We found that the use of ARGUE is not necessarily limited in literal verbal quarreling with unpleasant emotion but, to some extent, discussion in a rational way in the particular domain could also be found. Since the topics in certain discipline (e.g., *policy questions* in 5.6) mostly require specific knowledge to argue over, not any ordinary people are capable of arguing about them. As a result, more metaphorical uses of ARGUE are found than literal ones in the present study.

(5.6)*Lenin had to argue policy questions with them publicly.* (BMA525)

To summarize, the present study reports the corpus analysis of ARGUE in written texts with several findings. Firstly, we found that most uses of ARGUE aim to present a ‘Content’ in written texts; however, some of them are absent for the emphasis on the action of ARGUE itself. Secondly, inanimate entities serving as the ‘Support’ claims the ‘Proposition’ even though the number is limited. The restricted co-occurrence of ARGUE with ‘Support’ is possibly due to the collocation issue; that is, writers prefer other verbs (e.g., *present, demonstrate*) to co-occur with ‘Support’s. In terms of ‘Issue’, in general, they are mostly absent in the QUARRELING frame. However, with a closer look, our results indicate their preference to co-occur with a group of ‘Arguers’ in a certain domain. When the arguers are in plural forms, two possible readings are provided. At last, several formal topics were found in written texts. Arguers are not necessarily to argue emotionally but, to some extent, with rational arguments. This study offers a detailed investigation on ARGUE in terms of its meaning distribution, preferred pattern in each meaning, and the topics people argue about. It may contribute to academic writers, TESOL-related studies and studies on lexical semantics.

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