

# Handbook of Research on Culturally–Aware Information Technology: Perspectives and Models

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## Chapter 27

# Addressing Cross– Linguistic Influence and Related Cultural Factors Using Computer–Assisted Language Learning (CALL)

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### **ABSTRACT**

*The goal of this research, a work in progress, is to address areas in second/foreign language acquisition prone to cross-linguistic influence, and to examine related cultural factors. More specifically, the authors aim to identify such areas, map available knowledge in this respect using ontological engineering methodology, and devise appropriate teaching strategies and learning scenarios to help overcome cross-linguistic influence with the help of computer-assisted language learning systems. The authors have been working mainly with Japanese-speaking students of English and first-year university English-speaking students of French. In this chapter, the authors describe culture in relation to foreign language learning, cross-linguistic influence, their cultural framework as well as ontological engineering methodology. They demonstrate their work with examples of the use of modals by Japanese students/speakers of English. They further provide an illustration of ontological modeling in addition to a basic simulation of how a CALL system based on an ontology could potentially work.*

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## **INTRODUCTION**

Language is imbued with culture. When people communicate, they do so in relation to one another, as well as in relation to prior experience. In other words, their voice is not only individual, but collective: they regularly express the knowledge and social patterns accepted within their native community (Kramersch, 1993).

This chapter discusses research work in progress. We address the issue of cross-linguistic influence and related cultural factors while using computer-assisted language learning (CALL) in an attempt to help overcome such influence through the use of teaching strategies and learning scenarios aimed at students of English and French as a second / foreign language. Cross-linguistic influence is a phenomenon that, simply put, can be observed when, namely in the process of language acquisition, speakers use skills that can be traced to their native language (or another language they might have learned) when using a second, third or foreign language. For the sake of simplicity, in the course of this chapter, we shall term the target language, or the one being taught / learned, as L2, and the native language as L1. When cross-linguistic influence expresses itself in the form of errors, this is also labeled interference. Interference may appear linguistic in nature, yet cultural differences often underlie the phenomenon. Indeed, language and culture are intrinsically linked, and the process of acquiring L2 is also one of coming into contact with the culture of those people using this L2 (Byram 1988; Kramersch 1993; O'Dowd 2003; Lomicka 2006).

We thus seek to identify sources of interference and related cultural factors, and to map knowledge to this effect using ontological engineering methodology, which can then serve as a foundation for articulating teaching strategies and learning scenarios, as well as creating CALL applications. The student population we have been working with is composed of Canadian native speakers learning French and English, and Japanese native speakers

learning English, all of them enrolled in first-year university level language classes.

We begin by providing a brief outline of culture within language education, an explanation of cross-linguistic influence, of our current cultural framework, of our research goals and of ontological engineering methodology. We illustrate the nature of our work through the example of modals in the context of English learning in Japan. We end with a succinct illustration of ontological modeling and a basic simulation of how a CALL system based on an ontology (a map of relevant knowledge) could potentially work.

## **CULTURE IN SECOND / FOREIGN LANGUAGE TEACHING / LEARNING**

Dubreil (2006) outlines how culture has been approached in L2 education. Until the 1960's, it seems that culture was essentially included in the curriculum in the form of literature presented in textbooks. At the end of the 60's and for most of the latter half of the last century, educators were urged to move beyond what was termed Culture—with a big “C”—as manifested through civilization's accomplishments in literature, the fine arts, social institutions, history, geography and politics, and consider culture—with a small “c”—as expressed in lifestyles, or the habits and patterns of daily living.

With the turn of the millennium, culture in L2 education appears to take on a more fluid definition. Culture (regardless of capitalization) expresses itself through discourse. In other words, cultural reality is expressed, embodied and symbolized through language (Kramersch 1998). As such, culture is understood to have more to do with human interaction, in an encounter of native and target cultures being juxtaposed, potentially compared, and reflected upon. The theories underlying this view have led professional associations to provide members with guidelines for the teaching of culture in the L2 classroom, not only

including it as an essential skill alongside speaking, listening, reading and writing, but often times placing it at the core of the L2 curriculum, as a key element shaping its form and content.

Dubreil (2006) suggests that the following definition seems to capture the current outlook: “Culture learning is the process of acquiring the culture-specific and culture-general knowledge, skills, and attitudes required for effective communication and interaction with individuals and other cultures. It is a dynamic, developmental, and ongoing process which engages the learner cognitively, behaviorally, and affectively” (Paige et al., 2000, p. 50). Here, culture-specific refers to a particular culture (for example, French and francophone culture) and culture-general refers to learning about any culture that is not the learner’s native culture. More specifically, according to the *National Standards for Language Learning* published by the American Council on the Teaching of Foreign Languages (1999), cultural knowledge can be gained through examining cultural practices, products and perspectives. Practices refer to daily-life behaviors and patterns of social interactions, products refer to various cultural achievements, and perspectives refer to meanings, values and ideas.

The crucial importance of culture in relation to language learning is thus acknowledged in the field of language education. With the advent of technology, which has allowed for unprecedented contact with other cultures, namely through different means of computer-mediated communication, the various resulting forms of human interaction and discourse are actively being explored in Computer-Assisted Language Learning (CALL) in relation to culture (Lomicka 2006). This said, while it is recognized that that a vast amount of discussion going on, that standards exist, that experiments are conducted and system prototypes built, the fact remains that there remains a lack of clarity as to what is actually meant by teaching / learning language in conjunction with culture. Consequently, the actual inclusion of culture in

the curriculum as well as the manner in how to do so is an issue that is still largely unresolved (Dubreuil 2006, Lomicka 2006, O’Dowd 2003,).

## **CULTURE AND CROSS-LINGUISTIC INFLUENCE**

In L2 education, “the act of knowing the other and the other’s culture is inextricably linked to language competence. Both the ability to communicate by the appropriate use of language and by the awareness of the specific meanings, along with the values and connotations of language are involved in this act” (Lomicka, 2006, p.212). As Lomicka further explains, awareness of meanings, values and connotations can be approached through a cyclical process that Liddicoat (2003) describes in terms of input, noticing, reflection and output, with “noticing” being especially important to intercultural learning, in conjunction with reflection and discussion.

“Input” and “output” can take a wide variety of forms. Our current research narrows the focus. It concentrates on cross-linguistic influence, in an attempt to help learners overcome this influence when it leads to interference. Essentially, interference manifests as “errors in the learner’s use of the foreign language that can be traced back to the mother tongue” (Lott, 1983, p.256). It is the result of the influence of one’s native language (L1) (or another previously acquired language) on a language currently being acquired (L2). This influence can be termed “positive” when it facilitates the learning of a skill given similarities between L1 and L2, or “negative,” when a L1 skill transferred in L2 is different from what is actually used in the target language (Noor, 1994). This reflects the fact that “the learner tends to assume that the system of L2 is more or less the same as in his L1 until he has discovered that it is not” (Ringbom, 1985). Negative influence, or interference, can potentially impede learning and create misunderstanding.

Recent language research tends to show that overall patterns of errors tend to be language specific. This explains why English, for example, might sometimes be called “Thai English” or “Greek English” (Swan & Smith, 2001). The patterns stem from differences in language, of course, and they can be explained, for instance, in terms of syntax and morphology. At the same time, close scrutiny also reveals that in several cases, cultural underpinnings can be identified. The example later described in the chapter shall serve to illustrate this point.

Ferris (2002) explains, in the context of English acquisition, that L2 instructors may find it beneficial to investigate similarities and differences between the L1 and English (in terms of syntax and morphology) and use such knowledge to assess students’ particular strengths and weaknesses to design feedback and instruction to address these specific areas of need. We choose to take this a step further, by adding a cultural component, when applicable.

More specifically, we have been working at identifying and classifying interferences, while taking cultural factors into consideration. In so doing, we have found that perhaps more obvious instances of interference in relation to culture can be found in the use of vocabulary (meaning and connotation of words) as well as in the performance of pragmatic functions (greetings, making requests, invitations, congratulations, asking / giving advice, etc.). They are however also found in morphology, grammar, syntax and phonology.

We have been focusing on the passage from Japanese to English, and more recently, that of English to French and French to English. These make for interesting and challenging comparisons. Generally speaking, if L1 and L2 are related, it will be easier for the student to acquire proficiency. If they are unrelated, the process, especially in the earlier stages of acquisition, will prove more difficult and time-consuming (Ringbom, 1987). Conversely, it appears that if the L1 and L2 culture are less related, there seems to be a greater

potential for what we could term “cultural interference,” which translates at all levels of language production.

## **CULTURAL FRAMEWORK**

A vast amount of research on culture within and across different disciplines has been conducted to date. There exist various models, frameworks, concepts and perspectives of culture, which, as this Handbook reflects and Young (2008) suggests, can help guide the design of information technologies in an increasingly globalized world.

We are still experimenting with models of culture and values in an endeavor to circumscribe a set of appropriate tools that would allow for the labeling, explanation and analysis of cultural factors inherent in cross-linguistic influence, for use in CALL systems and applications. To our knowledge, such factors have not yet been systematically circumscribed towards this purpose.

That said, research in the field of cross-cultural pragmatics, especially the work of Wierzbicka and Goddard on natural semantic metalanguage (NSM), which we have recently come across, appears to provide powerful methodological tools that should support our work. These tools are used for the linguistic description of meaning, and, as a result, human thought, which then becomes a key to understanding culture. More specifically, NSM, as Wierzbicka (2006) explains, is based on two fundamental assumptions: “first, that every language has an irreducible core in terms of which the speakers can understand all complex thoughts and utterances and, second, that the irreducible cores of all natural languages match, so that we can speak, in effect, of the irreducible core of all languages, reflecting in turn the irreducible core of human thought” (p. 17). The NSM theory of language assumes that the intelligibility of complex and diverse meanings depends on the existence of a basic set of approximately sixty conceptual primes that are intuitively clear in all

languages (and presumably innate), that do not require any explanations, and that constitute the bedrock of human communication and cognition. These work within a minilanguage carved out of natural languages, using a minilexicon and a minigrammar. They can in turn be used as a “cultural notation” for the comparison of cultural values and ways of speaking across boundaries between societies, communities, subcultures and epochs (Wierzbicka, 2006).

Different models and frameworks analyzing cultural values are currently used in various research endeavors, to which the chapters of this Handbook bear testimony. Among those frequently cited, we find frameworks developed within organizations, especially the work of Hofstede (2001) and the GLOBE Study (2004), which define nation-level dimensions of culture that allow for comparing countries in terms of scores on these dimensions. The definition of the dimensions present differences, as do the methodological approaches, yet together, they spur the field towards further understanding and growth (Smith, 2006). Because these studies are rooted in surveys conducted in business organization, we also find the need to consider the work of other researchers. This said, validated comparative scores between nations do prove useful, and for this reason, we have also been interested in the work of Schwartz (1999). Following, we provide a brief description of the Hofstede and Schwartz models, with which we have worked more closely.

Hofstede’s vastly comprehensive study of how values in the workplace are influenced by culture provides a valuable framework with which to begin grounding cultural factors related to the language interferences. He argues that “people carry “mental programs” that are developed in the family in early childhood and reinforced in schools and organizations, and that these mental programs contain a component of national culture” (Hofstede, 2001, p. xix). The mental programs are of three levels: individual, collective and universal. They become expressed in the differ-

ent values that predominate among people from different countries. Hofstede identifies five main dimensions along which dominant value systems in over fifty countries can not only be ordered, but also reflect how human thinking, feeling and acting may, to some degree, be predicted. The dimensions mirror basic problems that any society has to cope with, and also point to how solutions to these problems will differ.

The five dimensions are: power distance, uncertainty avoidance, individualism, masculinity and long-term/short-term orientation. Essentially, power distance is concerned with the degree of human inequality underlying the functioning of each particular society. Uncertainty avoidance is concerned with the degree to which a society tries to control the uncontrollable. Individualism, as opposed to collectivism, is the degree to which individuals should look after themselves or remain integrated into groups, usually the family. Masculinity, as opposed to femininity, refers to the distribution of emotional roles between genders. Long term versus short-term orientation refers to the extent a culture programs its members to accept delayed gratification of material, social and emotional needs. The dimensions were empirically verified, and each country was positioned somewhere between their poles on the basis of specific scores (Hofstede, 2001).

Schwartz identifies cultural values that represent the implicitly or explicitly shared abstract ideas about what is good, right and desirable in a society (Williams, 1970). These cultural values (e.g. freedom, prosperity, security) are the bases for the specific norms that tell people what is appropriate in various situations” (Schwartz, 1999, 25). He further explains that the ways that societal institutions (family, education, economic, political and religious systems for example) express cultural value priorities is through their goals, function and modes of operation.

He divides the values in seven categories along three dimensions that reflect these categories: conservatism versus intellectual and affective

autonomy, hierarchy versus egalitarianism, and mastery versus harmony. He draws comparisons between forty-nine national cultures, the result of interviewing teachers and students in each of these nations. Though he recognizes that no single occupational group represents a given culture, he explains that the benefit of interviewing teachers lies in the fact that teachers play an explicit role in value socialization, presumably are key carriers of culture, and probably reflect the mid-range of prevailing value priorities in most societies (Schwartz, 1999).

Schwartz's research is of interest because he circumscribes fifty-six specific values, which, after careful analysis by his research group, appear to stand the test of universality. That is to say, he claims that they cover the full range of human experience. Furthermore, the values can also be categorized according to types of human beings, and reflect individual differences, not only cultural differences. While this may not be necessarily relevant to our current research, it could be useful in other culture-related CALL research. For example, when analyzing correspondence between keypals engaging in a virtual international exchange, it can be a tool to distinguish cultural from individual traits using a common vocabulary.

World values are also currently being investigated by the World Values Survey, a global network of social scientists studying changing values and their impact on social and political life, in collaboration with the European Values Study (<http://www.worldvaluessurvey.org/>). The Survey compares the basic values and beliefs of people in close to a hundred countries, representing over 85% of the world population, and monitors change over time. Two important dimensions, Traditional / Secular-rational (countries where religion is very important and those where it is not) and Survival / Self-expression (reflecting the transition from industrial society to knowledge society) explain more than 70% of the cross-national variance on key variables, and each dimension is strongly correlated with scores of other important attitudes.

The Survey is led by Ronald Inglehart (2005). Since Schwartz is no longer as active in the field, we will be further investigating research results provided by the Survey.

In addition to these studies, we take into consideration research on cultural stereotypes, which are gradually being explored in CALL (Gray & Stockwell (1998), Hertel (2003), Itakura (2004)). We cannot talk about culture without making generalizations. When discussing culture, we are making statements of likelihood and potential, and not of certainty. We can address how people from a particular culture may behave in a given situation, but not how they will in fact behave (Storti, 1999). Generalizations, as well as limited exposure to another culture can lead to stereotyping, which, in our attempt to help language students understand cultural underpinnings in various language acts, we wish to lessen.

## **RESEARCH GOALS**

Our research has been focusing on identifying learner errors that are a result of L1 interference with underlying cultural underpinnings. We work towards overcoming this type of error, in the hope that they can be overcome, though reality seems to show that often they are not. They can potentially become part of what is called language "fossilization." Broadly put, fossilization is, despite continuous exposure to input, motivation to learn, opportunity to practice, a state of non-progression in learning. More specifically, for our purposes, it has to do with how incorrect linguistic features can potentially become a permanent part of how a person speaks or writes a language (Richards, 1985). Research in the field tends to point to the fact that language fossilization has at its roots several factors, the two main ones appearing to be influence from L1 on L2, and the critical learning period: simply put, whether a language is learned as a child (high potential of acquiring native-like proficiency in L2) or an adult (ZhaoHong, 2004).



This said, understanding what renders linguistic features fossilizable might help educators better sequence and present instructional materials, and guide them to find compensatory strategies to maximize learning. Some such factors, among others, are the absence of corrective feedback, the quality of input, the automatization of faulty knowledge, a lack of understanding and sensitivity to input (ZhaoHong, 2004).

In the course of our research, we have spent considerable time identifying instances of language interference. Though several of them may appear to be strictly the result of linguistic differences, close scrutiny shows that beyond differences in linguistic features between L1 and L2, there are underlying cultural differences. Understanding this can at times result in deriving teaching strategies that depart from “standard” strategies for given language structures, in addition to altering curriculum sequence. In other words, these are steps towards weeding interferences at their root, early in the acquisition process. To this effect, we have conducted small experiments in the classroom which seem to indeed demonstrate that revised teaching strategies in view of interferences with cultural underpinnings appear to yield positive results, in that learners appear to overcome such interferences more than is the case if no particular attention is given them. That is to say, we have sought to increase the quality of input, providing linguistic and cultural explanations, as well as corrective feedback, thereby trying to promote adequate L2 usage before errors run the risk of becoming automatic.

We have thus been working at identifying key points of interference, underlining related cultural factors where appropriate, namely in the study of English by Japanese learners, and more recently, French and English for Canadian learners. The context is thus one of essentially homogenous groups of learners, who share a common L1. We have been analyzing the cultural factors underlying the sources of difficulty. We have been working at mapping this information for use in a CALL

authoring system that could, initially, be queried by language instructors preparing course curriculum. The system would alert them not only to areas of possible interference, but also explanations as to what they entail along with related cultural factors; it would also provide instructional strategies that may assist in overcoming these. Such information could also be eventually made available to students working directly with the system. The task is complex, and is a work in progress. In order to bring together the knowledge we need to build such a CALL system, we have been working with an ontological engineering methodology, as set forth by Mizoguchi Laboratory at Osaka University, Japan.

This said, though we are still aiming at working within a CALL authoring system such as the one we have just described, we have been using our findings to prepare targeted CALL applications that have been integrated within course websites posted via a Blackboard Learning System, a generic authoring system used in the institution where the main author of this chapter works. As such, though the research currently described still remains a work in progress, it has been possible to begin using its findings to steer and articulate teaching / learning scenarios within currently offered French classes.

## **ONTOLOGICAL ENGINEERING METHODOLOGY**

Ontological engineering, as it is practiced by Mizoguchi Laboratory, is used for knowledge management. It focuses on the specifications of concepts, the relations between concepts, and their attributes. In so doing, it enables to articulate seemingly chaotic situations in a principled manner and thus provide a concrete reference tool in the form of an ontology, which, simply put, is akin to a sophisticated road map representing the world of knowledge at hand, that can be read both by

computers and humans (who are not necessarily computer experts).

In knowledge-based systems, ontologies can be used for problem solving (task ontology), and they can also be used to describe a domain in which a task is performed (domain ontology). More precisely, a domain ontology seeks to represent a world of interest, making explicit the conceptualization of its structure. The objects perceived to exist in this world are made explicit, as are the relations and constraints between them. In other words, the domain ontology is a declarative description of the fundamental understanding of a given world of interest.

Domain ontologies, upon which computer systems and applications are subsequently based, are shareable and reusable. They can also be considered a repository of knowledge, which can be expanded and adapted as knowledge and understanding increases. In building an ontology, rigorous attention is paid to the meaning of the concepts, their hierarchical organization, as well as the relations governing them. Ontologies are meant to be used and shared by a community, and as such, designed collaboratively. They reflect a consensus of knowledge. Since they can be read not only by computers, but also humans, they thus provide a powerful tool to allow experts in the domain to come to a common understanding and agreement of the fundamentals of the world of interest they are working within, making this world explicit. Essentially, a domain ontology allows for the systematization of knowledge and its accumulation, using a common vocabulary.

Domain ontologies should also be conceived as use-neutral, in the sense that they are meant to serve as a foundation. Building on this foundation, different problems can be tackled, various applications derived, knowledge bases built. Consequently, domain ontologies should be relatively stable and aim to be a long-lasting conceptual structure. Furthermore, as a sophisticated data structure, they provide the building blocks and design rationale for the computer systems, models and applications

built to serve the domain (Mizoguchi, 2003). A good illustration of a domain ontology is the OM-NIBUS ontology, whose domain is education. It is a work in progress, yet it is also serving as the basis upon which different software are currently being built (Bourdeau et al., 2007).

Our own research describes, via an ontology, a world in which, very broadly speaking, language and culture can be related to one another. More specifically, we are striving to articulate the understanding we have of culture and cultural differences primarily based, at this point in time, on the work of Hofstede and Schwartz. We try to make explicit language acquisition requirements that can be related to what is known concerning interference, errors and associated learning difficulties. These not only occur in terms of “linguistic” requirements (simply put, appropriate use of phonology, syntax, morphology, grammar, vocabulary) but also language functions and acts, which all need to be systematized in a comprehensible and comprehensive fashion.

Though we do this in terms of interference, to which we relate cultural factors, we are constantly confronted with the fundamental question as to whether language and culture can actually be separated, or if they are sides of the same coin. That is to say, something that may at first appear to be a “linguistic” difficulty can often times be related to inherent cultural practices. The example we give in the following section should illustrate this point. We further try to provide information as to how errors manifest and possible compensation strategies students may adopt to avoid making these errors (and thus begin making new sets of errors).

Other problems we face are distinguishing errors that are L1-dependent and L1-independent. In other words, what can we identify as influence from L1, and what is actually related to complexities in L2, independent of L1 and cultural practices. The divide can give rise to much criticism and debate. Furthermore, we need to work with the fact that nations sharing a common language

do not necessarily share the same culture. This implies that expectations concerning language functions and delivery may vary; though a context may appear similar, usage of French in Quebec (Canada) in comparison to France can certainly vary. Furthermore, culture itself is not necessarily homogeneous within a given society. Consequently, when teaching L2, we acknowledge that we are also making cultural choices.

We are currently working within the framework of three languages. We believe that ontological engineering methodology will help us clarify the various complex issues at stake in terms of cross-linguistic and cultural influence in terms of these languages, all the while acknowledging the complexity of the task. We are working towards building a stable foundation of current knowledge in this respect in the form of an ontology, which could eventually provide building blocks for considering interference between different sets L1 and L2. In addition, we hope that articulating culture and cultural differences in relation to language can potentially support other CALL research projects, for example those concerned with computer-mediated communication, or acquisition of cultural competence through the analysis of various forms of discourse produced in L2.

We now provide an illustration of cross-linguistic influence, followed by a simulation of a potential CALL system whose programming could be based on the ontology we are working on, which is still in preliminary stages. The example we discuss is the use of the modal “had better” by Japanese learners of English.

### **ILLUSTRATION OF CROSS-LINGUISTIC INFLUENCE**

Suggestions and advice made by Japanese people in English are prone to interference stemming from L1. One of the points of concern, among others, is the usage of the English modal *had better* (also

described using different examples and more briefly, in Allard, Bourdeau & Mizoguchi, 2005).

Consider the following statements: (1) You had better go by train. (2) You had better go see the beautiful plum blossoms in the Expo Park. (3) You had better take these pills. Such statements are not uncommon in English used by Japanese native speakers. Yet they have sometimes struck English native hearers to whom they were addressed as somewhat inappropriate, odd, or cause for concern (more than the statement intended). The Japanese student who reported statement (1) was told by the foreign student he was advising that this type of comment was not quite appropriate—the student was able to decide for herself whether or not she should take the train—to the surprise of her Japanese interlocutor. Statements (2) and (3) elicited reactions from native English speakers to the effect of: “What if I don’t go to this park in particular?” or “What would happen if I didn’t take this medicine? Do I need to worry about something?” Statement (3) can give reason for concern especially when the statement is made by a physician.

Following is an example (4) of printed information using *had better*: “Body wash ball. For body clean. You had better use this wash ball. With a soap or body shampoo.” The statement is printed on the wrapping of a complimentary bath/shower sponge, provided in a hotel room. Upon reading this centered text in English and large characters (amidst smaller Japanese characters), the North American visitor to Japan reporting the example couldn’t help but momentarily jump and think: “What if I don’t use this sponge or soap? What kind of company is this, telling me what to do?” The initial, somewhat negative impression was likely exacerbated by the fact that it was presented in the format of four lines ending in periods, making it seem forceful; commercial products in North America may feature telegraphic chunks of information but they wouldn’t generally end with periods.

This being said, depending on the context, usage of *had better* will not necessarily bring about reactions such as those just described. The fact that it can, we believe, should be addressed with Japanese students learning English.

The tone of voice in which an utterance is made, as well as the relationship of a speaker to a hearer when expressing and receiving advice further need to be taken into consideration. A Japanese speaker may consciously articulate *had + better* when uttering a statement, rather than use the (*pronoun*) *'d better* abbreviation more common to everyday English (again in North America). This, along with a non-native rhythm / inflection / pronunciation may make the advice sound stronger / more threatening than it is actually intended to be, which may worsen the impression left on the person receiving it, especially if this person expects to be treated with a certain degree of respect. Consider, for example, a foreign company president being told by a support staff member that he had better take a train to go to a given place / meeting. Though trains are very commonly used for transportation in Japan by people of all social and professional ranks, especially in busy urban centers, such a statement may inadvertently create a misunderstanding.

It appears that *had better* is generally perceived by Japanese speakers of English as an equivalent for the expression *hou ga ii*. Translations found in various dictionaries further confirm this. In a dictionary of Japanese grammar, *hou ga ii* is explained in the following way: “it is strongly suggested that someone do something.” (Makino & Tsutsui, 1986). In *Practical English Usage*, *had better* is explained in terms of strong advice, or telling people what to do (including ourselves) (Swan, 2005). What is the difference then between a strong suggestion and strong advice? To many, the nuance is not clear. *Hou ga ii* and *had better* may therefore be understood to essentially be equivalent expressions. And yet, as the examples above have shown, this is not always the case.

How can an English teacher approach the topic so that usage of *had better* be clearly understood?

Modals of advice can be taught by initially contrasting them in relation to one another in terms of strength (Celce-Murcia & Larson-Freeman, 1999). This means explaining, for example, that *had better* is stronger than *might*, *could*, *should*, but weaker than *have to*, and *must*; it is in the middle. When Japanese expressions of advice are placed on a scale of relative strength, *hou ga ii* is ranked as one of the weakest expressions in terms of impact (Makino & Tsutsui, 1986). How strong then is strong? Cultural perspectives, it appears, vary in this respect.

In an attempt to clarify the situation for Japanese students, different textbooks indicate that the usage of *had better* can imply that if the advice given is not followed, there is the possibility that a problem or a danger may result (Barker, 2003, Murphy, 2004, Azar, 2002). Bearing this in mind, it could then be explained to students that in statement (3) for instance, usage of “had better” is not the best option since there is not any particular problem or danger in view of not seeing plum blossoms in a particular park. Neither is there a particular problem in not using soap along with a sponge in order to clean one’s body (4).

Examining the issue more closely, however, it seems that this explanation is not enough to clarify usage. *Hou ga ii* also carries the implication of negative consequences, as discussions with Japanese speakers and teachers of Japanese have revealed. In fact, this is the reason for giving the advice, and demonstrates concern for the hearer’s welfare, or at least for the possibility of missed opportunities. As such, it is commonly used among friends. Furthermore, doctors use this expression when giving advice to patients (3), as do mothers with children when telling them how to behave. In both languages, then, each respective expression can imply the possibility of negative consequences, or a possible resulting problem.

In fact, the use of suggestion and advice expressions can vary according to the content of the

advice (*what* is being suggested), the relationship of the speaker and hearer to one another (status, situation of expertise, authority, hierarchy, friendship, etc.), and the context. In addition, the range of use of one expression in one language may be greater or lesser than its potential translation in the other. That is to say: *hou ga ii* can be used in situations similar to *had better* in English, and sometimes not. Such points need to be stressed when teaching Japanese students and many various examples used to illustrate. Furthermore, the cultural issue of sensitivity to advice, which varies according to culture and in this case affects usage, needs to be addressed.

To this effect, let us return to the example of the native English hearer who reacted negatively to the suggestion of taking the train. Westerners, who tend to value individualism and the capacity to decide for oneself, may react negatively to advice, especially if it is perceived as unsolicited. On the other hand, Japanese people are generally receptive to advice, even viewing it as normal, if not desirable. This is perhaps linked to the Japanese proclivity towards maintaining group harmony which rests upon a series of socially accepted rules. These serve as guidance towards maintaining harmony, and as such, are necessary and useful. They in turn contribute to generating a strong sense of duty, as well as, generally speaking, a sense of ease with respecting and following rules, and an openness towards various forms of advice from other group members with a similar concern for harmony. In other words, whereas “strong” advice using *hou ga ii* would likely not ruffle a Japanese hearer, “strong” advice using *had better* may in some cases not be well received by a native English-speaking hearer.

We acknowledge that this explanation is, to a certain extent, made of generalizations. Yet, it is not possible to talk about culture, about groups of people, without making generalizations. As these do contain a kernel of truth, used with discrimination, generalizations can at least pave

a way towards clearer mutual understanding. As such, they can be useful (Storti, 1999).

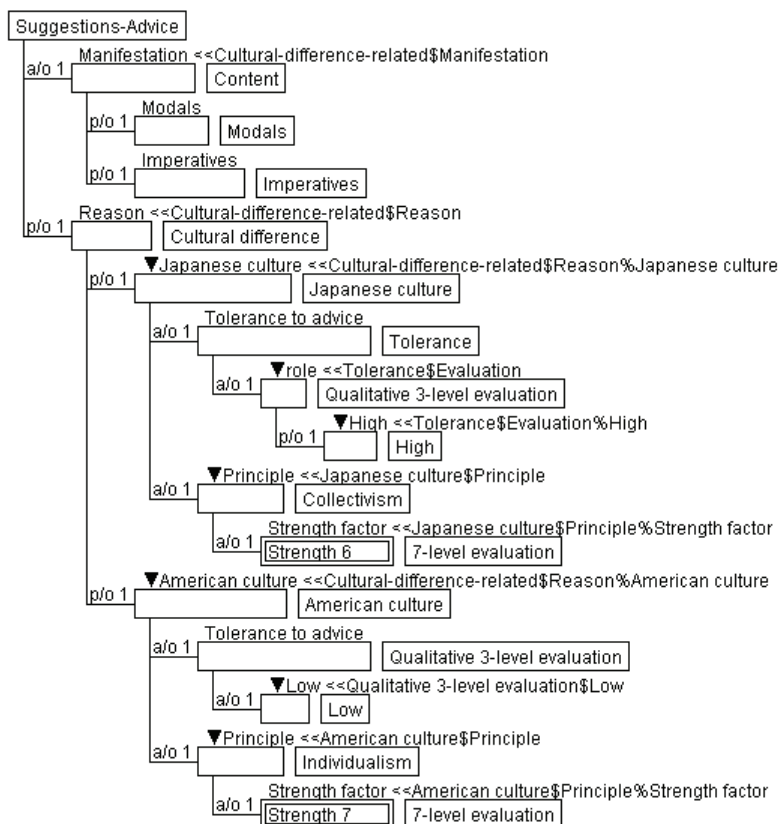
How then does an English teacher deal with explaining *had better* to Japanese students? Teaching strategies based on the cultural differences can be devised and stored into a CALL system. The cultural differences themselves in relation to this particular form of interference can be listed and explained.

In trying to culturally explain the phenomena, we might call upon concepts such as “range of meaning,” “speaker / hearer perspective,” “sensitivity to / ease with advice,” “under-use / overuse,” “attention to social hierarchy,” “need for politeness,” etc. Such concepts provide handles with which to give explanations, and a collection of different concepts that are systematically organized can provide a framework for comparing different language acts or functions in view of cross-linguistic influence. This can further lead to establishing links between language acts or functions that may not otherwise be initially apparent, and for example lead to teaching elements in targeted sequence, so as to reinforce understanding.

## ILLUSTRATION OF ONTOLOGICAL MODELING

Figure 1, shows an ontological excerpt of the previous example of cross-linguistic influence. p/o stands for “part of,” a/o stands for “attribute of.” The writing above the squares indicates a role, that in turn is constrained within a certain class (often the same as the role), indicated in the square right of the role. What is not shown in the figure is that different types of interference come under a concept called “L1-related interference” (native language related), itself falling under “English language learning topics.” We classified interferences in terms of a general English language curriculum for first year university Japanese students (not specializing in language).

Figure 1. Excerpt of ontological modeling of cultural differences in relation to interference when making suggestions / giving advice (using tools and methodology developed by Mizoguchi Laboratory)



This excerpt also shows how the interference is illustrated in terms of cultural factors, in this particular case contrasting Japan to the United States, given that the English being taught should be “American English.” The concept “Tolerance to advice” is one that we have coined for the purpose of our work while the principles of collectivism and individualism refer to Hofstede’s dimensions. In this figure, comparative scores are reflected in comparing cultural concepts: “Tolerance to advice” is rated on 3-level evaluation scale, that is to say, high, neutral or low, whereas the dimensions receive a numerical score on a scale of 1 to 7, with 4 being neutral.

Ideally, then, an instructor of English in Japan inputting a given topic of instruction into a CALL system (such as practice of suggestions / advice

or, alternatively, the study of modals) could then be made aware of possible L1 interference in view of the topic, how it actually manifests, as well as cultural factors at play. The instructor could be directed to more detailed explanation in text form as to the nature and reason for the interference, in terms of linguistic and cultural considerations. The basic simulation in the next section shows how this might work.

### BASIC SYSTEM SIMULATION

When preparing a language course or a given lesson, a teacher could receive guidance, and be able to query the system in relation to L1 interferences. The system could provide suggestions as to

potential topic ordering, explanations concerning the cross-linguistic phenomena, in addition to instructional strategies, targeted activities and drills to help overcome potential difficulties. A student working on an activity, for his part, might be prompted by the system concerning an area of difficulty, and directed to specific explanations and activities for further practice. The programming rules would be directly based on an ontology. Following is a basic simulation pertaining to teacher access to the system:

```

IF Japanese is L1 and English
  is L2
And IF Learning Topic is: Modals
  of Advice
THEN: Cross-linguistic
  difficulty
  Provide students with
  targeted explanation
  Provide targeted exercises
REASON:Combination of
cultural and linguistic
difference
RELATED TOPIC: Imperatives
(In trying to overcome
difficulties in the
use of had better, Japanese
students may overuse "Please
+ imperative," which we don't
discuss in this chapter)
RETRIEVE TARGETED EXPLANATION
(in text form)
RETRIEVE INSTRUCTIONAL
STRATEGY (in text form)
RETRIEVE EXERCISES AND TAR
GETED DRILLS (stored in the
computer)

```

The system could also display "aware" behavior. It could reproduce, in essential form, information contained in the ontology. For example:

```

Topic: Suggestions / Advice
  Related to broader topic of:
    Language functions
L1-related difficulty: yes
  Manifestation 1: Modals
Subclass: Had better
  (We have explained the
  example of had better in
  detail, but there is cross-
  linguistic influence at
  work with other modals, for
  example avoidance of should)
  Manifestation 2: Imperatives
Language-related difficulty: Yes
  Manifestation-Had better:
  Range of meaning varies
  between L1 and L2
  Manifestation-Had better:
  Differences in usage between
  L1 and L2
  Manifestation-Imperatives:
  Overuse of please
Culture-related difficulty: Yes
  Manifestation-Had better:
  Differences in speaker /
  hearer perspective
    (retrieve generic
    explanation in text form)
  Manifestation-Had better:
  Content / Context issues
    (retrieve generic
    explanation in text form)
  Manifestation-Had better:
  Sensitivity to advice
    (retrieve generic
    explanation in text form)
    (Japan: rather low-North
    America: rather high)
  Manifestation-Imperatives:
  Attention to social hierarchy
    (Japan: rather high-North
    America: rather low)

```

RETRIEVE explanation of this cross-linguistic difficulty (in text form).

We acknowledge that the above represents an approximation. And yet, it is a starting point towards trying to bridge usage problems and communication gaps that are very real. The computer can point to the root of the problem, in other words show “intelligence,” and a more detailed explanation in text form can be retrieved. Such an explanation is further linked to examples of instructional strategies, targeted explanations and practice. Ultimately, the teacher can decide what to incorporate, or not.

We have noticed that, for instance, to make Japanese students sensitive to advice statements and illustrating through examples that American English speakers can indeed be sensitive to advice is usually enough for them to understand that they need to be attentive about how to communicate in this type of situation. Practice of targeted exercises with accompanying discussion of possible impact of one form of statement in comparison to another has also shown to be efficient. In other words, a detailed explanation of the cross-linguistic phenomena may not always be needed for students, even though the system has information to this effect in store. Suggestions as to what explanations are especially efficient are provided in the instructional strategies. Our system could leave the teacher with the flexibility of learning about what underlies the cross-linguistic influence at hand, to adapt, adjust, borrow, if need be, and make it all or in part available to students.

## **CONCLUSION**

The process of acquiring a second or foreign language, especially in the earlier stages, is not without challenges, several stemming from native language influence. In this paper, we have explained the phenomenon of cross-linguistic

influence and potentially related cultural factors, illustrating with a specific example. We have described how we are working at mapping knowledge in this respect using ontological engineering, so that future CALL applications may not only readily address cross-linguistic influence and cultural factors in terms of the languages which we have been investigating, for given student populations, but also spur research between other sets of languages. We plan to continue refining and elaborating our ontology, all the while authoring relevant instructional / learning scenarios that are directed at errors and learning difficulties deriving from cross-linguistic influence, in an effort to help overcome them, prevent the fossilization of erroneous language patterns, and lessen the likelihood of misunderstanding between people of different native languages.

The study of cross-linguistic influence essentially began over half a century ago, and has gone through various phases of research development, at times clearly falling into disfavor with several scholars at given periods. This said, a number of works on this topic have been published in recent years, reflecting not only how various endeavors are being conducted in this area, but also that such research is deemed worthy of investigation. Our goal is for our own research, harnessing the power of information technology to deliver targeted instruction to language students through CALL, shall prove fruitful in equipping increasingly global citizens with communications skills conducive to mutual understanding.

## **REFERENCES**

Allard, D., Mizoguchi, R., & Bourdeau, J. (2005). Can Language and Culture Go Hand in Hand? Crosslinguistic Influence in the L2 Acquisition Process. In *Proceedings of the JALT Conference*, October 2005 (pp. 382-393). Tokyo: JALT.



- Azar, B. S. (2002). *Understanding and using English Grammar*. New York: Longman.
- Barker, D. (2003). *Eigo to nakanaori dekiru hon* [Coming to Terms with English: A Reference Book]. Tokyo: ALC Press.
- Bourdeau, J., Mizoguchi, R., Hayashi, Y., Psyché, V., & Nkambou, R. (2007). When the domain of the ontology is education. In *Proc. of the 4th Conf. on Intelligent, Interactive Learning Objects Repository Networks (I2LOR'07)*, Nov. 4-7.
- Byram, M. (1988). Foreign Language Education and Cultural Studies. *Language, Culture and Curriculum*, 1(1), 15–31.
- Byram, M. (1997). *Teaching and assessing intercultural communicative competence*. Clevedon, UK: Multilingual Matters.
- Celce-Murcia, M., & Larson-Freeman, D. (1999). *The grammar book and ESL/EFL teacher's course* (2nd ed.). Cambridge, MA: Heinle and Heinle.
- Corbeil, G. (2007). Can PowerPoint Presentations Effectively Replace Textbooks and Blackboards for Teaching Grammar? Do Students Find Them an Effective Learning Tool? *CALICO Journal*, 24(3), 631–656.
- Dubreil, S. (2006). Culture through CALL. In L. Ducate & N. Arnold (Eds.), *Calling on CALL: From Theory and Research to New Directions in Foreign Language Teaching* (pp. 237-268). CALICO Monograph Series Volume 5. San Marcos, TX: Texas State.
- Ferris, D. (2002). *Treatment of Error*. Ann Arbor, MI: University of Michigan Press.
- Goddard, C., & Wierzbicka, A. (Eds.). (1994). *Semantic and lexical universals: Theory and empirical findings*. Amsterdam: John Benjamin.
- Gray, R., Stockwell, G. (1998). Using computer mediated communication for language and culture acquisition. *On-Call*, 12.
- Hertel, T. J. (2003). Using and e-mail exchange to promote cultural learning. *Foreign Language Annals*, 36(3), 386–396. doi:10.1111/j.1944-9720.2003.tb02121.x
- Hofstede, G. (2001). *Cultures consequences* (2nd ed.). Thousand Oaks, CA: Sage.
- House, R., Hanges, P., Javidan, M., Dorfman, P., & Gupta, V. (2004). *Culture, Leadership and Organizations: The Globe Study of 62 Societies*. Thousand Oaks, CA: Sage Publications.
- IEEE Standard Upper Ontology Working Group. (n.d.). Retrieved from <http://suo.ieee.org/>
- Inglehart, R., & Welzel, C. (2005). *Modernization, Cultural Change and Democracy: The Human Development Sequence*. New York: Cambridge University Press.
- Itakura, H. (2004). Changing cultural stereotypes through e-mail assisted foreign language learning. *System*, 32(1), 37–51. doi:10.1016/j.system.2003.04.003
- Kashima, Y. (2000). Conceptions of culture and person for psychology. *Journal of Cross-Cultural Psychology*, 31(1), 14–32. doi:10.1177/0022022100031001003
- Kramsch, C. (1993). *Context and Culture in Language Teaching*. New York: Oxford University Press.
- Kramsch, C. (1998). *Language and Culture*. Oxford, UK: Oxford University Press.
- Levy, M., & Stockwell, G. (2006). *CALL Dimensions: Options and Issues in Computer-Assisted Language Learning*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Liddicoat, A. (2003). Teaching languages for intercultural communication. *Berkeley Language Center Newsletter*, 19, 1–7.

- Lomicka, L. (2006). Understanding the Other: Intercultural Exchange and CMC. In Ducate, L., & Arnold, N. (Eds.), *Calling on CALL: From Theory and Research to New Directions in Foreign Language Teaching* (pp. 211–236). San Marcos, TX: Texas State University.
- Lott, D. (1983). Analysing and counteracting interference errors. *ELT Journal*, 37(3), 256–261. doi:10.1093/elt/37.3.256
- Makino, S., & Tsutui, M. (1986). *A dictionary of intermediate Japanese grammar*. Tokyo: The Japan Times.
- Mizoguchi, R. (2003). Tutorial on ontological engineering, part 1, Introduction to ontological engineering. *New Generation Computing*, 21, 365–384. doi:10.1007/BF03037311
- Murphy, R. (2004). *English Grammar in Use*. Cambridge, UK: Cambridge University Press.
- National Standards in Foreign Language Education Project. (1999). *Standards for foreign language learning in the 21<sup>st</sup> century*. Yonkers, NY: Author.
- Noor, H. (1994). Some implications of the role of the mother tongue in second language acquisition. *Linguistica Communicatio*, 6(1-2), 97–106.
- O'Dowd, R. (2003). Understanding the other side: Intercultural learning in a Spanish-English email exchange. *Language Learning & Technology*, 7(2), 118–144.
- Paige, R. M., Jorstad, H. L., Siaya, L., Klein, F., & Colby, J. (2000). Culture learning in language education: A review of the literature. In Paige, R. M., Lange, D. L., & Yershova, Y. A. (Eds.), *Culture as the core: Integrating culture into the language curriculum* (pp. 47–113). Minneapolis, MN: Center for Advanced Research on Language Acquisition.
- Richards, J., Platt, J., & Weber, H. (1985). *Longman dictionary of applied linguistics*. New York: Longman.
- Ringbom, H. (1987). *The Role of the First Language in Foreign Language Learning*. Philadelphia, PA: Multilingual Matters.
- Schwartz, S. (1999). A theory of cultural values and some implications for work. *Applied psychology. International Review (Steubenville, Ohio)*, 48(1), 23–47.
- Smith, P. (2006). When elephants fight, the grass gets trampled: the GLOBE and Hofstede projects. *Journal of International Business Studies*, 37, 915–921. doi:10.1057/palgrave.jibs.8400235
- Storti, C. (1999). *Figuring foreigners out*. Yarmouth, ME: Intercultural Press.
- Swan, M. (2005). *Practical English Usage* (3rd ed.). Oxford, UK: Oxford UP.
- Swan, M., & Smith, B. (Eds.). (2001). *Learner English: A teacher's guide to interference and other problems*. Cambridge, UK: Cambridge University Press. doi:10.1017/CBO9780511667121
- Wierzbicka, A. (1991). *Cross-cultural pragmatics: the semantics of human interaction*. Berlin: Mouton de Gruyter.
- Wierzbicka, A. (2006). *English – Meaning and Culture*. New York: Oxford University Press.
- Williams, R. M. Jr. (1970). *American society: A sociological interpretation* (3rd ed.). New York: Knopf.
- World Values Survey. (n.d.). Retrieved from <http://www.worldvaluessurvey.org/>
- Young, P. (2008). The Culture Based Model: Constructing a Model of Culture. *Journal of Educational Technology & Society*, 11(2), 107–118.

Zhao Hong, H. (2004). *Fossilization in adult second language acquisition*. Clevedon, UK: Multilingual Matters.

## KEY TERMS AND DEFINITIONS

**Computer-Assisted Language Learning:** Computer-assisted language learning (CALL) is an approach to teaching and learning foreign / second languages in which computer, computer-based resources and information technology are used to present, reinforce and assess material to be learned.

**Cross-Linguistic Influence:** Simply explained, cross-linguistic influence is a phenomenon that can be observed when speakers use skills that can be traced back to their native language (or another language they might have previously learned) when using a second, third or foreign language.

**Culture:** A relatively stable system of shared meanings, a repository of meaningful symbols, which provides structure to experience (Kashima, 2000)

**Foreign Language:** A foreign language is a language not widely spoken and used by the people of a community / society / nation. For example, Spanish is a foreign language in Canada.

**Interference:** In the context of language acquisition, interference are errors in the learner's use of a foreign/second language that can be traced back to one's native language, or another language previously acquired

**Native Language:** A native language has been learned in childhood and is still being spoken by the individual using it.

**Ontological Engineering:** Ontological engineering is a research methodology which gives us the design rationale of a knowledge base, kernel conceptualization of the world of interest, semantic constraints of concepts together with sophisticated theories and technologies enabling accumulation of knowledge which is indispensable for knowledge processing in the real world. (Mizoguchi, 2003)

**Ontology:** An ontology is similar to a dictionary or glossary, but with greater detail and structure that enables computers to process its content. An ontology consists of a set of concepts, axioms, and relationships that describe a domain of interest (IEEE Standard Upper Ontology Working Group). An ontology can also be read by humans, who do not necessarily need to be computer specialists to interpret its meaning.

**Second Language:** A second language is a language that is spoken and used by the people of a community / society / nation. For example, French or English are second languages in Canada.