Obligation and reader involvement in English and Korean science popularizations: a corpus-based cross-cultural text analysis*

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Abstract

Most research on English/Korean cross-cultural text analysis has focused on comparing the discourse organization of academic texts written by English native speakers and ESL learners. However, this provides a limited view of the textual differences between the two cultures. In the present research, we analyze a genre with a mass readership—newspaper science popularization texts—from an interpersonal perspective. Using two corpora of 356 British and Korean newspaper articles, we investigated modal expressions of obligation. Analytical categories were devised based on two aspects: "who is imposing the obligation?" ("the obligation-imposer") and "on whom the obligation is imposed?" ("the obligation-imposed"). The analysis shows differences in the ways in which obligation is imposed on the reader in the two corpora. The English writers depend more on third-person scientific experts as "the obligation-imposer," and tend to specify "the obligation-imposed" explicitly. In contrast, the Korean writers are more likely to impose obligation in their own persona, and to represent the "obligation-imposed" implicitly. We explore in what ways these differences can be seen as reflecting cultural norms, focusing especially on the individualism and task-orientedness that are held to be characteristic of Western cultures as opposed to the collectivism and relation-orientedness of Korean culture.

Keywords: reader involvement; science popularization; modality; obligation; cross-cultural text analysis.

1. Introduction

Recently, interest in texts from non-Western cultures has increased as a result of pedagogical research on academic texts written by second/

foreign language (L2) learners. The primary motivation has been the assumption that the rhetorical patterns of L1 texts may affect those of L2 English texts (Kaplan 1987, 1988; Taylor and Chen 1991; Grabe and Kaplan 1996; Hinkel 1997). This has meant that the research on cross-cultural text analysis between English and Korean has mainly focused on the organization of Korean academic texts or L2 Korean students' academic writing in comparison with that of native English students' texts (Eggington 1987; Choi 1988; Ok 1991; Cho 1999; Lee 2000).

However, it can be argued that the writing conventions of Korean academic text have converged on English writing styles because of the increasing influence from, and the necessity to communicate with, the English-using academic world. For this reason, it seems less probable that culturally unaffected ways of text organization will be found in this genre. In addition, little attention has been paid to other textual aspects apart from text organization.

In the present research, a cross-cultural comparison of text will be carried out with a different type of data, from a different perspective, and for a different purpose. Firstly, instead of an academic genre that has a very limited range of scholarly readership, the study uses science popularization texts in newspapers from Britain and Korea. Science popularization texts (scientific popularization, popular science, or popular science writings) are usually understood as ''science writing for the general people'' (Calsamiglia 2003: 139). Since the genre has a mass readership, it is more likely to be written to reflect the textual features that are conventional within the British or Korean community. In other words, even though newspapers as a text type have been imported from the Western world, it is highly probable that the way in which Korean newspaper texts are written is less influenced by English conventions compared with the Korean academic genre. In addition, there is another benefit of taking this genre for cross-cultural study. Since the general topics are ''science,'' both the British and the Korean writers tend to deal with similar issues such as ''global warming'' or ''new technologies for a better life.'' Therefore, it is relatively easy to find texts in the two languages that are comparable.

Secondly, as mentioned above, most previous research has concentrated on organizational issues related to the ''textual'' metafunction (Halliday 1994) but has neglected the ''experiential'' and ''interpersonal'' metafunctions.[1] In the present research, the emphasis is placed on the interpersonal aspect of text. The analysis focuses particularly on the writer's use of the modal expressions of obligation, as one of the linguistic devices that the writer can choose for the involvement of the reader in the text. Finally, our motivation is not directly pedagogical: we are not concerned

with the possible effects of L1 conventions on L2 writing. Rather, we wish to build on the original insight that different cultures may have developed different generic conventions for comparable genres (Hinds 1983), and to explore the nature of certain key areas of difference. Our aim is to identify some of the differences in how writers interact with their readers in a corpus of British and Korean texts and to attempt to relate the discourse patterns that we find to the broader cultural factors that they construe.

1.1. *The modal meaning of obligation for the involvement of the reader in text*

In discourse studies, the idea of involvement has been generally understood as the speaker's feeling of relatedness to the interaction with other interlocutors in a discourse situation. Tannen (1989: 9–12) defines involvement as "an internal, even emotional connection individuals feel which binds them to other people as well as places, things, activities, ideas, memories, and words." In addition, the idea has been considered to be linked to direct interaction between speaker and listener. In Chafe's (1982: 35–53) research comparing spoken and written language, "involvement" is one notion that explains the features of spoken language and is in contrast to "detachment," which characterizes written language. Chafe argues that the contrast of involvement versus detachment arises from the difference that speakers are normally engaged in face-to-face interaction with their audience, whereas writers are not (see Chafe and Danielewicz 1987; Biber 1988).

Even though it is sometimes difficult to draw a clear boundary between the spoken and written modes, the notion of involvement has been regarded as a characterizing feature of spoken discourse, where face-to-face interaction is available, and particularly viewed as relating to the addressor. However, apart from the addressor's involvement, various linguistic resources can be used to evoke the addressees' involvement in a discourse situation, whether it is spoken or written. For instance, through using modal expressions of obligation, i.e., the linguistic devices of deontic modality, the writer can aim to make the text sound involving and relevant to the reader, as in example (1):

(1) (E-48)[2]
   Attention has lately shifted to Chad, in the central part of the continent, with the announcement of the discovery of a 6–7m-year-old hominid skull there. But Asia <u>should</u> not be ignored, as the latest evidence of early Homo erectus technology in Japan and China has emphasised.
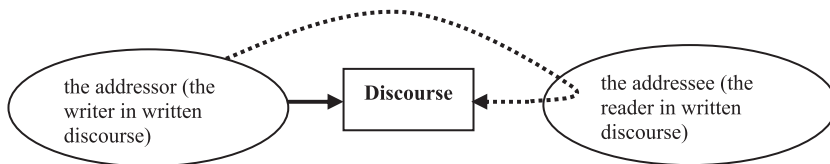
Figure 1. *Addressor's involvement (solid arrow) and Reader-Involvement Evoking act (dotted arrow)*

The writer of (1) imposes a kind of obligation on the reader with the modal verb *should:* although the agent of the passive voice is an understood one, it is clear that the understood agent (who *should not ignore Asia*) can include the reader, and that the writer is making a strong recommendation to the reader (among other people) based on the writer's knowledge of paleontology.[3] The writer's imposition of obligation may make the reader feel a kind of responsibility to fulfill the obligation, and, as a result, he/she may feel involved in the text. Modal expressions which potentially impose some kind of obligation on the reader are thus seen as one way in which the writer can evoke in the reader a feeling of involvement in the text. This view of involvement is shown in Figure 1, in which the solid arrow represents the writer's direct involvement (following Chafe and Tannen), while the dotted arrow represents the writer's attempt to create a sense of involvement in the reader. In the present study, communicative acts such as the expression of obligation which realize this attempt are termed "Reader-Involvement Evoking acts" (henceforth, RIE acts).[4]

In fact, previous researchers have already mentioned the possible effect of deontic modality in terms of reader involvement although they did not use the specific term "RIE act." For instance, Hyland (2001: 553) argues that "obligation modals referring to actions of the reader" are "potential surface feature evidence of reader engagement" (see also Hyland 2002; Swales et al. 1998). Giltrow (2005: 194) suggests that expressions for imposing obligation in research articles can remind the researchers of the solidarity among them. However, few attempts have been made at corpus-based cross-cultural text analysis particularly in terms of the modal expressions of obligation. Therefore, the aim of the present study is to open up this area to investigation. In order to achieve this goal, English and Korean corpora will be compared by setting up a system of modal expressions of obligation that specifies the interaction between writer and reader, focusing particularly on the person who is imposing obligation and the other person(s) on whom the obligation is imposed.

   We begin in the following section by identifying the modal expressions of obligation used in the analysis of the present study.

2.   The study

2.1.   *Modal expressions of obligation in the study*

In English, we find it useful to make a broad three-way division in the options available for realizing the modal meaning of obligation used for RIE acts: grammaticalized expressions (e.g., *must, have to,* etc.); lexical modal expressions (Perkins 1983; Palmer 1990) (e.g., *be necessary to/that, There is a need to,* etc.); and metaphorical expressions (Halliday 1994: 355). Example (2) below illustrates the first and third of these categories (we leave aside for the moment the fact that the modality is attributed to someone other than the writer—see 2.2.1 below).

(2)   (E-45)
      Andreas Kortenkamp, a toxicologist at the University of London, School of Pharmacy, agrees more research <u>must</u> be done but adds that <u>it is not too early for</u> action.

Apart from the modal verb *must*, obligation is expressed through the phrase *it is not too early for [action]*. This appears to be simply a description of the current state of affairs, with no grammatical or lexical item whose primary function is to express obligation. Pragmatically, however, the phrase can be seen as functioning as a metaphorical demand for action (Halliday 1994; see Iedema 1999 for further discussion of how "shouldness" can be more or less indirectly expressed in different contexts). However, this kind of metaphorical realization of modality was not included in the analysis because there is no objective and absolute standard to decide which of these expressions are imposing obligation; and this problem is compounded by the fact that the analysis is carried out in two very different languages. This indeterminacy also means that a list of such expressions cannot be drawn up to allow the corpora to be searched mechanically.[5] Therefore, only the items from the first two

Table 1.   *The English modal expressions of obligation*

Types	Examples
Grammaticalized expressions	*must, should, ought to* *have (got) to, need to, had better*
Lexical modal expressions	*be necessary to/that, be obliged to, be required to,* *There is a need to*[6]

Table 2.   *The Korean modal expressions of obligation*

Types	Examples[7]
Grammaticalized expressions	*-eya/aya hata, -eya/aya toyta* ('must', 'should', 'ought to')
Lexical modal expressions	[AGENT-*ka/i(-un/nun)* GOAL-*ul/lul* VERB STEM-*nun*] *kesi philyohata.* 'The fact [that AGENT VERB GOAL] is necessary.'
	[AGENT *-ka/i(-un/nun)* GOAL- *ul/lul* VERB STEM-*l*] *philyoka issta.* 'There is a need [for AGENT to VERB GOAL].'

categories shown in Tables 1 and 2 were considered in gathering data for the present study.

2.2.   *The systems of modal meaning of obligation used for analyzing texts in terms of RIE acts*

Various systems for describing modality have been suggested (e.g., Halliday 1994; Palmer 1990; Perkins 1983; Sohn 1999). However, we found that these previous models of modality are not entirely suitable for cross-cultural analysis of texts from the perspective of RIE acts because they are not specifically designed to explore the concept of writer–reader interaction. We therefore set up a system for analyzing the modal meaning of obligation based on the following two main factors: "who is the imposer of the obligation?" (henceforth, "the obligation-imposer") and "on whom is the obligation imposed?" (henceforth, "the obligation-imposed").

There were two main reasons for categorizing instances according to these two factors. Firstly, one important consideration in investigating the interaction is that the act of imposing obligation is a face-threatening act (FTA: Brown and Levinson 1987) in that "orders" and "requests" may threaten the addressee's face (1987: 66). Therefore, in order to identify any possible differences in how such FTAs are performed in the two languages, we need to examine how the two interlocutors, the obligation-imposer and the obligation-imposed, are constructed in text. Secondly, concentrating on the functional roles performed by the language choices in this way makes it possible to compare the expressions of obligation in the two corpora irrespective of the syntactic differences of English and Korean.

2.2.1.   *The obligation-imposer.*   In science popularization texts, there are two different ways of representing the obligation-imposer according to how explicitly this role is constructed in text. The obligation may be

imposed through the writer's own voice. This is the unmarked case for modality, and the obligation-imposer is left implicit. In such cases there are two possible sources of the imposition of obligation: the writer him/ herself may impose the obligation, as in example (3); or the writer's voice may represent generally accepted opinions from the scientific research community, as in example (4).

(3) (E-51)

The only things that the writers of *Hear the Silence* get wrong, to be fair, are the science and the story. As a drama, it's moving and convincing. But when you watch it, and you <u>must</u>, make sure you have this paper next to you. Use it as a tick chart for the half-truths, distortions and omissions.

(4) (K-27)

ttaymwuney   *wuli-nun*   *kwahak-eynun*   *mwullon*   *inlyu-ey*
for.this.reason   we-TOP   science-to   not.only   humankind-to
tayhayseto   *saylowun*   *sikak-ul*   *cekyonghay*
but.also   new   viewpoint-ACC   apply
-<u>*ya ha*</u>-n-<u>*ta*</u>.
-should-PRS-DECL
'For this reason, we <u>should</u> apply a new viewpoint not only to science but also to humankind.'

In addition, however, the writer may overtly specify a certain third person as the obligation-imposer, by means of reporting what they said. In this genre of texts, they are usually scientists or experts in certain areas— e.g., *Dr Jane Wang* in example (5).

(5) (E-16)

Dr Jane Wang, a physicist from Cornell University, New York, says that rather than thinking of insects as small aeroplanes, *we* <u>should</u> view them as swimmers in the air.

Although the writer attributes the imposition to a third person, the use of *we* indicates that those on whom the obligation is imposed are intended to include the reader; and there is no indication in the text that the writer disagrees with the opinion that is being reported (in the case of [5], for instance, Dr. Wang's views on insect flight are explicitly described in the text as the ''answer'' to the question of how insects fly). In such cases, the writer acts as an intermediary, as it were transmitting the obligation to the reader on behalf of the expert.[8] The choice to use expressions of obligation which are attributed to someone else rather than in the writer's own voice has important implications and will be discussed in Section 4.

Table 3. *Four possible types of obligation-imposed*

The obligation-imposed	Explicit entity	2nd-person pronoun *you/tangsin* (Type 1)[9]
		1st-person pronoun plural *we/wuli* (Type 2)
		3rd-person nominal forms (Type 3)
	Implicit entity	Understood agent (and nominal omission in Korean) (Type 4)

In the present study, cases like (3) and (4) are categorized as "Type W" ("Writer") and those like (5) as "Type T" ("Third person"). Both types of obligation-imposer were included in the study, provided that the obligation-imposed included the reader (see next section).

2.2.2. *The obligation-imposed.* Next, we need to consider on whom the obligation is imposed: "the obligation-imposed." There are some cases in the data (e.g., when a scientist is reported as describing the actions that the researchers had to take in their research) where the obligation is imposed on a third person: these have been excluded, since they do not have a reader-involving effect. However, in most cases the obligation-imposed at least potentially includes the reader, as illustrated in the examples below. In those cases, there are four possible categories of expression as shown in Table 3.

If the obligation-imposed is the 2nd-person pronoun *you/tangsin* (Type 1), it normally refers directly to the reader. In English, this is the "impersonal *you*" (Kitagawa and Lehrer 1990); but, as in (6), even in such cases the choice of *you* inherently introduces "you-ness" and a sense of direct address, and therefore potential reader involvement, in a way that other options open to the writer such as *everyone* or *people* do not.

(6) (E-111)[10]
     But for a maglev fast enough to compete seriously with passenger aircraft *you* must travel to Japan. In the foothills of Mount Fuji, 100km west of Tokyo, lies the tourist town of Tsuru.

If the obligation-imposed is expressed through the 1st-person pronoun plural *we/wuli* (Type 2), it includes the reader because it refers to the writer, the reader, and someone else as in (7) and (8).

(7) (E-32)
     Of course no one has any idea whether the disease could be passed from deer to humans, but the feeling is that this is not a risk *we* should take lightly.

(8) (K-65)

wuli-*ka*   *te*   *cal*   *kwanchalha-nun*
we-NOM   much   closely   observe-COMP
kes-i   *philyoha*   *-ta*.
fact-NOM   is.necessary-DECL
'<u>The fact</u> that *we* observe more closely <u>is necessary</u>.'

In the category of ''3rd-person nominal forms'' (Type 3), there are three possible kinds of expressions: the use of indefinite pronouns (e.g., *everybody, anybody*), common nouns (e.g., *people*, *society*, *our small island, human beings*), and proper nouns (e.g., *the English, Koreans*). In each case, although the involvement effect is less strong than with *you* or *we*, the reader can identify him/herself as a member of that group. For example:

(9) (E-10)

But despite the attention and money, none of it will be enough to save everywhere from the sea. *Our small island* will just <u>have to</u> cope with being a little smaller still.

(10) (K-30)

ilen   *tokseng*   *pailesu*   *-lo*   *inhan*   *cayang-ul*   *makki*
this   poisonous   virus   -caused   by   disaster-ACC   prevent
wihay   inlyu-*nun*   *ppalli*   *cihyey-lul*   *mo*
in.order.to   human.beings-TC   rapidly   wisdom-ACC   seek
-*aya ha*-*n*-*ta*.
-have.to-PRS-DECL
'*Human beings* <u>have to</u> seek wisdom rapidly in order to prevent the disaster caused by this poisonous virus.'

On the other hand, in the cases of ''implicit entity'' (Type 4), the obligation-imposed is not explicitly realized in the text. In English, this happens when it is the omitted understood agent of a passive voice clause on whom the obligation is imposed, as in example (1) above (''Asia should not be ignored''). In Korean, on the other hand, the obligation-imposed can be realized implicitly in two ways. Firstly, there are cases, as in English, of agentless passive voice clauses as shown in example (11).

(11) (K-82)

kwahakkiswul   *sencinkwuk-ulo*   *ciniphaki*
science.technology   well-developed.country-into   entering
wihaysenun   *hankook-uy*   *yenkwu*   *phayletaim-i*
for   Korea-GEN   research   paradigm-NOM
pakkwi   -*eya ha*-*n*-*ta*.
be.changed   -should-PRS-DECL

'To enter the group of countries with well-developed science and technology, the research paradigm of Korea <u>should be</u> <u>changed</u>.'

In addition, there are many cases where the subject of a sentence does not appear: contextually recoverable nominal elements are easily omitted if they are not topicalized in the Korean language. The agent of the verb to which the modal expressions of obligation are agglutinated can be easily omitted—see example (12).

(12) (K-142)

te	*kwakamhakey*	*kicho*	*yenkwu-lul*	*hwaktayhay*
more	boldly	basic	research-ACC	expand
nak	-<u>*aya ha*</u>-*n*-<u>*ta*</u>.			
keep	-<u>should</u>-PRS-DECL			

'(*You*/*We*) <u>should</u> keep expanding basic research more boldly.'

In such cases, even though there is no explicit realization of any entities to indicate the readers, if they can feel that they potentially fill the role of the understood agents, it can be argued that they are being constructed as the obligation-imposed.

3.   Data and methodology

In the present study, the focus is on science popularization in newspapers. Two corpora were built from texts taken from two British and two Korean newspapers: *The Daily Telegraph* and *The Guardian* from Britain, and *Chosunilbo* and *Dongailbo* from Korea. They are all quality broadsheet newspapers, aimed at a relatively educated audience (Korea has roughly the same division between "quality" and "popular" newspapers as Britain).[11] The texts, which were collected from the online versions of the newspapers, appeared in the "Science" section in both groups of newspapers. In selecting the texts, news reports which happened to relate to noteworthy scientific events were not included. Science popularizations proper are discursive and address broad issues; they exploit interactive resources such as questions, and are highly evaluative; and they deal with advances in scientific understanding rather than the inventions or discoveries that are the focus of news reports. The texts are written either by science reporters or by scientists, with a marked difference in the proportions of each: 17% of the British writers are scientists, compared with 34% of the Korean writers.

We set out to compare the same amount of data from the two groups of texts, over a fairly short time-span. As shown in Table 4, more Korean texts were collected in order to equalize the total number of sentences.[12]

Table 4.   *Details of the texts*

Languages	No. of texts	Total no. of sentences	Publication time-span
English	115	8,886	Feb 2003–Feb 2004
Korean	241	8,829	Jun 2000–Aug 2004[13]

Using the corpus analysis software Wordsmith Tools 4, we first identified all the modal expressions for obligation listed in Tables 1 and 2 in the two corpora, and then categorized each occurrence into Types W or T for the obligation-imposer and Types 1, 2, 3, or 4 for the obligation-imposed (see Table 3) in order to find whether there are any differences in the way of imposing obligation in text. Although Wordsmith Tools identifies the exact forms of the modal expressions, it cannot identify the functions of the modal expressions. For example, the modal verb *must* can be used for representing epistemic necessity as well as obligation; but the software cannot distinguish between these uses. For this reason, manual analysis was necessary after the computational analysis.

4.   Results and discussion

The numbers of sentences where the modal expressions of obligation are used for RIE acts in each corpus are shown in Table 5.

Table 5 indicates that modal expressions of obligation are significantly more frequently used as a device for RIE acts in the English corpus than in the Korean one. Although the imposition of obligation is a FTA, the English writers seem readier to use it for RIE acts than the Koreans. This suggests that English writers are perhaps more inclined to see the function of science popularization as at least partly concerned with the moral and ethical implications of scientific and technological advances.

If the results are looked at in terms of the obligation-imposer and the obligation-imposed, there are distributional differences between the two corpora. Firstly, when considering the category into which the

Table 5.   *Numbers of sentences where the modal expressions are used for RIE acts*

	English	Korean	Significance test
Number of sentences with impositions of obligation	107	74	5.84*

* $P < 0.05$; critical value = 3.84[14]

Table 6.   *Occurrences of Types W and T*

Type	English		Korean		Significance test
	%	frequency	%	frequency	
Type W (writer)	42.99%	46	81.08%	60	1.95
Type T (3rd person)	57.01%	61	18.91%	14	31.47*
Significance test	2.11		30.80*		

* $P < 0.05$; critical value = 3.84

obligation-imposer falls, it is noticeable that there is a significant differ-ence between the two corpora in the use of Type T (see Table 6).

Table 6 also shows that the Korean writers use Type W, as in example (13), much more heavily than Type T, as in example (14).

(13) (K-16)
 hanpanto-uy   konglyongtul-ul ihayhaki   wihaysenun
 Korean.peninsula-GEN dinosaurs-ACC   understand in.order.to
 pota   nelpkey po-l   <u>philyo-ka   iss-ta</u>.
 more   broadly see-REL <u>need-NOM exist-DECL</u>
 'For understanding the dinosaurs of the Korean peninsula, <u>there is a need to</u> see more broadly.'

(14) (K-88)
 welkyoswu-*nun   "thongcung-un   cwukwancekin*
 Prof.Wall-TOP   "pain-TOP   subjective
 hyensang-ulo   thain-uy   kothong-ul   emsal
 phenomenon-therefore   others-GEN   ache-ACC   exaggeration
 ilako   mwusihaysenun   an   <u>toy-n-ta</u>"   -ko
 as   disregard   not   <u>should-PRS-DECL</u>"   -QUOT
 kangcoh-ayss-ta.
 emphasize-PST-DECL
 '**Prof. Wall** emphasized that "Pains are a subjective phenomenon. Therefore, (*we*) <u>should</u> not disregard others' aches as exaggeration".'

The differences must be treated with caution, since, as noted above, a larger proportion of the Korean writers are scientists, who in some cases are reporting on research in which they themselves are to a greater or lesser degree involved. However, the proportion of Type T is still lower than would be predicted.

In contrast, in the English texts the difference is much smaller, and in fact Type T (example [15]) is slightly more often used than Type W (example [16]).

Table 7.   *Occurrences of each type of imposition in terms of the obligation-imposed*

Type	English		Korean		Significance test
	%	frequency	%	frequency	
Type 1 (*you/tangsin*)	34.58%	37	0%	0	51.06*
Type 2 (*we/wuli*)	40.18%	43	16.21%	12	18.34*
Type 3 (3rd-person nominals)	13.08%	14	10.81%	8	1.62
Type 4 (implicit entity)	12.15%	13	72.97%	54	27.22*

* $P < 0.05$; critical value = 3.84

(15)   (E-32)
   "*We* <u>need</u> people to continue hunting," says **Miller**. "It is the only cost-effective way to manage the population. *We* <u>must</u> just reduce infection levels so it does not spread and we can minimise the long-term effects on population stability."

(16)   (E-60)
   We know that our planet's resources will not last forever and that *we* <u>should</u> be trying to reduce the amount of rubbish we throw out.

These variations suggest that the writers of the two cultures have different views of the writer's role in this genre. Through the explicit specification of a third-person obligation-imposer (Type T), the English writers introduce various experts' opinions, which can be seen as serving to increase the perceived objectivity and accuracy of the information given. This, in turn, gives greater authority to the demand for action.

   At the same time, the writer is positioned with the reader as having the obligation imposed on them by the expert. This fits with a general tendency in the English texts for the writers to align themselves with the readers rather than with the experts (e.g., through the use of pronouns indicating solidarity—see Kim 2006).

   However, the English writers are almost equally ready to perform the imposition in their own persona (Type W) and, as noted above, the Korean writers rely very markedly on this form of imposition of obligation. In order to explore the possible reasons why this happens, we need to turn to the question of who fills the role of the obligation-imposed in the two corpora—see Table 7.

   Reading across the table, the frequencies of Types 1 and 2 in the English corpus are significantly higher than those in the Korean one. In contrast, the frequency of Type 4 in the Korean corpus is significantly higher than that in the English. This also means that, reading down the table, Type 2 and Type 1 are more frequently employed than the other

categories in the English data, whereas Type 4 is far more frequent than
the others in the Korean data. Below are examples of each of these pre-
dominant types: Examples (17) and (18) illustrate Types 1 and 2 in the
English texts, while example (19) illustrates both subcategories of Type 4
in the Korean texts (contextually recoverable subject and passive with
understood agent).

(17) (E-13)
      So when you hear about someone like Fiennes, and you ask whether
      exercise is worth it, *you* <u>have to</u> consider your own priorities.

(18) (E-94)
      ''Think of some poor soul who died in the trenches in 1914,'' says
      Peacock. ''Basically we knew nothing about the universe then, we
      didn't even know that galaxies were made of stars. . . . That guy
      died just a few years from the one time in human history when
      basically all these questions were settled. . . . *We* <u>should</u> not get
      bigheaded. We only understand a small fraction of things about
      the universe.''

(19) (K-173)
      inkanpokcey-nun   emkyekhakey kumciha   <u>-yeya</u>[15] ha
      human.cloning-TOP   strictly   forbid   <u>-should</u>
      -ciman   nanchipyeng chilyo-lul wihan cheyseypho
      -although.but   obstinate.disease remedy-ACC for   stem.cell
      pokcey   yenkwu-nun   kyeysokt<u>oy   -eya ha-n-ta</u>.
      cloning   research-TOP <u>be</u>.continued <u>-should</u>-PRS-DECL
      'Although (*we*) <u>should</u> forbid human cloning strictly, stem-cell
      cloning research for the remedy of obstinate diseases <u>should be</u>
      continu<u>ed</u>.'

In other words, the Korean writers are more likely to leave the
obligation-imposed implicit. In contrast, in the English corpus, Types 2
and 1 are preferred to the others, i.e., the English are more inclined to
specify the obligation-imposed explicitly.

   One plausible explanation for this difference is that, as noted above,
when using modal expressions of obligation for RIE acts, the two groups
of writers are performing a kind of FTA in relation to the readers, and to
do this, they seem to employ different kinds of strategies in ways which
are appropriate to their culture.

   In the English corpus, there are broadly two ways of performing the
FTA. Firstly, Type 2 (*we* as the obligation-imposed) is more frequently
chosen than other types. This can be related to one of Brown and
Levinson's positive-politeness strategies: ''to convey that S (speaker) and

H (hearer) are cooperators.'' According to Brown and Levinson, ''if S and H are cooperating, then they share goals in some domain, and thus to convey that they are cooperators can serve to redress H's positive-face want'' (1987: 125). Brown and Levinson continue that ''to include both S and H in the activity'' is one strategy in the second major class of positive-politeness strategies. The use of Type 2 can be deployed to suggest that both the writer and the readers are involved in the fulfillment of the obligation. This places the writer on the same level as the reader, evoking solidarity rather than constructing the writer as the ''expert'' at a higher level (through greater knowledge) than the reader. Thus, while the FTA is directly carried out, the potential imposition is diffused.

However, the English writers also employ a considerable amount of Type 1 (*you* as the obligation-imposed). This may seem to sit oddly with the frequent use of Type 2, since it implies that the writer is imposing obligation on the readers ''without any redressive action, baldly'' (Brown and Levinson 1987: 69), distancing himself/herself from the fulfillment of the obligation and withdrawing behind the cloak of knowledge-based authority. It is true that *you* in all these cases falls under what Kitagawa and Lehrer (1990) term the ''impersonal use,'' referring to people in general; but, as noted earlier, the fact that the writer chooses *you* rather than, for example, *people* or *one* is significant in that, in comparison with the 3rd-person forms, *you* retains a strong flavor of direct address. What seems to be happening here is that, for the English writers, involvement is more important than politeness: by making explicit reference to the reader, whether or not the writer includes him/herself in the obligation-imposed, the writer seeks to heighten the RIE effect. At the same time, the choice of overt forms of expression, whether *we* or *you*, means that the obligation is being imposed explicitly and directly. This can perhaps be seen in terms of balancing involvement against directness: the writer's overt interaction with the reader provides a context in which direct imposition of obligation is more acceptable. From this perspective, the fact that the English writers make markedly heavier use of experts as the obligation-imposer (Type T—see above) can also be seen as a way of enabling direct imposition of obligation without damaging the relationship between writer and reader.

In contrast to the English texts, in the Korean texts implicit entities (Type 4) are overwhelmingly employed and *wuli* (Type 2) is the next choice for the obligation-imposed, but with a huge gap between the frequency of Types 4 and 2. This result can also be related to Brown and Levinson's (1987) idea of politeness and strategies for performing the FTA. They argue that, in many languages, ''impersonalizing speaker and hearer'' may be a strategy for ''negative politeness'' and that speakers

try to avoid the personal pronouns *I/you* by employing "passive and circumstantial voice" (1987: 190–194). In the case of Korean, there is the further option (which is not available in the same way in English) of leaving unstated the entity responsible for carrying out the required action. Through avoiding any realization in the text of a concrete entity for the obligation-imposed with which the reader can identify, the writer can downplay the fact that obligation is being imposed: i.e., the "threat" to the reader's "face" (Brown and Levinson 1987) is minimized. This is therefore in a sense the reverse of the way in which the English writers deal with the imposition of obligation: Korean writers downplay overt interaction but place higher priority on maintaining polite relations with the reader through indirectness.

It can thus be argued that the writers of the two cultures demonstrate different attitudes toward the textual imposition of obligation. The Korean writers choose negative politeness strategies, preferring to appear to avoid performing the FTA overtly, suggesting that they regard the imposition as potentially very face threatening. In contrast, the English writers employ positive strategies or perform the imposition without any redress, presumably reflecting an assumption that it may not threaten the reader's face so greatly (see the figure in Brown and Levinson 1987: 60). This may also help to explain why the English writers appear ready to use expressions of obligation more frequently than the Koreans.[16]

5.   Conclusion

The results of the study have shown that the ways in which the modal expressions of obligation for RIE acts are employed are different between the two corpora. On the basis of Halliday and Martin's (1993: 37) arguments that "social context is realized by language," it can be suggested that the variations in the strategies employed seem to be influenced by an inclination toward implicitness and indirectness in the Korean texts and a preference for explicitness and directness found in the English ones.

It is not easy to find a clear linguistic definition of "implicitness" ("indirectness") in written discourse analysis because many researchers relate this to different aspects of texts. Originally, the idea of implicitness and indirectness has been noted in the research on contrastive rhetoric as an organizational feature of texts from East Asian countries such as Korea, China, and Japan. However, according to Hinkel (1997: 379), the concept can also refer to another set of features of texts "that serves to remove direct reference to the speaker and the hearer, and is used to avoid a potential imposition or a threat to the speaker's/hearer's face (Brown and

Levinson 1987).'' On the basis of this, it can be argued that the Korean writers' preference for Type W (the writer as the implicit obligation-imposer) and, especially, Type 4 (implicit entity as the obligation-imposed) in imposing obligation is one example of indirectness.

Many researchers argue that implicitness and indirectness in the texts of Eastern Asian countries seem to be a reflection of their sociocultural heritage, particularly Confucianism (Hinkel 1997; Cho 1999).[17] Confucianism was introduced to Korea in 372 AD. From then, it kept its status as a political ideology throughout Korean history until the beginning of the twentieth century; and the tradition of Confucianism still remains a very powerful force in modern Korean society (Yum 1987, 1988). If this is so, what aspect of this philosophical ethos could have influenced the characteristic realization of obligation imposition in the Korean texts?

Bond and Hwang (1986: 216) argue that the centrality of harmonious human relationships based on hierarchical social order is the fundamental creed of Confucianism. This key essence of Confucianism can be related to the implicitness and indirectness of Korean:

the Korean language itself is also abundant with implicitness and indirectness. This aspect is a consequence of the Confucian legacy of putting the highest value on human relationships. Indirect communication helps to avoid the embarrassment of rejection by the other person, leaving the relationship intact (Yum 1987: 77).

It therefore seems plausible that the implicitness and indirectness that we have identified in the Korean texts are due to the ''relation-orientedness'' which is pervasive in the Korean culture. Politeness is seen primarily in terms of avoiding situations in which there is a possibility of conflict or rejection, and therefore building and maintaining a good human relation between the writer and the reader is more valued than the messages conveyed in the Korean texts. This kind of relation-orientedness may also explain the reason why, to the majority of the Korean writers, the imposition of obligation appears to be seen as much more face threatening.

In contrast, in Western culture, writers are expected to be responsible for making ''relationship, purposes, and main messages as transparent as possible within the conventions of the text type'' (Grabe and Kaplan 1996: 190). The reason why the English writers show such explicitness and directness seems to be to enhance the efficiency of communication. For instance, according to Kim and Kim's (1997: 509) study, there are cultural differences in the request strategies between Americans and Koreans: Americans are more concerned about ''conveying the message clearly and efficiently (task constraint),'' whereas Koreans attend more to ''avoiding damage to the relationship or loss of face by the hearer

(social-relation constraint).'' It can be suggested that, unlike in Korean culture, the specification of agents of behavior or of responsibility for fulfilling obligation seems to be more valued because of the ''task-orientedness'' (see, e.g., Kim 1994; Kim and Wilson 1994) of communication in Western culture. In addition, this task-orientedness may also explain why the imposition of obligation does not appear to be so face threatening to the English writers as to the Koreans.

Notes

*   We would like to thank the three anonymous reviewers for helpful comments and suggestions on an earlier version of this paper.
1.   In systemic functional grammar, language is seen as having a ''threefold pattern of meaning''—experiential, interpersonal, and textual meaning. These form three ''meta-functions'' of language (Halliday 1994: 35).
2.   ''E-48'' stands for ''English text no. 48.'' Similarly, ''K-1'' stands for ''Korean text no. 1.''
3.   It could be argued that the obligation must be mainly imposed on paleontologists as the agents to whom the command most obviously applies. However, the wording does not express a limitation of that kind: all readers are being encouraged to accept the validity of the command and to fulfill the obligation in some way, if only by accepting the claim that Asia is important in this respect.
4.   In addition to the modal meaning of obligation discussed here, various other linguistic devices, such as 1st-person pronoun plurals, reader-oriented 2nd-person pronouns, questions, and the modal meaning of possibility, are also considered as kinds of RIE acts (Kim 2006), although they are not included in this study.
5.   Furthermore, a manual search of a sample of the texts suggested that such expressions occurred very infrequently in both languages, and that excluding them would not significantly affect the findings.
6.   Apart from the expressions listed in Table 1, a number of other lexical modal expressions in English (e.g., *be compulsory to/that*) and Korean (e.g., GOAL-*ul/lul yokwu-hanta* ('require GOAL') appeared in the corpus. However, since they appear fewer than five times, they are all excluded from the analysis.
7.   More detailed syntactic explanations will be given as necessary in the Korean examples below. All the Korean examples in the paper are transliterated according to the Yale system of romanization. This is widely used in linguistic research on Korean, even though it is not easily vocalized.
8.   The ways in which modality attributed to another rather than averred by the writer/speaker may function in text are clearly more complex than is described here. For our purposes, however, the simple model outlined here is sufficient.
9.   The choice of 2nd-person pronoun in Korean is extremely complex, because of the system of honorifics. For instance, there are six possible forms of 2nd-person pronouns in the language: *ne, tangsin, caney, yelepwun, imca,* and *kutay*. However, the analysis shows that only *tangsin* is employed by the writers to address the reader directly in the corpus. For a full discussion, see Kim (2006).
10.   From this point, the following conventions are used in examples: the expression of obligation is underlined, and, where explicitly mentioned, the obligation-imposed is in italics and the obligation-imposer is in bold.

11. As well as in newspapers, Korea publishes science popularizations in the form of magazines such as *Kwahakdonga* and *Newton*, which are similar to *Scientific American* and *New Scientist*.

12. In most computerized corpus analysis, the amount of data is measured by the number of words, identified as strings of letters. However, Korean words do not correspond to strings because the Korean language is an agglutinative language: one string of Korean letters, which is counted as one "word" mechanically, may be made up of more than one Korean word. For this reason, the number of sentences was chosen as the unit of measurement.

13. There is a difference in terms of the time-span; and the number of Korean texts is more than double that of English texts. The English articles are published more frequently, usually at a rate of about two or three articles a week, whereas the Korean articles generally appear irregularly. In addition, the Korean texts have roughly 37 sentences on average, whereas the English texts have about 77 sentences. Therefore, in order to make the sizes of the two corpora equal, more Korean texts were needed, which meant sampling from a longer time-span.

14. Significant differences are asterisked. For the significance test in the present study, we calculated log-likelihood value. The higher the log-likelihood value, the more significant is the difference between two frequency scores.

15. If the modal expression *-eya hata* is agglutinated after the verbalizing ending *hata* ('to do'), *-eya* is changed into *-yeya* for the convenience of the pronunciation as follows: *ha* (the stem of *hata*) *-yeya hata*.

16. As one of the reviewers noted, it would be of value to explore how far these conclusions are confirmed by an investigation of how the writers of the articles themselves perceive their use of expressions of obligation, through interviews, etc. However, that is beyond the scope of the present text-based study.

17. Hinkel (1997) relates the indirectness of text to Asian cultural backgrounds, particularly Confucianism and Buddhism, and Cho (1999) argues that Confucianism has an influence on rhetorical aspects of Korean texts.

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