A Procedure of Frame-Based Contrastive Semantics

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Abstract

This paper presents a detailed procedure of frame-based contrastive work, focusing on the process of establishing the frames. First, synonymous TEs are analyzed together to establish their role constellations. Then, this is applied to three instances of the source word, a result of which leads to a revision of the frame design initially established. The source word used here is the Korean *huagin,* and TEs used are *confirm* and *ascertain.* This experiment suggests some important issues in frame-based contrastive semantics and bilingual lexicography: the relativity of frame design and interlingual *differentiation.*

1 Introduction

Most of the contrastive studies in the frame semantics discourse focus on how to *use* frames for TE matching rather than how to *establish* frames— the procedure of frame design, which identifies frame elements, and frame description, which assigns type values for each frame element.[1] Hence, it seems that there should be more systematic attention to the procedure of frame-based contrastive work. This paper presents such a procedure in detail and proposes that (1) frames should be established in the context of semantic comparison, and (2) the procedure should start from the target language. For this case study, I use the Korean *huagin* as the source word and *confirm* and *ascertain* as its TEs. I will first show the workings of the procedure and then provide some reflections and justifications in the last section.

2 Role constellations of *confirm* and *ascertain* [2]

Role	Knower	**Medium**	*Content*	Prosody
Type	Passive	Active, transparent	Validity of pre-knowledge	Completion, ease

Table 1: Confirm frame

**The different fonts in the examples below correspond to the fonts of the roles in the table.*

1. [Context: The annual report was published last night.]
   The Under-Secretary... confirmed *the report's publication.*
2. **The final match** also confirmed *what he always knew - he could manage.*
3. She found a lump in her breast...and *cancer* was confirmed last week **by doctors...**
4. *The grand-jury investigation*, long rumored, was confirmed **in documents** filed with the Securities and Exchange Commission by Atlantic Richfield Co.

5. **To see such trite garbage** confirms to me *that children are being allowed to write without the supervision of adults.*
6. Sainsbury's says the *cause* has yet to be confirmed but "statistical evidence" shows the outbreak was associated with fruit from the salad bar.

Role	Knower	**Medium**	*Content*	Prosody
Type	Active	Passive, opaque	New finding	Process, difficulty

Table 2: Ascertain frame

1. We are still trying to ascertain *what it all means.*
2. The university is anxious to ascertain *details...*
3. He is still **sifting through that material**, still ascertaining *when he can use the combative performer...*
4. Until **this [investigation] is completed,** *the number of deaths and cause of the fire* cannot be ascertained.
5. *...credibility of the French nuclear arsenal* could only be ascertained **by carrying out between 10 and 12 tests.**

The sex of the fetus can be ascertained accurately **by ultrasound scanning...**

I have studied the behaviors of *confirm* and *ascertain* by taking from the *Bank of English* 75 instances for each word, of which six are presented here. *Confirm* and *ascertain* both describe a cognitive situation: a Knower comes (or seeks, fails, etc.) to cognize a Content through a Medium. However, the corpus examples show that in the confirm frame, the Medium is *transparent,* while it is *opaque* in the ascertain frame.

To illustrate, in the cognitive situation typically described by *confirm,* the Medium is easily available and clearly and authoritatively shows the Content. If the Medium is a person, s/he has an authoritative knowledge of the Content (*Confirm* 1, 3), and if it is an event or material, it is a decisive evidence for the truth of the Content (*Confirm* 2, 4, 5). On the other hand, the Knower's role or effort in bringing about the cognition is seldom mentioned. In contrast, in the situation that triggers the use of *ascertain,* the Medium, which may or may not be mentioned in the sentence is often hard to find and does not readily reveal the Content, and so the Knower's efforts of exploring the Medium to discern the Content is frequently mentioned. Hence, we can say that in the confirm frame the Medium is *active* and the Knower *passive,* while in the ascertain frame the Medium is *passive* and the Knower *active.*

The example *Confirm* 6, where the Medium is not yet available, is quite a-prototypical, and yet it still bears resemblance to the other, prototypical instances because the sentence suggests that good clues are already available and the process of finding a clear Medium will not be complicated. Also, *Ascertain* 6 seems to have an easily available Medium, contrary to the typical use, and yet the use of *can* indicates that the cognition depends on the Knower's ability and effort to use the ultrasound scanning.

The transparency of the Medium in the confirm frame leads to the semantic prosody of *completion:* in 84% of the *confirm* instances, cognition is already completed, and in the other instances cognition is in process or failed. In contrast, the opaqueness of the Medium in the ascertain frame generates the prosody of *process:* cognition is completed only in 13% of the instances, and in the rest ascertainment is in process, a future task, a possibility, or failed. Furthermore, whereas cognition generally proceeds with *ease* in the confirm frame, in the ascertain frame cognition is represented as *difficult*, and expressions such as *struggle, effort, try, difficult,* and *problem* often appear around the target verb.[3]

On the other hand, the Content is what the Knower has cognized, seeks to cognize, has failed to cognize, etc. The Content of the confirm frame is the *validity of a pre-knowledge*, and the Content of the ascertain frame a *new finding. Pre-knowledge* is a belief or conviction that the Knower has before the cognition takes place, and the cognition of *confirm* strengthens its validity. In our examples, the Contents include "what he always knew" (*Confirm* 2) and "rumors" (4), and in other instances it is clear that the Content is already known or suspected (1, 3, 6). When the Knower cognizes a Content without such pre-knowledge, it is considered a *new finding.* For instance, the sex of the fetus cannot be known before the ultrasound scanning (*Ascertain* 6), and the university has no idea of the details, although it may have some general idea (*Ascertain* 2).

3 TE matching for *huagin* and revision of frame design

The texts are taken from Korean newspapers. I translate the context and the source text except the word *huagin* in order to convey the original meaning as closely as possible, and this word should be read as roughly meaning "to cognize" or "attempt to cognize."

3.1 President Kim's visit to North Korea

Source text I: South Korean President Kim reports on his visit to North Korea: "We lived as a unified nation for 1,300 years before we were forcefully divided 55 years ago. It is impossible for us to continue to live separated physically and spiritually. **I have *huagin-ed* this fact first-hand during this visit.**" (Jeonun gugeosul ibeone gaseo hyeonjieseo huaginhetsumnida.)

Role	Knower	Medium	Content	Prosody
	I (Kim)	this visit	this fact (we cannot live separated)	
Type	Passive	Active	Validity of pre-knowledge	Completion, ease

Table 3: Role constellation of the source text I

In this speech, President Kim is saying that his experience during the visit overwhelmingly and clearly showed him Korean people's inseparability. Hence, the Medium is transparent and active. The Content is his long-held conviction, a pre-knowledge, and there is an emphasis on the cognition is completed. This constellation, then, exactly matches that of *confirm* (Table 1). Hence, the source text can be rendered: "This visit has *confirmed* this fact to me," as *confirm* takes the Medium as the subject.

3.2 Genetic modification

Source text II: Food manufacturers must indicate whether the crops used for their products are genetically modified. **If they cannot *huagin* whether they are genetically modified** (yoojeonja jojak yeoboorul huaginhalsoo eomnun gyeongooenun...), they must indicate on their products: "Possibly includes genetically modified such-and-such."

Role	Knower	Medium	Content	Prosody
	they (manufactures)	Not mentioned	whether they (crops) are genetically modified	
Type	Active		New finding	Process, difficulty

Table 4: Role constellation of the source text II

The text suggests that it is often difficult to find out about the genetic modification of the food material; in other words, although the Medium is not mentioned here, whatever it is, it is opaque and requires the Knower's cognitive efforts. The Content is a new finding, and there is a prosody of difficulty. Thus, this constellation is exactly matched by that of *ascertain* (Table 2). Hence, the translation: "If they cannot *ascertain* whether...."

3.3 Government inspection on public officials' discipline

Source text III: The Korean government is conducting an inspection on public official's discipline. The opposition Grand National Party (GNP) criticizes this as government's attempt to penalize the public officials participating in GNP's National Reform Committee (NRC). Now, the government responds to the GNP accusation: "Although GNP keeps bringing up the NRC issue, **we have never *huagin-ed* it [officials' involvement in NRC] or made it a problem** (ie dehe... huaginhageona moonjesamun iri eopda) as part of our inspection."

The government has not investigated the officials' NRC involvement. Here, the Knower is the government and it plays an active role in cognition, and the Content (officials' involvement) is a new finding; hence, the role constellation points to *ascertain*; however, saying, "we have never *ascertained* it" would mean that the government *did* investigate the matter and failed to get the result, instead of not investigating at all. This discrepancy happens because *huagin* here just means "to attempt to cognize" or "to inquire" rather than "to cognize," while *ascertain* always means "to cognize."
In this case, then, the frame design we have been using so far is inadequate to show the difference between the two words. This discrepancy points to a new dimension of semantic comparison and thus an introduction of a new frame element: Cognitive Orientation, whose type values are *cognition* and *inquiry*:

Role	Knower	Medium	Content	C. O.
Source text III	We: Active	Passive	Officials' involvement in NRC: New	**Inquiry**
Ascertain	Active	Passive	New	**Cognition**

Table 5: TE comparison through a revised frame design

The words that satisfy the role constellation of the source text III seem to include *investigate, check,* and *inquire.* We may have to add even more frame elements in order to distinguish these words. At the moment, however, we shall be satisfied to use them all in rendering the source text: "we have never *investigated/ checked/ inquired about* public officials' participation in NRC."

4 Frame relativity and differentiation

Our discussion shows that frame design for a lexeme (or for a sense) is not fixed, but determined in the context of semantic comparison, because each case of comparison determines what semantic dimensions are relevant. This again becomes clear when we see how differently *confirm* and *ascertain* are treated in the FrameNet, where they are analyzed separately through the frame hierarchy: *confirm* has only two frame elements, Support and Proposition, while *ascertain* has six: Cognizer, Evidence, Content, Manner, Means, and Speaker. Here, Cognizer corresponds to the Knower; Support/ Evidence, Means, Speaker to the Medium; Proposition/ Content to the Content; and Manner to the Prosody. So we can see that for *confirm,* there is no equivalent of the Knower and Prosody.

The rationale for starting the frame semantic analysis from the target language is that in TE matching the source word should follow the semantic dynamics of its TEs. In other words, the distinctions that are relevant in TE matching are those that determine the use of different TEs rather than those that determine different senses of the source word [Swenson 1993]. Hence, TE matching requires that the source language distinctions be established first, and then imposed upon the target language sense.

The problem, however, is that this imposed sense distinction is not familiar to the source language. Viberg calls this problem *differentiation.*

> The term *differentiation* can be used in cross-linguistic comparison when there are several semantically contrasting translational equivalents in the target language, but the native speaker of the source language has no feeling that these equivalents correspond to different meanings in his/her language [Viberg 1998].[4]

For instance, with respect to the source text I, *I have huagin-ed this fact during this visit,* it is would be somewhat odd, at least at first, for a Korean speaker to ask whether this means that the Knower actively explored the Medium or that the Medium actively informed the Knower. When the Medium a non-person (things and events), *huagin* only takes the Knower as the subject, and in the mind of the Korean speaker this automatically makes the Knower the active agent in all occurrences of *huagin.*

In translating this sentence into English, however, one of the TEs of *huagin,* that is, *confirm,* takes the Medium as the subject, and this necessitates the distinction of activity and passivity. The source sentence can be translated either as *This visit has confirmed this fact to me* or as *I have ascertained this fact through this visit* according to whether the Medium or Knower is considered active.

This suggests that differentiation poses a great challenge for creating a user-friendly and successful dictionary because it forces the users to deal with unfamiliar distinctions. But dealing with target language distinctions is a process of learning how to think like a native in making word choice, a necessary process if one wants to truly learn the language. A good bilingual dictionary not only provides rich and well-organized information but also effectively teaches the users how to think like a native.

Endnotes

[1] For instance, Atkins [1996], Boas [2001], Fillmore and Atkins [2000], Heid [1996], and Heid & Krüger [1996]

[2] In Heid & Krüger [1996], *role constellation* and *syntactic constellation* constitute *frame constellation.*

[3] Sinclair [1996] discusses semantic prosody, especially the prosody of *difficulty* associated with the phrase *naked eyes.*

[4] See also Santos [1998], [Aijmer [1998], and Baker [1992] for different cases of differentiation.

References

[Aijmer 1998] Aijmer, K., 1998. Epistemic predicates in contrast, in: S. Johansson & S. Oksefjell (eds.) *Corpora and Cross-Linguistic Research*, Rodopi, Amsterdam

[Atkins 1996] Atkins, B. T. S., 1996. Bilingual Dictionaries: Past, Present, Future, in: *Euralex '96 Proceedings*

[Baker 1992] Baker, M., 1992. *In Other Words: A Coursebook on Translation*

[Boas 2001] Boas, H. C., 2001. Frame Semantics as a framework for describing polysemy and syntactic structures of English and German motion verbs in contrastive computational lexicography, in: P. Rayson et al. (eds.) *Proceedings of the Corpus Linguistics 2001 Conference.* Technical Papers, Vol. 13. University Centre for Computer Corpus Research on Language, Lancaster

[Fillmore & Atkins 2000] Fillmore, C. & Atkins, B. T. S., 2000. Describing polysemy: the case of crawl, in: Y. Ravin and C. Leacock (eds) *Polysemy: Linguistic and Computational Approaches*, Oxford University Press

[Heid 1996] Heid, U., 1996. Creating a Multilingual Data Collection for Bilingual Lexicography from Parallel Monolingual Lexicons, in: *Euralex '96 Proceedings*

[Heid & Krüger 1996] Heid, U. & Krüger, K., 1996. A multilingual lexicon based on Frame Semantics, in: L. Cahill & R. Evans (eds) *Proceedings of AISB96 Workshop on Multilinguality in the Lexicon,* University of Essex

[Santos 1998] Santos, D., 1998. Perception verbs in English and Portuguese, in: S. Johansson & S. Oksefjell (eds.) *Corpora and Cross-Linguistic Research*, Rodopi, Amsterdam

[Sinclair 1996] Sinclair, J., 1996. The Search for Units of Meaning, TEXTUS vol. IX, no. 1

[Swenson 1993] Swenson, B., 1993. *Practical Lexicography*

[Viberg 1998] Viberg, A., 1998. Contrasts in polysemy and differentiation: Running and putting in English and Swedish, in: S. Johansson & S. Oksefjell (eds.) *Corpora and Cross-Linguistic Research*, Rodopi, Amsterdam