Towards mapping cultural differences in CALL

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This paper describes aspects of a research in progress. The research is concerned with identifying various forms of L1 interference in the process of acquiring L2, namely in terms of cultural differences, and the difficulties these might create for students. We are also working on instructional strategies and activities to help overcome such difficulties. We aim to map this information in an authoring/learning management system (LMS) that could assist both teachers and students, using ontological engineering (OE), a knowledge management methodology. In this paper, using the example of meeting someone for the first time, we illustrate how cultural differences can be at play in this process, briefly introduce OE and illustrate how our LMS might work.

この文書は調査の進展の状況を説明しているものである。このリサーチ作用は、L-2を取得するプロセスの中でのL-1の干渉による、つまり、文化の相違とか、、またこれらの相違が学生に与える困難との関わりに於ける様々な形式を識別する作業に関して行なったものである。私達は又、そのような困難をいかに克服するかを手助けする指導戦略と活動に関しても仕上げ作業を行なっているものである。私達はこの情報を、存在論的エンジニアリング法（OE）、知識管理方法論を使って、教師、学生の双方の役に立つオーサリング/学習管理システム（LMS）に取り入れる事を目指している。本文書では、人々がお互いに初めて会った場合を例にして、OEを簡単に説明し、LMS法がどの様に作用するかを簡潔に実例で示しながら、、このプロセスの中で遊びに於けるお互いの文化の相違が起こりうるのかを描き出す事にした

In the early stages of second/foreign language (L2) acquisition, transfer of patterns from the native language (L1) can be a major source of errors for learners. These reflect multiple ways of viewing the world and show that language, as a social practice, is imbued with culture. What learning difficulties associated with cultural differences can we identify? Our study has focused on those of Japanese students learning English. Among these, we have found that many are related to issues of pragmatics: introducing oneself, asking/giving advice, etc. For an example of transfer at play in relation to usage of certain verbs in the context of giving advice, see Allard, Mizuguchi, and Bordeau (2006).

Language learning methodology underlying the design of CALL applications and the use of authoring/learning management systems (LMS) is essentially generic, when applicable; it does not yet account for interferences stemming from L1 in the process of acquiring L2. We have been working towards the design of a CALL system based on declarative knowledge concerned with such interferences, using ontological engineering (OE). OE is a new methodology for knowledge which focuses on the specification of concepts, their relations and their attributes. OE enables the articulation of seemingly chaotic situations in a principled manner, and allows for the building of a knowledge base, which can then be integrated in an authoring/LMS.

This paper will compare cultural differences at play in the context of meeting someone for the first time in Japan and Canada. It will then briefly introduce OE and show how it provides *handles* with which to understand and analyze such differences. Finally, it will outline how a potential CALL-related LMS, in accessing information to this effect, can support the design of language lessons that help bridge potential cultural gaps by identifying areas of difficulty, providing explanations, instructional rules, drills and activities.

Example: meeting someone for the first time

Let us use the example of a Japanese and a Canadian adult meeting for the first time in Japan, with English being the language of communication. The Japanese person—no longer in school—has not lived or traveled extensively abroad, has not had much opportunity for exchange with foreigners, and though having had to study English in high school and possibly university, has not had much opportunity to practice speaking English. The meeting situation is one in which there is time for at least a short, casual conversation.

Though there are several influencing factors (age and context, for example), statements and questions made by a native Japanese in this situation tend to follow, at least initially, fairly set patterns. After establishing one another's name, questions concerning country of origin, and hobbies are quite typical. Also typical are questions or comments concerning Japan, namely its food and aspects of its culture, as well as questions or comments about the foreigner's country of origin. Though this may not appear particularly unusual at first glance, what is striking—in the experience of the foreign writers of this paper—is that the very same questions and comments are made quite consistently, to the extent that it sometimes seems as though Japanese people share a pre-set, agreed upon, question and comment checklist to be used when meeting a foreigner for the first

time. Furthermore, questions are often asked in fairly rapid sequence, that is to say, the Japanese participant will not necessarily offer many personal comments in relation to the questions and answers exchanged, but tend to move from one question or comment to another, quickly changing the topic.

For example, in addition to hobbies, we have consistently been asked whether we can use chopsticks, like sushi or *natto* (fermented soya beans), or whether we like Japan. There might also be, if actually eating together, a question or comment about the food being delicious, a comment on how good we might be at using chopsticks, or at using basic Japanese, with little other variation in the first few minutes of the conversation.

The question related to hobbies is in fact fairly typical of what is called "self-introductions." Self-introductions are carried out among groups of Japanese when a people who do not all know each other gather together. People introduce themselves one after another, in an orderly manner, very often beginning with their name, place of origin if relevant to the situation, and a hobby they might have. It is generally not a time for questions—one listens quietly to what others have to say. In this sense, then, to ask a foreigner about hobbies is simply asking about information Japanese might naturally volunteer in the process of self-introduction.

The questions about food are perhaps related to the curiosity of whether a non-Asian foreigner can actually easily use chopsticks, appreciate raw fish, or tolerate fermented soya beans; less than a decade ago, raw fish was not commonly eaten or found in many Western countries, and fermented beans, having a peculiar taste and texture, are apparently not always appreciated by foreigners living in Japan—and are not a regular part of the diet in some areas of Japan for that matter. To ask someone if the food is delicious is, in fact, a direct translation of a fairly typical Japanese question (*oishii desu ka?*). *Oishii* is generally translated in conversation as *delicious*, though it also carries the meaning of *good*, *nice*.

What we are trying to illustrate with the above is that in meeting someone for a first time, notwithstanding the possible difficulty inherent in expressing oneself in L2, cultural differences are at play. In comparison, a conversation between a Canadian and a foreigner meeting for the first time, the topic might eventually turn to what one does in one's spare time, but it would rarely be labeled a hobby. Furthermore, the conversation is not likely to follow a consistent *checklist* of seemingly set questions and comments, and the content and direction of the conversation will likely present variations from one set of people to another. In this situation, in addition to questions concerning the foreigner, a Canadian would likely make use of general comments (It's a nice day today, isn't it?), ice-breakers (Do you come here often?), personal comments (My native language is actually French) and re-casting of the other person's statement (Really? You have lived in Canada for three years already?). In addition, any chunk of the conversation would likely be an opportunity for continuing along that topic for a time, if deemed appropriate; for example, as a follow-up to the fact that the foreigner may have been in Canada for three years already, a Canadian might ask: "Where?" "Doing what?" and intersperse the conversation with personal comments ("You're an accountant? So is my brother. He works for…").

Let us consider this from the point of view of broader cultural considerations. Japanese interaction often calls for the use of prescribed, ritualized sentences and patterns in various interpersonal exchanges to a far greater extent than standard English used in most Western English speaking countries – certainly in Canada (examples of ritualized sentences in English include: "How are you?" "Nice to meet you"). Furthermore, when meeting someone for the first time, personal comments in Japanese tend to be fewer unless solicited, and even then, are often short and concise, in comparison to those a native Canadian might make in similar circumstances. These characteristics are probably linked, among other things, to the Japanese proclivity towards maintaining harmonious relationships, which is further related to the relative importance placed on group, rather than individual, concerns. In other words, set, prescribed sentences and patterns that are shared and expected ensure that two people conversing can "safely" remain on socially accepted ground, namely in a situation of meeting for the first time. There are of course expectations and an understanding of socially accepted ground in this type of situation among native Canadians as well, but the boundaries are altogether looser than they appear to be in Japanese culture, and some degree of personal improvisation in conversation is generally expected on the part of a Canadian.

Understandings of what politeness, respect, and consequent expectations might entail also present variations when comparing Japanese interaction patterns to those involving native Canadians. In Japan, when meeting someone for the first time, it is important to establish a footing, which means that one will generally set oneself in an appropriate hierarchical position in relation to the person being addressed, which, especially when in doubt, means one puts oneself in a lower position than the other—through language. The choice of certain verb forms, for example, will indicate that one is placing oneself in a position of humility or lower social ranking in relation to the other. These practices carry over into issues of, for example, whom it is appropriate to address in a given circumstance, who might initiate a conversation, and how much to say. For example, it would be inappropriate for a new Japanese employee to decide impromptu to introduce themselves to the president of the company, whether at a company party or during a fluke encounter. In contrast, it would not generally be an issue if a Canadian employee did this.

The above discussion is, to a large extent, made of generalizations. However, as Storti (1999) suggests, "cultural generalizations are necessarily statements of likelihood and potential, not of certainty" (pp. 3-4). Yet, Storti explains, 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.

As discussed above, culture is an integral part of language. As language teachers, attention to cultural similarities and differences in the process of teaching L2, with the help of targeted explanations and practice in these respects, not only pave the way towards intercultural understanding, but also enhance the capacity for using L2 in ways that may be closer to "standard" practices in L2. This is especially important in situations where, as in Japan, students form a homogenous cultural group, because it lessens the potential

for cultural misunderstandings. Meeting someone for the first time invariably creates an impression. If that process goes smoothly, it is of benefit to all concerned.

So how might any of this translate into the language class? Teachers who have been working and living for some time in Japan have likely developed various strategies to deal with some of the cultural differences at play. Those who are not familiar with the Japanese language or culture may not be aware that teaching or reviewing specific communication strategies relevant to L2 can help students come closer to hearer expectations in terms of standard L2.

The following anecdote is offered as an illustration: One of the authors of this paper has had extensive experience teaching English L2 to French Canadian students. When practicing meeting someone for the first time, French Canadian students simply transfer what they already know from L1; in other words, while practicing L2, they use communication strategies they are already familiar with. Since these strategies bear much in common with those used by English Canadians, from a pragmatic standpoint, the process is quite smooth. Problems that arise are essentially of a linguistic nature. Students can easily improvise first time meetings on their own and communicate in a way in which a potential English hearer would relate. When teaching in Japan, however, it gradually became clear that taking the time to briefly discuss cultural differences, explain and practice different communication strategies, such as ice-breakers and making general comments, was of benefit to students. With practice, they were able to carry out first time meeting conversations that were in tune with what one might expect in L2, and many seemed to enjoy the process.

Our research has been concerned with the following questions. How might information about cultural differences in relation to language teaching be summarized, organized, and made readily available to teachers? (We have purposely described our example loosely to show that difficulties exist in determining where to start). How can this be recycled to support learning in other pragmatic situations? Can it help explain why, beyond pragmatics, certain sentence patterns, or the usage of certain verbs, for example, might substantially vary between L1 and L2? Can some generalizations be made about how languages work? Can some of what applies to differences between English and Japanese be applied to a different set of L1 and L2?

In fact, we have been working towards the design of a CALL system to support language teaching and learning in view of transfer and interference between L1 and L2, namely from the point of view of cultural differences. This system may provide information about specific cross-linguistic phenomena, along with instructional strategies, drills, and practice to help students overcome hurdles encountered in the process of L2 acquisition. Our methodology is one that is increasingly used in knowledge management and artificial intelligence, and is called Ontological Engineering (OE). Let us first introduce OE, and later revisit the example of meeting someone for the first time.

CALL and Ontological Engineering:

With some background knowledge of the cultures at stake, cultural factors can be distilled from the description of a first meeting. One might begin by considering differences in *speaker and hearer perspective* according to culture. More

specifically, concise statements could be used as *handles* to begin understanding what underlies, for instance, the situation described above. In the case of Japan, the handles could include: "Rather collectivist society," "Reliance on ritualized sentences," "Reliance on patterns of interaction," "Deference to age, rank, or authority," "Importance of harmonious relationships," "Looking out for others before self," "Respect for tradition" etc. In the case of Canada, they could include, "Rather individualist society," "Frequent use of non-ritualized statements" "Friends can be made quickly," "Self-reliance," "OK to stand out," "OK to be proactive," "Telling it like it is." Essentialized though they may be, such concepts can begin to pave the way to understanding cultural differences. Such concepts are only statements of likelihood and potential, and describe a limited portion of a greater picture. However, they do give an idea of how people in given cultures *may* behave in a given situation, and why.

Furthermore, if such concepts are systematically organized within a relevant taxonomy, they may provide a framework for comparing different language acts or functions in view of cultural influence, and possibly lead to establishing links between them. Attention to cultural factors and transfer from L1 has taught us, for instance, that after practicing meeting someone for the first time, discussing and practicing the essentials of small talk has been beneficial with Japanese students. Students practicing meeting for the first time have begun to hone skills in view of communication strategies such as ice-breakers, personal comments, following up on a chunk of conversation, etc. These can quickly be recycled and further practiced in small talk, a different pattern of interaction also subject to cultural influence. Communication strategies can also be introduced with respect to other pragmatic situations.

In our research, we have been working on systematically organizing cultural concepts so that they may be related to various language functions, while trying to be fairly comprehensive within the context of non-English major Japanese university students studying English conversation. We are further interested in making this kind of information available to teachers and students via a CALL system, as well as providing examples of strategies to deal with cultural differences or possible hurdles related to transfer of L1 patterns into L2. That is to say, a teacher working with such a CALL system when preparing a language course or a given lesson could receive guidance if needed, and be able to query the system (we will show an example of this in the last section of the paper). The system could also provide suggestions as to potential topic ordering, for example to practice "meeting someone for the first time" and "small talk" in close sequence. It would provide explanations concerning cultural differences, in addition to providing instructional strategies, activities, and drills that could help the acquisition of useful communication skills. A student working on an activity might be prompted by the system concerning an area of difficulty, and directed to specific explanations and activities for further practice.

Such a system calls for a sophisticated knowledge management methodology. It also implies the capacity for "intelligent" behavior. To address such issues, we use ontological engineering (OE) methodology. This methodology for knowledge management, well known within the artificial intelligence community, focuses on the

specification of concepts, i.e., their relations and attributes. Such a specification is called an ontology, which, simply put, can be understood as a sophisticated road map representing the world of knowledge at hand. OE therefore enables the articulation of seemingly chaotic situations in a principled manner, and provides a concrete reference tool in the form of the ontology.

It is not possible to extract the reasoning behind it with current software since programming rules and the knowledge guiding these rules are enmeshed. In OE methodology, however, an ontology is first created, and then programming rules and a knowledge base are elaborated. What this means is that since the knowledge representation is independent from programming rules, knowledge can be readily accessed not only by computers, but also by humans. This obviously facilitates the sharing of knowledge between interested parties, and makes it possible to readily adapt the system in view of evolving knowledge, or for use with a different set of L1 and L2.

Let us provide a very basic illustration of an ontology, using the example of vehicles (Mizoguchi, 2003).

Vehicle World:

- Ground vehicle
  - motor car
  - 4 or more wheel car
    - car
    - truck
  - motor bike
  - train
- Sea vehicle
  - ship
- Air vehicle
  - aircraft

A simple taxonomy

OE articulation of the Vehicle World:

- Type
  - ground vehicle
  - sea vehicle
- air vehicle
- Function
  - to carry people
  - to carry freight
- Attribute
  - power
  - size
- Component
  - engine
  - body
- Traffic system
- ….

A simple ontology (includes the preceding taxonomy)

This example shows how objects related to the target world might be systematically organized in terms of relevant concepts. A subsequent step to the above would be to specify relations existing between the concepts, thus ultimately resulting in a comprehensive description of the fundamental understanding we have of this world.

We are currently elaborating an ontology for the study of English L2 by Japanese L1 students in terms of cultural differences and cross-linguistic difficulties. In the process, we are attempting to provide fundamental descriptions of the worlds of culture, language learning difficulties, and language teaching methodology in relation to our research and its proposed goals. We have also begun testing relevant strategies for overcoming cross-linguistic difficulties in the classroom, and are thus designing a working prototype of the CALL system we have been describing. Let us now take a closer look at how the system might work.

Basic simulation of CALL system: Example revisited

We have brushed upon the fact that there are cultural differences at play when meeting someone for the first time, and some communicative strategies that could be used. Let us now be a little more specific. Let us imagine a teacher newly arrived in Japan with little experience of culture or language sitting in front of a computer, with access to a CALL authoring/learning management system (LMS), for example Moodle (www.moodle.org). The teacher could browse through a list of topics, or perhaps key in "Meeting someone for the first time." Let us look at some caricatured examples of possible computer rules underlying the system:

IF Japanese is L1 and English is L2

And IF Learning Topic is: Meeting someone for the first time

THEN (display the following):

- Provide students with communication strategies
- Provide targeted exercises and practice drills

REASON : - Cultural differences at play

RELATED TOPIC : Small Talk

RETRIEVE TEACHER EXPLANATION (in text form)

RETRIEVE INSTRUCTIONAL STRATEGY (in text form)

RETRIEVE EXERCISES AND TARGETED DRILLS (stored in the computer)

The computer could also display "aware" behavior. It could reproduce, in essential form, information contained in the ontology. In this particular case, on the topic of meeting someone for the first time, the computer could display information of the following type:

Topic: *Meeting someone for the first time*

Related to broader topic of: *Pragmatics*

Culture-related difficulty: Y*es*

Manifestation: *Overuse of ritualized sentences/questions*
Limited personal comments
Rapid change of topic

(retrieve explanation for any of the above in text form)

Cultural factors, Japan:	*Rather collective-oriented society (strength: 4 out of 5)*
	Importance of harmonious relationships
	Looking out for others
	Deference to age, rank or authority
	Features of educational methods in Japan
	Etc.
(Retrieve explanations for any of the above in text form)	
Cultural factors, Canada:	*Rather individualist society (strength: 4 out of 5)*
	Friends can be made quickly
	Self-reliance
	OK to be pro-active
	Features of educational methods in Canada
	Etc.
(Retrieve explanations for any of the above in text form)	
Suggested Communication strategies:	*Use of ice-breakers*
	Making general comments
	Providing personal information
	Expanding on chunks of conversation
(Retrieve explanations for any of the above in text form)	

Again, we acknowledge that the above represents approximations, and yet, it is a starting point towards trying to bridge very real communication gaps. The computer can point to the root of the problem, in other words show basic "intelligence," and a more detailed explanation in text form can be retrieved. Such an explanation is linked to examples of instructional strategies, targeted explanations, and practice. Ultimately, the teacher can decide what to incorporate. Let us add that the cultural factors we have provided may perhaps seem haphazard, but they are based on the work of researchers in the field of comparative cultural studies, such as Hofstede (2001) and Schwartz (1992). Furthermore, the behavior demonstrated by the computer models information based on our working ontology, which will be described in more detail in a subsequent paper.

With respect to meeting someone for the first time, we have noticed that reminding Japanese students that native English speakers tend to be individualistic and, therefore, do not make extensive use of ritual statements or questions, preferring *original* utterances put together according to the situation and conversation interspersed with personal comments, is usually enough for them to understand that there is reason to pay attention to cultural differences and to examine specific communication strategies. Practice of conversational activities with a focus on communication strategies has also been shown to be efficient. In other words, a detailed explanation of cultural differences or 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 provides guidance and suggestions, leaving the teacher with the flexibility of learning more, to borrow, adapt, and adjust—and to make it available to students.

To give a quick example of how a student might work within such a system, we could imagine that she is be working via a computer with a listening exercise in which she is required to label various sections of a conversation in terms of communication strategies. When in doubt, she could access other examples of what the strategies entail, for the sake of comparison. Explanation of strategies could also be accessed, as well as aids to translation in Japanese.

Concluding Remarks:

The process of acquiring L2, especially in the early stages, is not without challenges, many stemming from cultural differences and L1 influence. In this paper, we have illustrated, using the example of meeting someone for the first time, that different cultures call for different communication strategies. We have briefly described how we might coin concise concepts to provide handles to understanding some of the phenomena at stake, and have summarized how a CALL system built on the basis of OE methodology can assist language teachers and students, taking cultural considerations into account. We hope to further elaborate on the results of our research in future papers, and ultimately, we hope that our work can be of help in promoting cross-cultural understanding.

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