A contrastive systemic functional analysis of causality in Japanese and English academic articles

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A CONTRASTIVE SYSTEMIC FUNCTIONAL ANALYSIS
OF CAUSALITY IN JAPANESE AND ENGLISH ACADEMIC ARTICLES

A Thesis submitted to
the Graduate College of
Marshall University

In partial fulfillment of
the requirements for the degree of
Master of Arts

in

English

by

Masaki Shibata

Approved by
Dr. Hyo-Chang Hong, Committee Chairperson
Dr. Jun Zhao
Dr. Benjamin White

Marshall University
May 2013
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I would like to thank my dear family and friends in Japan. My cherished sister, Mifuyu, has always motivated me with encouraging words. My beloved parents, Katsuhiko and Naomi provided me generous financial and emotional support, and they are always proud of me and pleased to hear about my graduate work.

I also would like to thank my classmates who have been motivating me as we were overcoming all difficulties on our graduate paths. My best friends, Leo Roehrich and Devina Kettle, shared wonderful times in the United States and they are the reason I never felt loneliness and homesickness. Their consistent effort for their theses also inspired and encouraged me to keep working on my thesis tenaciously.

I appreciate that Dr. Jun Zhao always helped strengthen my linguistic and pedagogical knowledge through classroom instructions. I was able to achieve my dream of presenting at a conference due to her advice and support. I also thank Dr. Ben White who provided me great knowledge of language instruction which certainly helps my future career.

Finally, my thesis could not have been completed without Dr. Hyo-Chang Hong who has consistently supported my thesis and graduate life. He is my father of linguistics, who taught me amazing linguistic theory and who taught me what language is. I was captivated in his class, which also determined my future to be a professional linguist like him as well as a language educator. His extraordinary knowledge and endless support gave me confidence to complete my thesis. My gratitude to him cannot be expressed enough here, but I would at least like to say I am honored to work with him and I would like to thank him from the bottom of my heart.
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ABSTRACT

A Contrastive Systemic Functional Analysis of Causality in Japanese and English Academic Articles

by Masaki Shibata

Typological differences between languages have been a much debated topic in linguistic studies. Despite their usefulness in understanding syntactic features of various languages, such contrastive analyses have yet to thoroughly explore semantic variation among languages; furthermore, the results obtained have not been practically utilized in other areas of applied linguistics. This situation may come from the fact that a large number of contrastive studies have eclectically examined isolated areas of language variation either from syntactic, morphological, or from pragmatic perspectives. Viewing this issue from another angle, Systemic Functional Linguistics (SFL) focuses on language from a multi-dimensional perspective, where language is a realization of both interpersonal, textual, and social contextual factors. In recent years, SFL has demonstrated its applicability to neglected areas in applied linguistics such as translation studies and foreign language pedagogy. On par with current SFL research into the language of various text types or genres, the purpose of this study is to investigate the ways in which the concept of causality is realized in syntactically distinct patterns and how such syntactic variations serve different discourse functions in Japanese and English academic articles. From the various realizations of causality, this thesis focuses on explicit logical and ideational causality and its lexicogrammatical realizational patterns and functions as used in published journal articles on second language acquisition. This study indicates that contrary to the current claim about the function of causality-oriented grammatical metaphors (Halliday and Matthiessen, 1999), causality and its realizational patterns are language-specific phenomenon.
1. INTRODUCTION

1.1 FORMAL AND FUNCTIONAL LINGUISTICS

In the last half of the 20th century, linguistics has traditionally referred to formal or Chomskyan linguistics. This particular branch of linguistics theorizes language from a cognitive perspective which conceptualizes language learning in terms of “Language Acquisition Device” (LAD) and “Universal Grammar” (UG). LAD, as hypothesized in formal linguistics, allows humans to select their L1 parameters in an innate fashion, which implies that children are born with the innate ability to acquire their first language (Chomsky, 1965). This device is also hypothesized to be linked to UG, the total set of all possible grammatical structures found in human languages (Klein 1986). In this model of language studies, language is further conceptualized as two distinct phenomena of competence and performance (Chomsky, 1965). The former refers to the kind of language that is worthy of linguistic research, and the latter is a matter of actual output generated by parameters in language (Chomsky, 1965). In other words, competence is tied to cognitive processes, and performance is related to actual language production.

Contrary to this formal perspective, Systemic Functional Linguistics (SFL) focuses on linguistic meanings and on the experience of various social contexts. This then leads to the idea that children’s language ability may be related to different degrees of contextual exposure to language and contexts. For example, a number of researchers have looked into the relationship between contextual exposure to various types of discourse and students’ academic success. They concluded that children exposed to the types of language used in academia through interacting with educated parents are more likely to succeed in school subject areas, whereas those exposed
to non-academic styles of language used at home are much less likely to succeed at school (Bernstein, 1997).

In summary then, SFL examines actual language production in various social contexts, while formal linguistics focuses more on abstract forms of language.

1.2 HISTORY OF SYSTEMIC FUNCTIONAL LINGUISTICS

Modern linguistics started with the Swiss linguist, Ferdinand de Saussure, who provided an important argument for modern linguistics: that the analysis of contemporary language should be separated from historical concerns and that synchronic (at a particular point in time) analysis should play a more important role in researching language. His idea was adopted later by modern linguistic research including Chomskyan and Hallidayan linguistics (Bloor & Bloor, 2004, pp. 236-237). Following Saussure’s study, Whorf made a remarkable contribution to linguistic research from the late 1980s to middle 1990s (p. 241). His emphasis on the role of language in culture is that the human perception of society is determined by language used in the society (p.241); in other words, if people experience fundamentally different types of language, they must live in a different society. Compared to previous linguistic theories, Whorf’s idea was much closer to the basic concepts of SFL; language cannot be separated from social contexts. In the 1920s interest in finding functional explanations for grammatical structure was raised by Prague School linguists established by a group of Czech and Russian linguists. They attempted to account for functional aspects of language rather than structures (Davidse, 1987, p.39). They are also radically influenced by German psychologist Bühler, who proposed the model of three functions of language: expressive, conative and referential (Bloor & Bloor, 2004, p.244). Later,
this theory was developed by Halliday into SFL’s three metafunctions: interpersonal, ideational and textual (p.244).

More immediately, however, two researchers, Bronislaw Malinowski and J.R. Firth influenced the development of functional theory. Malinowski was an anthropologist studying the culture of people on the isolated island, Papua New Guinea. He collected a number of texts local people produced and translated them into English. Later he realized that regardless of the translation skills, without an understanding of their culture and social contexts in which the speakers engaged, the translation he made cannot be construed. This theory led to his introduction of the term “context of situation” and “context of culture” (Martin, 2001, p.151). Firth as well as his followers took a great interest in Malinowski’s work and contributed to further study in the relationship between language and social context (Bloor & Bloor, 2004; Martin, 2001). Firth also theorized the grammar of a language as “polysystemic,” a system of systems (as cited in Bloor & Bloor, 2004, p.245), which is further explained by Halliday, who asserted that language systematic networks represent paradigmatic sets of choices available to users of the language (1972). Based upon ideas from these immediate successors, Halliday extended the idea of Systemic Functional Grammar (SFG), which is also expanded to other areas of language pedagogy (Bloor & Bloor, 2004, p.250).
1.3 OVERVIEW OF SYSTEMIC FUNCTIONAL LINGUISTICS

In Introduction to Functional Grammar (IFG), Halliday (2004) views language as a set of system networks or resources, and text as a product of an ongoing selection of such resources available in any given language. Systemic theory treats the grammar of a language as a representation in the form of system networks, not as an inventory of structures. In SFG, structure is treated as a syntagmatic realization of paradigmatic choices, and should be “the outward form taken from systemic choice” (p.23). SFL allows researchers to explicitly model and explain how language works as “a semiotic tool and it interacts with social contexts in making meanings” (Schleppegrell, 2004, p.18).

Similar to the traditional grammar, language in SFG is “stratified” into different levels or “strata” (Halliday, 2004, p.23) and applies the same concept to linguistic analysis. However, “stratification” differs from the traditional linguistic conceptualization of language in the interpretation of the boundaries among language categories. According to Schleppegrell (2004):

Rather than analyzing linguistic structures in isolation or as abstract entities, a functional approach identifies the configuration of grammatical structures which is typical of or expected in different kinds of socially relevant tasks and links those linguistic choices with the social purpose and situations that the “texts” (spoken and written) participate in (p. 45).

In other words, functional linguists do not focus on individual elements of language, but rather they take a holistic view. SFL categorizes language into two distinguishable strata: content and expression. Content is a realization of the semantic aspects of language, and expression is the
surface phenomenon of language. These two strata are expanded following the inclination of subjects’ ages and language complexity due to social expectation. Situational and social contexts allow humans to communicate with other people and make sense of their experience through structural organization. In order to interact with social contexts, content area is further stratified into lexicogrammar and semantics (Halliday, 2004; Martin, 2005). Lexicogrammar construes meanings into wording: syntax, clause and word in terms of ideational, textual and interpersonal meaning (Halliday, 2004; Martin, 2005) as shown in Figure 1. Semantics is interpreted as “an emergently complex pattern of lexicogrammatical patterns” (Martin, 2010, p.5).

Figure 1. Stratification (Martin, 2005, p.4)
1.4 RESISTER AND THREE METAFUNCTIONS

SFL treats the context of situation as synonymous to register. Malinowski’s discovery of the relationship between context of situation and culture and language led others to invent the term “register” in order to account for context (Martin, 2005, p.63). According to Halliday (as cited in Schleppegrell, 2004, p.46), register is “a set of meanings that is appropriate to a particular function of language, together with the words and structures which express these meanings.” For example, science texts are distinguished from informal interactional language since they belong to the science register, not to the register of informal conversation. The implication of the example above is that language is a realization of the register leading to meanings in social contexts. Register does not simply represent the different lexical choices, as Halliday further explains that “Register…also involves new styles of meaning, ways of developing an argument, and of combining existing elements into new combinations” (as cited in Schleppegrell, 2004, p.46).

Language requires speakers to reconstrue experience with coherent structure, regarding the relationship between speaker/writer and listener/reader. Considering the three facets of human language, SFL perceives register with three different interrelated aspects- field, tenor, and mode (Martin, 1993; Schleppegrell, 2004). Field is what is talked about, tenor is the relationship between speaker/writer and hearer/reader, and mode is expectations for how particular text types should be organized (Schleppegrell, 2004). In summary, field realizes ideas presented, tenor represents personal stance, and mode is a way of textual organization. These metafunctions, field, tenor and mode, are construed in lexicogrammar as ideational, interpersonal and textural (Schleppegrell, 2004; Martin & Rose, 2008; Martin, 2005,) as shown in Figure 2.
These three different perspectives reveal what a text means, how it creates meaning, and how it can be interpreted under a specific situation and culture. This three perspective framework made SFL a successful tool to analyze meaning of language, which is not only English but also multi-linguistics research, Chinese (Sum, 2006), Japanese (Naganuma, 2008), Spanish (Lavid et al., 2010); hence the Systemic Functional framework takes account for this contrastive research between Japanese and English.

*Figure 2. Field, Tenor and Mode* in Relation to Metafunction (Martin & Rose, 2008, p.12)
1.5 RATIONALE

Causal relation is one of the most central concepts to the human mind. Critically thinking about how an action influences other events as well as participants is a necessity in daily life. The nature of a causally linked world has led to various studies on causality in numerous fields, including linguistics (Diesel & Hetterle, 2011; Inui, Inui & Matsumoto, 2005). The world tied with causality is also reflected in human writing. Teruya (2007) argued that causality is defined as one of the most frequent logical semantic relations (p.386), and cause-effect relations are frequently used in academic writing (Flowerdew, 2003, p.489). Linguistically, cause and effect relations are conventionally realized through the syntagmatic element of conjunction realized lexically using words such as because. This syntagmatic realization of causation is utilized not only in English, but also in other languages, including Japanese.

However, there is doubt that causation can be expressed through similar syntagmatic elements while maintaining similar meanings in different languages. Ford and Mori (1993) conducted cross linguistic research between Japanese and English, analyzing syntagmatic use of causal conjunctions, showing how cause and effect relationships are placed differently in a sentence within an interactional setting. Ford and Mori’s research strictly focuses on syntagmatic realization of causation and does not consider semantic realizations of causal relations.

In addition to syntagmatic realization, Inui and Okumura (2005) proposed that causal relations are realized both explicitly and implicitly, and with or without causal markers. Their research shows that implicit causal relations are manifested without any causal makers, and implicit causation dominates 70 percent of total causation whereas only 30 percent of causation is expressed using explicit causal markers. In contrast to previous research, their study also
focuses on causation expressed through other lexical categories such as nouns and postpositions. Their research, however, did not elaborate on implicit causation and ignored the mystery of what comprises “implicit causation.” Considering their findings of implicit causation, Schleppegrell (2004) argues that academic writing contains experiential and logical grammatical metaphor which allows an expanded series of lexical items, such as group, clause and sentences, to be packed into a more concrete and smaller scale of language such as nouns.

The reason this process occurs in academic writing is that nominalization allows a wider variety of lexicon to take the role of subject, the “topic” of the sentence, and the former is able to embed more information in the texts. The examples below show models of logical grammatical metaphor.

Careful experimentation led to our results
We reached our conclusion through experimentation.  

(Martin & Rose, 2008, p.43)

The first example shows the verbalized causation where the causal conjunction is realized as a verb. The verb led to plays a role in creating a causal relationship between careful experimentation and our results. In other words, the results were made because the researcher experimented carefully. The second example shows circumstantial causation, where the preposition through expresses conjunctive meaning by creating a causal connection between conclusion and experimentation. Neither text uses explicit causal makers such as conjunctions, instead using other lexical items, verb or circumstance, to create cause and effect relations.

Although Inui’s research found that nouns and postpositions are also causal makers, the research did not find any causation expressed by means of verb or circumstance, as introduced
by Martin and Rose (2008). Previous research ignores the semantic realization of causation and
neglects the construction of implicit causation. This thesis, therefore, analyzes Japanese texts in
terms of nominalized, verbalized, circumstantial and conjunctive causality and compares them
with English texts to identify how linguistic tools are manipulated to express a causal relation in
academic texts.

1.6 RESEARCH QUESTION AND THESIS OVERVIEW

The major question of this contrastive research is:

What comprises implicit causation in Japanese academic writing and how are the linguistic
aspects of Japanese different from English in terms of construing causal-effect relations? To
examine these differences, the following questions are asked:

1. What is the ratio of causation used per clause in Japanese and academic texts?
2. What are the major lexicogrammatical devices to construct cause-effect relations in
   Japanese and English academic texts?
3. What types of causation are frequently used in both languages?
4. What is/are the main language-specific textual mechanism(s) in the way that causality is
   manifested?

The first step is to explain the meaning of causality in SFL and the major field of SFL
contributing to the analysis of language use in terms of causality. The considerable distinctive
Japanese features are also explained in the review of relevant literature. After explaining all the
relevant fields, the study section provides the explanation of the research methodology and
shows the data. The final stage of this article provides a discussion of the data and introduces
pedagogical implications.
2. REVIEW OF RELEVANT LITERATURE

2.1 THE SYSTEMIC FUNCTIONAL GRAMMAR FRAMEWORK

Systemic Functional Grammar explains the construction of language associated with three metafunctions. The Ideational metafunction is the field that investigates the speaker’s expression of experience. One of the most noteworthy areas of the ideational field is logical and experiential grammatical metaphors, which takes responsibility for speakers’ linguistic manipulation to express meaning in academia. This study focuses on the speakers’ language use to illustrate the causation in the academic articles, and, thus, the study is conducted within the ideational field.

Academic writing and grammatical metaphor

The difference between spoken and written language has been discussed for decades. It is commonly proposed that written language is more complex than spoken language, but the meaning of complexity is rather arguable and inapplicable to language pedagogy. Halliday (2002) proposed that the feature of written language is “dense, structured, crystalline, and oriented towards things (entities, objectified processes), product like, tight with meanings related as components” (p. 350). Halliday further explains those features of written language under the discovery of covert semantic categories manifesting themselves at the level of lexicogrammar. Unlike traditional or formal syntax, which is largely based on understanding language from an overt set of categories, SFL argues that the relationship between covert syntactic features and covert semantic categories plays a key role in the way that language—including such semantic categories as texts—can be understood. For example, discussing how elements at the level of
Halliday argues that lexicogrammar are metaredundant with those at the level of semantics, which simply implies that lexicogrammar leads to semantics, whether directly or indirectly (as cited in Martin & Rose, 2008, p.38).

Grammatical metaphors, congruent and incongruent uses of language, have also been applied to the interpersonal and ideational fields. Interpersonally realized social relations have to do with negotiating social status and solidarity among speakers and listeners, while the ideational field, as a register variable contributing to the realization of text types, is related to how physical or mental experiences are realized at the level of lexicogrammar. Thus, interpersonal grammatical metaphor is more frequently used in spoken language whereas ideational grammatical metaphor is manifested in written language. In considering the Ideational field, incongruent realizations of ideational elements are also termed as “experiential grammatical metaphor”. Halliday proposed that experiential grammatical metaphor can be understood as a process where processes, qualities, and binding elements all drift experientially toward the most concrete elements of nominal meanings. Types of grammatical metaphors introduced by Halliday and Matthiessen (1999) are shown in Table 3. According to Schleppegrell (2004), the reason for manifesting grammatical metaphor in academic writing is its ability to comprise more of formers’ ideas into the texts. This informative feature of academic writing requires grammatical metaphor to pack adequate amounts of information, which also lead to Halliday’s proposal of the primary academic writing feature, “dense” (2002). By nominalizing a series of lexical items such as clauses and sentences, grammatical metaphor enables them to be a theme, or subject, which implies that these nominalized items can be realized as the topic of a sentence
or a whole text (Schleppegrell 2004). Halliday proposed that grammatical metaphor is “one of the factors that contributes most to the overall effectiveness of a text.”
## Table 1
Types of Grammatical Metaphor (Halliday & Matthiessen, 1999)

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Grammatical shift</th>
<th>Example</th>
<th>Semantic element</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(1) grammatical class</td>
<td>(2) grammatical functions</td>
<td>congruent</td>
</tr>
<tr>
<td>1</td>
<td>adjective → noun</td>
<td>Epithet/Attribut e → Thing</td>
<td>unstable → instability; quick(ly) → speed</td>
</tr>
<tr>
<td>2</td>
<td>verb → noun:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Auxiliary → Thing</td>
<td>willgoing go → prospect; can/ could → possibility, potential</td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>Catenative → Thing</td>
<td>try to → attempt; want to → desire</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>preposition(al phrase) → noun</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>Preposition</td>
<td>Minor Process → Thing</td>
<td>with → accompaniment; to → destination</td>
</tr>
<tr>
<td>ii</td>
<td>prepositional phrase</td>
<td>Location, Extent &amp;c → Classifier</td>
<td>[dust is] on the surface → surface dust</td>
</tr>
<tr>
<td>4</td>
<td>conjunction → noun</td>
<td>Conjunctive → Thing</td>
<td>so → cause, proof; if → condition</td>
</tr>
<tr>
<td>5</td>
<td>verb → adjective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>Event → Epithet/Classifi er</td>
<td>[poverty] increases → increasing [poverty]</td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>Auxiliary → Epithet/Classifi er</td>
<td>was/used to → previous; must/will → constant</td>
<td></td>
</tr>
<tr>
<td>iii</td>
<td>Catenative → Epithet/Classifi er</td>
<td>begin (to) → initial</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>preposition(al phrase) →</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>adjective</td>
<td>Minor Process → Epithet/Classifier</td>
<td>with → accompanying</td>
</tr>
<tr>
<td>---</td>
<td>-----------</td>
<td>----------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>i</td>
<td>Preposition</td>
<td>Location, Extent &amp;c → Epithet/Classifier</td>
<td>[marks are] on the surface → superficial [marks]</td>
</tr>
<tr>
<td>ii</td>
<td>prepositional phrase</td>
<td>Conjunctive → Process</td>
<td>before → previous; so → resultant</td>
</tr>
<tr>
<td>7</td>
<td>conjunction → adjective</td>
<td>Conjunctive → Process</td>
<td>(be) about → concern; (be) instead of → replace; (go) across → traverse</td>
</tr>
<tr>
<td>8</td>
<td>preposition(al phrase) → verb</td>
<td>Location, Extent &amp;c → Process</td>
<td>(put) in a box/ in house → box/ house</td>
</tr>
<tr>
<td>i</td>
<td>Preposition</td>
<td>Conjunctive → Process</td>
<td>when → in times of; because → because of</td>
</tr>
<tr>
<td>ii</td>
<td>prepositional phrase</td>
<td>Conjunctive → Process</td>
<td>so → as a result, in consequence; if [it snows] → under/ in [snow(y) conditions]</td>
</tr>
<tr>
<td>9</td>
<td>conjunction → verb</td>
<td>Conjunctive → Process</td>
<td>then → follow; so → cause; and → complement</td>
</tr>
<tr>
<td>10</td>
<td>conjunction → preposition(al phrase)</td>
<td>Conjunctive → Process</td>
<td>minor process</td>
</tr>
<tr>
<td>i</td>
<td>→ preposition</td>
<td>Conjunctive → Process</td>
<td>when → in times of; because → because of</td>
</tr>
<tr>
<td>ii</td>
<td>→ prepositional phrase</td>
<td>Conjunctive → Process</td>
<td>so → as a result, in consequence; if [it snows] → under/ in [snow(y) conditions]</td>
</tr>
<tr>
<td>11</td>
<td>+ noun</td>
<td>+ Thing</td>
<td>[x] → the fact/ phenomenon of [x]</td>
</tr>
<tr>
<td>12</td>
<td>+ verb</td>
<td>+ Process</td>
<td>[x] → [x] occurs/ exists; [x] → have, do [x] (e.g.,)</td>
</tr>
<tr>
<td>i</td>
<td>+ verb</td>
<td>Conjunctive → Process</td>
<td>when → in times of; because → because of</td>
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<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ii</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ (causative &amp;c) verb</td>
<td>impact → have an impact</td>
<td>(agency &amp;c)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>make [x:y] → impose [y on x]; thing [x=y] → credit [x with y]</td>
<td></td>
</tr>
<tr>
<td></td>
<td>iii</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>+ (phasal &amp;c) verb</td>
<td>started/wanted [to survey] → started/wanted [a survey]</td>
<td>(phase &amp;c)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i</td>
<td>noun → (various)</td>
<td>Thing → the government [decided] → Thing expansion of thing: (qualifying)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(a) Qualifier [decision] of/ by the government</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(b) Possessive Deictic the government’s [decision]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(c) Classifier government(al) [decision]</td>
<td></td>
</tr>
<tr>
<td>ii</td>
<td>adverb → adjective</td>
<td>Manner → Epithet [decided] hastily → hasty [decision]</td>
<td>Circumstance expansion of thing: (descriptive)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>prepositional phrase → adjective Location, Extent &amp;c → Epithet [argued] for a long time → lengthy [argument]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>adverb → (various) Location, Extent &amp;c → Possessive Deictic [announced] yesterday → yesterday’s [announcement]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>prepositional phrase → (various) Location, Extent &amp;c → Qualifier [departed] for the airport → [departure] for the airport</td>
<td></td>
</tr>
</tbody>
</table>
The examples below illustrate congruent and incongruent realization of the language.

The example (2) shows the nominalization of a whole clause (1).

(1) Congruent expression  
The telephone was invented  
(clause)

(2) Incongruent expression  
The invention of the telephone led to…  
(nominal phrase)

(Schleppegrell, 2004, p.72)

The word *invent* in the example (1) is the process, and the whole meaning is realized as a single clause; however, the process, *was invented*, is transformed into a noun, *invention* in the example (2), which consequently is transformed into a nominal group. This process also applies to the field of conjunctions; an experiential grammatical metaphor accounts for facilitating the conjunctive semantics as a logical grammatical metaphor. The logical grammatical metaphor simply means metaphoric use of language by alternating conjunctions to expand the segments in serial chains. In this field, the conjunctive relation is construed through not only nominal groups, but also verbal groups and circumstances. Although Martin and Rose (2008) explained the distinctive features of experiential and logical grammatical metaphor by proposing that “logical resource expands segments in serial chains, and experiential resources arrange segments in orbital configurations” (p.42), the logical grammatical metaphor also contains the experiential grammatical metaphor in order to create the conjunctive semantics into smaller chunks of meaning. The examples (3) and (4) below demonstrate the incongruent and congruent realization of conjunctions. The importance of this type of logical semantic grammatical metaphor can be distinctly seen when logical semantics are compared across various texts. Conjunctive meanings in (4) are all realized congruently, presenting the sequence of events as
they happened, while (3) packs all the experiences as arguable phenomena. Nominal groups account for all conjunctive semantics in (3) rather than structural conjunction and they further demonstrate the density of academic arguments.

(3) **The aim** of our experiment was to find out which part of the magnet is the strongest. **The steps** involved spreading our pins out on the table, putting our magnet over our pins, seeing what happened, repeating trying the sides with pings and seeing which side was the strongest by comparing. **The result** was that the pings all went to the poles. **Our conclusion** is that the poles are the strongest part of the magnet.

(4) We did and experiment **In order to** find out which part of the magnet is strongest. **First** we spread the pings out on the table. **Then** we put our magnet over our pins. **Then** we saw what happened. **Then** we tried the sides with pins. **Then** we saw which side was strongest by comparing. **Because** we did this, we saw that the pings all went to the poles. **So** we found out that the poles were the strongest part of the magnet.

(Martin & Rose, 2008, p.41)

**Conjunction: Causal-Conditional**

Halliday’s realization of causality is defined as causal-conditional relations comprised of conditional relations in the causal component. Halliday (2004) also explains that the expression of causal-conditional is realized either generally or specifically. The specificity of causal relations is constructed in six different ways: cause, reason, purpose, concessive, conditional positive, and conditional negative. The first three, result, reason, and purpose, are associated with the causal relation, and the latter three, concessive, conditional positive, and conditional negative, are interpreted as conditional. Teruya (2007) generalized these six causal relations and categorized them into five different meanings: cause, reason, purpose and concessive and
conditional. The reason for the interpretation of causal and conditional semantics as sharing the same system network option is that the semantic realization of causal and conditional may result in parallelism and interchangeability, as examples (1) and (2) show below. (Teruya, 2007, p. 387).

(1) If I had the money, I would have bought a new car.”
(2) Because I didn’t have the money, I didn’t buy a new car.

In these examples, the counterfactual type of the conditional relation realized as a conjunctive clause is reinterpreted potentially as the cause-effect relation. Although both texts are constructed by different types of logical semantics; causal (1) and conditional (2), both texts imply that a lack of money made purchasing a car is impossible. In other words, a lack of money is the cause of the failure to purchase a car. In such case, condition, itself, would be a cause of the action. The consideration of such an inseparable semantic realization between causal and conditional is the reason for categorizing causal and conditional semantic meanings as one particular kind of logical relations. Taking such semantic relations and matters of cohesion as the primary reasoning for the language classification, Halliday argues that causality should be categorized in Table 1. Japanese translation is also shown in Table 2.
Table 2
*Cause-Conditional Semantics in English* (Halliday, 2004; Teruya, 2007)

<table>
<thead>
<tr>
<th>Causal-conditional</th>
<th>Causal</th>
<th>Cause</th>
<th>therefore, hence, because of that; for, in consequence, as a result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason</td>
<td></td>
<td></td>
<td>on account of this, for that reason</td>
</tr>
<tr>
<td>purpose</td>
<td></td>
<td></td>
<td>for that purpose, with this in view</td>
</tr>
<tr>
<td>Conditional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>conditional positive</td>
<td></td>
<td></td>
<td>then, in that case, in that event under the circumstance</td>
</tr>
<tr>
<td>conditional negative</td>
<td></td>
<td></td>
<td>otherwise, if not</td>
</tr>
<tr>
<td>concessive</td>
<td></td>
<td></td>
<td>yet, still, though, despite this, however, even so, all the same, nevertheless</td>
</tr>
</tbody>
</table>

Table 3.
*Cause-Conditional Semantics in Japanese* (Teruya, 2007)

<table>
<thead>
<tr>
<th>Causal-conditional</th>
<th>Causal</th>
<th>Cause</th>
<th><em>Kara</em> から “because”, <em>node</em> ので “because” <em>tame</em> ため”because” <em>sitagatte</em> したがって “therefore”,</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reason</td>
<td></td>
<td></td>
<td><em>sono reyuude</em> “その理由で””For that reason”</td>
</tr>
<tr>
<td>purpose</td>
<td></td>
<td></td>
<td>*tameni(ha) ために（は）“In order to” <em>youni</em> ように “In order to”</td>
</tr>
<tr>
<td>Conditional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>conditional positive</td>
<td></td>
<td></td>
<td><em>sono Baai</em> その場合”In that case” <em>to</em> と “If, when”, <em>naraba</em> ならば “If”</td>
</tr>
<tr>
<td>conditional negative</td>
<td></td>
<td></td>
<td><em>samonakereba</em> さもなければ“Otherwise”</td>
</tr>
<tr>
<td>concessive</td>
<td></td>
<td></td>
<td><em>ga</em> が “but, yet, although”, <em>Keredomo</em> けれども “Even though” <em>nimo kakawarazu</em> にもかかわらず “Even if”</td>
</tr>
</tbody>
</table>
Clause complexes

Traditionally the concept of “clause” is the unit of structure containing syntactic elements such as subject and verb. However, because of its trinocular perspective on language, SFL treats the level of clauses and clause complexes differently from traditional grammar. In other words, the concept of clauses and clause complexes have more to do with semantic meanings than with syntactic structures, and clause boundaries are more a matter of semantic rather than syntactic issues.

The traditional term “sentence” is alternatively referred to as “clause complex” in SFL. Clause complex is simply defined as the chunk of clauses combined by both tactic and logical semantic relations. The degree of interdependency determines whether clause relations are that of parataxis or hypotaxis. Parataxis refers to the equal semantic status between clauses, whereas hypotaxis refers to an unequal semantic status between clauses. Clause complex types are also applicable to Japanese, but the way clause complexes are organized is more limited than in English (Teruya, 2007, p330).

Clause complexes in Japanese are organized by the sequence of secondary and primary clauses. In parataxis, initiating clauses are followed by continuing clauses, whereas independent clauses dominate the primary position in hypotaxis as shown in Table 4. This general order of clause complex is variable in English depending on textual considerations. In contrast to English, Japanese texts do not allow the variability of organizational syntactic order in clause complexes.
Table 4

*The Organization of Taxis in Clause Complexes* (Teruya, 2007, p.331)

<table>
<thead>
<tr>
<th></th>
<th>Secondary</th>
<th>Primary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parataxis</td>
<td>1 (initiating)</td>
<td>2 (continuing)</td>
</tr>
<tr>
<td>Hypotaxis</td>
<td>β (dependent)</td>
<td>α (independent)</td>
</tr>
</tbody>
</table>

The interdependency relations are further categorized into specific properties: expansion and projection, interpreted as logical semantic types. The meaning of “expansion” is that a secondary clause expands the information provided in a primary clause, while the “projection” refers to projecting the ideas of the former either mentally or verbally. In terms of expansion Japanese grammars of tactic structural conjunctions are characterized in two ways: adnominalization and verbal conjugation. According to Teruya (2007) adnominalization is “an addition of a structural conjunction such as the conjunctive nominal *toki* 時 “when”, the conjunctive postposition *made* (ni) まで (に) “until, (by)”, or the conjunctive particle *noni* のに “despite” (p.334). Verbal conjugation implies that conjunctive markers are embedded into verb form. The examples are introduced in Teruya (2007); ‘conditionalization’ as in *sur-e-ba* すれば “provided”, *sur-u-to* すると “if, when(ever)”, *sur-u-nara* するなら “if…” or ‘infinitivization’ such as the suspensive form as in *shite* して “and,-ing” (p.334). Table 5 shows examples of interdependency realized as adnominalization and verbal conjugation.
Table 5
*Adnominalization and Verbal Conjugation* (Teruya, 2007, p.332)

<table>
<thead>
<tr>
<th>TAXIS</th>
<th>Secondary Clause</th>
<th>Primary Clause</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Parataxis</strong>  [1 ^ 2]</td>
<td>雨がふるから [1:] Ame ga [Proc:] huru kara ame GA fell because “Because it will rain”</td>
<td>でかけるな [2:] dekakeru na “don’t go out”</td>
</tr>
<tr>
<td>(adnominalization)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hypotaxis</strong> [B ^a ]</td>
<td>雨がふったら [B:] Ame ga [Proc:] hutta ra ame GA fell-conditional If it rains</td>
<td>ぼくはでかけない [2:] boku wa dekakenai “I won’t go out”</td>
</tr>
<tr>
<td><strong>Verbal-conjugation</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As briefly explained above, the major dominance of projection clauses are verbal and mental projections. In English, a “that” and quotation marks are the major negotiatory makers for verbal or mental projection. Teruya (2007) further proposes that Japanese also possesses negotiatory makers, which differ from English depending on the mood: writing (*to と*) and speaking (either *to と* or *tte って*) as shown in Table 6 and 7.
Table 6

<table>
<thead>
<tr>
<th>Projection</th>
<th>Sayer</th>
<th>Verbal Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>「そうしてください」と</td>
<td>母が</td>
<td>たのんだ。</td>
</tr>
<tr>
<td>&quot;soo site kure&quot; to</td>
<td>hahaga</td>
<td>tanon da</td>
</tr>
<tr>
<td>So do-SUSP p-give-&amp;receive</td>
<td>mother GA</td>
<td>ask-past-inf</td>
</tr>
</tbody>
</table>

“We Please do so”, asked my mother. [Kokoro]

Table 7

<table>
<thead>
<tr>
<th>Senser</th>
<th>Projection</th>
<th>Mental Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>男も女も</td>
<td>永遠の愛があると</td>
<td>信じていた</td>
</tr>
<tr>
<td>Otoko mo on’na mo</td>
<td>eien no ai ga aru to</td>
<td>shinjite ita</td>
</tr>
<tr>
<td>Man also woman also</td>
<td>eternal love NO love GA</td>
<td>believe-ASP-past-inf</td>
</tr>
<tr>
<td>Exitadno</td>
<td>PROJ.R</td>
<td></td>
</tr>
</tbody>
</table>

“We Both man and woman believed that eternal love existed.” [Hutari]

Such taxis relations-parataxis and hypotaxis-and logical semantics-expansion and projection-are responsible for the determination of a clause boundary. The system of clause complex is represented in *Figure 3*. 
2.2 JAPANESE SYNTAX

Clause complex

One of the most distinctive features between Japanese and English has to do with how the two languages treat the category of clause subject. Unlike English, which is categorized as a subject marker or prominent language, Japanese is a topic or Theme prominent language; rather, in a number of interpersonally prominent contexts, clausal subjects can be omitted and can only be contextually retrieved. The identification of subject can be made in two ways: honorification and logical semantic relationship. Honorification is associated with interpersonal meanings that use either an honorific form or a humble form where morphological changes of verbs take place for showing respect or admiration to addressees, or adjusting to social expectations (Teruya, 2009, p.6).
Logical semantics is another contribution to identification of subjects. For example, a clause complex with temporal logical semantics such as suspensive form (generally called て te form) leads to the assumption of what or who the subject is in the latter clause, since the nature of temporal sequences implies a sequence of events which frequently have the same subject but a different action in two serial segments.

Another Japanese feature distinctive from English is identified in a number of clause simplexes retained into one clause complex. Compared to English, Japanese clause complexes can contain a number of clause simplexes as well as logico-semantics. The examples below show the number of clause simplexes contained in one clause complex in Japanese.

Example (1)

(1.1) 英語においては母子会話や、生徒と 教師の会話等の分析に活用され（Cloran, 1999）、
In English, (rhetoric unit analysis) is used for the analysis of mother-child communication, the conversation between a student and a teacher or etc,

(1.2) 知識伝達の分析に有用な枠組み
Knowledge transmission of analysis for practical framework
(rhetoric unit analysis) is practical framework for the analysis of knowledge transmission

(1.3) と考えられているが、
(negotiatory marker) to be considered but
It is considered that (1.2), but

(1.4) 日本語に適した研究は佐野(2010b)、佐野・小磯(2011)などがあるものので、
Japanese to adjust research Sano (2010b), Sano, Koiso (2011) etc. to exist but/h owever
there is the research adjusting (rhetoric unit analysis) to Japanese conducted by Sano (2010b), Sano and Koiso (2011) etc, but
(1.5) まだ 少ない。
Still a few
there is still a few.

The interconnection between (1.1) and (1.2) is created by the verb conjugated as an extension form, and the clause simplexes in (1.2) and (1.3) are under the projected-projecting relation. (1.3) and (1.4) are simply related to each other by a structural conjunction, ga が “but,” and the last two clause simplexes, (1.4) and (1.5), are tied by another structural conjunction, monono ものの “but/however.” In this case, 5 clause simplexes are packed into one clause complex. As shown here, a Japanese clause complex can contain more clause simplexes as well as structural conjunctions compared to English, and this feature makes Japanese clause complexes larger in their clause-embedding feature than English, even when the syntagmatic measurement of clause simplexes in Japanese remains the same as in English\(^1\), which leads to the comparable analysis of causality use in total clause simplexes.

---
\(^1\) It is worth noting that the syntagmatic measurement of clauses has caused a number of problems in typological research. Among them are serial verb constructions, which are a main feature in Japanese but not so in English (Comrie, 1989).
Japanese circumstanciation

Japanese circumstanciation is also a distinctive feature from English. Circumstanciation is concerned with the elements which provide specific circumstances of processes and participants. The major circumstanciations are typically shown in adverbial groups and prepositional phrases. Although Japanese adverbial phrases work in a similar manner to English adverbial phrases, prepositional phrases are realized in different syntactic structures. Unlike English, which locates the nominal group before prepositions, the Japanese circumstance marker is positioned after a nominal group, and is conversely called post-positional. An example of Japanese postpositional circumstance is shown in Table 8.

Table 8
Japanese Circumstanciation

<table>
<thead>
<tr>
<th>わたしは</th>
<th>くるま</th>
<th>で</th>
<th>がっこう</th>
<th>に</th>
<th>いきます。</th>
</tr>
</thead>
<tbody>
<tr>
<td>Watashi ha</td>
<td>Kuruma</td>
<td>De</td>
<td>Gakkou</td>
<td>Ni</td>
<td>Ikimasu</td>
</tr>
<tr>
<td>Participant</td>
<td>Transportation</td>
<td>by</td>
<td>school</td>
<td>To</td>
<td>Go</td>
</tr>
</tbody>
</table>

I go to school by car

In the example, “car” is located before the circumstance marker, *de* で “by” and *ni* に “to” also follows the same structure. Contrary to English, a Japanese circumstance marker is positioned after nominal groups; it is therefore called postpositional. There is another distinguished feature of Japanese from English in reference to circumstanciation. In English, a preposition takes on a significant role for the semantics of the prepositional phrases; however, this system differs in Japanese and postpositional markers have much less responsibility for the semantics of the clause, whereas nominal groups associated with the postposition determine the meaning of
postposition. For example, if the head of a nominal group marked by a postposition に “ni” is a time related nominal group, the meaning of the postposition に is construed as temporal location, but if a nominal group is associated with a locative nominal group, semantics of the に is space location (Teruya, 2007, p.318). The various meanings of one particular postposition require a contextual understanding of nominal groups around the postpositional marker to interpret the meaning of the postpositional phrase in the text. However, requiring understanding of the texts surrounding the postposition is not required for all postpositions. The numbers of potential semantics a postposition can retain are also remarkably different for each postposition. For example, the most frequently used postpositions in terms of causation are で and によって (Moriyama, 2004, p.2; Teruya, 2007, p.319). Comparing these two postpositions, によって retains only one particular semantics “by (agent)”, but で comprises five different semantics: cause, means, special location, temporal location and condition (Moriyama, 2004, p.2). For the postposition によって, its textual understanding is less important than the postposition で, since it has only one particular meaning. On the other hand, analyzing a semantically adaptable postposition such as で, micro and macro views on the texts are needed in order to understand the semantics of postpositions. All of the postpositional markers realized in this research are listed in Table 9.
Table 9
Japanese Postposition Types of Causal Semantics Used in this Research

<table>
<thead>
<tr>
<th>Postposition</th>
<th>Purpose</th>
<th>のために no tame ni For the sake of</th>
</tr>
</thead>
<tbody>
<tr>
<td>Causal</td>
<td>で de</td>
<td>By</td>
</tr>
<tr>
<td></td>
<td>によって/により ni yotte / ni yori by</td>
<td></td>
</tr>
<tr>
<td></td>
<td>つうじて tsujite through</td>
<td></td>
</tr>
<tr>
<td></td>
<td>めぐり meguri through</td>
<td></td>
</tr>
</tbody>
</table>

3. STUDY

The methodological approach of this study lies within the Systemic Functional Linguistics analysis of English and Japanese academic linguistics journals. The area of this study contains the following aspects of SFL: clause complex, logical semantics, logical and experiential grammatical metaphor.

3.1 DATA COLLECTION

This research involves introductory parts of English and Japanese academic linguistics journals. The reason for selecting academic journals of one particular area is that this research focuses on the causality use only in academic registers. It was hypothesized that the specificity of this particular register between Japanese and English will bring out the semantic differences of contrastive analysis as academic language is the primary area in which causality is used in a
number of lexicogrammatically distinct ways (Martin and Rose, 2007), so the academic journals related to one particular area, linguistics, are selected. All of the English and Japanese resources are published journals written by native speakers of each language. The length of the introduction sections are divergent for each article, where lexical items range from 279 words to 1008 words in the English journals, and from 472 to 2342 words in the Japanese journals. Comparable numbers of causality uses are the priority for the purpose of this contrastive research as it is construed in academic journals. By analyzing 14 articles of Japanese and 9 articles of English, the comparable number of causality use (Japanese: 122 and English: 126) are collected. The data sources are listed in the primary source section of the references.

3.2 METHOD OF ANALYSIS

Causal-Conditional Analysis

For the causal-conditional analysis, the causality markers are highlighted and categorized into 4 sections: nominal groups, verbal groups, circumstance groups, and conjunctions. For the purpose of analyzing causality type, all of the causality-related lexical items are categorized into the 5 principles of causality: cause, purpose, result, conditional (positive and negative) and concessive (Halliday, 2004).
*Ratio of causality used in the texts*

As a method for determining causality ratio, the total number of causality out of the total number of clause simplexes are used as a basis for calculation. The total numbers of causalities and clause simplexes are listed in Table 10. The formula is shown in the following.

Table 10  
*The Total Numbers of Causalities and Clause Simplexes*

<table>
<thead>
<tr>
<th></th>
<th>Total causality</th>
<th>Total clause simplexes</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>126</td>
<td>241</td>
</tr>
<tr>
<td>Japanese</td>
<td>122</td>
<td>421</td>
</tr>
</tbody>
</table>

**Formula for causality ratio:**

\[
\text{Ratio of causality used in the texts} = \frac{\text{Total number of causality markers}}{\text{Total number of clause simplexes}} \times 100
\]

*Ratio of Lexicogrammatical Devices*

First, each lexicogrammatical device is calculated as shown in Table 10. The percentage of each device is calculated based on the two different aspects: the total number of clause simplexes and the total number of causations. The percentage is then calculated based on the total number of clause simplexes, implying the frequency of use for each type of lexicogrammatical item used per clause. Additionally, the ratio calculated based on the total number of causation shows how often each lexicogrammatical item occurs from the total of causality-related expressions. The four lexicogrammatical items are listed in Table 11. The formulas of each ratio are shown in the following.
Table 11
*Number of Four Causality Realizations*

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Group</td>
<td>20</td>
<td>24</td>
</tr>
<tr>
<td>Verbal Group</td>
<td>42</td>
<td>16</td>
</tr>
<tr>
<td>Circumstance Group</td>
<td>22</td>
<td>18</td>
</tr>
<tr>
<td>Conjunctive Group</td>
<td>42</td>
<td>64</td>
</tr>
<tr>
<td>Total</td>
<td>126</td>
<td>122</td>
</tr>
</tbody>
</table>

Formula for lexicogrammatical item per clause:

\[
\text{The percentage of the type expressing causation} = \frac{\text{Total number of each type}}{\text{Total number of clause simplexes}} \times 100
\]

Formula for lexicogrammatical item from total causality:

\[
\text{The percentage of the type expressing causation} = \frac{\text{Total number of each type}}{\text{Total number of causation}} \times 100
\]

*Ratio of Causation Types*

The final analysis of this research is to investigate the ratio of causality in various types of conjunctive elements. The causal types are categorized into five types: cause, reason, purpose, concessive and condition. (Halliday, 2004). Those five types are largely categorized into two groups: causal and conditional. The first three types belong to causal semantics, whereas the latter two are classified as conditional semantics. The number of each category is counted (see in Table 12) and the ratio is calculated by the formula in the following.
Table 12  
*Number of Five Causation Types Realized in Conjunctive Elements*

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Japanese</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cause</td>
<td>15</td>
<td>32</td>
</tr>
<tr>
<td>Reason</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Purpose</td>
<td>20</td>
<td>7</td>
</tr>
<tr>
<td>Concessive</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>Condition</td>
<td>1</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>64</td>
</tr>
</tbody>
</table>

Formula for ratio of five causal types:

The percentage of each causation types = \( \frac{\text{Total number of each type}}{\text{Total number of conjunctive elements}} \times 100 \)

4. ANALYSIS AND RESULTS

4.1 CAUSALITY RATIO

The ratio of causal use in Japanese and English articles shows a difference in terms of its frequency of occurrence. In the Japanese articles, causal semantics is used at the rate of 28%, whereas the rate of causal use in the English texts is almost 50%. That is, the Japanese texts use 122 cases of causality in 421 single clauses and the English texts use 126 cases in 241 single clauses. This number implies that the Japanese texts have much less frequency of causality use, which is nearly half of the English texts. *Figure 4* describes the difference in the ratio of causal use between the Japanese and English articles.
Table 13
*Causality Ratio between Japanese and English Texts*

<table>
<thead>
<tr>
<th></th>
<th>Total causality</th>
<th>Total clause simplexes</th>
<th>Ratio of causality per clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>126</td>
<td>241</td>
<td>52%</td>
</tr>
<tr>
<td>Japanese</td>
<td>122</td>
<td>421</td>
<td>31%</td>
</tr>
</tbody>
</table>

*Figure 4. Causality Ratio between Japanese and English Texts*
4.2 NOMINAL GROUP

Nominalization of causal logical semantics is part of logical and experiential grammatical metaphor. The nominalization is the final stage of incongruent realization of conjunctions, as logical semantic relations are compressed into the smallest experiential element in language. This process usually packs a cause-effect relation into one nominal group. For example, the implication of the word result is as an effect of some action. Result itself does not exist without any participant who produces a result. In other words, result itself includes all of the participants who produce (or cause) the result and this assumption is attached to a nominal group showing causation. Examples of causal-related nominal groups in both Japanese and English are introduced from the data

(1) 英語ブログ集合を収集・分類した結果の
分析を行う.
(We) analyze the result of collecting and categorizing English blog assembly.

(2) Problems with reader-oriented features such as providing supporting evidence and appropriate style and tone have been identified as major contributors to the failure of novice writers to persuade academic audiences.

Example (1) shows the nominal group implicitly composed of a cause-effect relation. This is the case as explained above, the nominal group itself contains the causal relation. The lexicon the result retains the meaning that the result was produced by collecting and categorizing the English blog assembly. Example (2) shows the clear logical semantics creating the connection between a cause and effect. The nominal group major contributors implies the causal logical semantics
because. The unpacked version of the sentence interprets this as novice writers fail to persuade academic audiences, because they have problems of providing supporting ideas, and appropriate style and tone. Conjunction because was packed into major contributors, which led to the process of packing a clause complex into a clause simplex.
Ratio of causation realized in nominal group

The data show the similarity in the ratio of the nominal realization of causal conjunctions between Japanese and English. As in whole clauses, English uses the nominalization of the conjunction slightly more than Japanese, exceeding by about 2%. That is, the Japanese texts contain approximately 20% of total causation, but the English texts uses only about 16%. The data indicate that there are no large differences in the nominal realization of causal conjunctions between Japanese and English.

Figure 5. Ratio of Nominalized Causation
4.3 VERBAL GROUP

Implication of verbal realization of causal relations plays a role in bridging the relation between cause and effect. Because the verb is in charge of creating a cause and effect relation, noun groups surrounding the verb such as a subject and complement are likely to be a part of causation.

(1) このような活動は、説明表現の熟達につながる。
This like activity explanation expression of growth to connect
An activity like this connects to the growth of explanation expression.

(2) Achieving bilingual competence requires the individual to gain control of the linguistic rules of both languages.

In the Japanese example (1), the verb *connects to* implies a cause and effect relation displayed as subject and complement. The implication of this clause is that the explanation expression may “grow because of the activity like this”. The complex causal conjunctive *because of* is packed into the verbal process, where a prepositional phrase is packed into the verb *connect*. It also locates the other elements associated with causation into subject and complement positions. Thus, *the growth of explanation expression* is the effect of the cause, *an activity like this*. The interpretation of causality in example (2) refers to the purpose. According to Halliday (2004), the purpose is considered part of causality, because an action is performed because of a particular purpose (p. 43). In this case, the purpose is realized in the subject *achieving bilingual competence* and *gain control of the linguistic rules of both (the) languages* is the action to attain the purpose. This clause can be interpreted as individuals having to gain control of the linguistic rules of both languages for the purpose of achieving bilingual competence.
The verbalization of causal logical semantics illustrates a significant difference between the Japanese and English texts. The Japanese texts have an extremely low frequency of verbalized causal meanings, which is shown in Figure 6. In the Japanese texts, the verbalized causations comprise 13 percent of the total causation, while they make up only four percent of the total clause simplexes. The English texts, on the other hand, contain a high number of verbalized causation at the rate of 33% in the total causation, which is the highest of all four areas.

Figure 6. Ratio of Verbalized Causation
4.4 CIRCUMSTANCE GROUP

Circumstance refers to adverbial phrases and pre/post positional phrases, which modify participants and processes. Among circumstantial expressions, pre/post positional groups form a major grammatical category that shows causal conjunctive meanings in both Japanese and English texts. The examples below describe the causal realization of circumstantial meanings in Japanese and English.

(1) 特に、いわゆる「ゆとり教育」カリキュラム
   Especially so called “Yutori Kyouiku (pressure free education)” curriculum
   によって 1990年代 には 大学生の学力が総合的に低下した。
   by 1990s in college students of academic ability in general decline

The academic ability of college students has generally declined especially by so called Yutori Kyouiku (pressure free education) in 1990s.

(2) Children may in fact acquire new languages more efficiently due to their engagement in play and other physical activities.

In example (1), the cause-effect relation is constructed through a postposition ni yotte “by.” The nominal group positioned before the postposition, Yutori Kyouiku “pressure free education” is recognized as the cause of the decline of college students’ academic ability and the postposition bridges the relation between the cause and its effect. In example (2), the preposition due to indicates reasons such as play and physical activities for children’s efficient language acquisition because due to itself implies cause or reason. Such pre/postpositions are contributors to the construction of the causal relation into a group, a phrase, and a clause.
In terms of the realization of causation by circumstantial elements, the result shows a similarity between the Japanese and English texts, which has only a 2% difference between them. Both the Japanese and English texts use circumstantial causality less than 10% of the total clause simplex and less than 20% of the total causations. The result may imply that circumstantial causality does not play an important role in expressing causal logical semantic meanings. The result of the circumstantial causality expression is shown in Figure 7.

![Figure 7. Ratio of Circumstantial Causation](image)
4.5 CONJUNCTIVE GROUP

Unlike the other lexicogrammatical aspects discussed above, conjunctives are the congruent realization of logical semantic meanings; the semantics of syntax is construed as such. In this research, conjunctions are the only area of meaning where the logical and experiential grammatical metaphors do not apply. It is only cohesive structural conjunctions that are the major element within the logical semantic system. However, conjunction in SFL does not rely on the formal criteria for conjunctions, but rather on the realizations of conjunctive meanings. For example, *By* used in (4) performs connecting the two segments, rather than modifying the participants and the process. Although “by” is termed as a preposition, not as a conjunction in the formal linguistics, it can be a conjunctive element in SFL depending on the function of “by” performed in the context. For the purpose of categorizing types of causal realizations, this analysis considers language meanings and functions as important to this semantic area.

In reference to Japanese conjunctive meaning expressions, Teruya (2007) introduced two ways of constructing structural conjunctions. One is adnominalization, where the conjunction itself is a nominal group. Similarly to the postposition, adnominalization is also restrictedly positioned after the subordinate clause. The other is verbal conjugation where structural conjunction is conjugated into a verb. Example (1) shows a case of adnominalization used in the data and example (2) describes the verbal conjugational conjunctive meaning.

(1) 特に，文脈の前後流れを
particularly context of before and after of flow
考慮し，
to consider not if
文の意味を全く別
sentence of meaning at all different
して捉えて
as to understand possibly
しまうことがある。
the case there is.
If (the computer) does not consider particularly the flow, previous and latter of sentences, there is the case that (computer) comprehends the meaning of the sentence as a totally different meaning.

(2) In other words, foreign language of voice sounds and letters to use actually communication to do can
すなわち、外国語の音声や文字を使って実際にコミュニケーションを図ることができる
In other words, (we) can communicate in real, using voice sounds and letters of foreign language.

(3) in order to investigate linguistic differences in the way the students realize the expository genre in general and the theme of clauses in particular,
(3.1) theme is an element of the textual metafunction, an important conceptualization for SFL, the framework for this study.

(4) By making explicit what is to be learnt, providing a coherent framework for studying both language and contexts, ensuring that course objectives are derived from students’ needs, and creating the resources for students to understand and challenge valued discourses.
(4.1) genre approaches provide an effective writing pedagogy.

The use of conjunctions is divergent in the Japanese and English academic articles (seen Figure 8). 15% of conjunctive elements are used in the Japanese texts, but over half of causality are realized as conjunctive elements. This number indicates that conjunctive elements are highly responsible for constructing the causal logical semantics, and may explain why the same meaning is realized much less in the other grammatical forms. In contrast, the English texts contain 33% of conjunctive elements in the total causations, the highest number of all the other causal forms examined. But it was much lower than in the Japanese texts in terms of the ratio in the total causation.
Further analysis of the conjunctive elements in terms of the type of causation shows that there is another difference between the Japanese and English texts. According to Halliday (2004), causality is classified into two categories: causal and conditional. Causal and conditional semantics are further classified into sub-categories: cause, reason, purpose concessive and conditional. The first three are referred to as causal, whereas the latter two are associated with conditional meanings. Each conjunctive element in this analysis was analyzed according to the five types of causal logico-semantics, and it revealed a significant difference in the types of causality used in the Japanese and English texts.

The Japanese texts have cause-related causality at the highest rate at the rate of 50%, as shown in Figure 9, whereas the English texts show that purpose-related causality dominates the conjunctive meaning. Purpose is conversely one of the lowest frequent meanings in the Japanese texts, occurring only 11% of the conjunctive meanings. English, on the other hand, shows a remarkably lower rate of conditional conjunctive elements. Particularly, the conditional

![Figure 8. Ratio of Conjunctive Causation](image-url)
meaning in the English data shows up at a significantly low frequency compared to the Japanese texts. *Figure 10* shows the ratio of the larger category of causality: causal and conditional. Both texts have the causal-related causality exceeding the conditional-related causality, but there is a large gap between causal and conditional elements observed in the English texts, as causal-related causality occurs 70% more often than conditional-related causality. This result leads to the interpretation that English texts do not have much to do with conditional-causality in academic writing, but the causal-related causality takes more responsibility for the academic journals.

![Figure 9. Ratio of Causation Types in Conjunctive Elements](image)
Figure 10. Ratio of Causal and Conditional Conjunctive Elements
This research has described the ways in which English and Japanese academic articles use different lexicogrammatical devices to express the concept of causality. Despite the similar text type or genre to which the data belong, the analysis has shown that the two languages differ not only typologically but also in terms of the lexicogrammatical patterns realizing cause and effect relations. Schleppegrell (1995) argued that the conjunctive linkage in written English tends to be expressed through prepositional phrases or other syntactic condensation, rather than through structural conjunctions. This semantic and syntactic mismatch between the two languages may be partially responsible for Schleppegrell’s finding that ESL students use twice the number of because in their writing compared to native speakers (1995). On this basis of this, Schleppegrell proposes that ESL students have a lack of knowledge about how the English language expresses logical semantics and emphasizes the importance of explicit pedagogical support for ESL students. This research has revealed that Japanese texts have much more structural conjunctions than English texts, whereas English texts have implicit causal semantics using logical and experiential grammatical metaphor whose causality meaning may not always be transparent.

The most conclusive result is that the lexicogrammatical features used to introduce and describe practically the same common are quite distinct depending on the languages used to do so. All lexicogrammatical areas where logical and experiential grammatical metaphors are employed indicate that the Japanese texts make much less use of the language transformed by the grammatical metaphor, but more of congruent expressions in terms of causality in comparison to the English texts. Nominal groups, circumstantial elements, and verbal groups in the Japanese
texts did not make much use of the gap that exists between the levels of semantics and lexicogrammar. This finding may further explain why the Japanese texts relied more on conjunctions to convey logical semantic meanings; and that is, in the Japanese texts, conjunctions were a major contributor that bridges the relation between causes and effects. This aspect is shown in the analysis that showed nearly 50 percent of causal relations are construed through conjunctions. The English texts, on the other hand, do not use conjunctions much, but rely more heavily on logical and experiential grammatical metaphors to convey the same causality meaning. This result also implies that the English texts use more incongruent expressions in academic registers, as shown in Schleppegrell (2004) that experiential grammatical metaphors increase the academic realm by packing as much information as the speaker intends to provide (p. 72).

One implication that results from this analysis is that the argument that an increase in the frequency of experiential grammatical metaphors is closely associated with an increase in terms of the level of complexity and technicality of the area may be restricted to English, and may not be applicable through various languages. The Japanese causality analysis shows fewer logical and experiential grammatical metaphors in the data academic texts, and experiential grammatical metaphors were not used much. This result may lead to the interpretation that the creation of academic realm is not associated with changing logical semantic meanings at the level of lexicogrammar in the Japanese texts, and a congruent realization of conjunctions does not have negative impact on academic registers in Japanese. The English texts, however, showed the effect of an increase in experiential grammatical metaphors in the academic area.

The types of causality used also vary in the Japanese and English academic journals. In terms of conjunctive elements, Japanese causations are generally composed of both causal and
conditional elements. English conversely has a significantly lower rate of conditional-causation while causality related causations are frequently used. The assumption is that the features of conjunction used in the Japanese and English texts are associated with the syntax of conjunctive elements. Causal related causations: reason, purpose, and cause, frequently use prepositions to connect elements between one segment and another, but the conditional seems to be expressed more through structural conjunctions such as but, although, if. These obvious textual conjunctions are the primary resource used in the Japanese academic journals, but not in the English data as they have other lexicosemantic resources to show similar concepts. We then may argue that the analysis conducted here provides suggestive evidence that what is called “semantic conjunction” that has been argued to be a crucial lexicogrammatical feature for languages to evolve into a more complex and technical form may be restricted only to the changes that have happened in English, and that it may not be generalizable to other languages.

And finally, as the findings discussed in my thesis are limited to analyzing academic linguistics journals, they may not be generalizable to all text types and registers of the two languages. Despite this limitation of this thesis, the results and contrastive differences in the lexicogrammatical construction of causality in Japanese and English are still worth noting. In the future, research on causality should analyze a wider variety of text types, which will reveal a true comparison between the two languages. Currently, that type of analysis requires analytic methods based on corpus linguistic models, which exclusively rely on computer programs and statistical analyses. The scope of this paper does not include these methods of analysis; nevertheless, this research is a step toward a more complete contrastive analysis between Japanese and English from a systemic functional perspective.
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Secondary sources


Office of Research Integrity

March 7, 2013

Masaki Shibata
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Dear Mr. Shibata:

This letter is in response to the submitted thesis abstract titled “A Contrastive Systemic Functional Analysis of Causality in Japanese and English Academic Articles.” After assessing the abstract it has been deemed not to be human subject research and therefore exempt from oversight of the Marshall University Institutional Review Board (IRB). The Code of Federal Regulations (45CFR46) has set forth the criteria utilized in making this determination. Since the information in this study only involves a textual analysis it is not considered human subject research. If there are any changes to the abstract you provided then you would need to resubmit that information to the Office of Research Integrity for review and a determination.

I appreciate your willingness to submit the abstract for determination. Please feel free to contact the Office of Research Integrity if you have any questions regarding future protocols that may require IRB review.

Sincerely,

Bruce F. Day, PhD, CIP
Director
Office of Research Integrity