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Preface

We resolved to start publishing this journal thinking that despite the fact that Poland has a strong position in second language acquisition research and that quite a large number of monographic publications in this area come out every year—often published abroad with Multilingual Matters or Springer, among others—there is yet no academic research-oriented journal devoted to the theory and practice of SLA which would be widely available to Polish academia. The existing journal, *Studies in Second Language Learning and Teaching* published by Adam Mickiewicz University (Kalisz–Poznań), emphasizes the role of classroom-oriented research and so its particular focus complements the new journal by presenting foreign language pedagogy and its classroom applications. The origins of our journal also lie in the success of the *International Conference on Second/Foreign Language Acquisition* which has been organized for almost thirty years by the Institute of English at the University of Silesia. It gathers together each year many Polish and foreign academics and focuses on often un-researched issues and fairly new trends in SLA. Papers falling within the leading theme of each conference are usually edited and published in the form of a monograph, but there are also many studies presented in research areas not directly related to the main theme. Since many of these are of a high academic standard, we would like to open a channel for their publication, alongside other original articles and submissions. We believe that our new journal will serve an important need in projecting new and interesting research in SLA.

This journal will be published bi-annually and will consist of articles submitted to us directly or solicited (by invitation). Each text will be peer-reviewed in a double blind referring process by referees of the Editorial Board and beyond. The Editorial Board consists of both Polish scholars and foreign experts in the area, and represents the wide range of research interests of its members. All updated information on the journal will be

made available on the Institute of English (University of Silesia) webpage at www.ija.us.edu.pl (via a special link) and the journal webpage at http://www.journal.us.edu.pl/index.php/TAPSLA.

The present inaugural issue consists of articles in various areas of SLA and also research in multilingualism. The thematic spread of this issue ranges from the texts relating purely to linguistic aspects of second language acquisition/learning in different contexts and at different levels to issues of the identity of those involved in the process of foreign language learning, teachers and learners. In future we also intend to compile special issues which will be thematically-oriented.

We hope that this journal will to some extent fill a gap in the Polish journal publishing market and that it will be of interest to researchers working in the field of second language acquisition. We would like to invite Polish and foreign academics to share their scholarly research with us by submitting their work to the *Theory and Practice of Second Language Acquisition* journal published by the prestigious Polish academic publisher, Wydawnictwo Uniwersytetu Śląskiego (University of Silesia Press).

Danuta Gabryś-Barker
Adam Wojtaszek

Jolanta Latkowska
University of Silesia

How Relevant is the Sapir-Whorf Hypothesis to Contemporary Psycholinguistic Research?

Abstract: The paper raises the question of whether the linguistic relativity proposal, also known as the Sapir-Whorf Hypothesis, should be used as a frame of reference for modern research into the relationship of language to cognition. The question is discussed in the context of Whorf's (1956) writings, with emphasis on factors that are crucial to the proposal, i.e. language, thought, and behavior. The second issue addressed by the paper is whether linguistic categories provide an accurate window on cognition, as was suggested by Whorf and in some of the more recent debates. The analysis takes the form of a correlational study which examines the categorization criteria applied in tests that require language-based and language-neutral judgments.

Keywords: linguistic relativity, Sapir-Whorf Hypothesis, cognition, language, correlational study

Introduction

To the psycholinguist and second language acquisition researcher, the *Sapir-Whorf Hypothesis*, also known as the *linguistic relativity principle*, indicates the possibility of a causal relationship between language and thought. Originally, the relationship was assumed to be deterministic, with language acting as a mould of cognition. Accordingly, the categories of the native language were attributed with formative powers which determined the perception and apprehension of extra-linguistic reality (Carroll, 1956). Because of a lack of unequivocal empirical evidence and a barrage of criticism on purely theoretical grounds (Kramsch, 2004), this 'strong' deterministic version of the hypothesis was rejected as untenable. The 'weak' relativistic hypothesis is generally accepted, however, since it resonates with a popular perception of language as a shaping but not restrictive force (Pederson, 2007). Also, the weak hypothesis received support

from a large number of studies conducted in the 1990s and during the first two decades of this century. For an informative review of relevant research see Pederson (2007) and Cook and Bassetti (2011).

Research into linguistic relativity embraced Slobin's *thinking for speaking hypothesis* (Slobin, 1996; 2003; 2004; 2005), which stipulates that verbalization induces a language-dependent mode of thinking that transforms non-linguistic conceptual content into a 'verbalizable' propositional format prior to articulation. This is done in accordance with the available linguistic categories, which additionally serve as a mechanism directing the speaker's attention to those aspects of experience that they encode. Consequently, inferences about conceptual processing may be drawn from both verbal and non-verbal performance. As research into the paradigm produced strong confirming evidence, the thinking for speaking hypothesis tends to be invoked as a *weak form of linguistic relativity* (Han & Cadierno, 2010). This reserves the term *strong hypothesis* for those strands of relativistic research that explore correlations between linguistic categories and cognitive behavior on the basis of behavioral measures that either by-pass or entirely exclude language (Levinson, 2003; Lucy, 2004).

The first decade of the 21st century saw the emergence of a bilingual turn in relativistic thought and a spate of studies investigating cross-language interaction and the ensuing restructuring of cognitive mechanisms (Athanasopoulos, 2011b; Bylund, 2011; Pavlenko & Malt, 2011; von Stutterheim, 2003). It also bore witness to renewed criticism of the Sapir-Whorf Hypothesis, as well as accusations that it was couched in terms that did not reflect Whorf's original concerns. A case in point is Pavlenko's (2014) most recent contention that Whorfian effects manifest themselves through language use and are most easily observed in bilinguals.

Such a disparity of opinion over what constitutes Whorfian effects is not new to relativistic debates. For example, research into the conceptual basis of emotion words shows that when used as stimuli in research, emotion words influence the categorization, memory, and perception of emotion. In the absence of such prompts people are unable to identify emotion and perceive it in a categorical way (Gendron et al., 2012). According to Malt and Ameel (2011), such a lack of discriminating power in a non-verbal condition is indicative of an absence of relativistic effects. Gendron et al. (2012), by contrast, disregard the non-verbal dimension and classify as relativistic the effects evoked by the presence of emotion words. *Thinking for speaking* appears to be equally contentious. While Slobin (1996; 2003; 2004; 2005) and Han and Cadierno (2010) see language-driven thinking as a (weak) form of linguistic relativity, Athanasopoulos (2011a) regards it as being solely linguistic.

This paper addresses the confusion that beclouds the notion of Whorfian/ relativistic effects on cognition by referring to the writings of Benjamin Lee Whorf, who is credited with developing the hypothesis, and analyzing them in

terms of themes that are central to relativity, i.e. thought, language, and be-havior. It is hoped that the analysis will help put the Sapir-Whorf Hypothesis in perspective and evaluate its tenets against current trends in psycholinguistic research. The second objective of the paper is to reexamine the extent to which language-based tests provide a neutral and/or accurate view of conceptual processes such as non-verbal categorization. This is vital for understanding the controversy surrounding the hypothesis and the rationale behind some of its subsequent modifications.

Whorf's Views on Key Relativistic Variables

Thought and Thinking. Following the recommendations of Watson, early 20th-century American psychology abandoned investigations of conscious thought and mental activity on the grounds that they were unobservable. Accordingly, a theory claiming that thinking takes place in a language and that 'the greatest light upon it […] is thrown by the study of language' (Whorf, 1956, p. 252) must have aroused intense interest and attention, not to mention controversy and criticism. In such a climate, Whorf, who had no background in psychology and gained recognition in academia primarily as an expert on Maya hieroglyphs and Indian languages, advanced the view that linguistic diversity sparked off cognitive differences in speakers of different languages as a function of continued use of the patterns of their native language for expression. The evidence quoted in support of these claims was linguistic and behavioral, and is the subject of the following sections.

Although many contemporary analysts consider the notion of *habitual thought* to be the cornerstone of Whorf's hypothesis, it did not receive much attention in his writing. In fact, his collected works (Carroll, 1956) contain only one article devoted to the subject with only one specific explanation of what the term meant to its author. It reads as follows:

> By 'habitual thought' and 'thought world' I mean more than simply language, i.e. than the linguistic patterns themselves. I include all the analogical and suggestive value of the patterns […], and all the give-and-take between language and the culture as a whole, wherein is a vast amount that is not linguistic yet shows the shaping influence of language. In brief, this 'thought world' is the microcosm that each man carries about within himself, by which he measures and understands what he can of the macrocosm. (Whorf, 1956, p. 147)

Beautifully phrased, the quotation indicates that Whorf saw thought as the linguistic and non-linguistic content of the mind. Surprisingly, there is no mention of either regularity or frequency of occurrence that could account for the habitual nature of thought. The *shaping influence* of language is described elsewhere as a non-conscious structuring process that is not always overtly linguistic:

> Thinking in a language does not necessarily have to use words. […] Much thinking never brings in words at all, but manipulates whole paradigms, word-classes […] 'behind' or 'above' the focus of personal consciousness. (Whorf, 1956, p. 252, footnote 1)

The now classic statement "The linguistic system (in other words, the grammar) of each language […] is itself the shaper of ideas" (Whorf, 1956, p. 212) explains the significance of the *paradigms* and *word-classes,* which are attributed with formative powers. Whorf (1956, p. 258) stated explicitly that sentences were more essential than words.

Unfortunately, to the detriment of his theory, Whorf was often inconsistent and imprecise. In his rebuttal of the Watsonian notion that silent thinking is essentially "suppressed talking accompanied by laryngeal agitations" (Whorf, 1956, pp. 66–68), he ambiguously suggests the possibility that it is

> RAPPORT between words, which enables them to work together at all to any semantic result […] that constitutes the real essence of thought insofar as it is linguistic. (Whorf, 1956, pp. 66–68)

and that "thinking itself is in a language—in English, in Sanskrit, in Chinese" (Whorf, 1956, p. 252). In fact, vague references to the "linguistically-determined thought world" (Whorf, 1956, p. 154) abound in his texts, implicating language in general as a potent structuring agent.

This lack of precision should take no one by surprise. Whorf was clearly an open-minded researcher who was familiar with trends and developments in psychology. For instance, the idea that thought was largely linguistic was borrowed from Jung, while in *The Yale Report* (Whorf & Trager, 1996) *Gestalt theory* served as a backdrop for a discussion of the interaction between language and perception. Whorf was also aware but dismissive of alternative views of the language-thought interface. The quotations below lay out his thoughts on this matter:

> Talking, or the use of language, is supposed only to 'express' what is essentially already formulated nonlinguistically. Formulation is an independent process, called thought or thinking, and is […] indifferent to the nature of particular languages. (Whorf, 1956, p. 207)

> Formulation of ideas is not an independent process, […] but is part of a particular grammar, and differs, from slightly to greatly, between different grammars. (Whorf, 1956, pp. 212–213)

Nevertheless, it must be stressed that his approach to the issue was that of an early 20th-century linguist preoccupied with analyses of phonemes and morphemes and relatively uninformed about the complexity of cognitive processing which poses a challenge to interdisciplinary research a century later. Whorf (1956, p. 42) seemed to distrust psychological terminology which he regarded as a legacy of old laboratory experiments. Consequently, his use of psychology-related terms is intuitive and commonsensical, as demonstrated by the following description of how grammar influenced what a psychologist could have called perception and categorization. The specifics of both processes remain a matter of conjecture.

> Users of markedly different grammars are pointed by their grammars towards different types of observations and different evaluations of externally similar acts of observation. (Whorf, 1956, p. 221)

Whorf's attempts to embrace the cognitive and linguistic levels attracted the attention of Lakoff (1987, p. 330), who called him a pioneer in (cognitive) linguistics and "the most interesting linguist of his day." Yet, from the perspective of psychology, the research did not meet the requirements of good science because it used imprecise and intuitive terminology, and employed anecdotal and impressionistic evidence, and for an obvious failure to define terms (variables) carefully and form testable hypotheses, which was vital for obtaining empirical evidence for the theory. What tends to be overlooked is that, as a linguist, Whorf was neither interested nor qualified to conduct research that met those requirements.

Behavior. The way Whorf understood the behavioral aspect of linguistic relativity had little in common with modern interpretations of the hypothesis. Under the influence of Sapir, a leading anthropologist of the time, he came to regard language as a social construct and consequently looked for signs of its influence in culturally conditioned personal and social activities. The influence manifested itself as "constant ways of arranging data" and "most ordinary everyday analysis of phenomena" (Whorf, 1956, p. 135) in line with the language habits of the community. Whorf became acutely aware of the dependency of behavior on linguistic descriptions of events in his work as a fire inspector. Although initially concerned with purely physical conditions and circumstances surrounding the starting of fires, he soon discovered that part of the blame lay with how the situation was represented linguistically. A case in point is

the now classic example of gasoline drums which, when full, require handling with caution and care. This caution is abandoned around empty gasoline drums because the word *empty* suggests a lack of danger. The sad truth is that empty drums are potentially even more dangerous because they contain explosive vapor (Whorf, 1956, p. 135). The principle behind this dependency is as follows: "people act about situations in ways which are like the ways they talk about them" (Whorf, 1956, p. 148).

The example makes clear that Whorf did not distinguish precisely between verbal and non-verbal behavior. Nor did he try to infer cognitive patterns from the observed behavior. It seems he was happy to accept that activities that were not explicitly linguistic were non-linguistic by default and that patterns of behavior reflected patterns of thought. His contemporaries, including his pupil and friend John B. Carroll, adopted a more principled approach, however, and argued for a strict separation of linguistic and non-linguistic processes. This protected linguistic relativity from becoming circular and tautological, as explained by Casasanto:

> Inferring cognitive differences solely from linguistic differences is hopelessly circular. Patterns in language can serve as a source of hypotheses about cognitive differences between members of different language communities, but some sort of extra-linguistic data are needed to test these hypotheses: Otherwise, the only evidence that people who talk differently also think differently is that they talk differently! (2008, p. 67)

It also solved the problem of a linguistic bias in data analysis as researchers were able to assess cognitive phenomena in a language-neutral way, i.e. without privileging a vision of reality invoked by the language of the analysis, or indeed, the researcher's native language. This was a problem Whorf was intensely aware of.

Language. A second dimension of the linguistic relativity principle represents the notion that languages are relative and vary in how they conceptualize and represent extra-linguistic reality. In the words of Whorf: "each language performs […] artificial chopping up of the continuous spread and flow of existence in a different way" (1956, p. 253) and

> segmentation of nature is an aspect of grammar […]. Languages differ not only in how they build their sentences but also in how they break down nature to secure the elements to put in those sentences (1956, p. 240).

On the linguistic level, the result of the segmentation process is a large scale pattern-system of grammatical categories such as nouns, verbs, number, gender,

voices, tenses, and the like. The categories are attempts to segment and interpret experience. The rules of "patternment" and patterns of sentence structure are specific to each language and guide mental activity. Whorf borrowed the idea that the sentence is the main unit of linguistic structure and therefore should be used as a template in linguistic analyses from Bloomfield. What is more, in a truly structuralist style, he made a strenuous effort to describe carefully the linguistic terms used in his research and analyses.

Surprisingly to some, Whorf's understanding of lexical semantics was quite vague. In fact, he did not seem to be familiar with the *Fregean* distinction between *sense and reference* (cf. Goddard, 2003). This is demonstrated in no uncertain terms by the quotation below:

> That part of meaning which is words, and which we may call "reference," is only relatively fixed. Reference of words is at the mercy of the sentences and grammatical patterns in which they occur. (Whorf, 1956, p. 259)

To put things in perspective, it should be noted that in his lifetime American linguistics was preoccupied with phonology and morphology, while semantics was underdeveloped since, like all things cognitive, it was considered to be beyond the reach of scientific investigation.

Yet another theme running through Whorf's work was that of language as a cultural phenomenon, or more specifically, as an "especially cohesive aggregate of cultural phenomena" (1956, p. 65). It is a shared knowledge of the aggregate that makes it possible for the members of a particular speech community to communicate, as explained in the excerpt below:

> We cut nature up, organize it into concepts, and ascribe significances as we do, largely because we are parties to an agreement to organize it in this way–an agreement that holds throughout our speech community and is codified in the patterns of our language. The agreement is, of course, an implicit and unstated one, BUT ITS TERMS ARE ABSOLUTELY OBLIGATORY (Whorf, 1956, pp. 213–214).

The belief that cultural norms are codified in ethnic languages inspired Whorf (1956, pp. 138–139) to address the question of an interplay of culture and linguistic norms. He was particularly interested to find out if there were "traceable affinities between (a) cultural and behavioral norms and (b) large-scale linguistic patterns." The answer was affirmative, although Whorf conceded that the two were related rather than correlated, making the relation much weaker than some of his comments seemed to suggest. The conclusion to be drawn was that language and culture should be studied as a whole since they

were closely integrated. It is more than likely that this anthropological slant in Whorf's reasoning prevented him from using quantifiable research paradigms.

Finally, as a linguist and anthropologist, Whorf expressed concern about what Lucy (2011, p. 46) called "unwitting lingua-centrism" of linguistic evaluation and description. This is a tendency to analyze languages in terms of categories rooted in the researcher's own language. Although unable to eliminate the bias of using English as a tool of analysis in his own research, Whorf made his views regarding this issue clear:

> But to restrict thinking to the patterns merely of English […] is to lose a power of thought which, once lost, can never be regained. […] I believe that those who envision a future world speaking only one language, whether English, German, Russian, or any other, hold a misguided ideal and would do the evolution of the human mind the greatest disservice. (1956, p. 244)

By the same token, he was very conscious of the limitations of linguistic metalanguage which, in his opinion, was useless in any other than a strictly grammatical sense (Whorf & Trager, 1996).

Whorf's contribution to linguistics exceeds by far the scope of this paper, which has presented his position on language insofar as it relates to linguistic relativity. Among Whorf's most notable endeavors in other areas were attempts to decipher Maya and Aztec writing, and an analysis of the Hopi language, as well as numerous theoretical articles on phonotactics, the cryptotype, and language typology. Although some of the notions they advanced were either modified or indeed disproved by later research, it should be borne in mind that Whorf was deprived of the opportunity to develop and perfect his work because he died of cancer at the age of 44. His death and that of his mentors, Franz Boas and Edward Sapir, who died within a few years of Whorf, dealt a blow to the linguistic relativity proposal, which was presented to the world in an unfinished form.

Practical Implications. The current reawakening of interest in linguistic relativity and the expansion of the concept to include bilingualism are living proof that the Sapir-Whorf Hypothesis continues to inspire researchers across the academic spectrum. This is most evident in the outpouring of studies and monographs on the subject that has been observed over the past two decades or so. They are a tribute to Whorf in particular for having opened a debate that required expertise and vision, and for having had the courage of his convictions.

It must be kept in mind, however, that Sapir and Whorf were pioneer researchers with a focus on cultural rather than cognitive phenomena. Consequently, the paradigm established for their work could not meet the requirements of more

controlled studies designed to discover relationships between narrowly defined variables. As has been demonstrated in this paper, Whorf's understanding of thought was often intuitive, while his analysis of data was descriptive and impressionistic, even philosophical at times. This alone diminishes the usefulness of the original and/or any other broadly conceived version of linguistic relativity for current research which is based on detailed cognitive models. As Pederson rightly observes, nowadays:

> the question 'Does language influence thought?' is being replaced by a battery of questions about whether a given feature of a specific language influences particular cognitive operations, what the exact cognitive mechanisms are which give rise to this influence, and how we can most precisely characterize the nature of this influence. (2007, p. 1036)

In the light of the above, it becomes apparent that the disagreements over what constitutes *Whorfian effects on cognition* that are common in psycholinguistic circles cannot be conclusively resolved because Whorf did not provide enough information on the subject. In fact, he was only a precursor of what later came to be known as a research trend bearing his name.

Personally, I applaud Cook's (2011, p. 12) comment that there is an infuriating tendency for academics "to debate not the actual issues involved, but their interpretation of the writings of Whorf and Sapir [...], rather like the exegesis of a sacred text." Paradoxically, this paper is no exception. Still, as a researcher, I would much rather concentrate on the real issues. One of them is discussed below.

Linguistic and (non?)-linguistic categorization in tasks using linguistic stimuli: A correlational study

Objectives. According to Lakoff (1987, p. 330), the classic Whorfian argument "that the structure of a language could influence nonlinguistic behavior" should be couched in terms of the question of whether naming is part of (non-linguistic) cognition. The present study investigates this issue by attempting to find out to what extent semantic naming distinctions correlate with categorization patterns in tasks that:
- apply non-linguistic criteria of categorization, e.g. similarity judgments in a free sorting task;
- implement categorization according to lexico-semantic criteria which diverge from those laid down by the words under study.

The existence and strength of significant correlations will show whether the observed linguistic patterns may be construed to reliably reflect the underlying conceptual models. This will be the case when items given the same name in the linguistic task are placed in the same category in the non-linguistic condition (Latkowska, 2013).

Participants. The participants of the study were 30 first-year students of the University of Silesia attending a teacher training course at the English Department. Their level of proficiency in English was assessed with the Oxford Quick Placement Test (2001) and ranged between the B2 ($N = 22$) and the C1 ($N = 8$) levels. None of them had stayed in an English-speaking environment for more than a month. The students also had elementary to lower intermediate knowledge of German, which they had studied in secondary school and at university. Because the study did not examine cross-language comparisons, it was not considered essential to restrict it to monolinguals or limited bilinguals.

Materials. The materials used in the study included nine scenarios (see below), each of which created a context to activate the targeted meaning and related concept. The scenarios were built around the semantic components of Wierzbicka's (1997) Natural Semantic Metalanguage explications for three Polish friendship terms, i.e. *przyjaciel*, *kolega*, and *znajomy*. Eight scenarios were used in a previous study where they elicited the targeted words consistently (Latkowska, 2013).

Przyjaciel 'best friend'
S1) We went to school together and lived in the same street. On Saturdays we would first meet in the playground, and then, a few years later, on the tennis court. Now we often go to our local for a chat. There isn't a thing we wouldn't know about each other.
S4) We often talk on the phone or on the net. Our conversations are very honest and deep; sometimes they remind me of going to confession.
S9) She/he is one of the few people I trust and often discuss my problems with. I admire his/her experience and disinterested wisdom.

Kolega 'friend'
S2) For five years, we have been meeting at university where we do the same degree course. We sometimes study for exams together and in our free time, i.e. quite rarely, we go to the cinema.
S6) For several years we've been going to ski camps together. In fact, all of us started from scratch and had many adventures on the ski slopes and routes. We enjoy skiing together.

S10) We are classmates and often stay after school to do our homework together. There are five of us in all and we enjoy studying together.

Znajomy 'acquaintance'
S3) We meet when walking our dogs and often have a chat while our pets chase each other on the grass. This is how I hear the news about the people living in the area.
S5) We met at a conference where we were seated next to each other at the conference dinner. After an interesting conversation we exchanged business cards.
S8) Our kids are classmates and we often meet at parents' meetings or when collecting them from school. Sometimes, when I have to work overtime, s/he walks my son home for me.

Two distractor items were also included, both with a focus on *neighbor*, i.e. S11 and S7, which read as follows:

S7) Although we live on the same floor we meet once a month or less.
S11) We live in a house on the city outskirts. The couple next door are very friendly and we often help each other. For example, last summer I watered their garden when they went on holiday.

The participants were instructed to write down the word(s) they would use to name their relationship with the individual(s) described in each scenario (Test 1). The relationship was not romantic and they could use the same word several times to refer to different scenarios, or use two different words to refer to the same situation. The scenarios were presented in a randomized order which is indicated by the letter S for scenario and the entry number. The participants were expected to provide the target word in response to the prompt: *This person is a(n) or These people are (my)…* . The questionnaire was implemented in Polish.

In addition, the participants were requested to complete a scenario evaluation test (Test 2, see Appendix 1), which was a verbal categorization task aimed at finding out how the participants perceived the scenarios. This was vital to clarifying the nature of the relation signified by each of the friendship terms. The participants were required to assign a corresponding scenario number to one of the following categories:
• a very close and personal relationship;
• a close but not intense, also professional relationship;
• a purely social relationship;
• a purely professional relationship.
To obtain information about the participants' language history, *The Oxford Quick Placement Test* (2001), paper and pen version, was used, as well as a back-

ground questionnaire. The questionnaire focused on factors such as education level and experience with the L2.

Procedure. The tests were administered in the following sequence:
- the free sorting task;
- the scenario naming test (Test1);
- the scenario evaluation test (Test 2).

In the free sorting task, which tends to be used to assess non-verbal categorization (Malt & Ameel, 2011), the participants were presented with a list of un-numbered scenarios and asked to put them into categories on the basis of their similarity. The instructions for the task read as follows: *Mark with the same letter, i.e. A, B, C, and so on, situations which in your opinion are similar to each other/one another*. The participants were free to form as many categories as they saw appropriate. The order of the scenarios was randomized and the participants were not aware of the purpose of the study. The free sorting task preceded the other two tests which required explicit verbalization. It was hoped that implementing the sorting task first would help avoid drawing the respondents' attention to specific linguistic criteria, thus reducing the extent of subvocal verbalization. A decision was also made not to include triads matching in the study since the binary choice enforced by the structure of the task did not always accurately reflect the categorization choices of the respondents who, if given the chance, might have opted for a different answer (Latkowska, 2009). What is more, the piloting stage for the triads task produced inconsistent results.

The naming test and the scenario evaluation test were implemented as described in the section on materials. The respondents were given 45 minutes to complete all three tests. They were also allowed to sign the test sheets with a fictitious name to ensure anonymity. The background questionnaire and the placement test were completed the following week.

Analysis. To compare the similarity of the participants' categorization choices in the three tasks, the situations that were placed in the same category were combined into pairs. For example, if scenarios 1 and 4 elicited the name *przyjaciel*, they were placed in the verbal category of *przyjaciel* under the label 1, 4. If these two scenarios were marked with the same letter in the free sorting task, they were obviously in the same category, too, which was considered to be a measure of similarity between verbal categorization and sorting behavior. For the sake of precision, the pairing of the situations from the sorting test was carried out using an Excel macro created for this purpose. The pairs were then tallied and the score for each pair was correlated with those for the equivalent pairs in the other two tasks. The mode of analysis developed for this study is partly modeled on Malt et al. (1999). The Shapiro-Wilk test was run to assess the distribution of the data. Since they did not follow normal distribution

(W > 0.19, p = 0.000) in all three tests, non-parametric Spearman rank-order correlations were computed. The alpha level was set at 0.05 or less.

Results and Discussion. In the free sorting task, the subjects created six categories marked from A to F. Category F contained just one scenario (S7) and was subsequently excluded from the analysis. The sort yielded 42 pairings of scenarios, the most frequent of them being 4, 9 ($N = 30$), 1, 4 ($N = 25$), 1, 9 ($N = 25$), 8, 11 ($N = 23$), 10, 2 ($N = 20$), 2, 6 ($N = 16$), and 5, 7 ($N = 16$).

The naming task elicited four main groupings, i.e. (1) *przyjaciel* ($N = 84$), (2) *kolega* ($N = 83$), (3) *znajomy* ($N = 108$) and (4) *sąsiad* ($N = 45$). There were also infrequent cases of other names. All of the scenarios elicited their targets, which in most cases constituted about 70% of each category's elicited name set, and were thus the dominant names. As regards the scenarios that received the same name, there were 38 pairings altogether. The most frequent ones included: 4, 9 ($N = 26$), 1, 4 ($N = 24$), 1, 9 ($N = 21$), 10, 2 ($N = 21$), 10, 6 ($N = 21$), 5, 8 ($N = 21$), 3, 5 ($N = 19$), and 7, 11 ($N = 19$).

Test 2 served as a control for the naming task and produced a clear response pattern for S1, 4, and 9 (*przyjaciel* 'close friend'), which were classified as *very close and personal* by between 25 and 30 respondents (83%–100%). S5 for *znajomy* was evaluated as *purely professional* ($N = 25$) by the majority of respondents, too. There was more variability in the responses to the remaining situations. Overall, the test produced 38 scenario pairings, the most frequent being: 4, 9 ($N = 27$), 1, 9 ($N = 25$), 1, 4 ($N = 23$), 10, 2 ($N = 20$), 10, 8 ($N = 12$), 2, 6 ($N = 12$), 2, 8 ($N = 11$) and 2, 11 ($N = 11$).

Spearman rank-order correlations computed for specific categories in the free sorting and naming tests showed clearly that the two tests summoned different categorization criteria. The sorting task (Table 2, see Appendix 3) elicited judgments based on the most salient and extreme properties, such as very intense and personal contact (S1, 4, 9) on the one hand, and little or no contact (S5, 7) on the other. Situations involving relationships of moderate intensity were perceived as similar.

In the naming task (Table 1, see Appendix 2), *znajomy* covered situations involving varying degrees of intensity, except for the most powerful ones, which were assigned primarily to *przyjaciel*, and secondarily to *kolega*. There were no statistically significant positive correlations between the words. Thus, although similar at first glance, the patterns of similarity identified in the naming task did not match. Neither did the criteria applied in the sorting test reflect those exhibited in the naming task.

A between-test comparison involving the sorting test and the scenario evaluation test (Test 2) yielded surprising between-task synchrony (Table 2, see Appendix 3), with Grouping A correlating significantly with categories evaluated as *very close and personal* ($\rho = 0.62$, p = 0.000), Grouping B showing

similarity to *close but not intense* relationships ($\rho = 0.41$, p = 0.004), Grouping C aligning with *purely social* relations ($\rho = 0.36$, p = 0.01), and Grouping D correlating significantly with *purely professional* scenarios ($\rho = 0.36$, p = 0.01). Grouping E correlated with *purely social* relations as well ($\rho = 0.30$, p = 0.04).

The categories of the naming test and those of the evaluation test displayed a comparable level of similarity (Table 1, see Appendix 2). Namely, *przyjaciel* was strongly correlated with the *very close and personal* parameter ($\rho = 0.72$, p = 0.000), *kolega* correlated with the *close but not so intense* category ($\rho = 0.58$, p = 0.000), while *znajomy* was aligned to both *close but not so intense* and *purely social* relations ($\rho = 0.3$ and $\rho = 0.44$, respectively, p < 0.05). The significant correlate for *sąsiad* 'neighbor' was *purely social* relations ($\rho = 0.50$, p = 0.000). These results are too systematic to be accidental and indicate that semantic categories are the most precise medium of description for other semantic categories.

Conclusions. The results of this small-scale study show that language-based tests may yield quite misleading results when used to examine non-verbal categorization patterns. Although the data demonstrate an obvious dissociation of lexical naming in Test 1 from the allegedly non-linguistic criteria applied in the free sorting task, the dissociation is called into question by the correlations obtained for the sorting task and the scenario evaluation test (Test 2). Because these are so consistent they raise the possibility that more general linguistic criteria were involved in the sorting process. This does not seem unlikely since linguistic stimuli activate entire language systems, bringing to bear context-relevant parameters and criteria. It is their interfering influence that might have cancelled out the effects of the naming distinctions from Test 1. As things stand, however, we have no way of knowing whether the observed trends reflect deeper conceptual distinctions or the dynamics of semantic processing at the linguistic level.

This lack of clarity is of relevance to research into all things Whorfian, where it is necessary to distinguish between the conceptual and linguistic levels of representation. Since language-based tests allow for the involvement of untargeted linguistic categories, which may affect the validity of findings, their usefulness for research into non-linguistic categorization should be seriously questioned.

As a concluding remark, it might be worth noting that thanks to the application of sophisticated research technologies such as, e.g. fMRI and ERPs, researchers are now studying the language-cognition interface in ways that were unimaginable to Whorf and his contemporaries. There can be no doubt that, despite many shortcomings, the Sapir-Whorf Hypothesis continues to fascinate the academic community, inspiring further research into the unsolved mysteries of the human mind.

Polish version of Test 2

Które z przedstawionych sytuacji odnoszą się do relacji (można pominąć niektóre z podanych poniżej punktów)

Bardzo bliskich i osobistych (podaj numery sytuacji)

....
....
....
....
....

Zażyłych, lecz mniej osobistych, również zawodowych (podaj numery sytuacji)

....
....
....
....
....

Typowo towarzyskich (podaj numery sytuacji)

....
....
....
....
....

Typowo zawodowych (podaj numery sytuacji)

....
....
....
....
....

Appendix 2

Table 1

Spearman's correlation coefficients for the linguistic tests

N = 48	Przyjaciel	Kolega	Znajomy	Sąsiad	Very close	Close but not intense	Social	Professional
Przyjaciel rho	n/a	ρ = −0.17	ρ = −0.39	ρ = −0.09	ρ = 0.72	ρ = −0.46	ρ = −0.19	ρ = −0.07
		p = 0.25	p = 0.005	p = 0.51	p = 0.000	p = 0.001	p = 0.19	p = 0.59
Kolega rho	ρ = −0.17	n/a	ρ = 0.17	ρ = −0.21	ρ = −0.12	ρ = 0.58	ρ = −0.13	ρ = −0.03
	p = 0.25		p = 0.24	p = 0.13	p = 0.41	p = 0.000	p = 0.35	p = 0.83
Znajomy rho	ρ = −0.39	ρ = 0.17	n/a	ρ = 0.25	ρ = −0.46	ρ = 0.30	ρ = 0.44	ρ = 0.25
	p = 0.005	p = 0.24		p = 0.08	p = 0.000	p = 0.04	p = 0.001	p = 0.08
Sąsiad rho	ρ = −0.09	ρ = −0.21	ρ = 0.25	n/a	ρ = −0.11	ρ = 0.006	ρ = 0.50	ρ = −0.05
	p = 0.51	p = 0.13	p = 0.08		p = 0.43	p = 0.96	p = 0.000	p = 0.71

Appendix 2

Table 2

Spearman's correlation coefficients for the free sorting task and the linguistic tests

N = 48		Grouping A	Grouping B	Grouping C	Grouping D	Grouping E	Przyjaciel	Kolega	Znajomy	Sąsiad	Very close and personal	Close but not intense	Social	Professional
Grouping A	rho	n/a	ρ = 0.086	ρ = 0.072	ρ = −0.003	ρ = −0.356	ρ = 0.602	ρ = 0.292	ρ = −0.254	ρ = −0.243	ρ = 0.617	ρ = 0.058	ρ = −0.188	ρ = −0.033
	Sig. (2-tailed)		p = 0.562	p = 0.627	p = 0.983	p = 0.013	p = 0.000	p = 0.044	p = 0.081	p = 0.096	p = 0.000	p = 0.696	p = 0.201	p = 0.786
Grouping B	rho	ρ = 0.086	n/a	ρ = 0.636	ρ = 0.447	ρ = 0.056	ρ = −0.006	ρ = 0.273	ρ = 0.419	ρ = 0.154	ρ = −0.091	ρ = 0.409	ρ = 0.245	ρ = −0.181
	Sig. (2-tailed)	p=0.562		p = 0.000	p = 0.001	p = 0.703	p = 0.966	p = 0.060	p = 0.003	p = 0.295	p = 0.538	p = 0.004	p = 0.093	p = 0.218
Grouping C	rho	ρ = 0.072	ρ = 0.636	n/a	ρ = 0.487	ρ = −0.032	ρ = 0.093	ρ = 0.024	ρ = 0.331	ρ = 0.252	ρ = −0.024	ρ = 0.209	ρ = 0.360	ρ = 0.024
	Sig. (2-tailed)	p = 0.627	p = 0.000		p = 0.000	p = 0.831	p = 0.528	p = 0.871	p = 0.021	p = 0.083	p = 0.870	p = 0.155	p = 0.012	p = 0.873
Grouping D	rho	ρ = −0.003	ρ = 0.447	ρ = 0.487	n/a	ρ = 0.198	ρ = 0.158	ρ = −0.114	ρ = 0.387	ρ = −0.011	ρ = 0.081	ρ = −0.121	ρ = 0.225	ρ = 0.359
	Sig. (2-tailed)	p = 0.983	p = 0.001	p=0.000		p = 0.176	p = 0.282	p = 0.441	p = 0.007	p = 0.939	p = 0.585	p = 0.413	p = 0.124	p = 0.012
Grouping E	rho	ρ = −0.356	ρ = 0.056	ρ = −0.032	ρ = 0.198	n/a	ρ = −0.142	ρ = −0.196	ρ = 0.292	ρ = 0.422	ρ = −0.168	ρ = −0.215	ρ = 0.295	ρ = 0.262
	Sig. (2-tailed)	p = 0.013	p = 0.703	p = 0.831	p = 0.176		p = 0.335	p = 0.182	p = 0.044	p = 0.003	p = 0.253	p = 0.143	p = 0.042	p = 0.057

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Jolanta Latkowska

Wie wichtig ist die Sapir-Whorf-Hypothese für gegenwärtige psycholinguistische Forschungen?

Zusammenfassung

In dem Artikel möchte die Verfasserin die Frage beantworten, ob die Sapir-Whorf-Hypothese ein Bezugspunkt für gegenwärtige Forschungen über den Zusammenhang zwischen der Sprache und dem kognitiven Apparat des Menschen (dem Denken) werden kann. Die Diskussion fußt auf Benjamin Lee Whorfs (1956) Werken; berücksichtigt werden dabei die für die oben genannte Hypothese wichtigsten Begriffe: Sprache, Gedanke und Verhalten. Gesucht wird auch die Antwort auf andere Frage: ob Sprachkategorien ein gewisses Fenster zu den zu Grunde liegenden Denkprozessen sind, wie Whorf und einige von den heutigen Tendenzen der kognitiven Sprachwissenschaft behaupten? Bei der Analyse bedient sich die Verfasserin der in verbalen und nonverbalen Texten angewandten Kategorisierungskriterien.

Larissa Aronin
Oranim Academic College of Education, Israel
Vasilis Politis
Trinity College, Dublin, Ireland

Multilingualism as an Edge[*]

A b s t r a c t : The article presents a philosophical conceptualization of multilingualism. Philosophy's general task is to subject human experience to reflective scrutiny and the experience of present day society has changed drastically. Multilingualism, as the vehicle of a new linguistic dispensation, plays a central role in it. We apply the metaphor 'edge' to explore the way multiple languages are deployed in, and intensively shape, the postmodern world. We also demonstrate how multilingualism is an edge, not only metaphorically, but involving true and real boundaries of various kinds, and all of them are essential for its nature.
K e y w o r d s : philosophy, multilingualism, boundaries, edge

Introduction

Multilingualism is currently a thriving area of enquiry. It is being researched from a variety of angles and has amassed an impressive and diverse pool of data. Theoretical knowledge on multilingualism is expanding too. It concerns social organization, the role of languages, and a wider vision of the universe in which speaking and thinking man, *homo loquens*, exists.

Research methodology on multilingualism allows for a wide range of approaches. While a great diversity of traditional methods of psycholinguistic and sociolinguistic research continues to be intensively employed by scholars, a significant change is taking place as new methods are developed or being borrowed from neighboring disciplines, and also from seemingly distant ones

(Aronin & Jessner, 2015). The new trends in the research methodology of multilingualism include *conceptualizations* which is an umbrella term, meaning "applying theoretical thinking and entailing interpretation of data from a number of viewpoints. This can include clarifying terms, developing new concepts and constructs, and applying novel perspectives to already studied phenomena" (Aronin & Jessner, 2015, p. 62).

Conceptualization as a method refers to the field of philosophy, and in this paper we reach a philosophical level of conceptualization of multilingualism. This is distinct from other research in its scope and methods and also in that it is a method that "avoids using the senses and relies on reflection" (Lacey, 2001, p. 252).

To engage in the philosophical level of investigation requires that enough empirical data are collected in a research discipline. By now, multilingualism has arrived at a situation appropriate for philosophical concerns, and the province of the *philosophy of multilingualism* is emerging.

The philosophy of multilingualism as a distinct area of research in multilingualism was enunciated in 2008 (Aronin & Singleton, 2008a), and is still taking its first steps in an incipient area (Aronin & Singleton, 2013). Its establishment has been warranted by the intensive development of multilingualism studies, which in turn was the consequence of the new global realities, in which so much depends on multilingual arrangements and individuals. The role of multilingualism in the contemporary world has changed with the enormously extended *scope and salience* of current multilingualism. There has been a dramatic rise in the number and significance of multilinguals and multilingual communities all over the world. The latter's diversity and complexity account for the fact that today *constellations of languages* often fulfill the communicative, cognitive, and identification requirements once met by single languages. But the crucial importance of this novel and distinct global development is that multilingualism affects post-modern society *as a whole.* Vital societal processes and prominent characteristics of contemporary society are inseparably linked to multilingualism (Aronin, 2007; Aronin, forthcoming; Aronin & Singleton, 2008b; 2012; Singleton, Fishman, Aronin, & Ó Laoire, 2013).

In this contribution we offer a philosophical consideration of the phenomenon of multilingualism, and suggest using the metaphor of *edge* to better understand its current nature. To this end, we outline the cognitive field of the concept 'edge', and present a brief synthesis of how edges are treated in natural sciences. We then demonstrate in what way multilingualism is an edge (or how multilingualism represents an edge) from various perspectives. Finally, the advantages of such a theoretical vision for developing the theory and good practices of multilingualism are discussed.

Metaphors as Method of Thinking

Metaphors are employed not only in poetry and belles lettres as rhetorical devices; they have long been applied for understanding the world around us, and later in science as a tool to facilitate the grasp of abstract conceptual ideas in various domains of knowledge. By providing a particular type of comparison by analogy metaphors capture the essence of a phenomenon under exploration, and open up researchers' minds for generating new solutions.

It has been noted that the choice of metaphors over time is governed by the stage of technological development, and ensuing scientific views, which, together with contemporaneous religious, cultural, and political beliefs create societal mind-sets in a particular period. Indeed, the hyperbolic formal symbolism of the late Middle Ages permeated the existence of people in daily life, architecture, painting, and literature, and was the basis of their perception of the world. See, for example, Johan Huizinga's 1919/1924 study of art, life, and thought in France and the Netherlands during the 14th and 15th centuries. This work sumptuously described symbolic thinking, a system of correspondences based on the perception of shared qualities such as heat, cold, and density, which rested on the authority of ancient writers.

The 16th–17th centuries' discoveries in astronomy, mechanics, and the composition of matter, including those of Nicolaus Copernicus (1473–1543), Galileo Galilei (1564–1642), Johannes Kepler (1571–1630), Robert Boyle (1627–1691), and Sir Isaac Newton (1642–1727), led to deployment of different kinds of metaphors (Crane, 2010). The new metaphors, where analogy conveyed the structure, were necessitated by the character of the findings, which were invisible or inaccessible to the bare eye. Planets and the way celestial bodies move could not be seen without a telescope, and Copernicus's heliocentric system which identified the sun, rather than the earth, as the center of the solar system, was not easily demonstrated to the public. Atoms are invisible and their movements are impossible to follow; it was difficult to see how they could make up what appeared to be a solid surface.

What an ordinary person could intuitively understand from everyday experience came into sharp disagreement with the findings of scientists of that time. "Ordinary people could no longer trust their experience of the world to reveal the truth about its nature" (Crane, 2010, p. 105).

Metaphor and analogy became indispensable for science, because the workings of the physical world, such as small particles and the causes of natural events, can only be understood by analogy with phenomena that are visible or perceivable (Gentner & Jeziorski, 1993).

A new analogy, that of a clockwork mechanism, providing a mechanistic model of the universe, became prominent in the 17th–19th centuries. Scientific

explanations using the metaphor of machinery were used for the explanation of the world itself. The clockwork universe goes ticking along, and because its gears are governed by the laws of physics, every aspect of the machine was expected to be predictable. The same was deemed true of the human body. Doctors saw the body as made up of many individual parts that work together, and food was seen as a fuel, in accordance with the spirit of industrialization of the time.

When, in the 20th century, the computer metaphor took over, the universe was seen as a complex high-tech computer system. The computer metaphor is widely employed for the explanation of how the brain works. The human brain is perceived and treated as an information-processing system and its functioning is imagined in terms of "processing," "input," and "information" which is "stored" or "encoded." In cognitive psychology, human thought is described as a collection of algorithms.

The choice of a particular metaphor is crucial in a number of ways. Depending on which metaphor is chosen, the *focus* of the research is selected. When, in the 17th–19th centuries, the machine metaphor was in use by scientists and intellectuals, not only did they think of everything in terms of machines, engines, and gears, but also the parts of a 'machine' whether that be a person, nature or a plant, was at the center of attention, and research was interested in how the machine operated. Attention was focused on the way in which parts fit together and affected each other, in order to see how the machine worked. In such thinking a body as a machine cannot run without fuel (food), and the machine requires the right amount of fuel to keep it running.

The focus established by the choice of a particular metaphor leads to seeing some real things as highly important, and others as irrelevant for scholarly attention. Currently, commonly used productive metaphors are those of flux and fluidity, and not surprisingly, studies investigating life trajectories, changes, and dynamics in organizations of communities proliferate.

In some ways, the version of the metaphor determines the attitude and conclusions of studies. In the 19th century, Charles Darwin (1809–1882) and his peers perceived the similarity between the transmutation of biological species and the 'evolution' of languages (Alter, 1999). It is hardly surprising that the metaphors of nature and living creatures are frequently used in linguistics. Languages evolve, grow, change, live 'die', and "become extinct." The natural reaction to seeing a living being in danger is to think it should be protected, preserved, and revived. This is how endangered languages are treated. At times, the metaphorical tool is taken to extremes and languages are blamed for being killers themselves: "English is the world's worst killer language" (Skuttnab-Kangas, 2004). Not everything is similar in the source of a metaphor and what it seeks to illustrate. One has to be aware that metaphors can be dangerously

seductive and resistant to change, while human knowledge advances, eventually proving an image to be misleading.

Thus, conceptual metaphors work as models for abstract phenomena and processes, and provide insights for their understanding. Metaphors define the focus of exploration, direct scholarly vision, delimit the content of the research and, in a way, pre-determine research outcomes, as well as forming attitudes of laypeople and intellectuals towards the phenomena of life. The following discussion, while proposing a metaphor, is not intended to instill a dogma, but rather to employ the metaphor of 'edge' to grant insights, while drawing on the findings and approach in natural sciences for the benefit of understanding multilingualism better.

The metaphor of 'edge', which we are propounding in this article, like other metaphors in previous times, is consonant with the contemporary scientific discourse. Typically for conceptual metaphors (Lakoff & Johnson, 1980), it endeavors to elucidate the highly abstract, complex, and multidisciplinary phenomenon of current multilingualism, with the help of the source domain associated with basic kinetic and spatial experiences. The 'edge' metaphor is also inspired and merited by the time-honored, insightful treatment of the concept of edge in philosophy and recently in the natural sciences.

What is an Edge?

The Word and the Meanings of *Edge*. The word 'edge' in English has the following three major meanings:

1. Edge as the border, boundary, margin and verge, or outside limit of an object or area, as well as a line or line segment that is the intersection of two planes.

2. The second meaning refers to sharpness, a harsh and sharp quality: "the sharpened side of the blade of a cutting implement or weapon, like in 'a knife with a razor-sharp edge'" and a reference to negative outcomes as in brink, verge, <on the *edge* of disaster> and the threshold of danger or ruin, <living on the *edge*> (www.merriam-webster.com/dictionary/edge).

3. Edge also has the meaning of force, effectiveness, vigor or energy; a quality or factor which gives superiority over close rivals: *'his cars have **the edge** over his rivals'* (http://www.oxforddictionaries.com/definition/english/edge).

All these meanings are metaphorically suitable for multilingualism, as will be shown below. But first, let us look how edges are treated in the natural sciences.

Natural Sciences about Edge. Natural sciences have taken interest in edges since the middle of the 20th century. It was discovered that edges are not only mysterious places appearing and behaving differently from centers. They are not less important than the habitats, communities or ecosystems which they separate.

Centers of attention in biology, geography and ecology, and adjacent disciplines are natural edges, such as borders between forest and grassland or between ocean and continent (coast).

A coastline is a good example of an edge in nature. Geographers note that although coastal areas account for only 10 percent of Earth's land surface, they serve as home to two-thirds of the world's human population (http://www.scienceclarified.com/landforms/Basins-to-Dunes/Coast-and-Shore.html). Seabirds (about one-quarter of all bird species in North America) use coastal habitats for some part of their annual cycle (The State of the Birds 2013: Report on Private Lands United States of America, http://www.stateofthebirds.org/habitats/coasts).

Not only do beautiful landscapes attract people, animals, and birds to the coast, where dry land meets the ocean or other large bodies of water. Coasts are some of the most active environments on Earth. Wind and water gradually wear away Earth surfaces and the accumulation and building up of natural materials take place. Tides move over the surface of the Earth as it rotates with an average time between high tides of 12 hours and 25 minutes. But the time of tides is not regular and predictable, and variations in the depth of the oceans and the distribution of landmasses combine with other factors to produce highly complex tidal behavior.

There are many edges that are human-made, such as fences between estates or borders between countries. Some borders are impalpable, such as the equator, an imaginary line around the middle of the Earth, which divides the planet into the Northern Hemisphere and the Southern Hemisphere. Even borders that have no physical reality are very important for people in many different ways. For example, residents of Regina, the capital city of Saskatchewan, qualify for the Canadian Northern Residents Deduction for simply living in a zone located at 50° 46'N / 104° 61'. Extra payments to compensate for a difficult climate are established officially according to the ephemeral borders of Latitude/ Longitude. Scholars claim that intangible borders deserve no less attention than visible, perceivable borders.

Ecologists become conscious of important things about edges. First of all, *edges attract, harbor or trigger intensive activities*. It is along edges that essential physical and biological activity takes place. Scientists note a twofold activity intensification: (a) much higher diversity of species than in 'inner' areas, and (b) intensity of biological and other processes in these places. The *edge effect* on the organic environmental level is further heightened by social commotion and bursts of activity. Consider continental shelf zones, abundant

in marine life. The sovereignty of the rich edge area of the Kuril Islands in the Sakhalin Oblast of Russia, originating from the events of 1855 (Treaty of Commerce and Navigation between Japan and Russia) is still disputed between the Russian Federation and Japan.

Edges are where the action is, claims the exhibition in the Boston Science Museum, April 2014, and therefore where discoveries are to be made. Taking a wider social perspective, we can find more illustrations for the claim that edges make for bustling places. Major urban cities and areas are often situated on the borders between continents and oceans and their populations are growing faster than those in inland areas. The average population density in coastal areas is about 80 persons per square kilometer, twice the world's average population density (USSWE). Investments and infrastructure are often greater, too. One could ask what about those important, big cities that are not coastal, such as prominent Russian Federation urban industrial and cultural centers counting millions of citizens, such as Moscow, Niznii Novgorod, Novosibirsk, and Irkutsk. Those are not on ocean-continent borders, but they happen to be right on the perimeter bordering forest and grasslands (Encyclopedia, 1994). (The last examples recall the well-known fact that volcanoes 'sit' on geological borders. Huge, rocky tectonic plates separate, collide, and slide past each other, causing earthquakes, feeding volcanic eruptions, and raising mountains.) The Mediterranean region, situated on geological, historical, business, and political edges, has always been the hub of momentous events, conflicts, discoveries, and trade. In ecology such zones are termed 'ecotones'—*eco*, from Greek *oikos,* house, plus *tone*, from Greek *tonos* or tension.

Intensified activity is not the only reason why edges matter. Geographers, biologists, and ecologists have discovered a number of important features which make edges a justified focus of scientific interest. When they looked at edges more carefully, geographers realized that they are not simply thin lines on a map. In fact, edges in nature are pieces of territory that separate areas, communities, and habitats and have 'breadth' and 'width'. They are 'transitional zones' between two areas. It was discovered that transitional zones possess specific features. The first unique feature is that borders are ***both abrupt and gradual (sharp and blurry) at the same time***. As we see them on a map, or from a plane, they appear as thin lines, but on coming closer, or being within the territory, the border 'dissipates', and loses its sharp form. In this case, on looking closer, we discover a transition territory, a strip which may be narrow or wide, like between a forest and a field, or forest and grasslands.

The transitional zones, the edges, turn out to ***differ considerably from non-edges in appearance and structure***. The boundary habitat allows for greater diversity, and changes in population or community structure take place. For example, it has been noticed that the density of songbird populations is greater on estates, campuses, and similar settings, as compared with tracts of uniform

forest (Odlin, 1971) and that environmental features such as air temperature, soil moisture, and light intensity all change at edges. The 'transition zones' are dissimilar to any of the neighboring areas that they delineate; the features of adjacent territories 'mix' within the 'transitional zone'. Many species of plants and animals favor edge zones, and do not live in the 'inner' areas. Often, the so-called exotic in biology, species that are non-typical for a given territory, can constitute up to half of the population. As a result of contact, the environment of the border strip becomes non-similar to any of the neighboring areas; in fact, it becomes unique. In addition, it was discovered that ***borders have considerable impact on the inner areas that they separate***.

The above is not all that we now know about edges from the sphere of ecology. Borders, in fact, have at least two functions. They divide and isolate, and they also connect. Where edges meet, there is a meeting point for many species of plant and animal life, for physical and chemical materials, and therefore they create an interface for interactions, development, and change.

Boundaries are of at least two types. One type, the "threshold/limit boundary" is a boundary between two very different areas. For example, a forest edge separates a forest from a meadow. The existence of such type of boundary is the result of the difference of the neighboring territories that are separated. The forest edge exists exactly because the forest and the meadow are so different. Those borders have all the edge effects we cited above. The second type of boundaries distinguished by geographers, are those which separate very similar areas, such as two identical fields. Such boundaries are characterized by strong isolating qualities. They can effectively insulate, segregate a property, country, or community. The boundaries of the second type impart individuality and uniqueness to territories so separated simply by their existence. Thus on the one hand, boundaries divide and isolate, on the other, they connect. Thus boundaries often act as membranes, selectively allowing the passage of some things but not others.

Philosophy on Boundaries. The findings of natural sciences regarding physical, chemical, and biological features of edge regions, as well as their societal implications have been formulated in philosophical considerations on *boundaries*. Philosophical thought suggests that events also have boundaries, at least temporal ones. Moreover, even abstract entities, such as concepts or sets (e.g. imagined communities), are thought to have boundaries of their own. Multilingualism traditionally deals with processes, such as language acquisition, comprehension, or language change, but events and concepts are also essential for multilingualism, thus making philosophical concerns highly relevant for it.

Early intuitive definitions of ancient philosophers (e.g. Euclid and Aristotle) of the term 'boundary' gave rise to a number of puzzles philosophers deal with in our times (Politis, 2012). One of them examines the dilemma of defining

the exact point that divides spatial or temporal entities. When a boundary/line separates two adjacent entities, to which does it belong? Where is the last point of the one and the first point of the other? Leonardo da Vinci, in his Notebooks, expressed the question thus: what is it that divides atmosphere from the water? Is it air or is it water? (1938, pp. 75–76). Aristotle is credited with the classical version of the puzzle in regard to temporal boundaries: When a moving object comes to rest, is it in motion or is it at rest? Does the transitional moment belong to the motion interval or to the rest interval? (http://plato.stanford.edu/entries/boundary/).

Another philosophical concern regarding boundaries is the division between *bona fide*, 'objective in some sense' and *fiat*, 'artificial, which are not so grounded in the autonomous, mind-independent world'.

Philosophers' doubts about the concept of boundaries are reasonable, and Wittgenstein's suggestion that the boundaries of our language are the boundaries of our world (1921, pp. 5–6) implies that boundaries might be just a result of the organizing activity of our mind, and might not therefore exist in the real world. These general philosophical questions are appropriate and are indeed central for multilingualism.

The following section will probe more deeply into edges in multilingualism and their types, and into how multilingualism itself is an edge.

How Multilingualism is an Edge
Edges in Multilingualism

This section will start with a brief reflection on the appropriateness of three main meanings of the concept of edge for the study of multilingualism (3.1). We then carry on with the inventory of some long-standing research topics in bi- and multilingualism, which, in effect, revolve around the idea of edge, boundaries, and borders. These include: Who is a bilingual? and What is a language? Other topics include interlanguage, multi-competence, mental lexicon, cross-linguistic interaction, and language distance. The final subsection of section three will discuss the physical-geographical and physiological boundaries of multilingualism.

Multilingualism Can Be Conceptualized Through the Metaphor of Edge in Its Three Main Meanings. The metaphorical analogy with the meaning of 'edge' as effectiveness, vigor, and superiority is obvious. Studies in psycholinguistics and applied linguistics give us plentiful evidence of certain cognitive advantages for an individual. The current consensus in sociolinguistics and

multilingualism studies is that both for an individual and as a community arrangement, multilingualism is mainly beneficial. It gives an individual a competitive edge in societal communication and in career and job seeking. Power is distributed through languages and their ordering.

As for the meaning of sharpness, danger, and edginess multilingualism can indeed be a sharp edge when ignored or mishandled (see e.g., Kramsch & Jessner, forthcoming). It is an edge for children who are in the situation of *subtractive bilingualism*. In a situation of subtractive bilingualism learning a second language interferes with the learning of a first language. Eventually the second language replaces the first language. This is commonly found in children who emigrate to a foreign country when they are young, especially in cases of orphans who are deprived of their first language input. On a societal level, deep disputes may take place in a society over the status of languages; one example is of protesters clashing with police in 2009 in Kuala Lumpur, an event which was ignited by the decision of the government to start teaching mathematics in English, instead of as previously in Malay (BBC News, 2009).

In the same way as the one word, 'edge', contains two somewhat opposing ideas of benefits and potential danger, so the phenomenon of individual and societal multilingualism is advantageous on the one hand, but on the other hand, also filled with potential and real challenges.

The third meaning of the notion 'edge' is the meaning of border, margin, limits, and boundaries. In this meaning, unlike in the two others, multilingualism has not been explored. To our mind, considering edges or boundaries of multilingualism and multilingualism as an edge has philosophical significance. Multilingual studies provide facts from various disciplines for philosophical considerations and can contribute to the discussion of long-disputed philosophical issues. On the other hand, exploring multilingualism through the metaphor of edge seems to us beneficial to the field of multilingualism.

In fact, multilingualism is all about edges. The crucial issues of linguistic, bilingual, and multilingual research revolve around boundaries. Major bilingualism and multilingualism discussions are exactly about boundaries and edges, although they may not be labeled like that. Even the lengthy disputes on terminology revolve around where the boundaries are set. Needless to say, linguists, educators, and other stakeholders in multilingualism research depend on decisions regarding borders for answers.

Some Decisive Pivotal Boundaries of Multilingualism. It appears that much of the thinking on multilingualism consists of considering and examining boundaries. Multilingualism studies describe recognizing and experiencing boundaries, fixing them, crossing them, and breaking them.

The bilingual stage of societal awareness in respect of language has brought some crucial notions important for multilingualism up to the present.

The term 'bilingual' has been discussed at length. The decades-long discussions have still not determined an exact answer for simple questions: Who is a bilingual? At which point does a monolingual become a bilingual? How can one distinguish between the two? There is no way to define an exact moment or level of skill to pinpoint this. Whether one can be eligible for being called a bilingual depends on where the border is set with regard to proficiency, fluency, frequency of using L2, and communicating successfully in it. The borders arbitrarily set by different scholars, institutions, and opinions assumed by laypeople as a default are extremely wide-ranging. If proficiency is considered a defining factor in placing the divide, the two polar views appear thus: "native-like control of two or more languages" Bloomfield (1933, p. 56); "active, completely equal mastery of two or more languages" (Braun, 1937, p. 115) and, at the other pole, the interpretation given by John Edwards: "if, as an English speaker, you can say *c'est la vie* or *gracias* or *guten tag* or *tovarisch*—or even if you understand them—you clearly have some command of a foreign tongue" (Edwards, 1994, p. 55). Contemporary views range between these extremes but where to put the dividing post remains unclear.

> Should we reserve the label bi- or multilingual for persons whose proficiency is native-like and balanced across both/all their languages and across the range of language skills—i.e., understanding and producing speech, reading and writing—or should we be less demanding in our application of these terms? Might we, for example, be prepared to qualify as bilingual the Russian engineer who with fluency and understanding reads technical articles in English but is unable to pronounce what he reads? Can we conceive of attributing multilingual status to the Spanish opera singer who performs consummately in Italian, German and French but is unable to converse in any of these languages? (Aronin & Singleton, 2012, pp. 1–2).

In case the distinction is based on the criterion of frequent use, distinguishing between those who use both, or all, their languages frequently and those who do not, again presents a challenge. Frequency of use may be defined in different ways, and communicatively successful use of the languages depends on the point of view of the beholder-recipient or hearer of the message.

Perhaps, a quite unexpected 'edge' for a layperson would be the notion of language itself.

The most basic question: ***What is a language?*** is crucially bound up with establishing and locating boundaries. The notion of a 'language' itself is 'a vast abstraction' (Cook, 2013b, p. 28), a fiction. The facts are only exhibited in the actual performance of particular languages: English, Chinese, Navajo, Kashmiri (Strevens, 1982, p. 23). Kemp (2009) argues:

> If the existence of 'a language' is fiction, researchers need to be clear and explicit about where they are drawing the boundaries between one language and another in order that others can recognize the fiction as meaningful for the purpose of the study. In practice, for both psycholinguistic and sociolinguistic research, this is often done by specifying boundaries in social and cultural usage. (p. 16)

As attention to bilingualism was growing in the middle of the 20th century, a number of concepts were accepted, that were fundamental for bilingualism, and later important also for multilingualism. Most of them, in fact, deal with phenomena that according to the established assumptions of that time can be considered edges. In the monolingual perspective, the traditional views on the degree of language proficiency deemed desirable for the second language learner was that it should match the level of a 'native speaker', that is, full mastery of all the skills. Thus, the expected proficiency in both languages (neighboring entities) was perfect L1 and perfect L2. The reality though, is that only a few individuals reach balanced bilingualism. The majority of language users normally do not attain this aim, but remain in between, in the transitional zone.

The edge on the interface between the skills in the mother tongue and another language is crowded with L2 learners-users. Therefore, a number of concepts, actually explaining the edge phenomena, were put forward and are now fundamental for bilingual and multilingual research and practice.

The concept of *interlanguage* associated with the name of Larry Selinker (1972), or, as termed in the earlier version of the notion put forward by Stephen Pit Corder in 1967, 'transitional competence', implies that while advancing in the target language (target system), a learner of a second language develops an intermediate system. The intermediate system draws on the learner's first language (source language) knowledge and receives the input from the L2, (target language), but is a separate linguistic system, different from both his first language and the target language as it would be spoken by a native speaker (Tarone, 1979; Selinker & Douglas, 1985).

This interlanguage or 'transitional competence' is in a transitional zone, an edge between the two different entities of the first (mother tongue) and the second (target) language. It displays edge effects in being different from the neighboring entities, and having its own quality; it is systematic in its own way. Notably, the target language development can cease at any stage of proficiency, hence the interlanguage 'solidifies' in the stage it is at. In applied linguistics this phenomenon is called fossilization. Most of the second and additional language users more often than not stay in a transitional zone. This edge, thus, is a norm, including the majority of multi-language users, rather than an exception.

While interlanguage refers to language skills, the concept of *multi-competence* (Cook, 1991; 1992; 1993) treats language users more directly. It describes

the edge effect of when two (and more) languages meet in one person. These edge effects are seen in bilinguals, who according to Vivian Cook, possess a special quality distinguishing them from those who have mastered only one language. Initially defined as 'knowledge of two or more languages in the same mind' (Cook, 1991, p. 103) and 'the compound state of mind with two grammars' (Cook, 1992, pp. 557–558), the concept of multi-competence reveals the nature of bi- and multilinguals as essentially different from only-one-language-speakers, in that 'it assumes that someone who knows two or more languages is a different person from a monolingual, and so needs to be looked at in their own right rather than as a deficient monolingual' (Cook, 2013a, p. 3768).

Both interlanguage and multi-competence brought into the limelight phenomena that were different from what was then considered mainstream, and made scholars and teachers recognize them as important.

There are, no doubt, many people who speak languages not like native speakers. That is, they are in a transition zone; they are different from both L1 and target language speakers. These populations constitute a large proportion of the people on Earth. The implication of using the metaphor of edge is that we see these 'transitional language users' as comparatively stable, rather than in a temporary brief stage of motion towards the target of perfect L2.

As for the special qualities of the edge populations being different from the 'regular' ones, these are established by research in applied linguistics and psycholinguistics. Bilinguals were found to have advantages in a whole range of abilities (e.g. Hamers and Blanc, 2000, p. 89): enhanced executive control (Bialystok, 2011, p. 229), sensitivity to semantic and grammatical relations and regularities (see e.g. Bialystok, 2001; 2002), communicative sensitivity (Baker, 1993), and cognitive advantages in areas beyond the linguistic domain, such as visual-spatial abilities, and the capacity to solve problems based on conflict and attention (such as sorting cards by color, and then re-sorting them by shape) (Bialystok, 1999). Bilinguals are 'more attuned to the communicative needs of those with whom they talk' and have 'two or more worlds of experience' (Li Wei, 2000, p. 23).

More recent hubs of scholarly attention are also primarily about edges, and focus on debating the borders and boundaries between the language systems in one speaker.

The issue of a bilingual and multilingual **_mental lexicon_** revolves around one essential question of whether the mental lexicon of a bilingual or multilingual consists of separate and distinct lexicons for each language, or whether the lexicons of all the languages at user's disposal are integrated. Evidence supports both arguments for separation and those for integration (Cenoz & Jessner, 2003).

The line of research on **_Cross-linguistic interaction_** (CLI) is about the ways in which different languages and their various aspects interact in the mind of a multilingual speaker. Linguistic performance in the additional language and

further language development are seen as dependent on the influence of languages upon each other (Cenoz, Hufeisen, & Jessner, 2001; Kellerman, 1995). The outcomes of these interactions are seen in errors or, on the contrary, quick and successful mastery of various language aspects. A range of linguistic phenomena subsumes the notion of CLI transfer, interference, and borrowing from one language system to the other.

What are traditionally seen as cross-linguistic interrelationships are, in the first place, the crossing or not crossing of the borders between languages. Saying 'languages in the mind of a user', we mean not only the linguistic system of a particular language, but also cultural knowledge and assumptions, as well as experience, language learning techniques, and whatever else is connected to a particular language for a language user.

In the process of acquisition of their target language, L3 or Ln, multilinguals rely not only on their native and strongest language (L1), but also on other languages at their disposal. Cross-linguistic interaction *between the non-native* languages is the most recent line of investigation (see e.g. De Angelis & Dewaele, 2009). In bilingualism, the cross-linguistic interaction (crossing the borders of languages in our terms) can go only two ways, from the mother tongue (L1) to the foreign/second language (L2) and back, L2–L1. By contrast, the case of trilingualism furnishes more relationships (more borders to cross), thus giving the chance for 'the influence of L1 on L2, L1 on L3, L2 on L1, L2 on L3, and L3 on L1' (Jessner, 2003, p. 45).

Research shows that borders between three languages are complex, and the chance for the occurrence of crossings among them is not straightforward, but rather selective. It is not casual either. Influences and interactions between L1, L2, and L3 can go in all possible directions and configurations. Boundaries between languages in fact, operate as membranes, allowing for one kind of transfer, but not for another. Transfer is particularly common with lexical items, thus lexis seems to pass borders more easily than, for instance, structural elements of a language. The phonetic character of a language, on the other hand, seems to encounter obstacles that make it the component least able to cross the border, perhaps because it requires re-settling the basis of articulation (using the organs of speech in a new way) (Hammarberg & Hammarberg, 2005).

What are the 'keys' that open the borders, and under which circumstances do they perform better? This is the matter for further research. It is believed that *language distance* triggers transfer from non-native languages to L1 and other non-native languages more readily between similar languages. With that, not all language aspects cross equally well; for example, cross-linguistic similarity works differently for comprehension than for production, as Ringbom found in relation to the transfer in Finnish learners of English (Ringbom, 2005, p. 79). There is also evidence of transfer between languages with greater language distance, for instance, as described in the study of Schmidt and Frota (1986),

who reported instances of Arabic lexical influence, rather than L1 English, on L3 Portuguese (for the overview on research in CLI see De Angelis & Dewaele, 2009).

The notion of *language distance,* traditionally employed in the disciplines of linguistics and applied linguistics and SLA and TLA, is also a metaphor, explaining the differences between abstract and complex entities such as languages in spatial terms. It fits perfectly into the metaphoric approach of edges.

Other reasons believed to allow a language feature to travel from one language to the other are the recentness of using a language (the items are transferred to L3 from L2, because L3 was the most recent language a speaker used); psychotypology, which is perceived similarity (see, e.g. Sjöholm, 1995, study on Finnish and Finland-Swedish learners' linguistic choices); and, the so-called foreign language effect (see e.g Hammarberg, 2001; Ortega, 2008; Ringbom, 2005; Williams & Hammarberg, 1998).

The borders seem to let through not only language aspects such as grammar or vocabulary items, but also experience, processes, and strategies associated with one particular language across situations with additional languages (Gabryś-Barker, 2009).

Physical Boundaries. The metaphor of edges in multilingualism is often literal. There are multiple limits, borders, and boundaries which are material, tangible, and perceptible for either humans or mechanical or electronic equipment.

The physical, bodily, and otherwise tangible/real borders in multilingualism are the ones we may call *bona fide* boundaries.

Geographical boundaries. Physical geographical borders separate countries. Less distinct, but also physically discernible boundaries may delineate areas in a city where minority languages are spoken. Consider the boundaries of Irish use in the Republic of Ireland that delimit the territories where the Irish language is spoken as a community language, called Gaeltacht.

The boundaries are visibly shrinking as time goes by. This physical border, and what happens to it, is meaningful for the country in many ways other than simply marking physical territory. This border is also symbolic, and concerns national and ethnic identity, history, and the current rise of the national aspiration to learn Irish better, and use it in more domains.

Sociolinguistically, the Gaeltacht areas and Irish language users may be thought of as displaying an *edge effect*, in the sense that they have their own distinctive properties which differ considerably from mainstream English speakers. This refers to those few who are fluent in Gaelic, and to the majority of Irish speaker-learners as L2 speakers of their own native language (which is not their L1). This territory and these people as marginal speakers of a minor-

ity language represent individuality and uniqueness, indeed significant for the country in many ways, especially in recent years when the importance of the Irish language is coming to the fore in the discourse of the country.

It appears that in human society (1) *physical geographical edges are not only physical, they are at the same time edges that indicate* and actualize political, ethical, moral, and other divisions between people, and periods in the life of a country. These latter divisions (edges) are invisible but noticeable and significant.

We can also see that (2) *geographically and socially peripheral edges under some particular circumstances take a central place* at least in some aspects.

From the natural sciences we learn that (3) *the influence of geographical physical edges spreads to both the edge area itself or edge populations and also to 'inner' or central areas and populations*. This two-way impact is well illustrated by the studies which deal with borders in the most direct way, in one of the major areas of multilingualism: the study of *language contact*.

Specialists in language contact focus on the connecting interface of edges; they are interested in how languages come in contact, and what makes them interact in various ways. Despite this traditional emphasis, the field of language contact is clearly about limits and boundaries in the first place. Studying language contact reveals how distinct territories or entities (e.g. groups of language speakers) deal with the fact of division, separation, and borders, as well as the impact of these, when it comes to managing or handling them.

The first edge effect on neighboring entities, in this case, languages in contact, is illustrated by loan words, or borrowings. Words from Algonquian languages, such as *skunk*, *moccasin*, and *wigwam* crossed the border between the English speakers and Native Americans and were introduced to the English language. Australian English received words like kangaroo and boomerang from the Aboriginal languages of Australia through the borders (physical, historical, and social) between English speakers and Aborigines.

The transitional zone itself, the 'transitional entity', appears in the form of new languages and speakers of these languages. This social outcome of dealing with borders would be called, using our metaphor, the result of edge effect, or what biologists would call 'exotic species'. The new languages, *pidgins*, *Creoles*, and *bilingual mixed* languages, are clearly linguistically distinct from both of their source languages. They might indeed sound exotic to the ear of the source language speakers.

It is no wonder that they have not always been accepted as fully-fledged languages. They have been considered marginal, as have been the people using them. For example, we may cite Anglo-Romany, a bilingual mixed language in which the grammar is fully English and the lexis includes many basic vocabulary items from the original Romani language, an Indic ethnic-heritage language of northwest India.

If the previous examples dealt with distance, the next one shows edge as a limit in time and resources. The European Union currently has twenty-three official and five semi-official languages (2011, http://ec.europa.eu/translation/index_en.htm). To what extent can time and financial limits be sensibly extended to accommodate translation, and other needs, and thus how many more languages could be accepted as official languages of the EU?

Physiological boundaries. Other objective edges would include physiological boundaries and limits of different natures. Human physiology is known to present limitations for language acquisition. Human abilities for memory, for retaining or retrieving vocabulary, are limited, and applied linguistics thoroughly investigates these limits. There exist physical, biological edges, boundaries within which, it is believed, languages are acquired.

Age is a limitation and boundary, extensively discussed in multilingualism for various purposes: age of first language acquisition, second and next languages acquisition; age in the context of the 'Age Factor' hypothesis.

Neurolinguists use brain-imaging methods, such as Positron Emission Tomography (PET) and Functional Magnetic Resonance Imaging (fMRI), with the aim of demarcating the brain areas involved in language production and comprehension. They also use the findings of neurosurgery performed in functional mapping cortical stimulations, intended to localize the precise areas of brain that are crucial for language.

Theoretical Findings on Multilingualism
Obtained with the Help of the Metaphor of Edge

Analyzing multilingualism phenomena through the lens of edges we might suggest the following:

1. Physical geographical edges are not only just these [physical], they are at the same time symbolic edges that indicate, and carry out, political, ethical, moral, and other kinds of divisions between people and periods in the life of a country. These latter divisions (edges) are invisible but noticeable and significant.

2. In multilingualism, where physical and intangible human-imposed edges are often all in one, it is difficult to say which kind of border we are dealing with in each particular situation. Are they of a physiological, physical nature, or simply imposed by authorities, by our unconscious assumptions, or inculcated by history, culture and family? The answers to these questions

might assist in the solutions of particular sociolinguistic, political or ethical situations connected with languages.

3. Under some circumstances geographical and social peripheral edges play a central place, at least in some aspects.

4. As in the natural sciences we can discern that the influence of edges in multilingualism spreads through to both the edge area itself or edge populations, and also to 'inner' or central areas and populations.

5. In bilingualism and multilingualism, edges increasingly become accepted and treated as a norm.

6. There is a trend to accommodate the in-between edge zones. Tracing bilingualism and multilingualism research milestones, one can mark a trend towards less strict demarcation of borders between phenomena (that are meaningful for research and practice), such as native and non-native speakers of English. Instead of the criteria of earlier, essentially unattainable limits of proficiency as for a native speaker, the notions of 'expert user' or 'L2 user' as an active user of one's non-native language in one's own right are put forward. These terms suggest that it is enough to have fully operational command of the language with appropriate vocabulary and grammar, and accurate and fluent speech. Variants of English pronunciation, different from the Standard English and non-native English teachers are signs of attempts to accommodate the edges.

Conclusions

In this article we attempted to advance the theoretical understanding of multilingualism by engaging a philosophical mode of study. We presented metaphors as a method of thinking, and employed the metaphor of edge in order to gain insights into the nature of multilingualism. To this end, we first clarified the concept of edge in its glossarial meaning, and surveyed how natural sciences and philosophy treat this concept.

Then we turned our attention to the various edges of multilingualism and proposed a number of decisive pivotal boundaries that originated in the bilingual period of awareness of human languages (on the periods of societal awareness of language and languages; see Aronin & Singleton, 2012, pp. 19–32) and included initial and ongoing attempts to define terms, such as: language, bilingual, interlanguage, multi-competence, cross-linguistic interactions, and multilingual lexicon, in light of the inherent edge effects they display. The more tangible boundaries and edges, which concomitantly merge with symbolic borders, in the areas of sociolinguistics, language contact, applied linguistics, and neuro-

linguistics, have been evoked, in order to arrive at initial conclusions on edges in multilingualism. A number of theoretical findings about multilingualism have been put forward.

How does realization of edges (boundaries) in multilingualism contribute to our understanding of it? The implications of the philosophical conceptualization of multilingualism through the metaphor of edge lie in the domain of theoretical approaches, and also, in the long run, in practices dealing with multilingual reality.

The implications, from purely theoretical ones to more practically usable ones, are as follows:

1. First of all, the metaphor of edge *provides one more way of understanding multilingual experience* by suggesting a coherent structure. It gives a new meaning to the knowledge accumulated on multilingualism. Understanding the importance of edges in multilingualism re-directs researchers' attention to yet unexplored edges.

2. Looking at multilingualism as edge, and thus *moving the traditional angle of vision* can reveal emerging trends in multilingualism, which could not be seen from another angle. This perspective will allow us to raise fresh questions in relation to a variety of old and new topics.

3. Among other things, the suggested vision of multilingualism as an edge *explains why multilingualism is currently at the center of life and civilization*, and is a space-time 'where things happen'. Edges in multilingualism are the space-times to be investigated in the first place, as they contain and reflect the most important events and developments (Aronin, 2014).

4. Realization that boundaries are seen differently from the edge area, and from the 'distance', *can help us account for the discrepancies in some experimental data gathered to date*. Entities outlined by boundaries of different scales and natures would justifiably yield different results. Such results are unsurprisingly, not always compatible with each other, thus undermining the validity of a study when the characteristics of edges are not taken into consideration.

5. In multilingualism, where the disciplines of sociology, linguistics, ethnography, political thought, and others come together, *accepting the ubiquity and 'normalcy' of edges in complex reality, eases the unnecessary tension of multiple lines of research* trying to exactly define the undefinable, and encourages us to admit the reality of transitional entities. Those are not anomalous phenomena, but characteristic of the current sociolinguistic dispensation. Edges are paradoxical, for although they are transitional phases or entities, they are comparatively stable.

6. Lakoff and Johnson (1980, p. 131) pointed out that metaphors "sanction actions, justify inferences and help us set goals." An understanding of languages as borders, which can divide or connect, *might stimulate scholars*

to set up nontraditional algorithms of study of previously investigated phenomena. For example, in language contact studies, the first task might be to establish whether a particular case presents an instance of contact, or of a barrier. Introducing such a metaphorical perspective gives us more detailed and clearer knowledge, as such a view stimulates differential treatment of edges, e.g., depending on whether they are *fiat* or *bona fide*; or allows one to explore the properties of membranes for effective regulation of borders of various natures.

7. Edges are recognizable to varying extents. Some, even significant ones, may be indiscernible. Therefore, drawing on the natural sciences, we might wish to search for signs of a meaningful divide. *Specific indicators for edges in multilingualism* (between communities and groups, between monolinguals, bilinguals and multilinguals) *could be worked out*. Further investigation into the ethics of multilingualism and language policy would open up if we were able to detect the invisible and symbolic edges.

We have offered a novel theoretical consideration of the way people use languages in modern times, and how this reflects on human practices, through the metaphor of edge. The edges of multilingualism call for further investigation in more depth.

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Larissa Aronin, Vasilis Politis

Die Metapher für den Rand bei Konzeptualisierung der Mehrsprachigkeit

Zusammenfassung

Der Artikel präsentiert eine philosophische Auffassung von dem Phänomen der Mehrsprachigkeit. Die Philosophie befasst sich im Allgemeinen mit menschlicher Erfahrung und der Reflexion über sein Leben, das heutzutage vielen dramatischen und sogar drastischen Veränderungen unterworfen ist und die Mehrsprachigkeit spielt dabei bedeutende Rolle. Die Metapher für den „Rand" (eng.: *edge*) wurde zur Schilderung der Mehrsprachigkeit und der Hauptrolle der Sprache bei Gestaltung der gegenwärtigen Wirklichkeit gebraucht. Der Artikel lässt erscheinen, dass die Mehrsprachigkeit nicht nur metaphorisch als ein Rand, sondern auch wortgetreu interpretiert werden kann; in der wörtlichen Bedeutung kommen ihre Grenzen und wichtigste Merkmale zum Ausdruck.

Dorota Owczarek
Adam Mickiewicz University, Poznań

Advanced FL Students'
Self-Perception of Their Language Identity

A b s t r a c t : This article reports the results of a study of self-perception of their language identity by advanced FL students. The aim of the study is to observe what students' language choices are and what guides them in these choices. The concepts related to bi/multilingualism are taken into consideration, following Cook's opinion (1992, p. 558) that L2 users should be compared to bilinguals rather that monolinguals. The perception of the language self is related to language competence acquired in formal education. The findings will be referred to recent research on language and identity in a foreign language context conducted elsewhere, and suggestions for further study in the field will be provided.
K e y w o r d s : language identity, bi/multilingualism, language competence

> The importance of being multilingual is above all, social and psychological rather than linguistic. Beyond types, categories, methods, and processes is the essential animating tension of identity. (Edwards, 2009, p. 23)

Introduction

Bilingualism and multilingualism seem to be very broad terms which contain a number of different subcategories (Pavlenko, 2007; Edwards, 2013), as well as an array of concepts. In the report of the LINEE project on multilingualism in Europe the following key concepts are listed: culture, discourse, identity, ideology, knowledge, language policy and planning, multi-competence and power and conflict. Studies of bi/multilingualism focus on a variety of issues, such as gender (Pavlenko et al., 2001), emotions (Pavlenko, 2007), identity (Kramsch, 2009), the impact of bilingualism on language development (Białystok, 2005),

and the role of power relations in second language acquisition and identity formation (B. N. Peirce, 2000), to name just a few. The problem of identity is common to all of the above-mentioned studies, which is pursuant to David Block's postulate:

> Indeed, in FL and, in particular, SA contexts, it is important to explore how the symbolic capital of language learners mediates language learning activity and ultimately the kind of identity work that takes place. In FL contexts, long-term expectations regarding academic achievement might differ considerably along social class lines, with high expectations being inclusive of a positive disposition toward the study of an FL and low expectations framing such study as being of little use. (Block, 2007, p. 872)

Most studies of multilingualism and bilingualism concern expats or immigrants. However, with the advent of English as a lingua franca there appears a substantial number of cases of academic research devoted to FL context with the focus on the influence of English on learners' identities (Atay & Ece, 2009; Er et al., 2012; Guerra, 2012; Zacharias, 2012). Some researchers also focus on other languages than English (Kramsch, 2009; Coffey & Street, 2008). Nevertheless, a predominant fashion is to examine the issue either in SLA context or limit it to two languages, i.e. the vernacular language and a foreign one.

What Does It Mean to Be Bi/Multilingual?

In the Longman Dictionary of Contemporary English for Advanced Learners a bilingual person is defined as somebody who is able to speak two languages equally well, whereas a multilingual one is the speaker who is capable of using several different languages. Bialystok observes (2005, p. 581) that bilingualism is "a continuous dimension that describes the relative proficiency a person holds over two languages." Pavlenko (2007, p. 4) differentiates between monolingual speakers with long foreign language exposure, and those who speak two or more languages, and she terms them bilingual and multilingual respectively. She, after Cook (1999; 2002), makes a clear division between second language learners and foreign language learners, where foreign language learners are those who learn a language in the classroom and/or by themselves, and second language users are those who use a language for real life purposes. Foreign language learners differ from second language learners in that they do not use their language outside of the learning context. Pavlenko uses the term bilingual/

multilingual/L2 user to refer to those who use the second language outside of the learning context, no matter what their proficiency level is.

Concepts at Play in Bi/multilingualism

The first concept, language proficiency, is measured by language proficiency tests equated with linguistic skills such as listening, writing, speaking, and reading (Bialystok et al., 2005; Ehrlich, 2001). Yet, according to Hammemberg (2010, p. 94) it is a problematic issue as proficiency can vary in each language and it is difficult to determine the level of proficiency at which a language becomes one's own language. Proficiency also means adopting appropriate linguistic practices by regular users of the language and then adjusting them to one's personal preferences (Ohara, 2001, p. 231). A concept of multi-competence introduced by Cook (1992) which denotes various language systems grouped together in one's mind seem to overcome the problems posed by the difficulties connected with assessing one's proficiency, but above all it positions a bi/multilingual person with his/her distinct state of mind in opposition to a monolingual speaker. In other words, the bi/multilingual speaker is a specific speaker with a unique linguistic system. This view is shared by Kramsch (2009, p. 44), who, quoting Halliday, says that the way bilinguals deal with linguistic diversity makes them different from monolingual subjects.

The next concept is the identity/subjectivity of a language user. A multilingual speaker has been termed by Kramsch (2009) a multilingual subject, where prominence is given to the subjective aspects of language acquisition. Furthermore, this switch to identity in discussing multilingualism in postmodern times opens up new possibilities for looking at the issue from a new perspective, i.e. to see motivation as investment, an anxiety state as socially constructed silence, and the inability to say something as a symptom of power relations (Peirce, 2000). Thus, subjectivity appears as an entity constructed in a particular moment of time and speaking rather than the static body of an individual who speaks two or more languages. Moreover, it enables one to view one's self in various dimensions, such as one's competence (intelligence), or sense of humor (social attractiveness).

Traditionally, the motivation of a learner was seen in two categories, i.e. instrumental and integrative (Lambert & Gardner, 1972), but B. N. Peirce (2007) introduced the term investment which in a more informed way explains the learner's drive to study a FL. Who I am is partly described by the choice of what languages I want to speak. Therefore, investment is a concept which is tied to one's identity. It involves both personal as well as social elements. The

decision to study foreign languages and the language choice are based on one's interests, as well as the assumed symbolic value of a chosen language which can make the speaker a different person.

According to Kramsch (2009, pp. 15–17), language users become other people when they speak another language. The use of language may have a subjective relevance for learners. They may have heightened perceptions and emotions, may be more aware of their body movement, or have the feeling of a lost or an enhanced power. They use languages and their power to be what they want to be. This desire is the inner force thanks to which they can shape their subjectivity and become the subjects they want to be. A language creates a possibility to escape from or to explore the self. A multilingual subject is someone for whom language is not only an asset but also self-fulfillment.

Language acquisition is fraught with emotions. Pavlenko (2007) claims that emotions are the first condition for the embodiment of the language, and that languages learnt in the classroom lack such embodiment as they are not emotionally loaded. The only emotions learnt at school are connected with language anxiety. Speakers whose languages were acquired with the engagement of emotional memory perceive their language selves as emotional, embodied, and natural, and speakers who acquired their languages through declarative memory see their selves in L2 as detached and unemotional or even fake (Pavlenko, 2007, p. 189). True though this might be, it is also true that advanced language learners use their language outside the classroom, where emotions are revealed. These emotions guide them through their interactions allowing the speaker to get involved in a conversation or disallowing for such an involvement and positioning him/her as a silent listener/observer. Pavlenko observes (2007, p. 209) that bilinguals in some situations (usually on emotional grounds) refuse to speak one language and then they need to find a replacement. Does this situation concern FL learners? Is it only silence they are left to? Despite her different approach, Pavlenko says important things for FL learning and her observations lead to some important questions on bi/multilingualism in an FL learning context.

Finally, a scrutiny of the physical objects multilingual speakers use or feel attached to may indicate how far the speakers go beyond the classroom limits and their objects may shed some light on their identity. As Aronin (2012, p. 182) says, "an object is a representation of its user" and belongs to the user's private sphere. Some objects may have a strong emotional value. Some may be language-defined objects if they bear an inscription. Some, if they offer a linguistic choice, may reveal one's language identity.

In sum, the desire to speak a foreign language, and in particular the desire to speak a foreign language well, seems to be a way to become a unique, exceptional human being.

An issue that has intrigued me for a long time is whether those who study a foreign language at the advanced level, choose to work with this language

and work on its development in a foreign context perceive themselves as bi/multilingual and if so, what elements are involved in this process and how such people feel in those situations, where they use a language to establish new contacts, at dorms or on exchange visits, or via the Internet. Hence they use the language for everyday practices, even if their use is different (limited), when compared to that of immigrants or expats. Though they gain the basics in the classroom, they move forward beyond the classroom walls.

The findings presented here come from a pilot study carried out in February 2014. The main research question was: How do FL learners at the advanced level see and aspire of themselves, and in consequence what is their perceived language identity? The main question asked was: Do foreign language users see themselves as bi/multilingual speakers? The supporting questions referred to FL learners' self-perceptions as related to key elements in bi/multilingualism.

Methodology

Participants and Method. The research group consisted of 103 people ($N = 103$), 18—third year students and 81—second year students of the Applied Linguistics Department at Adam Mickiewicz University, who study English and German, German being their major, and one additional language (L4) of their choice, either French, Spanish, Italian or Russian, and four family members, who speak at least one foreign language.

For data collection an introspective approach (Pavlenko, 2012) was chosen as the focus of interest was on the students' own assessment of the problem in question. The students' self-perception of their language identity was examined by the use of self-assessment procedures (Edwards, 2013), which reveal one's opinions about the speakers of certain varieties of languages and provide an insight into the learner's beliefs, as well as shed some light on her/his attitude towards the surrounding world (Research Area Report C 2009, p. 4). Questionnaire-based studies of bilinguals were also conducted by Pavlenko and Dewaele (Pavlenko, 2012).

The respondents were given a questionnaire with 13 open-ended questions and one closed question. They were questioned in Polish and asked to provide answers to the following open-ended questions: (1) What language do you speak at home? (2) What is the language of the community you live in? (3) How do you understand the concept of language proficiency? (4) What languages have you been learning and for how long, and how do you assess your proficiency in these languages? (5) How do you assess your ability to express yourself in reference to humor, personality, and intelligence in a particular language? (6)

Does any of these languages pose a problem and if so of what kind? (7) Do you feel that the right to use any language is limited, what language and when? (8) Which language is helpful in achieving set goals? (9) In what situations do you use a language? (10) What is your attitude towards FL communities? (11) How has learning an FL benefited you? (12) Do you feel different when speaking different languages? and (13) What material objects are essential to your language studies? In the last closed question the respondents were to state whether they see themselves as a monolingual, bilingual or multilingual speaker. (For the original questionnaire see Appendix 1.) The respondents were instructed that the questionnaire was for scientific purposes only and were given the prescribed time of 30 minutes. The answers obtained for questions 1–13 were scrutinized and divided into categories, thus leading to establishment of nominal scales, which were further computed into descriptive statistics for frequencies of the established categories. Finally, the results were compared within the studied group by means of inferential statistics suitable for nominal scale, chi-square test.

Results and Discussion

The respondents make a homogenous group, Polish being both their first language and the language of the community they live in.

The respondents' understanding of language proficiency, as the study revealed, is similar to the definition of language proficiency as the overall level of language achievement and four skills of reading, writing, speaking and listening. The highest scores were ascribed to the following categories: high language competence (29%), good communicative skills (27%), a very good command of language (15%), and accurate language use (15%). See Table 1 for all the categories of the respondents' understanding of the concept.

The age of acquisition (AoA), the age at which the L2 learning started (Pavlenko, 2012, p. 407), can be crucial for language fluency, despite contradictory views on this matter, like the one that post-puberty learning of an FL does not exclude high competence in a FL (Muñoz, 2006; Snow & Hoefnagel-Höhle, 1978). In the studied group the average age of beginning to acquire English and German is 12 and 11 respectively. So, the respondents were young/old enough to achieve language fluency. However, the SD signifies some variability within the studied group. The context of language acquisition (CoA), which can be instructed or mixed (Pavlenko, 2012, p. 407), for the respondents is instructed. The results are presented in Table 2.

Table 1

The concept of language proficiency

No.	Category	%
1.	high language competence	29
2.	good communicative skills	27
3.	a very good command of a language	15
4.	accurate language use	15
5.	the connection between language and thought	9
6.	speaking fluently or fast	7
7.	equal to native speakers' abilities	5
8.	ability to use the language	5
9.	cultural background knowledge	1
10.	ability to express one's self	1
11.	functioning in a society that uses this language	1
12.	expressing emotions	1
13.	high language awareness	1
14.	understanding sense and context	1
15.	expressing humor	1
16.	good pronunciation	1
17.	knowledge of technical terms	1
18.	ability to discuss more difficult subjects	1
19.	it has various meanings, but for me…	1
20.	No answer	2

Table 2

Age and context of acquisition

Language	Length of study (mean)	Length of study (SD)	AoA (mean)	Context	%
English	9,679612	4,570716	12,14896	instructed	95
German	10,6068	3,339933	11,22178		
L3	1,761765	1,369255	20,04881	mixed	5
L4	1,078947	0,845957	20,82857		

($N = 90$) / a respondent's age mean = 21,82857 (SD = 3,321345)

Different languages offer different possibilities for self-expression and the self can be different in different languages (Pavlenko, 2001; Kramsch, 2009). Bilingual speakers will show some preferences among their languages, when choosing one language over another depending on a communicative situation. The question on the choice of language revealed that there is a great variety of choices among the respondents depending on the situation. L1 was preferred by less than half of the respondents in all the situations given in the question- naire. English seems to be a language appropriate to express one's sense of humor (38%) and German—a language to express one's intelligence (26%). It should be borne in mind that the answers may reveal the respondents' beliefs

rather than the real situation, as attitudes consist of feelings, thoughts, and predispositions to act in a certain way (Edwards, 2003). However, the answers indicate that there exist some linguistic preferences among the study group. For all answers see Figure 1.

Figure 1. Language preferences.

For bi/multilinguals creating one's identity in another language/culture, for example learning how to respond to various levels of hierarchy or social status is vital (Jarvis & Pavlenko, 2008, p. 110). The results of the research indicate that FL speakers experience the feeling of social distance and higher status of the native speaker, but in general the focus of the respondents is on linguistic problems, where these (49%) outnumber personality ones (7%). The respondents are mainly focused on their linguistic competence, with sociocultural matters receiving only a little of their attention. Figure 2 presents all the answers in this respect.
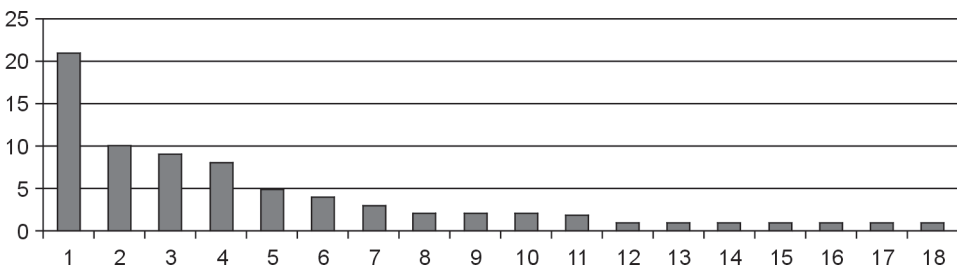

Figure 2. Languages and problems.

Note: 1 – grammar; 2 – not long enough period of studying; 3 – vocabulary; 4 – pronunciation; 5 – problems with communication; 6 – no opportunities to communicate; 7 – alphabet; 8 – language as a barrier to communication; 9 – reluctance to learn; 10 – lack of good basics; 11 – inability to understand native speakers; 12 – fear of mistakes; 13 – false friends; 14 – interlocutors not being open; 15 – shyness; 16 – stress; 17 – laziness; 18 – no problems.

Bonny Norton (2000) observes that in a natural context of SLA the right to speak is directly linked to identity construction. The limitation of this right, caused by an unequal distribution of power, hinders such a possibility. The majority (86%) do not feel their right to speak any language is limited. 14% of those who think otherwise cite situations like: (1) late at night in the street due to the lack of tolerance towards Germans in Poland (5%), (2) when people are more fluent than I am (3%), (3) when I cannot use Polish in an FL class (2%), (4) when I choose words very slowly, when I'm afraid of being laughed at, or (5) because French is being pushed out by English and German (Figure 3).
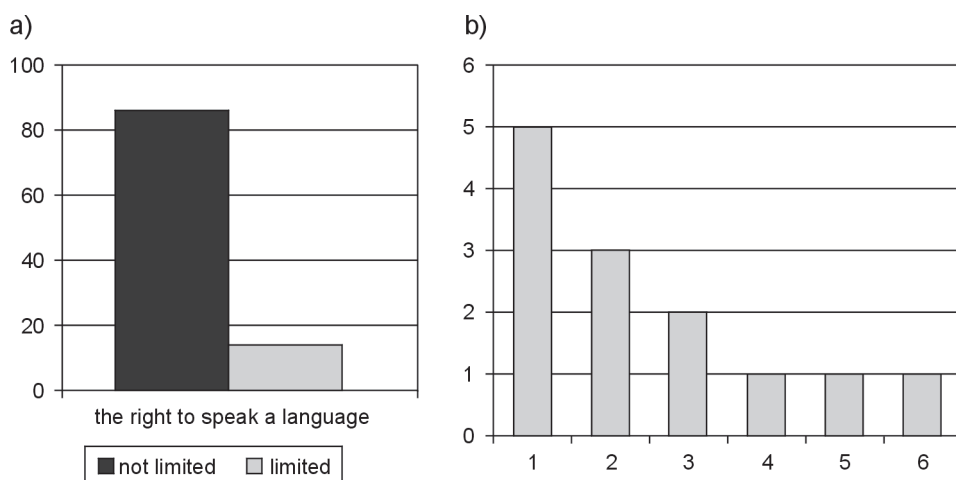

Figure 3. The right to speak a language (a); the situations when the right is being taken away (b).

Students are motivated by what they imagine they can achieve or become, e.g. translators, teachers, immigrants, travelers. For the majority of the respondents foreign languages are means to get a good job, German—60% and English—48%. Their motivation, the driving force to construct their identities through the languages they study (Kramsch, 2005), can be seen as making an investment, which better explains the differences in use of various languages in different contexts (Norton, 2000). Their language choices appear as means to fulfil their desires based on the imagined power of the language (Kramsch, 2009, p. 22). Their goals include: (1) to get a good job, (2) to communicate, (3) to travel, (4) to develop oneself, (5) to finish studies, (6) to emigrate, (7) to learn about a foreign culture, (8) to meet people, (9) to study abroad, (10) to get a certificate, and (11) to show dominance. Figure 4 shows the respondents' preferences as to listed goals.
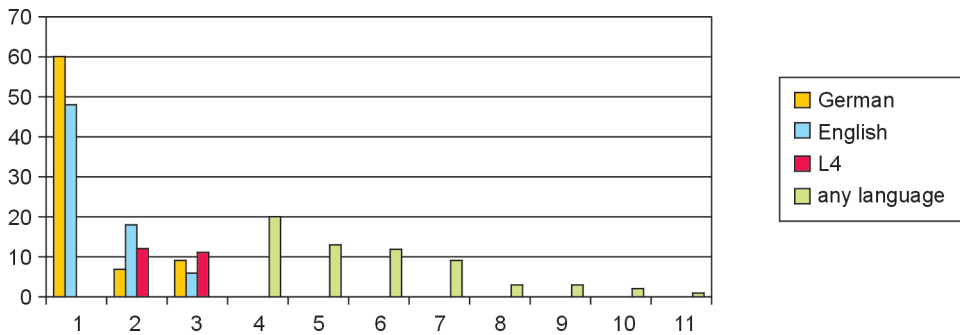
Figure 4. Languages and set goals.

According to Dwight Atkinson (2010) language as part of one's identity is part of one's self, linked to one's experience, and based on the learner's interaction with the environment. The answers do not show how this experience is gained or what the nature of that interaction is, but just point to the fact that the respondents extend the context of language use outside the classroom, which in turn creates good grounds for language embodiment, but needs further and deeper investigation. The situations provided involve their private life, in a dorm for example, where 47% use English, 24% – German, and 8% – L4, or travelling (24% use English, 23% – German, and 3% – L4). All the situations listed by the respondents are presented in Figure 5.
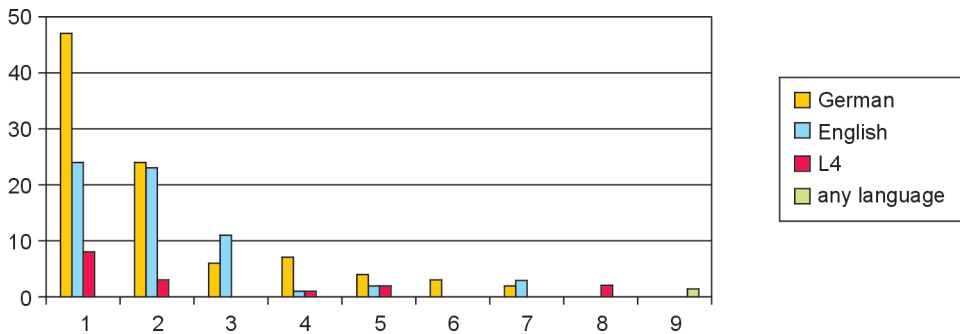

Figure 5. Context of language use.

Note: 1 – informal situations, i.e. in a dorm; 2 – when travelling; 3 – at work; 4 – for entertainment; 5 – new media (Internet, online chats); 6 – international organizations; 7 – Erasmus exchange programs; 8 – to maintain contact with family; 9 – whenever possible.

Language learning, like any other type of learning, brings about a change in one's mental state (Doughty & Long, after Atkinson). In the studied group the impact of language studies on one's personality was recorded. 76% of the respondents observe a positive change, and 9% said they had not changed at all. Figures 6 and 7 show the respondents' answers to the observed change and

positive change in detail respectively. The answers, however, do not allow us to probe deeper into the observed issues.
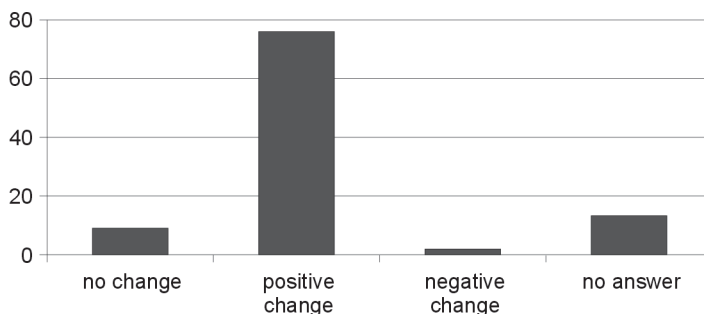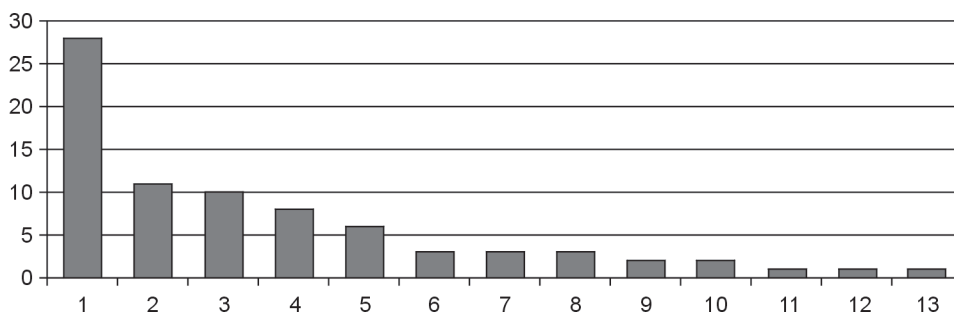

Figure 6. Observed change.

Figure 7. Positive change.

Note: 1 – open; 2 – self-confident; 3 – knowledgeable; 4 – aware of cultural differences; 5 – better mental abilities; 6 – sensitive to meaning; 7 – more communicative; 8 – better organizational skills; 9 – richer vocabulary; 10 – aware of mother tongue; 11 – more travel opportunities; 12 – wiser; 13 – better job perspectives.

The affective side is an integral part of one's language identity. The results of the study allow us to look at language emotionality (Pavlenko, 2012) to some extent. The study revealed that the students' attitudes to FL communities, which are likely to strengthen or weaken an individual desire to integrate with an L2 community, are positive or neutral. The question on the attitude towards FL communities did not reveal any strong prejudices. However, biased attitudes were evinced when respondents commented on their emotions connected with various languages. Namely, they feel cold or serious when speaking German or describe it as a "harsh" language. The negative emotions listed by the respondents (9.5%) point to linguistic anxiety or stress, in compliance with affective filter theory. Positive emotions (23%), like joy or satisfaction, are connected with the language achievements and self-fulfillment of the learner (see the discussion on emotional intelligence in Barzeger & Sadr, 2013). 47.5% of the respondents claim they do not experience any emotional change. The character

of the survey, which was built of short questions and answers, does not allow for an in-depth analysis of the respondents' emotions in their linguistic choices, nor can we see how these impact the subject position in order to further make legitimate claims about the respondents' embodiment of their foreign language, as Pavlenko postulates (2007, p. 200). The observed change is shown in Figure 8.
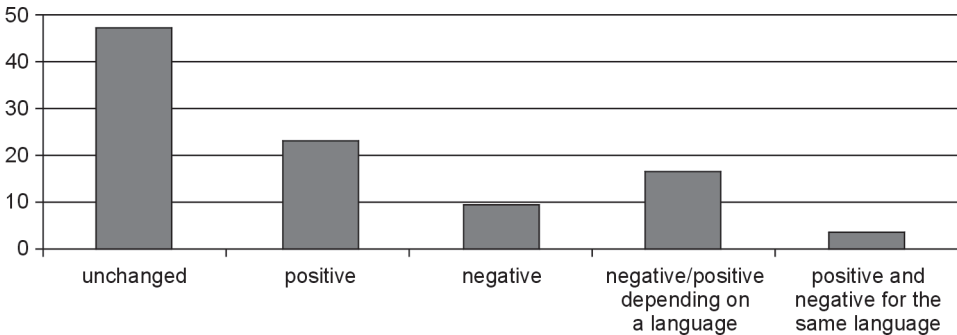

Figure 8. Languages and feelings.

The emotions cited by the respondents are presented in Table 3.

Table 3
Positive and negative emotions

Positive		Negative	
category	%	category	%
joy	30	uncertainty	11
satisfaction	9	stress	6
self-confidence	6	constrained	6
feeling at ease	6	feeling order and precision	3
feeling intelligent	3	feeling funny	4
pride	2	anger	1
warm home feelings	2	feeling not so good	1
cosmopolitan	2	feeling dominance	1
good mood	2	feeling formal	1
curiosity	1	feeling pompous	1
people have more to say	1	feeling strange as people don't speak this language	1
		feeling at a loss	1
		feeling exotic	1
		boredom	1
		the language offers a variety of interpretations	1
		coldness	1
		firmness	1
		seriousness	1
		"harsh" language	1

According to Aronin (2012), an object represents its user. Objects deemed important in FL learning by the respondents are mostly those linked to language study materials and represent an FL learner in an instructed context. Other objects (postcards, mp3, CDs, films, series) signify an informal context, where the learner engages with an FL for entertainment. Objects like postcards or chat rooms suggest a language user who is interested in maintaining contact or experiencing live conversations. When an object offers a linguistic choice, for example a Harry Potter book, a beloved possession of one of the respondents, the Polish (L1) translation of the English (L2) original is preferred. The objects represent both public and private spheres. The list of all objects is provided in Table 4.

Table 4

Objects of everyday use important for FL learners

Objects	%
blogs	1
books	15
CDs	6
colored fineliners	1
computers	14
course books	6
dictionaries	10
films	4
magazines	1
mp3	3
newspapers	2
postcards	1
radio and TV	10
series	1
slips of paper with new words	2

Though the perception of language selves varies among the studied group, as indicated by the number of categories obtained for each question, yet in light of the evidence gathered, three groups among the advanced FL speakers emerge: a monolingual, a bilingual, and a multilingual group. The answers in the study point to the fact that respondents assessed their language identity in compliance with the assessment of their language proficiency. The chi-square test run for the correlation between the respondents' language proficiency and their language identity ruled out variation due to chance alone. The null hypothesis was rejected, $\chi^2 = 0.036809$, p. = 0.05, χ^2 < p. (see Table 5 and Figure 9).

Table 5
Language fluency (*N* = 103)

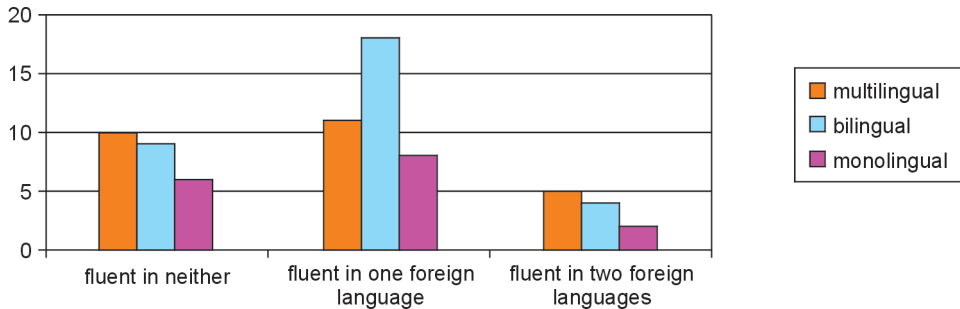| Language fluency	Frequency %
fluent in two foreign languages	29
fluent in one foreign language	44
fluent in neither	27

Figure 9. Fluency and perceived identity.

Conclusions

Comparing the results of this research to other findings in this area is problematic due to the sociocultural specificity of various studies. However, in making a selection I focused mainly on the findings of the research that concerned the formal education of students who exhibited multilinguistic competence, whether acquired in a formal setting only (Atay & Ece, 2009; Guerra, 2012; Zacharias, 2012) or in formal and natural settings combined together (Marshall, 2010). The findings of this research are partly in line with those presented by Zacharias (2012), who reports that encounters with native speakers appeared to magnify linguistic insecurity, and nonnative status is seen as a drawback. While in Zacharias's research all of the participants appeared to be fully aware that the use of English in public spaces would project negative identities, in my research this observation could be made in reference to German. In Guerra's study (2012), conducted among Portuguese students in a country which is linguistically homogenous, the suggestion that identifying a foreign language as a marker of one's identity has to do with the user's competence level in the language was confirmed. His other observation that curricula which lack sociocultural elements in language training(s) might be a deterrent to including the foreign language as a marker of identity may also hold true for the situation

revealed in my research. However, the overwhelming majority of participants in Guerra's study characterized English as a language which belongs to whoever uses it and see it as a global language for international communication. Despite the fact that Poland, like Portugal, is also a homogenous country, Polish students do not share this view. They see English as a language which can make them bi/multilingual. Atay and Ece (2009), Guerra (2012), Marshall (2010), and Zacharias (2012) report in their studies that the first language is seen as the most important language in the life of a human being and in formal education one's core identity is derived from the assumed first language culture. The results of the group studied in my research indicate that this is true only for some of the respondents.

Finally, the questionnaire used in this study allows us to analyze students' identities and their emotions only in very broad terms. It is possible to say that the respondents' perceptions of their language identities are partly the result of the system of formal education focused on accuracy, but the study does not provide for a deeper scrutiny of their identity construction. A follow-up study is needed in order to say whether FL learners can construct new selves and transfer native selves to a foreign culture, and whether formal education can lead to language embodiment, and appropriation of the symbolic values of the studied language in a formal context.

„I zaczęli mówić obcymi językami"*

1. Język używany w domu ....
2. Język społeczności, w której jest mój dom ....
3. Co oznacza wyrażenie „biegły w języku"? ....
4. Języki, które studiuję/uczę się/ uczyłam się

Lp.	Czas nauki (podaj lata)	Forma nauki (podaj rodzaj szkoły lub rodzaj zajęć)	Język	Zaznacz (V) język, w którym jesteś biegły
1.				
2.				
3.				
4.				

5. W którym języku najlepiej możesz wyrazić:
   swoją inteligencję ....
   osobowość ....
   poczucie humoru ....
6. Który język stanowi dla Ciebie problem? .... Jaki to problem? ....
7. Czy uważasz, że są sytuacje, w których odbierane Ci jest prawo do używania języka, który znasz? Jaki to język? .... Jakie to sytuacje? ....
8. Który język postrzegasz jako środek do realizowania stawianych sobie celów?
   Język .... cel/e ....
   Język .... cel/e ....
   Język .... cel/e ....
   Język .... cel/e ....
9. W jakich sytuacjach posługujesz się językami, które znasz?
   Język .... sytuacje/kontekst ....
   Język .... sytuacje/kontekst ....
   Język .... sytuacje/kontekst ....
   Język .... sytuacje/kontekst ....
10. Co myślisz o krajach/społecznościach, których język/i studiujesz?...
11. Czy nauka języków zmieniła Ciebie? Jak? ....
12. Czy używając różnych języków czujesz się inaczej? Jak zmieniają się Twoje odczucia?
    Język .... odczucia ....
    Język .... odczucia ....
    Język .... odczucia ....
    Język .... odczucia ....
13. Jakie przedmioty użytkowe były/są ważne lub wpłynęły na Twoją naukę języka?
    Przedmiot/y .... język ....
    Przedmiot/y .... język ....
14. Uważam siebie za osobę : a) monolingwalną, b) bilingwalną, c) wielojęzyczną.

Rok ur.: .... Płeć: K   M

Mogę i chcę wziąć udział w wywiadzie indywidualnym online. Mój adres mailowy: ....

   * Ta ankieta jest anonimowa i służy wyłącznie celom naukowym.

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Dorota Owczarek

Die Perzeption von der Identität eines bilingualen Studenten mit fortgeschrittener Sprachkompetenz

Zusammenfassung

In dem Artikel werden Ergebnisse der Forschungen über Selbstperzeption der Sprachidentität in der Fachschaft Fremdsprachenoberstufe präsentiert. Die Forschungen sollten aufzeigen, was für einen Griff tun die Studenten bei Bestimmung ihrer Sprachidentität (ich begreife mich als einsprachige, zweisprachige, mehrsprachige Person) und wovon lassen sie sich dabei leiten. In der Diskussion über Zweisprachigkeit/Mehrsprachigkeit der Studierenden gebrauchte man Begriffe, die die Betrachtungsweise V. Cooks (1992) berücksichtigen. Cook behauptet, dass die Benutzer von der angelernten Sprache formal gesehen eher für zweisprachige als einsprachige Personen gehalten werden sollten. Man wollte vor allem ergründen, auf welche Art und Weise die Befragten ihre Sprachidentität für den Fall definieren, dass Sprachkompetenz in verschiedenen Sprachen unter formalen Umständen, d.i. in der Schule erworben und entwickelt wird, und wie sie das auf eigene Sprachkompetenz beziehen. Die Forschungsergebnisse wurden den in anderen Ländern durchgeführten Forschungen gegenübergestellt. Die Verfasserin sieht auch die Notwendigkeit, weitere Forschungen auf dem Gebiet anzustellen.

Xinyue Cécilia Yu
Laboratoire de Linguistique Formelle, Université Paris Diderot

The Acquisition at the Interface
of Ditransitive Constructions
in Mandarin Chinese by French Adult Learners

A b s t r a c t : The semantically fine-grained ditransitive constructions in Mandarin Chinese show complex interaction between lexical semantics, constructional semantics, and syntactic frames. This study examines the acquisition process of the syntax as well as the semantics of these constructions by launching two experiments with French learners of Chinese. The experiment results reveal a 'syntax-before-semantics' learning process and the important role of input in implicit learning.
K e y w o r d s : interface, ditransitive constructions, Mandarin Chinese, syntax, adult learners

Introduction

For several decades, many studies have contributed to the understanding of argument realization in different languages and from diverse points of view, such as in the fields of syntax, corpus study, first language acquisition, and second language acquisition, etc. This subject attracts our interest in the foreign language acquisition field because of a difficulty hypothesis claimed by Krifka (2004):

One of the difficult areas for persons learning a foreign language is to grasp the range of usages of syntactic patterns that exist in the foreign language. It is not sufficient to learn how passive formation works, […]. One also has to learn which verbs can passivize at all, […]. (p. 1)

I am especially interested in the acquisition of ditransitive constructions in Chinese by French learners, exactly because of the multiple argument realization possibilities and the existence of certain lexical and constructional semantic constraints in the target language, which should cause learning difficulties for learners whose mother tongue exhibits neither such possibilities nor such constraints.

In consequence, our general research question is: facing the ditransitive constructions in Mandarin Chinese, how do French learners of Chinese acquire the complex three-way interface between lexical semantics, constructional semantics and syntactic frame?

Ditransitive Constructions in French, English, and Mandarin Chinese

Even though our study adopts the construction grammar frame (Goldberg, 1995; Jackendoff, 1997, among others) for theoretical analysis and for the experimental study interpretation, the term 'ditransitive' used here refers "to all three-argument constructions across languages whether a double object construction, as in English, or other syntactically comparable constructions: usually, subject, object, and a dative NP, but also a clitic doubled dative, as in Spanish, or a genitive NP, as in Greek" (Levin, 2004, p. 4).

Some Theoretical Background. The ditransitive constructions in English have been studied for several decades. Most endeavors have been devoted to the so-called 'dative alternation' phenomenon which refers to the alternation between a prepositional construction and a double object construction as illustrated in the following examples:

(1) John sent a book to Mary.   prepositional construction
(2) John sent Mary a book.   double-object construction

It has been observed that the alternation between these two constructions is not always free for the same verb (Gruber, 1965; Oehrle, 1976, among others).

(3) John sent a book to London.
(4) *John sent London a book.

Pinker (1989) proposes the Wide Range Rules to capture the semantic constraint in the double-object construction, according to which the first object

in the double object construction must have the property of a possessor. So this constraint excludes sentence (4) since the city of London could never be a possessor.

It has also been claimed that the dative alternation is not free for all dative verbs. For example, *throw* and *push* are very close in semantics, but they demonstrate different behaviors with regards to the dative alternation:

(5) John threw Mary the ball.
(6) *John pushed Mary the ball.

Pinker (1989) then proposes the Narrow Range Rules that restrict certain verb subclasses from entering the double object construction. For example, *throw* belongs to the verb subclass denoting an instantaneous force, which allows the dative alternation, while *push* belongs to the verb subclass denoting a continuous force, which prevents the dative alternation.

These lexical semantic constraints were further developed by Van der Leek (1996) and Krifka (1999; 2004) and were adopted in both the construction grammar (Goldberg, 1995; Croft, 2003) and lexical semantic approaches (Rappaport Hovav & Levin, 2008).

It is proposed in the construction grammar approach that the double object construction indicates a transfer event while the prepositional construction implies a caused motion event (Goldberg, 1995, among others). But the 'verb sensitive approach' (Rappaport Hovav & Levin, 2008; Levin, 2008) argues that the implied event depends not only on the syntactic form (double object or prepositional) but also on the verb lexical semantics. So *give* type verbs denote a caused possession event in both forms while *send* and *throw* type verbs denote a caused possession event in the double object construction and a caused motion event or a caused possession event in the prepositional construction.

I apply this perspective of combining lexical semantic constraint and constructional constraint to our comparative analysis of the ditransitive constructions in French, the mother tongue of our target learners, English, an L2 for most of the learners, and Chinese, the target language.

According to construction grammar, each basic argument structure denotes an event that is related to human experiences. With regard to our study, the caused possession event is the semantic key to delimiting the ditransitive constructions in the three languages. Precisely, based on the specificity of Chinese, I am going to look at the outward caused possession event, outward intended caused possession event and concerned benefaction event. There is a fourth event related to ditransitive constructions in Chinese, the inward caused possession event. But due to space limitations, in this paper I will just talk about the first three events and leave the last one for future discussion.

Constructional Semantics: Outward Caused Possession Event. In Chinese, there are four syntactic forms which express an outward caused possession event (examples are given in Table 1): two post-verbal prepositional constructions (i.e. (7) and (10)) (henceforth NP-PP form and PP-NP form), a preverbal prepositional construction (i.e. (23)) (henceforth preverbal-GEI), and the double object construction (i.e. (15)) (henceforth DO construction). But similar to the dative alternation in English, in Chinese not all dative verbs can enter into these four constructions: there are also some lexical semantic constraints. In this study, we take two verb subclasses into consideration: caused possession type verbs and caused motion type verbs.

Caused possession verbs ('true-dative' verbs in the term of Jackendoff 1992, 'give-type verbs' in the term of Rappaport Hovav & Levin, 2008), such as *give*, *submit*, *offe*r, and *return*, denote an event such that an agent causes a recipient to possess a theme and take inherently three arguments: agent, theme, and recipient. Caused motion verbs ('send-type' and 'throw-type' verbs in the term of Rappaport Hovav & Levin, 2008), such as *send*, *pass*, *throw*, and *move*, denote an event such that an agent causes a theme to move and take inherently two arguments: agent and theme. According to construction grammar, in English when caused motion verbs enter the double object construction, it is the construction that contributes the third argument: recipient (Goldberg, 1995).

In Chinese both types of verb can enter the two post-verbal constructions (i.e. (7) and (10) vs. (17) and (20)), but only the caused motion verbs are allowed in the preverbal GEI form (i.e. (23) vs. (13)) while only the caused possession verbs are legitimate in the double object form (i.e. (15) vs. (25)).

The two post-verbal constructions also exist in French (i.e. (9), (12) vs. (19), (22)) and English (i.e. (8), (11) vs. (18), (21)), and exhibit no particular lexical semantic constraint either. But it is observed that the PP-NP form is preferred when the PP denoting the recipient is 'heavier' than the NP denoting the theme ('Heavy NP shift').

There is not any preverbal-GEI equivalent in French or in English. But there is a preverbal-recipient form in French: the clitic construction. This construction legitimates both caused possession verbs and caused motion verbs (i.e. (14), (24)).

As we have seen previously, the double object construction exists in English and legitimates caused possession verbs (i.e. (16)) and some types of caused motion verbs (i.e. send-type and throw-type, but not push-type, (26) vs. (27)). This construction does not exist in French.

The summary of comparison of the three languages is presented in Table 1.

Table 1

Caused possession events—comparison of Chinese, English, and French

Lexical semantics	Chinese	English	French
caused possession verbs: i.e. give, submit, offer, return…	NP-agent V VP-theme PP-recipient (7) Zhangsan song-le yi-ben-shu Gei Mali. 'Zhangsan gave a book to Mary.'	NP-agent V NP-theme PP-recipient (8) John gave a book to Mary.	NP-agent V NP-theme PP-recipient (9) Jean a donné un livre à Marie. 'Jean gave a book to Marie.'
	NP-agent V PP-recipient NP-theme (10) Zhangsan song GEI Mali yi-ben-shu. 'Zhangsan gave to Mary a book.'	NP-agent V PP-recipient NP-theme (Heavy NP shift) (11) John gave to Mary a book that he bought yesterday.	NP-agent V PP-recipient NP-theme (Heavy NP shift) (12) Jean a donné à Marie un livre qu'il a acheté hier. 'Jean gave to Marie a book that he bought yesterday.'
	?/* NP-agent PP-recipient V NP-theme (13) ?/* Zhangsan GEI Mali song-le yi-ben-shu. ('Zhangsan gave a book to Mary.')		NP-agent CLITIC-recipient V NP-theme (14) Jean lui a donné un livre. 'Jean gave him/her a book.'
	NP-agent V NP-recipient NP-theme (15) Zhangsan song-le Lisi yi-ben-shu. 'Zhangsan gave Lisi a book.'	NP-agent V NP-recipient NP-theme (16) John gave Mary a book.	
caused motion verbs: i.e. send, pass, throw, move…	NP-agent V VP-theme PP-recipient (17) Zhangsan ji-le yi-ben-shu Gei Mali. 'Zhangsan sent a book to Mary.'	NP-agent V NP-theme PP-recipient (18) John sent a book to Mary.	NP-agent V NP-theme PP-recipient (19) Jean a envoyé un livre à Marie. 'Jean sent a book to Marie.'
	NP-agent V PP-recipient NP-theme (20) Zhangsan ji GEI Mali yi-ben-shu. 'Zhangsan sent to Mary a book.'	NP-agent V PP-recipient NP-theme (Heavy NP shift) (21) John sent to Mary a book that he bought yesterday.	NP-agent V PP-recipient NP-theme (Heavy NP shift) (22) Jean a envoyé à Marie un livre qu'il a acheté hier. 'Jean sent to Marie a book that he bought yesterday.'
	NP-agent PP-recipient V NP-theme (23) Zhangsan GEI Mali ji-le yi-ben-shu. 'Zhangsan sent a book to Mary.'		NP-agent CLITIC-recipient V NP-theme (24) Jean lui a envoyé un livre. 'Jean sent him/her a book.'
	?/* NP-agent V NP-recipient NP-theme (25) ?/* Zhangsan ji-le Lisi yi-ben-shu. 'Zhangsan sent Lisi a book.'	NP-agent V NP-recipient NP-theme (26) John sent Mary a book. (27) *John pushed Mary a book.	

Constructional Semantics: Outward Intended Caused Possession vs. Concerned Benefaction (No Transfer). In English, the dative alternation involves not only the alternation between the double object construction and the *to*-prepositional construction, but also the alternation with the *for*-prepositional construction:

(28) John baked a cake for Mary. (in order to give the cake to Mary/in Mary's place)
(29) John baked Mary a cake.

But just like the '*to*-alternation', the '*for*-alternation' is also subject to some semantic constraints:

(30) John opened the door for Mary. (in Mary's place/*in order to give the door to Mary)
(31) *John opened Mary the door.

As predicted by the Wide Range Rules of Pinker (1989), the '*for*-alternation' should also obey the restriction that the first object in the double object construction implies a recipient. 'For' in (28) can introduce a recipient who receives the object-theme, or a concerned beneficiary (term proposed by Colleman, 2010) in whose interest the action is carried out by the subject-agent with no intention to transfer the object-theme to the beneficiary. When the sentence is interpreted such that John baked the cake in order to give it to Mary, (28) may be 'alternated' to (29). 'For' in (30) can only introduce a concerned beneficiary but never a recipient, which is why (31) is ruled out.

So here a *for*-prepositional construction in English can denote (at least) two types of event: a caused possession event and a concerned benefaction event, while the double object construction expresses just a caused possession event type.

A closer examination of the double object construction issuing from the *for*-dative reveals that this kind of caused possession event is more like an intended event rather than a successful event (Goldberg, 1995; Croft, 2003, among others).

(32) John baked Mary a cake, but threw it away.
(33) *John gave Mary a cake, but threw it away.

A caused possession event expressed by caused possession verbs, such as *give*, implies the successful possession of the object-theme by the object recipient; but such implication is not shared by a caused possession event expressed by verbs such as *bake* since it can be denied (cf. (33)). The verb *bake* stands

Table 2

Intended caused possession event vs. concerned benefaction event—comparison between Chinese, English, and French

Lexical semantics	Chinese	English	French
creation verbs (intended caused possession): i.e. make, draw, write…	NP-agent V VP-theme PP-recipient	NP-agent V NP-theme PP-recipient	NP-agent V NP-theme PP-recipient
	(34) Zhangsan zuo-le yi-ge-dangao Gei Mali. 'Zhangsan made a cake for Mary.'	(35) John baked a cake for Mary.	(36) Jean a fait un gâteau pour Marie. 'Jean made a cake for Marie.'
	(?) NP-agent V PP-recipient NP-theme		
	(37) (?)Zhangsan zuo GEI Mali yi-ge-dangao. 'Zhangsan made a cake for Mary.'		
	NP-agent PP-recipient V NP-theme		NP-agent CLITIC-recipient V NP-theme
	(38) Zhangsan GEI Mali zuo-le yi-ge-dangao. 'Zhangsan made a cake for Mary.'		(39) Jean lui a fait un gâteau. 'Jean baked a cake for him/her.'
	*NP-agent V NP-recipient NP-theme	NP-agent V NP-recipient NP-theme	
	(40) *Zhangsan kao-le Mali yi-ge-dangao. 'Zhangsan baked Mary a cake.'	(41) John baked Mary a cake.	
activity verbs (concerned benefaction without transfer): i.e. open (a door), water (a plant), clean (window)…	*NP-agent V NP-theme PP(*gei*)-beneficiary	NP-agent V NP-theme PP(for)-beneficiary	NP-agent V NP-theme PP(*pour*)-beneficiary
	(42) *Zhangsan dakai men gei Mali. 'John opened the door for Mary.'	(43) John opened the door for Mary.	(44) Jean a ouvert la porte pour Marie. 'Jean opened the door for Marie.'
	*NP-agent V PP(*gei*)-beneficiary NP-theme		
	(45) *Zhangsan dakai gei Mali men. 'Zhangsan opened the door for Mary.'		
	NP-agent PP(*gei*)-beneficiary V NP-theme		NP-agent CLITIC-beneficiary V NP-theme
	(46) Zhangsan GEI Mali dakai men. 'Zhangsan opened the door for Mary.'		(47) Jean lui a ouvert la porte. 'Jean opened the door for him/her.'
	*NP-agent V NP-beneficiary NP-theme	*NP-agent V NP-beneficiary NP-theme	
	(48) *Zhangsan dakai le Mali men. *'Zhangsan opened the door for Mary.'	(49) *John opened Mary the door.	

for verbs pertaining to a verb subclass, creation verbs (Pinker, 1989; Levin, 1993). These verbs can enter the double object construction in order to express an intended caused possession event. Of course, creation verbs are not the only verbs that can have *for*-dative alternation in English. Other verbs, such as *buy*, are also legitimate in both constructions, as long as they indicate a pre-condition of transfer event (Goldberg, 2010; Liu, 2006).

If we take a look at Chinese, we can observe that the double object construction is ruled out for both intended caused possession event (cf. (40)) and concerned benefaction event (cf. (48)) (examples are given in Table 2).

The intended caused possession can be expressed in both post-verbal prepositional constructions with some acceptability differences ((34) vs. (37)). It is also legitimated in the preverbal GEI construction (cf. (38)).

Contrary to English, which uses the same post-verbal NP-PP construction to express both events ((35) & (43)), in Chinese the concerned benefaction is ruled out in the post-verbal constructions ((42) & (45)) and is only expressed by the preverbal GEI construction (cf. (46)).

In French, both the post-verbal prepositional pour-construction (equivalent to for-construction in English) (cf. (36)) and the preverbal clitic construction (cf. (39)) can host creation verbs and other transfer pre-condition verbs to express an intended caused possession event. They can also host other activity verbs to express a concerned benefaction event ((44) & (47)).

The summary of comparison of the three languages as regards intended caused possession event and concerned benefaction event is presented in Table 2.

Some Previous Studies
on Acquisition of Ditransitive Constructions

Different linguistic theories have led to different research perspectives on the (L1 as well as L2) acquisition of ditransitive constructions.

Under the generative grammar approach, in the early years, interest was devoted to the markedness of the double object construction and L1 transfer effect in L2 acquisition (cf. Mazurkewich, 1984; White, 1987). Later linguists focused more on the acquisition of the interaction between the lexical semantics and the syntactic form, specifically, the learnability of Broad Range Rules and Narrow Range Rules (Gropen et al., 1989; Pinker, 1989; Inagaki, 1997; Gorden & Chung, 1998, among others). It has been argued that L2 learners can acquire the Narrow Range Rules as long as they have achieved a certain proficiency (Inagaki, 1997). More recently, the acquisition of *to*-dative alternation and *for*-dative alternation has been studied in terms of high applicative and

low applicative (Oh, 2010; Shimanskaya, 2012) according to the proposal of Marantz (1993) and Pylkkänen (2008).

Under the construction grammar approach, linguists work more on the possibility of the generalization of the form-meaning pairs (constructions) and the role of different input types (skewed vs. balanced input) during the generalization of constructions (Goldberg et al., 1995; 2002; 2006; 2008; Gries & Wulff, 2005; Taylor, 2008; McDonough, & Nekrasova-Beckern, 2014; Yook, 2013, among others).

According to Goldberg and Casenhiser (2008), form-meaning pairs (constructions) are learned based on input. In experimental studies, with a minimum of training, subjects are capable of recognizing the form and the meaning of a new construction (fast mapping). Furthermore, biased input supplied with the preponderance of a certain type of examples could lead to generalizations that are more accurate when compared to a more representative input. But the biased frequency is only a sufficient but not a necessary condition to facilitate learning. In the L2 acquisition perspective, it would be advisable to supply a target input which includes abundant prototypical cases during training.

An examination of textbooks of Chinese as a foreign language shows that the teaching of ditransitive verbs generally begins with typical ditransitive verbs such as *gei* (give), *jiao* (teach), *wen* (ask). The verb *gei* (give) is a significant example since it carries the nuclear meaning of ditransitivity—successful caused possession, which is identical to the central meaning of ditransitive constructions (Goldberg, 1995).

Based on the comparative analysis of Chinese, English, and French and previous studies on the acquisition of ditransitive constructions, I would like to examine whether French adult learners of Chinese can acquire the three-way interface between lexical semantics, constructional semantics and syntactical frame. Furthermore, due to some similarities between the three languages, are the constructions with post-verbal PP favored by the learners? In order to answer these general questions, two experiments were carried out with the participation of French adult learners of Chinese as learner groups, and Chinese native speakers as a control group.

Method

Participants. Fourty French college students majoring in Chinese took part in our experimental study. Most of them come from the University of Paris Diderot, and a few of them are from the National Institute of Oriental Languages and Civilizations (INaLCO), University of Rennes II, and University

of Lyon II. Every participant gets an ID to take all the tests and to validate their participation. Since there is no official or national Chinese proficiency test in France, in order for us to get to know the participants' language background, they were asked to complete an online language history questionnaire (Li et al., 2013). Meanwhile I contacted three teachers of the Chinese Department of Paris Diderot and asked them to individually evaluate every participant from this university. Putting the participants' auto-evaluation and teachers' global evaluation together, I managed to divide the learner participants into three groups: low intermediate, high intermediate, and advanced.

I also found 14 Chinese native speakers, who were generally college students, to form a control group.

The participants' general information is summarized in Table 3.

Table 3
Summary of experiment subjects

Group	Number	Sex	Mean age	Mean learning time	Experience in China/Taiwan	Mean duration in China/Taiwan
Low intermediate	15	3M 12F	22.07	3.7 years	3 persons	6.67 months
High intermediate	16	4M 12F	21.69	3.1 years	2 persons	11.5 months
Advanced	9	5M 4F	28.22	6.7 years	6 persons	20.6 months
Control group	14	4M 10F	29.3	_____	_____	_____

Materials of Experiment I: Interaction Between Lexical Semantics and Syntactical Frame to Express a Caused Possession Event. Research questions and hypotheses. In the first experiment, I tried to tackle two specific questions:

Research question 1: Do French learners acquire the double object construction in Chinese to express the caused possession events despite its absence in French?

Hypothesis: Given that learners are supposed to have pre-acquired the double object construction in English, and that the initial input of ditransitive verbs in Chinese consists of *gei* (give), *wen* (ask), *gaosu* (tell), prototypical ditransitive verbs according to Goldberg and Casenhiser (2008), learners should acquire the usage of double object to express the caused possesion.

Research question 2: Can French learners acquire different sub-classifications of dative verbs, especially the distinction between the caused possession verbs and the caused motion verbs?

Hypothesis: Since the caused possession verbs and the caused motion verbs behave alike in French and the distinction in English is very subtle, French learners are expected to overgeneralize the usage of these two types of verbs in the double object construction and the preverbal GEI

construction due to interference from pre-acquired languages. Precisely, they would be expected to approve the occurrence of caused motion verbs in the double object construction and caused possession verbs in the preverbal GEI construction.

Acceptability judgment task (AJT). Recall that in this experiment I examine the caused possession events expressed by four syntactic frames combined with two types of verbs in Chinese. These combinations constitute the 8 conditions of the AJT (see Table 4).

Table 4

Conditions of the Acceptability Judgment Task of Experiment I

Conditions	Chinese	English	French
NP-PP-POSS*	+	+	+
NP-PP-MOT	+	+	+
PP-NP-POSS	+	+	+
PP-NP-MOT	+	+	+
DO-POSS	+	+	Ø
DO-MOT	–	+	Ø
GEI-POSS	–	Ø	Ø
GEI-MOT	+	Ø	Ø

* In this table, NP-PP denotes the form NP-V-NP-PP, PP-NP denotes the form NP-V-PP-NP, DO denotes the double object construction, GEI stands for the preverbal GEI construction, POSS stands for the lexical semantics of caused possession, while MOT stands for caused motion. Hence, NP-PP-POSS denotes the combination of the form NP-V-NP-PP and the lexical semantics of caused possession. The addition symbol '+' means that such combination is acceptable in this language; the subtraction symbol '–' means that such combination is not or is less acceptable in this language; the empty set symbol Ø means that such form does not exist in this language.

The verbs used in the 1–7 Likert Scale AJT are:
– 5 caused possession verbs: *zengsong* (offer), *huan* (return), *jiao* (submit), *jie* (lend), *zu* (rent);
– 5 caused motion verbs: *ji* (send), *dai* (bring), *na* (take), *ban* (move with hands), *chuan* (pass).

Each caused possession type verb combines with a caused motion type verb to form a pair; such a verb pair mixes with the four constructions to constitute the previously illustrated 8 conditions. The combinations of caused possession verbs and caused motion verbs are randomized. In total, there are 24 verb pairs constituting 24 experimental items. Each experimental item contains the sentence to be judged, following a context that is necessary to exclude inappropriate interpretation of the sentence to be judged. Besides, there are 24 distracters formed with diverse types of prepositions.

Table 5 presents an experimental item with the verb pair *zengsong* (offer) and *ji* (send).

Table 5

Example of AJT of Experiment I

Conditions	Items Context: Mark loves Chinese tea. Mr. Wang is his Chinese friend.	L1 predic-tion	L2 predic-tion
NP-PP-POSS	Wang xiansheng zengsong-le yixie zhongguo cha gei Make. Mr. Wang offer-asp some Chinese tea GEI Mark 'Mr. Wang offered some Chinese tea to Mark.'	+	+
NP-PP-MOT	Wang xiansheng ji-le yixie zhongguo cha gei Make. Mr. Wang send-asp some Chinese tea to Mark 'Mr. Wang sent some Chinese tea to Mark.'	+	+
PP-NP-POSS	Wang xiansheng zengsong gei Make yixie zhongguo cha. Mr. Wang offer GEI Mark some Chinese tea 'Mr. Wang offered Mark some Chinese tea.'	+	+
PP-NP-MOT	Wang xiansheng ji gei Make yixie zhongguo cha. Mr. Wang send GEI Mark some Chinese tea 'Mr. Wang sent Mark some Chinese tea.'	+	+
DO-POSS	Wang xiansheng zengsong-le Make yixie zhongguo cha. Mr. Wang offer-asp Mark some Chinese tea 'Mr. Wang offered Mark some Chinese tea.'	+	+
DO-MOT	Wang xiansheng ji-le Make yixie zhongguo cha. Mr. Wang send-asp Mark some Chinese tea 'Mr. Wang sent Mark some Chinese tea.'	–	+
GEI-POSS	Wang xiansheng gei Make zengsong-le yixie zhongguo cha. Mr. Wang GEI Mark offer-asp some Chinese tea 'Mr. Wang offered some Chinese tea to Mark.'	–	+
GEI-MOT	Wang xiansheng gei Make ji-le yixie zhongguo cha. Mr. Wang GEI Mark send-asp some Chinese tea 'Mr. Wang sent some Chinese tea to Mark.'	+	+

Elicitation task—Translation. Besides the AJT, which is conceived to examine learners' implicit knowledge (Nunan, 1996; Sorace, 1996; Chaudron, 2003), a semi-guided translation task is conceived to examine learners' target language performance (Chaudron, 2003).

In order to avoid the priming effect, the clitic form in French is chosen to conceive resource language experimental items, since it is the only syntactic frame not shared by the target language.

Among the verbs used in the AJT, 6 verbs are chosen in the translation task:
– 3 caused possession verbs: *zengsong* (offer), *jie* (lend), *huan* (return);
– 3 caused motion verbs: *ji* (send), *dai* (bring), *ban* (move with hands).

Each verb is used in 3 sentences, which results in 18 experimental items. There are also 18 distracters soliciting uses of different prepositions.

Just like the AJT, in the translation task, each item consists of a context and a sentence to be translated. Taking the experiment duration into account, in order to make the task easier, I provide all the elements in Chinese necessary for the translation. Note that these elements are presented in a random order. Apart from the NPs and the verb that must be used, prepositions other than

GEI are also provided. The subjects of the experiments are asked to choose the necessary elements (NPs, verb, preposition(s)) and put them in the correct order according to the original sentence in French.

Here is an example of the experimental items with the caused possession verb *huan* (return):

Context in French: *Zhangdong a rencontré Fanfan à la bibliothèque.* (Zhangdong met Fanfan in the library.)

Sentence to translate into Chinese:

(50) Zhangdong lui a rendu un album d'images.
Zhangdong CLITIC has returned a photo album.
'Zhangdong returned a photo album to her.'

The sentence in French is followed by an empty space where subjects can paste the necessary elements to translate the sentence. Below the empty space are the provided elements in Chinese:

(To use if necessary) *gen* (with) / *ti* (in the place of) / *gei* (to) / *ba* (disposal preposition) / *bei* (passive marker) / *wei* (for)

Zhangdong
huan (return)
ta (she/her)
(To use if necessary) *le* (aspectual marker)
yi-ben-huace (a photo album)

With a sentence like (50), learner subjects could produce a translation such as:

(51) NP-PP-POSS
Zhangdong huan-le yi-ben-huace gei ta.
Zhangdong return-asp one-cl-photo album GEI her
(52) PP-NP-POSS
Zhangdong huan gei ta yi-ben-huace.
Zhangdong return GEI her one-cl-photo album
(53) DO-POSS
Zhangdong huan-le ta yi-ben-huace
Zhangdong return-asp her one-cl-photo album

And in case learner subjects did not acquire the relevant lexical semantic constraint, they would produce an unacceptable sentence such as:

(54) GEI-POSS
Zhangdong gei ta huan-le yi-ben-huace.

(54) Zhangdong GEI her return one-cl-photo album
      'Zhangdong return a photo album for her/in her place.' (a concerned
      benefaction reading)

Materials of Experiment II: Interaction Between Lexical Semantics and Syntactical Frame to Express an Intended Caused Possession Event and a Concerned Benefaction Event. Research question and hypothesis. In this experiment I want to answer one specific question:

Research question 3: Can French learners acquire the construction semantics constraint of the intended caused possession event and the concerned benefaction (without transfer) event?

Hypothesis: In French, both target events are expressed by the same syntactic forms and are very close semantically. In Chinese, despite their semantic similarity, the concerned benefaction (without transfer) event is exclusively expressed in the preverbal GEI construction, while the intended caused possession event can be expressed in both preverbal and post-verbal constructions. French learners are supposed to be less sensitive to this constraint due to the interference from pre-acquired languages.

Acceptability judgment task (ATJ). As we have seen previously, in Chinese, creation verbs and other pre-condition of transfer verbs can be used in three ditransitive constructions (with different acceptability) to express an intended caused possession event. On the contrary, the concerned benefaction event can only be expressed with general activity verbs in preverbal GEI construction (or some other structures, such as NP TI (in place of) NP V NP, NP WEI (for) NP V NP, that I do not tackle in this study) but not post-verbal constructions. So the 3 structures combined with 2 types of verb create the 6 conditions of the ATJ (see Table 6).

Table 6
Conditions of the Acceptability Judgment Task of Experiment II

Conditions	Chinese	English	French
NP-PP-CRE*	+	+	+
NP-PP-BEN	–	+	+
PP-NP-CRE	+/ ?	–	–
PP-NP-BEN	–	–	–
GEI-CRE	+	Ø	Ø
GEI-BEN	+	Ø	Ø

* The labels of structures used in this table are identical to those in Experiment I. CRE stands for creation verbs, while BEN stands for general activity verbs that can be used to express a concerned benefaction event.

The verbs used in the 1–7 Likert Scale AJT are:
– 5 verbs of creation/precondition of transfer: *zuo* (make), *mai* (buy), *zhao* (find), *hua* (draw), *xuanze* (choose);

– 5 verbs of activity without possibility of transfer: *chuan-shang* (put-on), *dai-shang* (put-on), *tie* (paste), *gua* (hang), *baoguan* (keep).

Each creation verb combines with a general activity verb to form a pair; such a verb pair mixes with the three constructions to constitute the previously illustrated 6 conditions. The combinations of creation verbs and activity verbs are fixed due to pragmatic reasons (for instance, given that the two verbs in each verb pair share the same context, if the context provides an engagement event, it would be appropriate that someone 'put on' or 'keep' a ring for someone else, but rather unnatural that someone 'draw' a ring. Hence, some verb-pair combinations are pragmatically inappropriate). In total, there are 18 verb pairs constituting 18 experimental items. Each experimental item contains the sentence to judge following a context that is necessary to exclude inappropriate interpretation of the sentence to be judged. Besides, there are 30 distracters. See Table 7 for an example of experimental item containing the verb pair *zuo* (make) and *chuan-shang* (put-on):

Table 7

Example of AJT of Experiment II

Conditions	Item Context: Xiao Hong will go to school.	L1 prediction	L2 prediction
NP-PP-CRE	Mama zuo-le baisede chenshan gei Xiao Hong. mum make-asp white shirt GEI Xiao Hong 'Mum made a white shirt for Xiao Hong.'	+	+
NP-PP-BEN	Mama chuanshang-le baisede chenshan gei Xiao Hong. mum put on-asp white shirt GEI Xiao Hong 'Mum put on a white shirt for Xiao Hong.'	–	+
PP-NP-CRE	Mama zuo-gei Xiao Hong baisede chenshan. mum make-asp Xiao Hong white shirt 'Mum made a white shirt for Xiao Hong.'	+/ ?	–
PP-NP-BEN	Mama chuanshang gei Xiao Hong baisede chenshan. mum put on GEI Xiao Hong white shirt 'Mum put on a white shirt for Xiao Hong.'	–	–
GEI-CRE	Mama gei Xiao Hong zuo-le baisede chenshan. mum GEI Xiao Hong make-asp white shirt 'Mum made a white shirt for Xiao Hong.'	+	+
GEI-BEN	Mama gei Xiao Hong chuanshang-le baisede chenshan. mum GEI Xiao Hong put on-asp white shirt 'Mum put on a white shirt for Xiao Hong.'	+	+

Elicitation task—Translation. An elicitation task similar to the one in Experiment I was conceived for Experiment II.

6 verbs chosen from the AJT were used in the translation task:

– 3 creation/precondition of transfer verbs: *zuo* (make), *mai* (buy), *hua* (draw);
– 3 activity (without possibility of transfer) verbs: *chuan-shang* (put on), *dai-shang* (put on), *baoguan* (keep).

Each verb was used in 3 sentences, which results in 18 experimental items. There are also 18 fillers.

Here is an example of experimental items with the creation verb *hua* (draw):

Context in French: *Prof Guan vient de déménager dans un nouvel apparte-ment.* (Prof. Guan has just moved into a new apartment.)

Sentence to translate into Chinese:

(55) Lin Tian lui a peint une peinture.
     Lin Tian CLITIC has drawn a painting
     'Lin Tian drew him/her a painting.'

Similarly, the sentence in French is followed by an empty space where subjects can paste the necessary elements to translate the sentence. Below the empty space are the provided elements in Chinese:

(To use if necessary) *gen* (with) / *gei* (GEI) / *bei* (passive marker) / *bi* (compared to) /*de* (resultative marker)

Lin Tian
hua (draw)
ta (she/her)
(To use if necessary) *le* (aspectual marker)
yi-fu-youhua (a painting)

The sentence (55) is supposed to be translated in one of the 3 tackled di-transitive structures:

(56) NP-PP-CRE
     Lin Tian hua-le yi-fu-youhua gei ta.
     Lin Tian draw-asp one-cl.-painting GEI him/her
(57) PP-NP-CRE
     (?) Lin Tian hua gei ta yi-fu-youhua.
     Lin Tian draw GEI him/her one-cl.-painting
(58) GEI-CRE
     Lin Tian gei ta hua-le yi-fu-youhua.
     Lin Tian GEI him/her draw-asp one-cl.-painting

Procedure. The two experiments were carried out on Ibex Farm between April 2nd and 15th of 2014. Mails including experiment instructions and a vo-cabulary list were sent to participants to get them prepared before the launch of the experiments. Learner participants were allowed to take the tests at home or in the Language Resources Centre of Paris Diderot. When they had finished all the tests of the two experiments, they got a small present as a reward.

Results

Results of AJT of Experiment I. Three way ANOVA with Construction and Semantic as within-subject factors and Group as between-subject factor was conducted. The main effect of Construction (F (3, 138) = 24.78, p < 0.001), Semantic (F (1, 46) = 4.36, p < 0.05) and Group (F (3, 46) = 4.45, p < 0.01) was significant. There was a significant interaction effect of Construction × Group (F (9, 138) = 10.10, p < 0.001), and Construction × Group × Semantic (F (9, 138) = 15.74, p < 0.001) were observed.

Further simple effect analysis showed that Chinese native speakers are sensitive to the lexical semantic constraint in both double object construction and preverbal GEI construction. In the double object construction the caused possession verbs are accepted more easily than the caused motion verbs (F (1, 13) = 100.99, p < 0.001). In the preverbal GEI construction, caused motion verbs are found more acceptable than caused possession verbs (F (1, 13) = 445.38, p < 0.001). In the post-verbal NP-PP and PP-NP constructions, both types of verbs are found almost equally acceptable. These behaviors conform to what the linguistic analysis predicted.

With regard to the low intermediate group, learners are not sensitive to lexical semantic constraint in any construction form. More precisely, they almost equally accept the two types of verbs in the four different structures. It is worth mentioning, however, that learners of this group demonstrate a marginally different acceptability between the NP-PP and the PP-NP form: they tend to accept more easily the PP-NP form (F (1, 14) = 4.44, p = 0.054).

For the high intermediate group, learners are not sensitive to the lexical semantic constraint either. But among the four structures, preverbal GEI and post-verbal PP-NP are much more favored than the other two structures. Furthermore, learners of this group significantly prefer the PP-NP structure as compared to the NP-PP structure (F (1, 11) = 13.15, p < 0.01).

As far as the advanced group is concerned, learners show some sensitivity to the lexical semantic constraint. In the double object construction, they correctly accept more caused possession verbs than caused motion verbs (F (1, 8) = 15.21, p < 0.01). But in the preverbal GEI construction, no distinction between the two types of verb has appeared yet. It is curious to see that they significantly prefer caused motion verbs to caused possession verbs in the NP-PP form (F (1, 8) = 8.29, p < 0.05), even though Chinese native speakers do not show such preference.

Figure 1 presents the mean scores rated by control group and learner groups in the acceptability judgment task of Experiment I.
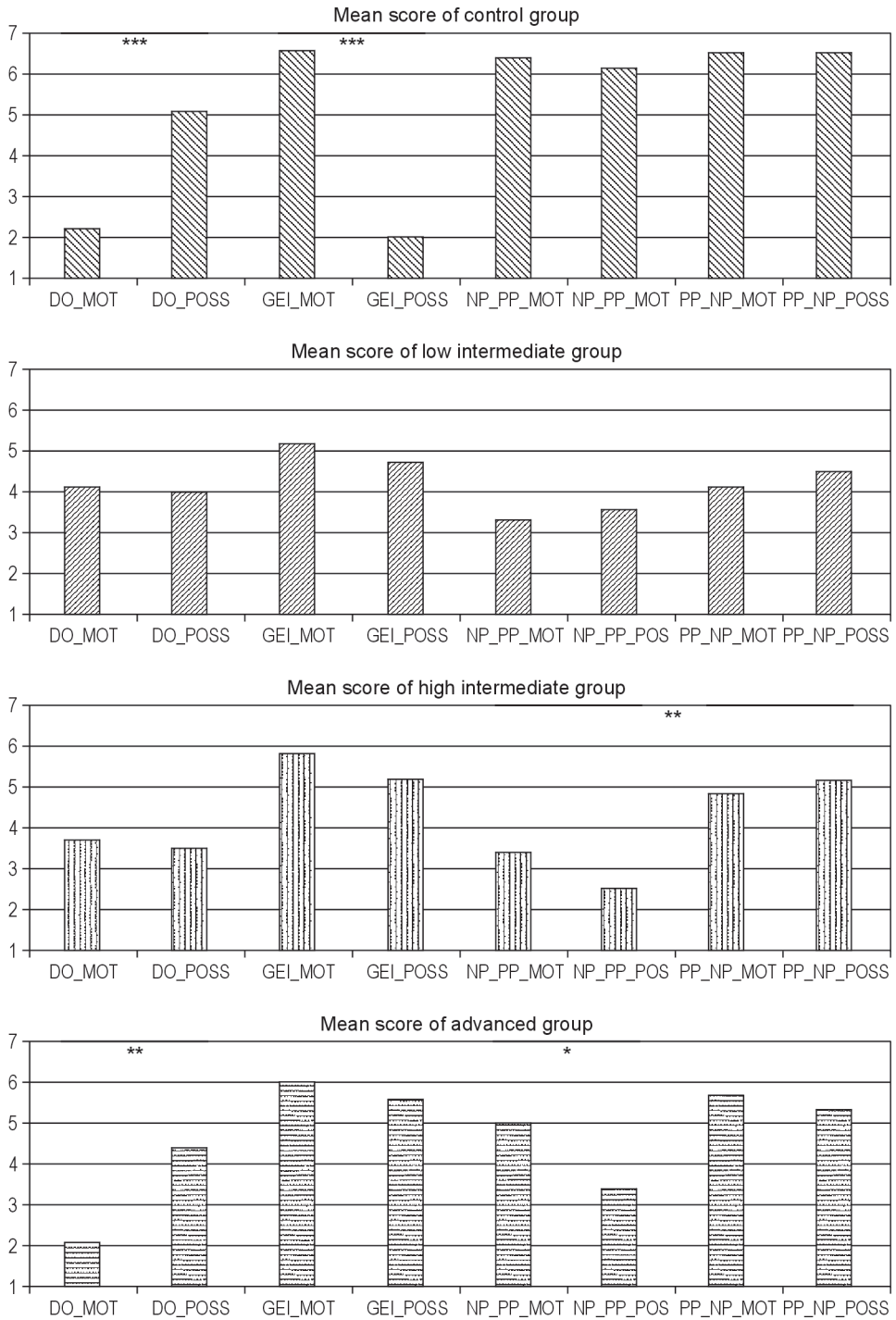
Figure 1. Means scores of control group and learner groups in AJT of Experiment I.

Results of Translation Task of Experiment I. The translation task is conceived to elicit the production of ditransitive constructions to express a caused possession event. Recall that all four structures studied here are legitimate to express such an event, albeit being subject to different lexical semantic constraints.

After the elimination of some incomplete sentences (4.1% of total sentences), it is interesting to see that in the data collected from the 40 learner participants there are not only the four ditransitive constructions but also some unexpected structures.

For example:

Original sentence in French: '*Xiao Wang lui a prêté un livre.*' ('Xiao Wang lent him/her a book.')

Translation in Chinese: BA construction

(59) NP BA NP V GEI NP
      Xiao Wang ba yi-ben-shu jie gei ta.
      Xiao Wang BA one-cl-book lend GEI he/she
(60) BA without GEI
      Xiao Wang ba yi-ben-shu jie ta.
      Xiao Wang BA one-cl-book lend GEI he/she

The BA construction is often called a 'disposal' construction (Li & Thompson, 1981; Xu, 1996). Syntactically it proposes the direct object in a preverbal position and marks it with BA (BA originally is a verb, indicating 'hold', then is grammaticalized to a 'coverb', a term proposed by Li and Thompson (1981), or a 'light verb', the term used in generative grammar, or a 'preposition', the term used in teaching of Chinese as a foreign language). Semantically the BA construction implies that the action expressed by the verb affects the object. The BA construction is compatible with ditransitive constructions (Tang, 1979, among others) by realizing the direct object in the preverbal position. But both corpus studies (Liu, 2007; Yao & Liu, 2010) and experimental studies (Yu, 2013) show that the BA construction is more likely to be used when the direct object conveys given information.

In the present work, direct objects in experimental items represent new information rather than old information. So the use of BA construction is not ungrammatical but it is not appropriate.

Besides the inappropriate production of the BA construction, subjects also use other prepositions or structures. Since they are not abundant, we will not talk about them in detail.

The percentage of major structures found in the collected data is presented in Table 8.

Table 8

Summary of percentage of attested structures occurrences in elicitation task of Experiment I

Low intermediate group	BA(38%) POSS(44%) < MOT(56%)	>	PP NP(25%) POSS(75%) > MOT(25%)	>	DO(19%) POSS(40%) < MOT(60%)	>	PREVERBAL GEI(15%) POSS(51%) ≈ MOT(49%)
High intermediate group	PP NP(48%) POSS(63%) > MOT(37%)	>	PREVERBAL GEI(25%) POSS(37%) < MOT(63%)	>	DO(12%) POSS(44%) < MOT(56%)	>	BA(9%) POSS(50%) = MOT(50%)
Advanced group	PP NP(38%) POSS(64%) > MOT(36%)	>	PREVERBAL GEI(31%) POSS(14%) < MOT(86%)	>	DO(12%) POSS(95%) > MOT(5%)	>	BA(12%) POSS(58%) > MOT(42%)

From Table 8 we can see that learners of the low intermediate group overuse the BA construction from the point of view of information structure. It seems that they have acquired the forms of PP-NP construction, double object construction and preverbal GEI construction. But in the use of the two latter constructions, they are not sensitive to the lexical semantic constraints: they use more caused motion verbs in the double object construction and both caused possession verbs and caused motions verbs in the preverbal GEI construction.

The most obvious difference between the low intermediate group and the high intermediate group is that learners of the latter group use much fewer BA constructions, which may be interpreted as progress in the acquisition of information structure (this interpretation needs to be further checked). The PP-NP form is still the favorite ditransitive construction, followed by the preverbal GEI construction, followed by the double object construction. In the use of the preverbal GEI construction learners begin to be sensitive to the lexical semantic constraint and use more caused motion verbs than caused possession verbs. But such a constraint has not been acquired in the use of the double object construction.

It is in the production of the advanced group that the acquisition of lexical semantic constraints can be evidenced. Learners of this group make correct and significant distinction between the two types of verb in both preverbal GEI construction and double object construction. The overuse of BA construction is an individual behavior rather than a group performance.

Results of AJT of Experiment II. Three way ANOVA with Construction and Semantic as within-subject factors and Group as between-subject factor was conducted. The main effect of Construction (F (2, 94) = 129.17, $p < 0.001$), Semantic (F (1, 47) = 23.33, $p < 0.001$) and Group (F (3, 47) = 3.65, p < 0.05) was significant. There was a significant interaction effect of Construction × Group (F (6, 94) = 11.05, $p < 0.001$), Semantic × Group (F (3, 47) = 21.46, $p < 0.001$) and Construction × Semantic × Group (F (6, 94) = 5.01, $p < 0.001$) were observed.

Further simple effect analysis showed that the preverbal GEI construction can be used to express both an intended caused possession event and a concerned benefaction event. Both creation verbs and general activity verbs are highly acceptable in this structure by Chinese native speakers, but with a constant significant difference between them (F (1, 16) = 12.2, $p < 0.01$). The NP-PP form cannot be used to express a concerned benefaction event, but it can legitimate intended caused possession events; the difference is significant (F (1, 16) = 173.97, $p < 0.001$). The concerned benefaction event is totally rejected in the PP-NP form, while the intended caused possession event is slightly but significantly more acceptable in this structure (F (1, 16) = 10.23, $p < 0.01$).

Learners from the low intermediate group and the high intermediate group accept the preverbal GEI structure to express intended caused possession event and concerned benefaction event. But they make no significant distinction when rating the two post-verbal prepositional structures.

For the advanced group, learners significantly highly accept the preverbal GEI construction and they reject more the post-verbal prepositional constructions. Meanwhile, they begin to make a significant distinction between the two events when the NP-PP form is concerned (F (1, 8) = 17.67, $p < 0.01$).

Figure 2 presents the mean scores rated by the control group and the 3 learner groups in the 1–7 Likert scale acceptability judgment task of Experiment II.

Results of Translation Task of Experiment II. As I examine the acquisition of 3 ditransitive constructions in this experiment, the preverbal GEI construction, the NP-PP construction and the PP-NP construction, we find many unexpected structures in the collected data. Besides the overuse of BA construction that we have discussed in section 5.4, in the translation task of Experiment II, there is also a curious and noticeable usage of the BEI construction.

The BEI construction is a prototypical passive construction in mandarin Chinese (Li & Thompson, 1981; Xu, 1996, among others). The subject of the BEI construction generally implies a patient semantic role. It is semantically not compatible with the concerned benefaction event; in an intended caused possession event, it is impossible for the recipient role or the incremental theme to occupy the subject position. So, generally this construction is incompatible
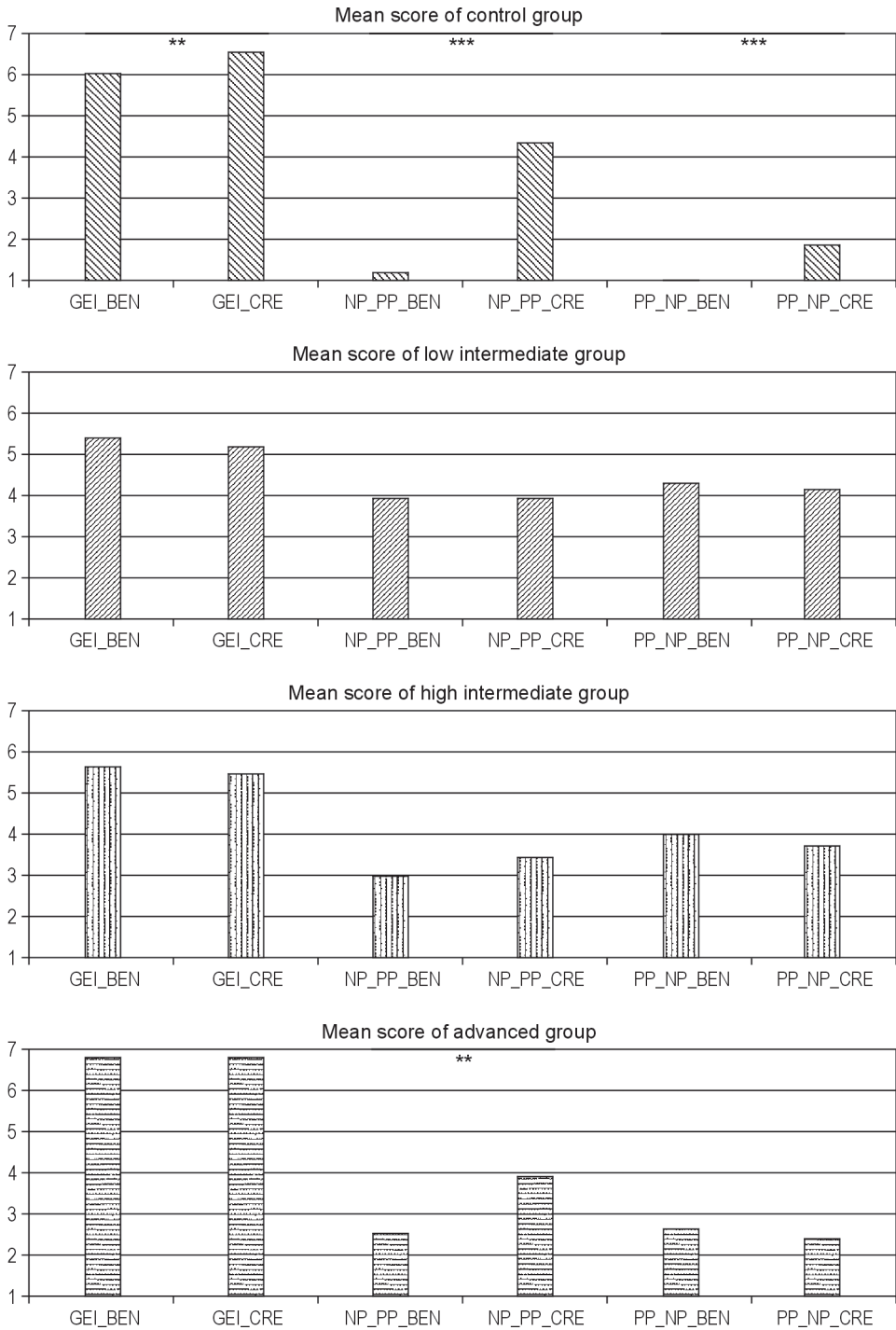
Figure 2. Mean scores of control group and learner groups in AJT of Experiment II.

with a ditransitive construction. This construction is nevertheless found in the learners' productions with either the theme or the recipient/beneficiary in the subject position.

Besides the BA construction and the BEI construction, various other structures were found in the data. I just present the major structures produced by learners with their percentage in Table 9.

Table 9

Summary of percentage of attested structures occurrences in elicitation task of Experiment I

Low intermediate group	Preverbal GEI(37%)	>	DO(21%)	>	PP NP(18%)	+	Diverse errors (BA, BEI, etc.)
	CRE(50.6%) ≥ BEN(49.4%)		CRE(43%) < BEN(57%)		CRE(68%) > BEN(32%)		
High intermediate group	Preverbal GEI(63%)	>	PP NP(21%)	>	DO(9%)	+	Less diverse errors
	CRE(52%) > BEN(48%)		CRE(53%) > BEN(47%)		CRE(32%) < BEN(68%)		
Advanced group	Preverbal GEI(85%)					+	Few errors
	CRE(53%) > BEN(47%)						

The preverbal GEI construction is the favorite structure among the three learner groups with an increased preference correlating with increased proficiency.

In the productions of the low intermediate group, the double object construction appears with a relatively high percentage despite the fact that this structure is legitimated neither for the intended caused possession event nor for the concerned benefaction event. The use of this structure becomes less frequent in the high intermediate group and almost disappears in the advanced group.

The favorite structure in Experiment I, the PP-NP form, appears too in the productions of the low intermediate group and high intermediate group in this experiment. It is used to express both tackled events, while it is actually ungrammatical to express a concerned benefaction event.

As previously mentioned, diverse errors are produced by learners of the low intermediate group and disappear with increased proficiency.

Discussion

The results obtained from the two experiments show that the low interme-diate level learners accept and produce the PP-NP structure, the double object construction and the preverbal GEI form. It can be explained by the fact that these three ditransitive constructions are explicitly taught in their textbook: the double object structure and the preverbal GEI are taught early in the first year of their study of Chinese, the PP-NP form is taught at the beginning of the second year, and most participants are in the second or in the third year in college.

But semantic constraints are not taught explicitly. This could explain the constraint violation found in both tasks in the two experiments with intermediate level groups. But fortunately, in Experiment I, the advanced group learners begin to be sensitive to lexical semantic restrictions in the double object construction. In Experiment II, learners overcome little by little the over-acceptance and the overuse of post-verbal constructions to express the concerned benefaction event as they make progress in learning Chinese.

If the advanced group learners can overcome some overgeneralizations, this could not be explained by explicit learning effect, given that to our knowledge no explicit instruction on ditransitive constructions' semantic constraints is provided in classroom teaching. This progress seems to be stimulated by input from the target language. As the auto-evaluation indicates, most of the advanced group learners have frequent contacts with the target language, such as reading, TV watching, and communication with Chinese native speakers in daily lives or in travel. These contacts may implicitly provide them with positive evidence of semantic constraint.

So far, it seems appropriate to conclude that French learners begin the ac-quisition of ditransitive constructions in Chinese from the learning of structural forms and then move to the learning of subtle lexical and constructional seman-tic constraints. This acquisition process echoes the findings of some previous studies, such as those of Inagaki (1997) and Oh (2010).

However, there is still a question to be answered: why do not French learners show preference for the post-verbal NP-PP construction despite the existence of an equivalent structure in their mother tongue and other pre-ac-quired languages such as English? According to the findings of Mazurkewich (1984) and White (1987), there should be a positive transfer to facilitate the acquisition of the NP-PP construction. Why is this phenomenon not seen among our French learners?

Recent quantitative studies carried out by Ambridge et al. (2012; 2013; 2014) and Goldberg (2011) may give us some enlightenment with the entrench-ment hypothesis.

The entrenchment hypothesis is the claim that repeated presentation of a verb in one (or more) attested construction (e.g. the PO-dative) […] causes the learner to gradually form an ever-strengthening probabilistic inference that adult speakers do not use that particular verb in nonattested constructions (e.g. the DO-dative) […]. (Ambridge et al., 2012, p. 48)

Adopting this hypothesis in my study, I may explain that since the double object construction, the preverbal GEI construction and the PP-NP construction are explicitly taught in class, based on these input the French learners may form the 'ever-strengthening probabilistic inference' that the NP-PP form is a nonattested construction and thus not legitimated.

This explanation seems highly probable because from the acquisition process of semantic constraints we have already seen the importance of statistical input in implicit learning.

Conclusion

This study examines the acquisition process of semantically fine-grained ditransitive constructions in Chinese by French adult learners and focuses on the three-way interaction between lexical semantics, constructional semantics, and syntactic frame.

From the point of view of syntactic forms, learners of our study show a great preference for the PP-NP structure and the preverbal GEI structure due to massive input. The very low acceptance and very rare production of the NP-PP form indicates that there is no apparent interference from L1, which could be explained by the entrenchment effect.

From the point of view of semantic constraints, overgeneralizations of form-meaning pairing are found at low intermediate level and high intermediate level. But as the proficiency in Chinese increases, learners can overcome some of the overgeneralization effects.

For future tasks, more detailed statistical analyses are expected to reveal the acquisition process more accurately. Meanwhile as part of our ongoing research, new experimental studies are being carried out to examine the information structure and constituent length factors in the acquisition of ditransitive constructions.

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Xinyue Cècilia Yu

Das Erwerben von ditransitiven Konstruktionen
in der Mandarinsprachvariante von erwachsenen Franzosen

Zusammenfassung

Die Verfasser zeigen ditransitive Konstruktionen in Mandarinvariante der chinesischen Sprache als eine komplexe Interaktion zwischen lexikalischer Semantik und Syntax (eng.: *syntactic frames*). Der Artikel betrifft zwei experimentelle Forschungen, die dem Prozess der Akquisition von ditransitiven Konstruktionen von den Chinesisch lernenden Franzosen gewidmet wurden. Die Ergebnisse bestätigen den Vorrang vom Syntaxerwerb vor der Lexik und die Rolle des Inputs beim indirekten Lernen (eng.: *implicit learning*).

Priya Ananth
Middle Tennessee State University, Tennessee, USA
Masaaki Kamiya
Hamilton College, New York, USA

The Effect of Prosody on Disambiguation:
A Case of Universal Quantifier and Negation

Abstract: This study is concerned with L2 Japanese learners' interpretation of scopally ambiguous sentences containing negation and universal quantifier using prosodic cues. It has been argued, in previous literature, that native adult speakers of English as well as Japanese interpret such sentences both on their surface (total negation) and inverse scope (partial negation) readings in the presence of prosodic cues. The present study shows, however, that L2 Japanese speakers predominantly favor the total negation reading even in situations where the prosodic cues point them to the partial reading. These outcomes indicate that L2 learners of Japanese do not attach "optimal relevance" to prosodic cues when disambiguating scopally ambiguous sentences. The results also imply that for L2 Japanese learners, clues other than prosody may be required to carry out disambiguation.
Keywords: prosody, disambiguation, negation, prosodic cues, relevance theory

Introduction

Prosody has an influence on pragmatic and semantic interpretations (e.g., Lieberman & Sag, 1974; Ladd, 1996; Jackendoff, 1972; Ward & Hirschberg, 1985, among others). The scope interaction between universal quantifier and negation presents an interesting phenomenon. Consider (1) below from Jackendoff (1972) which uses prosodic nuances to distinguish total and partial negation.

(1) All the students didn't sleep.
    'No student slept.' (total negation)
    'It is not the case that all the students slept.' (partial negation)

This sentence contains a universal quantifier 'all' and negation, both of which are scope-bearing items. Due to the interaction of these two, the sentence can have either a total negation or partial negation reading as shown above. Speakers of English or German disambiguate sentences such as (1) by different prosodic patterns (A-/B- accents) in English (Jackendoff, 1972) and a rise-fall contour in German (Buring, 1997). Recently, Nakanishi (2007) discovered that adult Japanese speakers are sensitive to the phonological contours of the Japanese equivalent in (2).

(2) Minna-wa ne-nakat-ta.
     all-$_{TOP}$ sleep-$_{NEG}$-$_{PAST}$
     'None of the students slept.' (total negation)
     'Not all the students slept.' (partial negation)

Previous experimental research has shown that native speakers rely on prosodic cues to disambiguate structurally ambiguous utterances during speech production and comprehension (e.g. Krajlic & Brennan, 2005; Lingel, Pappert, & Pechmann, 2006; Schafer, Speer, Warren, & White, 2000; Snedecker & Tueswell, 2003), pointing to an important connection between prosody and meaning in language processing. Fultz (2007) has shown that even less proficient late L2 learners may be similarly sensitive to this connection between prosody and meaning during L2 speech perception. In Japanese, Nakanishi (2007) and Hattori et al. (2006) have shown evidence of a correlation between prosody and disambiguation involving universal quantifier and negation in adult and children native speakers of Japanese respectively. However, little work has been done to investigate whether L2 learners of Japanese use prosodic cues to disambiguate scopal ambiguities during L2 speech comprehension. The present study addresses this gap by investigating experimentally whether L2 Japanese adult learners can correctly comprehend scope interactions between negation and universal quantification followed by the topic marker 'wa.'

The results of previous studies imply that native speakers of Japanese (both adults and children) were able to interpret ambiguity involving universal quantifier and negation by effectively using prosodic effects while expending minimum processing effort. The question that arises is whether or not such a tendency (or strategy for disambiguation) is available to second language users as well. We discovered that L2 Japanese speakers did not seek out the clue for disambiguation in prosody. The control group of native Japanese speakers, however, did seek out the prosodic cue for disambiguation. The L2 Japanese participants in the present study seem to follow the "Relevance Theory" (Sperber & Wilson, 1986; Wilson & Sperber, 2004) in which they consider some factor as the most optimal one to process the interpretation. Although we did not

investigate other potential factors in this paper, at least prosody does not stand out as the most optimal cue in this study.

This paper will be organized as follows: In section two, we will review the previous studies about the relation between prosody and interpretations. In particular, we will look at the interaction between universal quantifier and negation in English and Japanese, and will present the research questions of this study. In section three, we will lay out the experimental design. In section four, we will report the results of the experiment. In section five, we will discuss the theoretical implications as well as the answers to our research questions based on the results of the experiment. In section six, we will present our conclusions along with future questions.

Previous Studies

Two Types of 'wa', Prosody, and Experimental Findings in Japanese. This section explains the important ingredients of scope interactions such as (2) in Japanese. Consider example (2) from the previous section:

(2) Minna-wa ne-nakat-ta.
    all-$_{TOP}$ sleep-$_{NEG}$-$_{PAST}$
    'No student slept (total negation).'
    'It is not the case that all students slept (partial negation).'

As the English equivalents show, example (2) is ambiguous as either total negation or partial negation. One of the keys to understanding the source of ambiguity is the type of particle 'wa.' Kuno (1973, p. 38) accounts for two types of particle 'wa':

(3) a. 'wa' for the theme of a sentence: 'speaking of…, talking about…'
       John-wa gakusei desu.
       John-$_{TT}$ student is[1]
       'Speaking of John, he is a student.'
    b. 'wa' for contrasts: 'X…, but…, as for X'
       Ame-wa hutte imasu ga...
       rain-$_{CT}$ falling is but
       'It is raining, but…'

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[1] The authors added Thematic Topic (TT) and Contrastive Topic (CT) in the gloss.

As the examples in (3) show, the particle 'wa' means either the topic of the sentence (Thematic Topic: TT) as in (3a) or contrast (Contrastive Topic: CT) as in (3b). Due to the homophonic nature, 'wa' can be ambiguous.

(4) Watakusi-ga sitte iru hito-wa party-ni kimasen desita.
I-$_{NOM}$ know people-$_{TT/CT}$ party-$_{LOC}$ come-$_{NEG}$-$_{PAST}$
'Speaking of the persons whom I know, they did not come to the party.'
'(People came to the party, but) there was none whom I know.'

(Kuno, 1973, p. 48)

Kuno (1973, p. 47) claims that noun phrases before the thematic 'wa' do not receive prominent intonation, while those preceding the contrastive 'wa' receive prominent intonation.

Based on Kuno's observations, Nakanishi (2007) investigated the relation between the types of 'wa' and prosodic contours. Japanese is a pitch-accent language. A specific pitch is associated with each mora in a word (Tsujimura, 2014).

Nakanishi had five native speakers of Japanese speak sentences that contain either TT or CT (the examples are cited from Nakanishi, 2007, p. 179).

(5) a. TT 'wa'

    *   *
Naoya-wa nonbiri-si-teiru.[2]
Naoya-$_{TOP}$ relax-do-$_{PROG}$
'Naoya is relaxing.'

  b. CT 'wa'

    *   *   *   *
Naoya-wa nonbiri-si-teiru ga Maria-wa nonbiri-si-tei-nai.
Naoya-$_{TOP}$ relax-do-$_{PROG}$ but Maria-$_{TOP}$ relax-do-$_{PROG}$-$_{NEG}$
'Naoya is relaxing, but Maria is not relaxing.'

Nakanishi measured out the fundamental frequency F_0.[3] In particular, she measured the value of the F_0 peak immediately before and after 'wa' (Nakanishi, 2007, p. 179) and discovered that native speakers of Japanese give different prosodic contours to two types of 'wa'. Namely, the values of F_0 before and after 'wa' are about the same when 'wa' acts as a TT. On the other hand, the value of F_0 after 'wa' is relatively lower than the F_0 value before 'wa' when it is

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[2] The star marks indicate the accent location. In Nakanishi (2007), different markers were used to indicate the locations of accents.
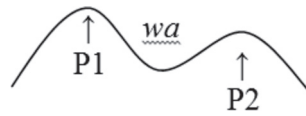
[3] F_0 is an acoustic correlate of the psycho-acoustic percept of pitch of the voice (Nakanishi, 2007, p. 179).

a CT. Observe the following prosodic patterns (example 6 cited from Nakanishi, 2007, pp. 179–180). Note that P1 and P2 are F_0 values.
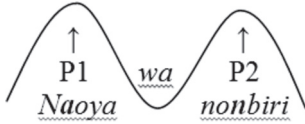
(6) TT pattern   CT pattern

Nakanishi further investigated the correlation between prosodic patterns of two types of 'wa' and scope interactions between a universal quantifier and negation. Recall example (2):

(2) Minna-wa ne-nakat-ta.
    all-$_{TOP}$ sleep-$_{NEG}$-$_{PAST}$
    No student slept (total negation).
    It is not the case that all students slept (partial negation).

Nakanishi read examples such as (2) with two distinct prosodic patterns (one is TT and the other is CT) to four Japanese informants and asked for the relevant interpretations. According to Nakanishi (2007, p. 183), her informants agreed that TT corresponds to the total negation reading, while CT corresponds to the partial negation reading. Hence, she concludes that two prosodic patterns of 'wa' correspond to different scope interpretations in Japanese.[4]

To summarize so far, it appears that native speakers of Japanese are sensitive to phonological contours to distinguish ambiguous sentences, especially when universal quantifier and negation are in conjunction with the two types of 'wa.'

Prosody and Interpretations in English. Japanese is not the only language that disambiguates scopally ambiguous sentences. Jackendoff (1972), Ladd (1996), Liberman and Sag (1974), as well as Ward and Hirschberg (1985) among others, claim that there is a correlation between phonological contours and scope interpretations. Jackendoff's examples 8.159 and 8.160 (1972, p. 352) are given below as (7a) and (7b).

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[4] Nakanishi (2007) attempts to account for the correlation between the prosodic patterns and the interpretations in alternative semantic framework (Büring, 1997). However, we will not adhere to this particular theoretical framework of this phenomenon in this paper. Rather, we would like to investigate whether or not L2 Japanese speakers interpret ambiguous sentences using the same strategy as native speakers of Japanese. Also see Hattori et al. (2006) for the Japanese-speaking children's interpretations of the interaction between universal quantifier and negation. They report that the Japanese-speaking children have the same interpretations as adults.

(7) a. ALL the men didn't go. ("A accent:" surface scope)

    b. ALL the men didn't go. ("B accent:" inverse scope)

These examples are ambiguous, representing total negation and partial nega-
tion. According to Jackendoff (1972), the phonological contours correspond to
the relevant interpretations as shown above. Namely, when the sentence ending
falls as in (7a), it means total negation (A-accent). On the other hand, when the
sentence ending falls and rises as in (7b), it is partial negation (B-accent).[5] Ward
and Hirschberg (1985), Pierrehumbert and Hirschberg (1990), and Steedman
(1991) claim that the type of pitch accent on the focused quantifier such as 'all'
also affects interpretation. So it is not entirely clear which of the two claims
holds true. To investigate this point, Leddon (2003) conducted two types of ex-
periments: production and comprehension tests. Unlike Jackendoff's examples,
Leddon used 'every' for universal quantifier. For the production task, Leddon
had adult native speakers of English read stories to children that included am-
biguous sentences. These sentences were produced by adult native speakers of
English and were recorded. For the comprehension task, Leddon made use of
the recorded sentences from the production task. She had adult native speakers
of English listen to the sentences to judge the relevant readings. According to
Leddon, no prosodic pattern emerged in the ambiguous sentences (production
test). Moreover, the results of the comprehension test showed that the partici-
pants were not sensitive to the phonological patterns to interpret ambiguous
sentences. In addition, Leddon's participants preferred a partial negation reading
to a total negation reading, regardless of the intonational contour found at the
end of the sentence. Hence Leddon concludes that intonation did not have an
effect on perceived interpretation, and the perception of a given interpretation
was not affected by prosody. Rather, intonational contour is only indirectly
related to interpretation of ambiguous sentences in the line of reasoning given
by Ward and Hirschberg (1985). It is worthwhile to mention here that in recent
experimental research done on children's interpretation of ambiguous English
sentences containing both negation and a quantifier (Musolino, 1998; Musolino
et al., 2000; Musolino & Gualmini, 2004; Gualmini, 2004; Musolino & Lidz,
2006, among others), two clear conclusions have been drawn. First, that at
a certain point in their language development, children (unlike adults) predomi-
nantly access total scope interpretations. And second, that children can overcome
such difficulty and become able to access the partial scope interpretation when

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[5] Precisely speaking, the presupposition contains negation in A-accent, while the focus is
negated in B-accent.

these sentences are accompanied by additional contexts that satisfy the felicity conditions for the use of negative statements.

Relevance Theory. This section explains the theoretical framework of "Relevance Theory" that will be later incorporated in the discussion to explain how L1 and L2 Japanese speakers interpret ambiguous sentences involving UQ and negation. With respect to how a speaker achieves comprehension, Sperber and Wilson (1986) as well as Wilson and Sperber (2004) proposed a pragmatic account called "Relevance Theory" which involves two factors—cognitive effect and processing effort. According to this theory, "an input is relevant to an individual when it is processing in a context of available assumptions yields a positive cognitive effect" (Wilson & Sperber, 2004, p. 608). Wilson and Sperber (2004, p. 609) claim:

(8) a. Other things being equal, the greater the positive cognitive effects achieved by
        processing an input, the greater the relevance of the input to the individual at that time.
    b. Other things being equal, the greater the processing effort expended, the lower
        the relevance of the input to the individual at that time.

In other words, according to Relevance Theory, relevance is assessed in terms of (a) (cognitive) effect factor and, (b) effort factor. In general, other things being equal, the more (cognitive) effect processing an input achieves, the more relevant it will be. And the less effort processing an input requires, the more relevant it will be. Thus, in relevance theoretic terms, L2 Japanese may consider some cues as more relevant than others.

To sum up, while Nakanishi's (2007) study with Japanese adults confirmed that added cues (prosodic in their case) play a role in access to the partial negation readings in Japanese, Leddon (2003) concluded in her production study with L1 English speakers that prosody does not play a role in disambiguation of structurally ambiguous sentences. This leads to the question how L2 learners comprehend scopally ambiguous sentences containing negation and universal quantifier, and how their comprehension is influenced by additional cues such as prosody. In other words, how much is prosody relevant to processing ambiguous sentences, and can the results be explained using Relevance Theory?

Research Questions for This Study. In the above subsections, we laid out the results of previous studies regarding disambiguation by prosody. The primary purpose of Leddon's and Nakanishi's studies was to investigate whether or not prosody plays an important role in disambiguation. It is certainly true

that prosody is a key factor in disambiguation, but it is also true that prosody is not the only clue for disambiguation. Therefore, one thing that these previous studies indicate is that prosody may or may not be a relevant factor for disambiguation for L2 Japanese speakers. In other words, it may be the case that some factors for disambiguation are parameterized, and the speakers of the language put a priority on one factor over the other. Theoretically speaking, human recognition tends to be geared to maximization of relevance (Cognitive Principle: Relevance Theory; Sperber &Wilson, 1986; Wilson & Sperber, 2004). In terms of such a formal theory, native speakers of Japanese tend to be geared to prosody as maximization of relevance. This may or may not be the case with L2 Japanese speakers. Also, recall that L1 English children tend to interpret scopally ambiguous sentences in total negative scope reading, but when the felicity condition is met, they are able to interpret both total and partial negative scope readings (Gualmini, 2004).

In light of the previous studies, we propose the following research questions:
1. Do L2 Japanese speakers differentiate total versus partial negation by prosody?
2. If Yes to the above, how?
3. Do L1 Japanese speakers differentiate total versus partial negation by prosody? (Although Nakanishi conducted this experiment, she had only four informants.)
4. If Yes to the above, how?

In order to answer these questions, we conducted an online picture matching task that will be described in the next section.

Experiment

The Study: Overview. The aim of this study was to investigate whether L2 Japanese speakers resorted to interpreting scopally ambiguous sentences (into partial and total readings) using prosodic cues that were provided as part of the context. This study consisted of an online version of a picture matching task in which the target language was Japanese. The particular focus of the study was on scope interactions of the universal quantifier *minna* 'all' and negation, yielding two distinct readings—total negation and partial negation. Of interest was whether L2 Japanese speakers would appropriately differentiate these readings using prosodic cues and how far or close they would be to the responses from the control group consisting of L1 Japanese speakers.

Participants. This study included 33 adult L2 learners of Japanese (mean age = 21.51, SD = 1.66) whose levels ranged from beginning high to advanced. The control group consisted of 33 adult L1 Japanese speakers (mean age = 41.06, SD = 8.89). All of the L2 Japanese participants were enrolled in undergraduate Japanese language classes at universities in the United States. All of the L1 Japanese participants were qualified teachers of Japanese at universities and office workers in the United States. A demographic questionnaire was administered prior to conducting the experiments, which elicited background information, including age, nationality, total number of years of instruction, and length of stay in Japan. The L2 proficiency scale for the experimental group was based on the classes they were enrolled in at that time (1st year = level 1; 2nd year = level 2; 3rd year = level 3). All participants signed a written consent and were assigned an identification code such that their responses remained anonymous.

Method and Materials. An online version of a picture matching task (Kamiya & Look, 2012) was designed for the experiment. In this task, each of the short stories (a brief lead-in sentence and the target sentence) was narrated in the target language and was illustrated with two pictures presented on power point slides. The narration of the story was digitally recorded and embedded into each slide. Additional prosodic cues were provided for each slide. Depending on how the test sentence was presented (using specific prosodic cues controlled to indicate partial or total reading), the interpretation matched the left or the right picture. Participants chose one of the two pictures, and were given an opportunity to write a comment on why they chose that interpretation.

To illustrate with an example, the present study involved an interpretation task designed to tap learners' interpretations of scope readings using prosodic cues. The task presented learners with stories that depicted events that either had a partial negative reading or a total negative reading with the universal quantifier. (2) below illustrates the two readings in Japanese.

(2) Minna-wa ne-nakat-ta.
   all-$_{TOP}$ sleep-$_{NEG}$-$_{PAST}$
    'None of the students slept.' [total negation = *wa* marks topic]
    'Not all the students slept.' [partial negation = *wa* marks contrast]

A screen shot of a sample slide with the embedded target sentence is given below (Figure 1). The full list of test sentences is given in the Appendix. (Audio clue) Lead in + **Target Sentence**:

コンピューターは便利ですが、みんなは持っていませんでした。

'Computers are convenient, but all the students didn't have them.'
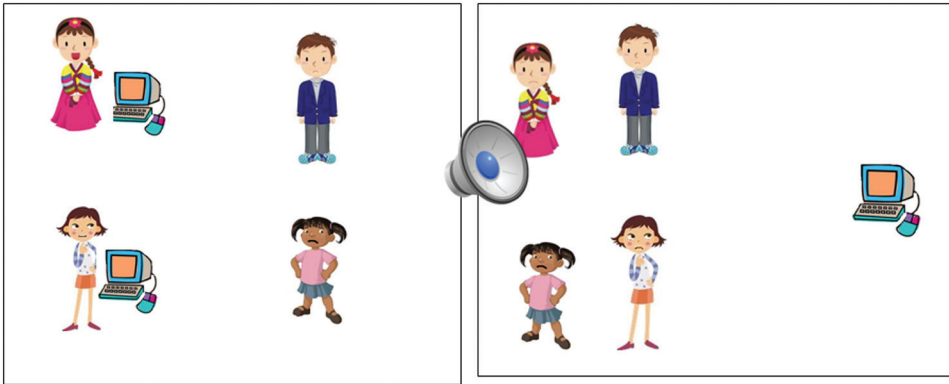
みんなは、もっていませんでした。

Figure 1. Sample slide of the test sentence.

When creating the target sentences, we investigated the average F_0 before/after 'wa' in our sentences. Let us say that F_0 before 'wa' is P1 and after 'wa' P2:

Table 1

Average F_0 before/after 'wa'

	P1	P2	Difference between P1 and P2
Total negation	155.5 Hz	245.1 Hz	89.6
Partial negation	193.1 Hz	136.3 Hz	56.8

As can be seen in Table 1, there are different patterns in Japanese prosody when it comes to 'wa.' For total negation, P2 is higher than P1, while for partial negation, P1 is higher than P2.

    Qualtrics software was used to create the online test and the responses were automatically recorded on excel spreadsheets. The test had an introduction page, where participants read a short background narrative about a foreign student studying in Japan, who has to complete a class assignment involving listening to audio clips and transcribing the notes by way of interpreting the audio recordings. The introduction page was followed by a warm-up phase which had five pre-test questions. The pre-test questions checked the participants' knowledge of the universal quantifier, negation, total reading, and partial reading. The main experimental task consisting of 30 questions followed the warm-up phase. The 30 questions were divided into 16 test questions (eight each for partial and total interpretation), and 14 distractor sentences. It was estimated that the tests could be completed in 30–40 minutes depending on the version (L1 or L2).

Procedures. The experimenters contacted the Japanese language classes as well as the native Japanese speakers face to face or via email and solicited voluntary participation for the study. Candidates were briefed about the goals of the study and the directions on how to do the online questionnaire. The instructions were made available in both oral and written formats. They were told that their participation would take about 30–40 minutes. The students were made aware that they would remain anonymous and their responses would be used only for research purposes and would not be used to evaluate their classroom performance. They were also informed that their refusal to participate or discontinuation of participation would never result in prejudice against them.

Those who agreed to participate were asked to give their signed consent and to send back their background questionnaires via email. After receiving the two completed documents, the experimental and control groups were divided up such that half of the participants from each group were given a brief training session aimed at ensuring that they understood that the semantic interpretation of the sentences may change due to the prosodic cues (sentences used for the training session are included in the Appendix). They were given examples from structures other than those used in this study. The remaining half of the participants did not receive this training.

After completing the training phase, a link to the experiment was sent via email to the participants along with a cryptic identification code. The participants were asked to complete the experiment within a week.

Results

First, let us look at the overall trends in responses in terms of percentages of correct answers for the experimental and control groups.

L2 Japanese learners without training answered total negation 76.6% and partial negation 30% of the time. Those with training answered total negation 79.8% and partial negation 27% of the time.

As for the L1 Japanese speakers (i.e. the control group), those without training answered total negation 89.0% and partial negation 62.5% of the time. On the other hand, those with training answered total negation 85.2% and partial negation 86% of the time. These results are illustrated in Figure 2 below.
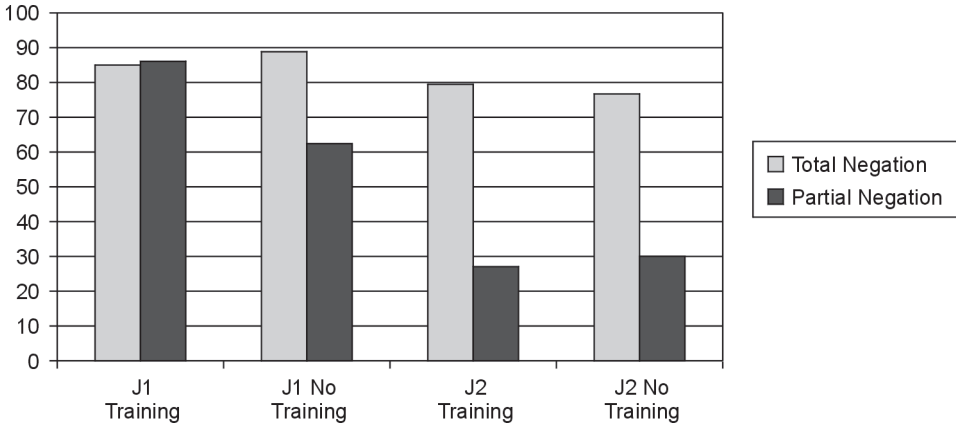
Figure 2. Percentage of Correct Answers in Japanese Test.

The main goal of the analyses was to determine if the responses by the L1 and L2 Japanese speakers to the target sentences differed depending on the scope interactions (i.e., total negation or partial negation). Since each participant responded to the sentences in both the total and partial negations, multivariate m-ANOVA was performed with the type of negation (total or partial) as the dependent variables and training (no training vs. with training) and nationality (American vs. Japanese) as the between subject factors (independent variables).

There was no interaction found between Training x Nationality F (2, 123) = 1.223, p = 0.298. The interactions were further examined by running a general linear model for the test. There was a significant difference found between experimental and control groups with F (2, 63) = 21.896, p = 0.000 and particularly on partial scope with F (1, 64) = 24.71, p = 0.000. The independent samples t-tests (two-tailed) also confirmed that the L1 Japanese speakers (control group) did significantly better than the L2 Japanese speakers (experimental group) on partial negation t (64) = −4.971, p = 0.000. The mean for the control group on partial scope was higher than that for the experimental group: 5.90 (SD = 3.07) and 2.30 (SD = 2.81) respectively.

Let us now turn to participants' justifications for the choice of their responses. Beginning with the L1 Japanese control group, 24 participants mentioned that prosody was a key factor to determine the choice. Their main reasons were "the stress on '*minna*' and the stress on the predicate', 'the pronunciation of '*minna*', whether or not there is a stress on 'wa', or 'it sounds like that'." One of the participants said that s/he could not think of any reason, but realized that the stress on *minna* is a key which s/he noticed half way through the test. Five out of 24 Japanese speakers (who gave phonology as a reason) noticed that prosody is a reason from the 1st question. Five out of 24 noticed prosody as a reason

from the 2nd question. Six out of 24 noticed at the 3rd, 4th, and 5th questions. So, among 24 who stated prosody as a reason, 16 noticed it earlier in the test.

Four L2 Japanese learners mentioned that they used prosody as a clue for the choice. They said '"it is about tone', 'something about tone of voice', or 'it is about the sound of *minna*'." The four participants mentioned prosody as their reason at the 2nd, 3rd, 7th and 12th questions respectively.

As a corollary to our study, we also conducted a second round of experiments offering a bidirectional component to our original objectives. The aim of this second part was to examine if L1 and L2 English speakers responded differently to scope interactions between negation and universal quantification in the presence of prosodic cues in English sentences. In order to be able to compare findings across the two experiments, procedures were analogous and experimental tasks were translation equivalents of each other. The same participants were employed for the second experiment and it was conducted after a gap of one week from the first one.

The procedure was just like the Japanese counterpart. Namely, we had a native speaker of English read an ambiguous sentence such as 'All the students didn't sleep', intending either total or partial negation (see full list in the Appendix). For the English patterns, we measured the minimum and maximum of F_0 in 'all'. It seems that there is not much difference between maximum and minimum of F_0 when it is intended to be read as total negation (the difference = 11.9 Hz). On the other hand, there is a big gap between the minimum and maximum of F_0 on 'all' when it is intended as the partial negation (difference = 89.9Hz) (Table 2).

Table 2
Average minimum and maximum of F_0 'all'

	Minimum	Maximum	Difference
Total negation	94.2 Hz	106.1 Hz	11.9
Partial negation	108.4 Hz	198.3 Hz	89.9

Below we will report the findings from the second experiment. First, the overall trend in responses in terms of percentages of correct answers for both groups of participants (L1 and L2 English speakers) was as follows.

Regarding the English test, L1 English speakers (American nationals) without training answered total negation 72.5% and partial negation 30% of the time. On the other hand, American nationals with training answered total negation 68% and partial negation 37.5% of the time. About the English test taken by L2 English speakers (Japanese nationals), those without training answered total negation 64.8% and partial negation 32.8% of the time. On the other hand, those with training answered total negation 66.9% and partial negation 47.7% of the time. These results are summarized in Figure 3 below.
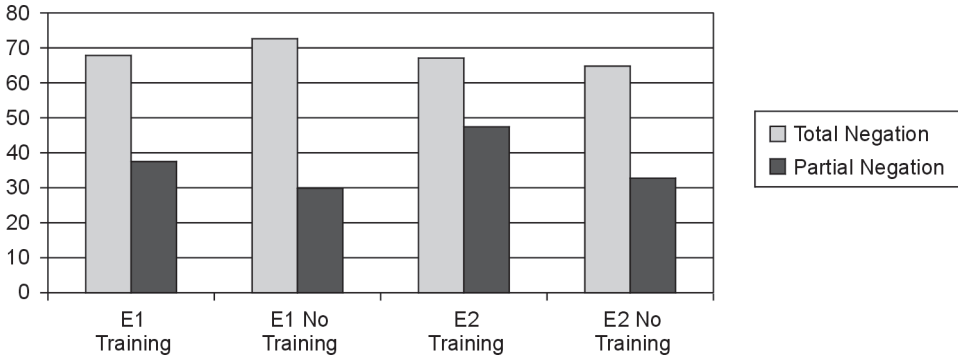
Figure 3. Percentage of Correct Answers in English Test.

Since each participant responded to the sentences in both the total and partial negative scope contexts, multivariate m-ANOVA was performed with the type of negation (total or partial) as the dependent variables and training (no training vs. with training); nationality (American vs. Japanese); and test version (English vs. Japanese) as the between subject factors (independent variables).

There was no interaction found among Training x Nationality x Test type F (2, 123) = 0.405, p = 0.668. Moreover, there was no interaction between Training x Nationality F (2, 123) = 1.223, p = 0.298, or between Training x Test type F (2, 123) = 0.025, p = 0.975.

However, the m-ANOVA indicated a significant interaction between nationality and test version on the two dependent variables (total and partial negative scope) with Wilks's Lambda value[6] = 0.82 and F (2, 123) = 13.82, p = 0.000. Further, the tests of between-subjects effects revealed that the interaction between nationality and test version was significant on partial negative scope with F (1, 124) = 8.93, p = 0.003, and not on total negative scope with F (1, 124) = 1.94, p = 0.166.

Next, the interactions were further examined by running a general linear model m-ANOVA between test version and nationality factors. Let us look at the two test versions (English and Japanese) and the performance of the Japanese nationals and the American nationals on the two test versions.

For the English test version, there was no significant difference found between the American and Japanese nationalities F (2, 63) = 0.218, p = 0.805. However, for the Japanese test version, there was a significant difference found between American and Japanese nationalities with F (2, 63) = 21.896, p = 0.000 and particularly on partial scope with F (1, 64) = 24.71, p = 0.000. The inde-

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[6] In statistics, Wilks's lambda distribution (named for Samuel S. Wilks), is a probability distribution used in multivariate hypothesis testing, especially with regard to the likelihood-ratio test and Multivariate analysis of variance.

pendent samples t-tests (two-tailed) also confirmed that on the Japanese test the Japanese nationals did significantly better than the American nationals on partial negation t (64) = −4.971, p = 0.000. The mean for the Japanese nationals on partial scope was higher than that for American nationals: 5.90 (SD = 3.07) and 2.30 (SD = 2.81) respectively.

Next, let us look at the two nationalities (American and Japanese) and their performance on the two test versions (English and Japanese). For the American nationals, there was no significant difference found between English and Japanese test versions with F (2, 63) = 0.392, p = 0.677. On the other hand, for the Japanese nationals, there was a significant difference between English and Japanese test versions with F (2, 63) = 20.373, p = 0.000, and significant on both the total negative scope and partial negative scope. For total scope, F (1, 64) = 9.70, p = 0.003. The mean for the Japanese test version was higher than that for the English test version: 6.94 (SD = 1.71) and 5.27 (SD = 2.55) respectively. For partial scope, F (1, 64) = 13.76, p = 0.000. The mean for the Japanese test version was again higher than that for the English version: 5.91 (SD = 3.08) and 3.21 (SD = 2.83) respectively. The independent samples t-tests (two-tailed) also confirmed that the Japanese nationals did significantly better on the Japanese test than on the English test on both total negative scope t (64) = −3.19, p = 0.002 and partial negative scope t (64) = −3.73, p = 0.000.

Finally, a set of independent t-tests (two-tailed) was carried out to confirm any significant differences between Japanese and Americans for their first language L1, second language L2, length of stay in the target country as show in Table 3.

Table 3

Independent t-tests for Japanese and Americans

	Japanese means	American means	t	P (two tailed)
L1 Total	6.96	5.60	−2.36	*0.021
L1 Partial	5.90	2.81	−4.06	*0.000
L2 Total	5.27	6.21	−1.6	0.114
L2 Partial	3.21	2.27	+1.35	0.181
Length of stay in target country	15.54	0.19	+11.38	<*0.0001

It is interesting to see the results of the independent t-tests between the American and Japanese groups for the overall performance on their first and second languages. For their native languages, there was a significant difference (p < 0.05) between the Japanese and American groups of participants for both the total and the partial readings. For their second languages however, statistically there was no significant difference between the two groups of partici-

pants for both the total and the partial readings. Note that although there was a significant difference found in the length of stay in the target country by the respective groups, there was no reflection of this fact in the difference in the performance of the L2 groups.

Let us also look at participants' justifications of the choice of their responses in the second experiment (English test).

Twelve Japanese reported that they made use of prosody as a clue. Their comments included 'the stress on *didn't* and stress on *all*', 'pronunciation of *all*' or 'the emphasis on *all*'. Two of them noticed it at the 1st question, and four of them at the 2nd question. Therefore, half of the participants observed that the phonological contour is the reason for the ambiguity even in the English test. Eight American respondents also mentioned that prosody was the key to answer the questions. Their comments included 'the tone of the speaker's voice', 'the way to read *all* the students, 'emphasis on *all*', or 'accent on *all*.' One of the participants mentioned that 15 out of 16 questions are about the stress on *all*, but only 3 questions were correct. Out of 8 native speakers of English, 5 of them considered the sound as a reason at the 2nd question, which is early in the test.

The next section will examine the results of the two experimental tests and their theoretical implications.

Discussion

The motivation for the current study was to examine whether or not learners of Japanese are able to interpret ambiguous sentences based on prosody. From the viewpoint of L1 Japanese, prosody before/after the particle 'wa' helps them to distinguish total negation from partial negation (Kuno, 1973; Hattori et al., 2006; Nakanishi, 2007). However, there is no experimental research available that supports L2 Japanese learners' interpretation of these two readings. At the end of section two, we raised the following research questions:
1. Do L2 Japanese speakers differentiate total versus partial negation by prosody?
2. If Yes to the above, how?
3. Do L1 Japanese speakers differentiate total versus partial negation by prosody?
4. If Yes to the above, how?

Let us answer these questions based on the results of our experiment. There was a significant interaction between the experimental and control groups particularly on partial negation. This indicates that the L2 Japanese learners tend

to interpret the test sentences as total negation reading. It is not surprising that the control group performed better overall as this confirms Nakanishi's study. The statistically significant difference between L1 and L2 Japanese speakers' performance on partial negation indicates sensitivity (or lack thereof) to the phonological contours of the particle 'wa.'

Based on the correct percentages of total and partial reading responses, both groups showed a strong tendency towards total negation interpretations. In other words, without context but just sound, it seems that the total negation reading is the default case. Let us again look at the percentage of correct responses as tabulated below (see Table 4).

Table 4
Japanese test results

	Total negation %	Partial negation %
J1 with training	85.2	86.0
J1 without training	89.0	62.5
J2 with training	79.8	27.0
J2 without training	76.6	30.0

As reported in the previous section, four L2 participants indicated prosody as a reason. This implies that some participants were aware of the phonological difference for the relevant interpretations. Then, why is their population so small? We will return to this issue when we consider the theoretical implications. Regarding the L1 Japanese speakers, 24 of them resorted to prosody as the reason to choose their answers. Overall, the L1 Japanese speakers are aware of the prosodic cues used for disambiguation.

To explain our results, we will make use of the "Relevance Theory" (Wilson & Sperber, 1986; 2004). Relevance Theory consists of the following two principles: (1) Cognitive Principle: that human cognition is geared to the maximization of relevance; and (2) Communicative Principle: that utterances create expectations of optimal relevance.

According to Wilson and Sperber, the goal of inferential pragmatics is to account for the way the hearer infers the speaker's meaning on the basis of the evidence provided (Wilson & Sperber, 2004, p. 250). In addition, an input is considered to be relevant to an individual when a positive effect is yielded for the processing. Wilson and Sperber (2004, p. 609) claim:

(8) a. Other things being equal, the greater the positive cognitive effects achieved by processing an input, the greater the relevance of the input to the individual at that time.

   b. Other things being equal, the greater the processing effort expended, the lower the relevance of the input to the individual at that time.

As the relevance of an input to an individual says, it seems that relevant information (or optimal relevance) has to do with how an individual interprets a sentence. Importantly, 'the greater the processing effort expended, the lower the relevance of the input to the individual at that time'. In terms of this condition, the learners of languages may be parameterized into two classes in the current study. Namely, there are participants who consider prosody to give positive cognitive effects and those who do not. The optimal relevance of processing a sentence may be related with grammar. In the present study, the acquisition of two types of 'wa' eliminates potential ambiguity from sentences for native speakers of Japanese. The two types of 'wa' differ in not only meaning but also prosody. Both pieces of information are *relevant* to the native speakers of Japanese.

On the other hand, it is not necessary for the L2 Japanese speakers to expunge anything in the ambiguous test sentences of the present study. Therefore, L2 speakers consider prosody to be not as optimal information as other possible factors (e.g., context). In other words, based on the above two conditions, it could be conjectured that the cognitive effect due to the prosodic cues is not very large in the case of partial negation readings. The absence of enough positive evidence in the environment to identify partial negation readings from prosodic clues necessarily increases the listener's corresponding processing effort. Therefore, the relevance to these sentences is not maximized to the extent of accurate identification. The unambiguous alternative of the partial negative reading using "not all…"—such as "Not all the students came to class"—has a larger cognitive effect due to the availability of positive evidence in the environment, and hence lower processing effort.

Optimality seems to be carried over to second language acquisition. This was the reason why we witnessed that the L1 Japanese group seeks for prosody as a clue due to the optimal relevance for interpretations, while it was not the case with L2 Japanese. Because prosody may not be optimally relevant, it may be the case that they do not pay careful attention to the two types of 'wa' during L2 learning.

In order to increase the cognitive effect and the optimal relevance of the test sentences in the present study, a preceding contextual clue also needs to be tested out. In case of American nationals, it could be the case that the additional preceding context will provide that extra contextual effect and hence reduce the processing effort.

As for the results of the second round of experiment (English test) with L1 and L2 English speakers, there is no significant difference between the American and the Japanese nationals. However, as the result section showed, the tests of between-subjects effects revealed that the interaction between nationality and test version was significant on partial negation. Observe that summorizes the result from the English test.

Table 5
English test results

	Total negation %	Partial negation %
E1 with training	68	37.5
E1 without training	72.5	30
E2 with training	66.9	47.7
E2 without training	64.8	32.8

Based on the correct percentages, both nationals showed a strong tendency towards total negation interpretations of the English sentences. In other words, without context but just sound, it seems that the total negation reading is the default case. These results can be explained using Relevance Theory as well. The percentage of correct responses is lower in partial reading as compared to total reading because the cognitive effect of the prosodic cues is not very large in the case of partial readings. And this is supported, in part, by the lack of sufficient positive input in the natural environment that would reinforce the interpretation of partial readings for these sentences.

The above results are analogous to the results obtained in the Goss and Nakayama (2011) study, where English native speakers seem not to be sensitive to prosody for disambiguation of structurally ambiguous sentences in Japanese. The purpose of Goss and Nakayama is to figure out how accurately L1 and L2 Japanese give a pause in the following examples when they read aloud, especially ambiguous sentences. The following phrases are unambiguous NP (Goss and Nakayama, 2011: modified their example (5)):

(9) a. [ookii [natsu no miitingu]]
      'the large meeting in the
      summer'
      (Right Branching modification)

   b. [[yasui apaato no] [soto]]
      'outside of the cheap
      apartment'
      (Left Branching modification)

The following example is ambiguous with different interpretations in (a) and (b):

(10) Abunai mati-no koosaten
a. [[abunai] [mati no koosaten]]
   'the dangerous intersection in
   the town'
   (Right branching modification)

   b. [[abunai mati no][koosaten]]
   'the dangerous town's
   intersection'
   (Left branching modification)

Goss and Nakayama report that there are preferences by L1 and L2 Japanese. While L1 Japanese gives accurate answers for right branching modification

(88% for right and 79% for left), L2 Japanese show preference for left branch modification over right branch modification (53% for right vs. 77% for left). Goss and Nakayama assume that L2 Japanese speakers' preference for left branching modification may be due to their L1 preference (i.e., left branch modification for English; Goss and Nakayama cite works by Fodor, 2002; Jun, 2003; Maynell, 2005) (L1 transfer might have occurred). Surprisingly, the accuracy rate for syntax-prosody matching of ambiguous sentences by L1 Japanese is 79%, which is close to L2 Japanese 74%. Hence, it may be conjectured that there must be a preferred prosody-syntax match such as left-branching modification or right-branching modification, depending on the participants' first language. However, Goss and Nakayama suggest that the mismatch between production (prosody) and interpretation exists even for L1 Japanese speakers. They suspect that learners may consider prosody as "extraneous or secondary information" when acquiring Japanese. In other words, their study supports the argument that prosody was found to have lower optimality for the L2 Japanese speakers to produce structural ambiguity. In the present study, there seems to be a preference (or a tendency) to interpret one pattern over the other pattern (in our test sentences, total negation is preferred). But prosody is not optimal enough to turn around such a preference when it comes to ambiguity resolution.

Conclusion and Future Study

The aim of this study was to examine if L2 Japanese learners use prosody to disambiguate the total and partial negation readings of sentences involving negation and universal quantifier. Based on the results of this study, it was shown that L2 Japanese speakers were not able to use prosodic cues to disambiguate the scopally ambiguous sentences used in this study. Their performance was better on identifying the total negation reading as opposed to the partial negation reading, which can be explained using the Cognitive Principle defined under the Relevance Theory.

In this study we only investigated the usefulness of prosody in disambiguation. The next step would be to examine the effect of a preceding context on disambiguation. In previous empirical studies, while prosody and/or context have robustly been utilized to control the meaning of any utterance, another corollary that needs investigation is a "no clue" condition, that is, to not provide any clues—contextual or prosodic—and examine if the participants are sensitive to the ambiguities of these constructions in their written form. These issues will be taken up in our next study.

Appendix 1

Experimental Stimuli

Training Session Sentences

(1) soo desu ka ↗   (raising the end)   vs.   soo desu ka ↘   (lowering the end)
    'Is it so?'   'It is so.'
(2) ii desu ↗   vs.   ii desu ↘
    'good'   'no thanks'
(3) Really ↗   vs.   Really ↘
(4) Is that right ↗   vs.   Is that right ↘

Pretest Sentences

(P1) Sooda to biiru-ga arimasita. Lisa to Mari-wa soda-o nomimasita-ga, John to Naoya-wa
     biiru-o nomimasita.
     'There was soda and beer. Lisa and Mari drank soda, while John and Naoya drank beer.'
(P2) Kyoo-wa tomodati-no tanzyoobi desu. Minnade puresento-o kaimasyou.
     'Today is our friend's birthday. Let's all buy her a present together.'
(P3) Omosirosoona geemu-ga arunode minnade geemu-o simasita.
     'The game looked interesting, so all the students played it together.'
(P4) Tomodati-ga pai-o tukutta node minnnade pai-o tabemasyoo.
     'My friend made a pie, so let's all eat it together.'
(P5) Lisa to Mari-wa ikimasitaga, Naoya-wa ikimasendesita.
     'Lisa and Mari went, but Naoya did not go.'

Test Sentences

(1) Computer-ga benri desu ga, <u>minna-wa</u> motteimas<u>en</u>desita. (Total negation)
    computer-_{NOM} convenient is but all-_{TOP} had not
    'Computers are convenient, but all the students didn't have them.'
(2) Ame-ga hutteiru node kasa-ga irimasu ga, <u>minna-wa</u> arimas<u>en</u>. (Partial negation)
    rain-_{NOM} falling so umbrella-_{NOM} necessary but all-_{TOP} have not
     'It is raining and they need umbrellas, but all the students don't have them.'
(3) Computer-ga benridesu ga, <u>minna-wa</u> tukaimas<u>en</u> desita. (Total negation)
    computer-_{NOM} convenient is but all-_{TOP} use did not
    'Computers are convenient, but all the students didn't use them.'
(4) Geemu-ga omosirosoo desu ga, <u>minna-wa</u> simas<u>en</u>desita. (Partial negation)
    game-_{NOM} interesting is but all-_{TOP} did not
    'The game looked interesting, but all the students didn't play it.'
(5) Omosiroi hon desu kedo, <u>minna-wa</u> yomimas<u>en</u>desita. (Total negation)
    interesting book is but all-_{TOP} read did not
    'It is an interesting book, but all the students didn't read it.'
(6) Kyoo-wa gakkoo-ga arimasita ga, <u>minna-wa</u> ikimas<u>en</u>desita. (Partial negation)
    today-_{TOP} school-_{NOM} there was but all-_{TOP} go did not
    'Today they had school, but all the students didn't go.'
(7) Spring break-de biichi-ni ikimasu ga, hotel-wa takai node, <u>minna-wa</u> tomarimas<u>en</u>.

spring break-at beech-to go but hotel-_TOP expensive because all-_TOP stay did not (Partial negation)
'During spring break they will all go to the beach. But since the hotel is expensive, all the students will not stay there.'

(8) Keetaidenwa-wa benri desu ga, <u>minna-wa</u> motteimas<u>en</u>desita. (Partial negation)
Cellphone-_TOP convenient is but all-_TOP have not
'Cell phones are convenient, but all the students don't have them.'

(9) Asita-wa tesuto desu. Coffee-ga arimasu ga, <u>minna-wa</u> nomimas<u>en</u>desita (Total negation)
tomorrow-_TOP test is coffee-_NOM there is but all-_TOP drink did not
'Tomorrow is test. There was coffee there, but all the students didn't drink it.'

(10) Party-ga arimasita kedo, <u>minna-wa</u> ikimas<u>en</u>desita. (Partial negation)
Party-_NOM there was but all-_TOP go did not
'There was a party, but all the students didn't go.'

(11) Nihongo-no syukudai-wa asita made desu ga, <u>minna-wa</u> simas<u>en</u>desita. (Total negation)
Japanese-_GEN homework-_TOP tomorrow until is but all-_TOP do did not
'The Japanese homework was due tomorrow, but all the students didn't do it.'

(12) Kanji-wa muzukasii kedo, <u>minna-wa</u> benkyoosimas<u>en</u>desita (Partial negation)
kanji-_TOP difficult but all-_TOP study did not
'Kanjis are difficult, so all the students didn't study them.'

(13) Pai-o tukuritakattanodesu ga, <u>minna-wa</u> tukurimas<u>en</u>desita. (Total negation)
Pie-_ACC make wanted is but all-_TOP make did not
'Although they wanted to make pies, all the students didn't make them.'

(14) Oisisoona keeki-ga arimasita ga, <u>minna-wa</u> tabemas<u>en</u>desita (Partial negation)
delicious cake-_NOM there was but all-_TOP eat did not
'The cake looked delicious, but all the students didn't eat it.'

(15) Omosirosoona geemu-ga utteimasu ga, <u>minna-wa</u> kaimas<u>en</u>desita. (Partial negation)
interesting game-_NOM selling but all-_TOP buy did not
'There was an interesting looking game in the market, but all the students didn't buy it.'

(16) Omosirosoona eiga-ga arimasita ga, <u>minna-wa</u> mimas<u>en</u>desita (Total negation)
interesting movie-_NOM there was but all-_TOP watch did not
'The movie seemed interesting, but all the students didn't watch it.'

Filler Sentences

(1) Kyoo-wa tesuto-ga arimasita. Minna-wa yoku dekimasita.
Today-_TOP test-_NOM there was all-_TOP good did
'Today there was a test. All the students did well on it.'

(2) Oisisoona aisukuriimu-ga arimasita. Minna-wa kaimasita.
Delicious ice cream-_NOM there was all-_TOP bought
'There was ice-cream that looked delicious, so all the students bought it.'

(3) Science-no zyugyoo-ga arimasita. Minna-wa yoku wakarimasita.
Science-_GEN class-_NOM there was all-_TOP good understood
'There was a science lesson today, and all the students understood it well.'

(4) Oisisoona ringo-ga arimasita. Minna-wa tabemasita.
Delicious apple-_NOM there was all-_TOP ate
'The apples looked delicious, and all the students ate them.'

(5) Sooda-ga arimasita. Minna-wa nomimasita.
Soda-_NOM there was all-_TOP drank
'There were pop drinks, and all the students drank them.'

(6) Computer-wa benri nanode minna-wa motteimasu.

Computer- _{TOP} convenient so all- _{TOP} have

'Computers are convenient, so all the students have them.'

(7) Ame-ga hutteite kasa-ga irimasu ga, minna-wa arimasu.

Rain- _{NOM} falling umbrella- _{NOM} necessary but all- _{TOP} have

'It is raining and they need umbrellas. All the students have them.'

(8) Computer-wa benrinanode, minna-wa tukaimasita.

Computer- _{TOP} convenient so all- _{TOP} use

'Computers are convenient, so all the students used them.'

(9) Omosiroi nihongo-no hon-ga attanode, minna-wa kaimasita.

Interesting Japanese- _{GEN} book- _{NOM} there was so all- _{TOP} bought

'There was an interesting Japanese book, so all the students bought it.'

(10) Spring break-de hoteru-ni ikimasu. Minna-wa tomarimasu.

Spring break-for hotel-to go all- _{TOP} stay

'During spring break they'll go to a hotel, and all the students will stay there.'

(11) Oisisoona coffee-ga arimasita. Minna-wa nomimasita.

Delicious coffee- _{NOM} there was all- _{TOP} drank

'The coffee looked delicious, so all the students drank it.'

(12) Nihon dewa keetaidenwa-wa benri nanode, minna-wa motteimasita.

Japan in cellphone- _{TOP} convenient so all- _{TOP} have

'Cell phones are convenient in Japan, so all the students had them.'

(13) Omosirosoona eiga-ga arimasita kara, minna-wa mimasita.

Interesting movie- _{NOM} there was because all- _{TOP} watched

'The movie seemed interesting, so all the students watched it.'

(14) Omosirosoona hon nanode, minna-wa yomimasita.

Interesting book so all- _{TOP} read

'The book seemed interesting, so all the students read it.'

English Version

Pretest Sentences

(1) There was soda and beer. Lisa and Mari drank soda, while John and Naoya drank beer.
(2) Today is our friend's birthday. Let's all buy her a present together.
(3) The game looked interesting, so all the students played it together.
(4) My friend made a pie, so let's all eat it together.
(5) Lisa and Mari went, but Naoya did not go.

Test Sentences

(T1) Computers are convenient, but all the students didn't have them. (Total negation)
(T2) It is raining and they need umbrellas, but all the students don't have them. (Partial negation)
(T3) Computers are convenient, but all the students didn't use them. (Total negation)
(T4) The game looked interesting, but all the students didn't play it. (Partial negation)
(T5) It is an interesting book, but all the students didn't read it. (Total negation)
(T6) Today they had school, but all the students didn't go. (Partial negation)
(T7) During spring break they will all go to the beach. But since the hotel is expensive, all the students will not stay there. (Partial negation)
(T8) Cell phones are convenient, but all the students don't have them. (Partial negation)
(T9) There was coffee there, but all the students didn't drink it. (Total negation)

(T10) There was a party, but all the students didn't go. (Partial negation)
(T11) The Japanese homework was due tomorrow, but all the students didn't do it. (Total negation)
(T12) Kanjis are difficult, so all the students didn't study them. (Partial negation)
(T13) Although they wanted to make pies, all the students didn't make them. (Total negation)
(T14) The cake looked delicious, but all the students didn't eat it. (Partial negation)
(T15) There was an interesting looking game in the market, but all the students didn't buy it. (Partial negation)
(T16) The movie seemed interesting, but all the students didn't watch it. (Total negation)

Filler Sentences

(F1) Today there was a test. All the students did well on it.
(F2) There was ice-cream that looked delicious, so all the students bought it.
(F3) There was a science lesson today, and all the students understood it well.
(F4) The apples looked delicious, and all the students ate them.
(F5) There were pop drinks, and all the students drank them.
(F6) Computers are convenient, so all the students have them.
(F7) It is raining and they need umbrellas. All the students have them.
(F8) Computers are convenient, so all the students used them.
(F9) There was an interesting Japanese book, so all the students bought it.
(F10) During spring break they'll go to a hotel, and all the students will stay there.
(F11) The coffee looked delicious, so all the students drank it.
(F12) Cell phones are convenient in Japan, so all the students had them.
(F13) The book seemed interesting, so all the students read it.
(F14) The movie seemed interesting, so all the students watched it.

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Priya Ananth, Masaaki Kamiya

Prosodie vs. Mehrdeutigkeit bei allgemeinem Quantor und bei Negationen

Z u s a m m e n f a s s u n g

Die in dem Artikel geschilderte empirische Forschung zeigt, auf welche Weise die das Japanische als zweite Sprache Lernenden die, eine Negation und einen Quantor (eng.: *universal quantifier*) enthaltenen mehrdeutigen Sätze bei prosodischen Signalen (eng.: *prosodic cues*) interpretieren. Frühere Forschungen bewiesen, dass die japanische Sprache lernenden Erwachsenen bei prosodischen Signalen solche Sätze entweder als völlig negativ (eng.: *total negativ*) oder teilweise negativ (eng.: *partial negativ*) interpretierten. Derzeitige Forschung hat diese Ergebnisse in Frage gestellt, indem sie besonders die völlige Negation als vorherrschende Interpretation von mehrdeutigen Sätzen darstellte, selbst bei den prosodischen Signalen, die nur eine partielle Negation bestätigen würden. Die Verfasser gelangten zum Schluss, dass die Japanisch lernenden Personen den prosodischen Signalen bei Interpretation von mehrdeutigen Sätzen keine große Bedeutung beimessen und wahrscheinlich andere Merkmale für eindeutige Interpretation der Sätze ausschlaggebend sind.

Arzu Ünel
Toros University, Turkey
Meryem Mirioğlu
Cukurova University, Turkey

Syntactical Modifications in Teacher Talk of Native and Non-Native Speakers in EFL Classrooms

Abstract: Classroom language in EFL classrooms comprises the core of communication between teachers and learners. Teacher talk plays a central role in understanding the nature of classroom language in this respect. According to Krashen's input hypothesis, teacher talk also constitutes an important source of comprehensible input for the language acquisition of the learner (Krashen, 1981). To make the input comprehensible, teachers may make modifications in their vocabulary, syntax, rate of speech or discourse. Accordingly, the aim of this study is to discover whether native speakers of English and non-native speakers of English make any syntactical modifications in their teacher talk at elementary and pre-intermediate levels and to try to find out what kind of syntactical modifications they make if they modify their syntax during their speech. The study was carried out with eight EFL instructors (both NSs and NNSs) at Çağ University in Turkey, using their audio-recordings, a questionnaire, and interviews. Antconc 3.2.1 Program and SPSS 17.0 Program were used to analyze the quantitative data. The findings of the data were incorporated with the results of interviews forming the qualitative part of the study. The results of the data revealed that native speakers of English and non-native speakers of English made syntactical modifications in their teacher talk at elementary and pre-intermediate levels. They ranged from subordinate clauses to the types of sentences. The findings of the study also demonstrated that syntactical modifications in the teacher talk of native speakers and non-native speakers at both levels depended on the proficiency level of the learners although not all of these modifications formed a statistically meaningful difference.

Keywords: English as a foreign language, teacher talk, syntactical modifications, comprehensible input

Introduction

Studies on language learning have made an enormous impact on the study of the classroom environment which facilitates communication and enables different kinds of interaction between teachers and learners. Cullen (1998) elucidates the necessity of distinction between the world outside and the classroom, stating that the classroom is unique on its own with its rules and conventions. When we examine recent studies on classroom conversations, it can be easily seen that studies of some researchers, such as Wright (2005), Ellis and Barkhuizen (2005), and Seedhouse (2004), mainly concentrate on the features of classroom interaction between teachers and learners and the language that teachers use during interaction. Therefore, it is essential to understand the notion of teacher talk in the classroom environment, a significant area for us to study.

While Xu (2010) defines teacher talk as "an instrument of implementing teaching plan" (p. 46), Ellis (1994) focuses on the difference between teacher talk and other kinds of talk, stating "the teacher talk is to address language learners in the classroom differently from the way which addresses other kinds of classroom learners by making modifications in form and function to promote interaction between learner and teacher" (p. 726).

Along with the definition and the function of teacher talk, the features of teacher talk are also very significant. Teacher talk has two main features. While the first feature focuses on the form of teacher talk, such as pauses, speed, repetition and modifications, the second feature stresses the characteristics of the language that teachers use to organize and control classes, the quality and quantity of teacher talk (Xiao-yan, 2006).

Some Theoretical Background

Understanding teacher talk necessitates looking into language acquisition and input. In that sense, the concepts of nature and nurture illustrate the core of second language acquisition. While nature means that learners learn the language innately, nurture presumes that the development of the language is stimulated by the environment while learners are in a process of interaction (Doughty & Long, 2003). Many researchers (Hatch, 1983; Krashen, 1982) have pinpointed that SLA is also built upon learners' getting comprehensible input. It is obvious that acquisition occurs when learners are exposed to language input that correlates with their level of proficiency. It is beyond doubt that one way of acquiring a second language is through simplified input or speech

adjustments. Gaies (1983) makes a comparison of the classroom language of teachers at different levels and highlights that teacher talk is roughly tuned to the learners' language proficiency.

Krashen (1981) highlights teacher talk as an important source of comprehensible input for the language acquisition of the learner. He (1982) emphasizes that learning takes place by means of the learner's access to comprehensible input. He (1982) also states that comprehensible input involves "a language that contains structures that are 'a little beyond' our current level of competence (i + 1), but which is comprehensible through our use of context, our knowledge of the world, and other extra linguistic cues directed to us" (p. 21). When the "i + 1" structure is examined, "i" stands for learners' current linguistic competence and "1" represents the items that learners intend to learn. The Input theory also has two corollaries (Krashen, 1985):

> Corollary 1: Speaking is a result of acquisition, not its cause; it emerges as a result of building competence via comprehensible input.
> Corollary 2: If input is understood and there is enough of it, the necessary grammar is automatically provided. The language teacher need not attempt deliberately to teach the next structure along the natural order—it will be provided in just right quantities and will automatically review a sufficient amount of comprehensible input (p. 2).

Once and for all, in order to understand the central role of modified input in second language acquisition to a high degree, it is necessary to know what modifications native and non-native speakers of English typically make when communicating with non-native learners.

Previous Studies on Syntactic Features of Teacher Talk

Besides the lexical, phonological, and discourse features of teacher talk, syntactic features also play an important role in understanding the modifications in teacher talk. In that sense, the proportion and the frequency of subordination in TT are significant in terms of showing complexity in syntax. The analysis of the frequency of the subordinate clauses in Henzl's study (1973; 1979) illustrates teachers' tendency to use fewer subordinate clauses to non-native learners. Gaies (1976) emphasizes a similar trend regarding the increasing rate of different kinds of subordinations (noun, adjective, and adverb clauses) in correlation with the proficiency level of the learners while Chaudron (1979) proposes this variation just for relative clauses.

Pica and Long (1986) and Wesche and Ready (1985) examine syntactic subordination in teacher talk by taking the number of clauses per T unit into account. In these studies, they have noted no important differences in the degree of subordination in teacher talk directed to L2 learners in comparison with NS-NS communication. On the other hand, Chaudron (1979) emphasizes significantly less complexity in TT to low and high beginners in contrast with greater complexity in teacher talk towards advanced learners. Besides, some studies (Gaies, 1977; Ishiguro, 1986) have found significantly less complex teacher talk addressing non-native learners.

The Study: Overview

This current study attempts to focus on lexical and syntactical modifications in teacher talk of native and non-native speakers of English in classrooms where the target language is English. Due to the scarcity of studies on such kind of modifications of teacher talk, it is hoped that this study may fill a gap and provide some insights into efficacious English teaching practices.

Methods

The study has a mixed research design in which qualitative and quantitative methods were integrated. The data used in this research design has been obtained from audio-recordings of eight EFL instructors (both NSs and NNSs) at Çağ University in Turkey, a questionnaire aiming at obtaining participants' background information and an interview regarding their views on the modifications in teacher talk.

Participants. The participants of the study were eight EFL instructors from the Preparatory School at Çağ University, the first foundation university in the southern part of Turkey. Convenience Sampling in which participants were chosen randomly was used during the selection of participants. Four instructors who participated in this research are native speakers of English, three of whom are females. Their ages vary between 28 and 36. While one of the instructors holds a degree in mass communications, three instructors graduated from a department directly related to the English language. Among these three instructors, one of them holds both master's and doctorate degrees and one

participant is presently doing her master's degree. The teaching experience of these participants ranges from 4 to 15 years.

As for the non-native speakers of English, their ages vary between 29 and 57. Among the four non-native instructors, two of them are graduates of ELT, and the other two hold Bachelor of Arts degrees in English Language and Literature and American Culture and Literature. While two of them are master's degree students, the other two do not hold any postgraduate degrees. Their teaching experience varies between seven and 37 years.

Tools. Three types of instruments were utilized: audio-recordings, a questionnaire on the background of the participants, and an interview regarding participants' opinions on the modifications in TT.

Data Collection Procedure

To obtain the data, participants' speaking lessons were chosen. The total number of learners in each class ranged from 15 to 19 at the elementary and pre-intermediate levels.

While there were two classes at the elementary level, there were also two classes at the pre-intermediate level. Each class at the elementary and pre-intermediate levels was taught by one NS and one NNS. Because there were two classes at the elementary level, there were in all four lessons to be recorded.

Four other classes were taught in the same fashion at the pre-intermediate level. Each session of recordings lasted for 50 minutes in parallel with the duration of each single class. The researcher and a native speaker of English conducted transcriptions of eight sessions of recordings over a span of four months. They transcribed 235 pages in total. These transcriptions were also double-checked by both the researcher and a native speaker of English.

To collect the data, permission of both the director of the Preparatory School and eight EFL instructors was asked in advance prior to in-class recordings. The researcher did not attend the classes in order not to disrupt the natural flow of the lessons. Before each class started, the voice recorder was placed in an inconspicuous place in the class so as to minimize the negative effect of the device on the learners while simultaneously increasing the quality of natural data. In addition, the researcher waited outside while the instructor was audio recording the lesson. To obtain the data as natural as possible, instructors were not given information about the main focus of the research.

As for the implementation of the questionnaire, it was filled out by the instructors individually. However, during the questionnaire phase, one of the

participants at the elementary level was pregnant. Therefore, the researcher sent the questionnaire to the researher via e-mail. The participant filled the question-naire and sent it back to the researcher to be examined.

As the last phase of the data collection, an interview was conducted with each participant. Appointments were made to talk with the instructors one by one. Then, the researcher met the instructors to interview them on the appointed day.

Data Analysis

Data analysis of the study is based on the analyses of teachers' speech at the elementary and pre-intermediate levels regarding syntactical modifications. Besides the analysis of the quantitative data, a questionnaire was filled out and an interview was conducted.

As for the analysis of teachers' speech in relation to syntactical modifica-tions, words and sentences in the teacher talk of NSs and NNSs at the el-ementary and pre-intermediate levels were counted by both the researcher and a native speaker of English. The obtained data from each instructor's lesson were entered into SPSS Statistics 17.0. Chi square (X^2) statistics was utilized.

Additionally, types of verbs (transitive, intransitive, and linking verbs), verb moods (indicatives, imperatives and subjunctives), voice of verbs (active and passive voice), the verb "be," subordinate clauses (noun clauses, adjective clauses, and adverb clauses) and types of sentences (compound, complex, and complex compound sentences) were determined and checked by both the re-searcher and a native speaker of English. The number of types of verbs, verb moods, voice of verbs, the verb "be," subordinate clauses and types of sentences were calculated one by one. It was examined whether any significant differences existed in the uses of these syntactical structures uttered by NSs and NNSs at the elementary and pre-intermediate levels according to Chi squared distribution in SPSS Statistics 17.0.

Regarding the analysis of the questionnaire that comprised the qualita-tive part of the study, it was beneficial to get background information on the participants and to illustrate this information (their age, gender, education, and work experience).

An interview was also conducted so as to get instructors' ideas about whether the language of the teacher in an EFL classroom should be modified according to the proficiency level of the non-native learners. The researcher took notes and asked what kinds of modifications needed to be made when the instructors mentioned the necessity of the modifications towards learners. For

the analysis of the interview, the researcher examined the responses regarding the types of modifications that instructors preferred to make towards non-native learners.

Results

Table 1

Differences in the use of subordinate clauses in teacher talk of NSs and NNSs at the elementary level

Subordinate clauses	NSs	NNSs	χ^2	Sd	P
Noun clause	39	22	4.738	1	0.030
Adjective clause	14	14	0.000	1	1.000
Adverb clause	48	24	8.000	1	0.005

In Table 1, when subordinate clauses that NSs and NNSs used at the elementary level were examined, it was seen that NNSs used 22 noun clauses in their speech, NSs uttered 39 noun clauses. In parallel with the results, a meaningful difference in the use of noun clause between teacher talk of NSs and NNSs was noticed ($p < 0.05$). This meaningful difference between the speech of NSs and NNSs at the elementary level was also present for the use of adverb clauses ($p \leq 0.05$). Adverb clauses were used more by NSs rather than NNSs. The number of adverb clauses in teacher talk of NSs was two times as great as the number of adverb clauses in the speech of NNSs. NSs employed 48 adverb clauses whereas NNSs used 24 adverb clauses.

In contrast with the use of noun clauses and adverb clauses, adjective clauses were used in the same number by both NSs and NNSs (14 adjective clauses in both speeches). Therefore, in this respect no important difference was observed between the teacher talk of NSs and NNSs at the elementary level.

Table 2

Differences in the use of subordinate clauses in teacher talk of NSs and NNSs at the pre-intermediate level

Subordinate clauses	NSs	NNSs	χ^2	Sd	P
Noun clause	71	39	9.309	1	0.002
Adjective clause	25	16	1.976	1	0.160
Adverb clause	54	43	1.247	1	0.264

As emphasized in Table 2, NSs used more noun clauses than NNSs did at the pre-intermediate level. There were 71 noun clauses in the speech of NSs while there were 39 noun clauses in the teacher talk of NNSs. Therefore, it is obvious to say that there was a remarkable difference in the use of noun clauses between the speech of NSs and NNSs ($p < 0.05$).

However, significant discrepancies were not seen in the use of adjective and adverb clauses between the teacher talk of NSs and NNSs at this level although NSs used more adjective and adverb clauses than NNSs did (25 adjective clauses in the teacher talk of NSs, 16 adjective clauses in the teacher talk of NNSs, 54 adverb clauses in the speech of NSs and 43 adverb clauses in the speech of NNSs).

Table 3

Differences in the use of subordinate clauses between teacher talk of NSs at the elementary level and teacher talk of NSs at the pre-intermediate level

Subordinate clauses	Elementary level	Pre-intermediate level	χ^2	Sd	P
	NSs	NSs			
Noun clause	39	71	9.309	1	0.002
Adjective clause	14	25	3.103	1	0.078
Adverb clause	48	54	0.353	1	0.552

Table 3 illustrates an increasing pattern in the use of noun clauses, adjective clauses, and adverb clauses in the teacher talk of NSs at the pre-intermediate level. To specify the data, NSs at the pre-intermediate level used more noun and adjective clauses rather than NSs did at the elementary level although there was a marked difference in just noun clauses ($p < 0.05$). Regarding adverb clauses, NSs used more adverb clauses at the pre-intermediate level surpassing NSs in their speech at the elementary level but that does not form a great difference ($p < 0.05$).

Table 4

Differences in the use of subordinate clauses between teacher talk of NNSs at the elementary level and teacher talk of NNSs at the pre-intermediate level

Clauses	Elementary level	Pre-intermediate level	χ^2	Sd	P
	NNSs	NNSs			
Noun clause	22	39	4.738	1	0.030
Adjective clause	14	16	0.133	1	0.715
Adverb clause	24	43	5.388	1	0.020

Table 4 shows that NNSs at the pre-intermediate level used more noun, adjective, and adverb clauses than NNSs did at the elementary level. Despite the high rate of subordinate clauses in the teacher talk of NNSs at the pre-intermediate level, there was an observable difference only in use of noun and adverb clauses between the teacher talk of NNSs at the elementary and pre-intermediate levels ($p < 0.05$ for noun clauses, $p < 0.05$ for adverb clauses).

Table 5

Differences in the use of sentences in teacher talk of NSs and NNSs at the elementary level

Sentences	NSs	NNSs	χ^2	Sd	P
Compound sentence	26	26	0.000	1	1.000
Complex sentence	74	48	5.541	1	0.019
Complex-compound sentence	14	6	3.200	1	0.074

As observed in Table 5, the number of compound sentences used by NSs was the same as the number in the teacher talk of NNSs. Both NSs and NNSs used 26 compound sentences. In addition, NSs used 14 complex-compound sentences. However, NNSs uttered only 6 complex-compound sentences. According to statistical calculations, no significant discrepancies were observed between NSs and NNSs in the uses of compound and complex-compound sentences at the elementary level ($p > 0.05$ for compound sentences, $p > 0.05$ for complex-compound sentences) although the use of complex sentences shows a meaningful difference between teacher talk of NSs and NNSs at the same level ($p < 0.05$).

Table 6

Differences in the use of sentences in teacher talk of NSs and NNSs at the pre-intermediate level

Sentences	NSs	NNSs	χ^2	Sd	P
Compound sentence	34	23	2.123	1	0.145
Complex sentence	83	76	0.308	1	0.579
Complex compound sentence	29	11	8.100	1	0.004

In Table 6, NSs used more compound, complex, and complex-compound sentences than NNSs did at the pre-intermediate level. Despite this, the number of compound and complex sentences used by NSs and NNSs at the pre-intermediate level did not reflect any important differences ($p > 0.05$ for compound sentences, $p > 0.05$ for complex sentences) while the number of complex-compound sentences used by NSs and NNSs at this level formed a meaningful difference ($p < 0.05$).

Table 7

Differences in the use of sentences between teacher talk of NSs at the elementary level and teacher talk of NSs at the pre-intermediate level

Sentences	Elementary level	Pre-intermediate level	x^2	Sd	P
	NSs	NSs			
Compound sentence	26	34	1.067	1	0.302
Complex sentence	74	83	0.516	1	0.473
Complex-compound sentence	14	29	5.233	1	0.022

As pinpointed in Table 7, compound, complex, and complex-compound sentences were made more in the speech of NSs at the pre-intermediate level rather than in the teacher talk of NSs at the elementary level. Despite the increasing trend in the number of subordinate clauses at the pre-intermediate level, the only notable difference was seen in the number of complex-compound sentences (p < 0.05) while the numbers of compound and complex sentences in the teacher talk of NSs at the elementary and pre-intermediate levels were close to each other. NSs at the pre-intermediate level made 14 complex-compound sentences. On the other hand, NSs at the pre-intermediate level constructed 29 complex-compound sentences.

Table 8

Differences in the use of sentences between teacher talk of NNSs at the elementary level and teacher talk of NNSs at the pre-intermediate level

Sentences	Elementary level	Pre-intermediate level	x^2	Sd	P
	NNSs	NNSs			
Compound sentence	26	23	0.184	1	0.668
Complex sentence	48	76	6.323	1	0.012
Complex-compound sentence	6	11	1.471	1	0.225

Table 8 shows that NNSs at the pre-intermediate level made more complex and complex-compound sentences compared with NNSs at the elementary level. However, the only significant difference was seen in the use of complex sentences (p < 0.05). There were 48 complex sentences in teacher talk of NNSs at the elementary level while there were 76 complex sentences in the speech of NNSs at the pre-intermediate level. As for compound sentences, NNSs at the elementary level formed more compound sentences than did NNSs at the pre-intermediate level. However, it was not possible to see any meaningful differences between these levels because the number of compound sentences

at the elementary level was so close to the number of compound sentencees at the pre-intermediate level (p > 0.05).

Data Obtained from the Questionnaire and Interview. Apart from the tables related to the syntactical structures used in teacher talk of NSs and NNSs at the elementary and pre-intermediate levels, there was a questionnaire in the study that was designed for getting background information including the age, the first language, educational life, and working experience of the participants (see Appendix 1). However, these findings were not taken into consideration for analysis.

Also, an interview was conducted (see Appendix 2). Participants were first asked a question regarding whether the language that the teacher uses should change according to the proficiency level of the learners. When the participants answered this question "yes," they were asked how they could change their language according to the level of the students. They were also asked whether they would simplify or elaborate their classroom language or how they would make some modifications.

When the answers of NSs were compared with those of NNSs at the elementary level, it was clearly seen that both NSs and NNSs stated that they would modify their talk according to the proficiency level of the learners. They also pinpointed that each proficiency level necessiated certain types of grammar structures. Therefore, they put forward that they needed to teach and interact with the learners by taking their language level into account. One of NNSs at the elementary level stated, "As each level contains certain structures, teachers should use language according to level of students to make interaction with them easier."

On the other hand, based on the comparison of the answers given by NSs and NNSs at the pre-intermediate level, it was clearly noticed that NSs and NNSs at the pre-intermediate level believed that using complex structures at beginner or elementary level could cause learners to lose their motivation during the process of language learning. One of the NNSs at the pre-intermediate level said, "How can you use complex sentences when teaching beginners? Firstly, they will lose motivation. Then, they will lose their interest in the lesson." They mainly thought that teachers needed to modify their classroom language so that learners could feel confidence in their ability to understand. However, they stated that their classroom language needed to be just beyond the level of the learners. They believed in the necessity of challenge in the language learning process. In addition, they suggested that there was no need to use too simple language and to speak too slowly to make the learners comprehend the language.

Discussion and Findings

The findings obtained from the quantitative data have revealed that NSs and NNSs at the elementary and pre-intermediate levels made syntactical modifications while addressing non-native learners of English.

In addition, the use of *subordinate clauses* indicates the measure of subordination in teacher talk. Regarding noun clauses, NSs at the pre-intermediate level used more noun clauses than NSs did at the elementary level which forms a notable difference (see Table 3). The same trend continues in the speech of NNSs at both levels (see Table 4). As for adjective clauses, there was a slight increase in the use of adjective clauses in the teacher talk of NSs and NNSs at the pre-intermediate level compared with the speech of NSs and NNSs at the elementary level, although this does not constitute a notable difference (see Table 1 and 2). In addition to the use of noun and adjective clauses, the use of adverb clauses increased in the speech of NNSs at the pre-intermediate level compared to the use of adverb clauses in the teacher talk of NNSs at the elementary level forming a significant difference (see Table 4). Although there is a small increase in the number of adverb clauses in the speech of NSs at the pre-intermediate level, this does not lead to a marked difference (see Table 3). It can be inferred from the data that teachers mostly tended to use fewer subordinate clauses towards less proficient non-native learners, as Hakansson (1986) pinpoints. This inference is also in accordance with the ideas of Gaies (1977) emphasising an increase in the use of subordinate clauses to the learners with a higher level of language proficiency.

As a second category, the findings of the *types of sentences* illustrated that NSs at the pre-intermediate level used complex sentences most while NSs at the elementary level constructed complex-compound sentences least. It is an undeniable fact that there was an increase in the use of compound, complex, and complex-compound sentences in the teacher talk of NSs at the pre-intermediate level in comparison with the speech of NSs at the elementary level. Despite this increase, the only notable difference was observed in the use of complex-compound sentences. NSs at the pre-intermediate level used more complex-compound sentences than NSs did at the elementary level (see Table 7). An increase in the use of these types of sentences can also be observed in the use of complex and complex-compound sentences in NNSs' speech at the pre-intermediate level. Nevertheless, the only meaningful difference was found in the use of complex sentences rather than compound and complex-compound sentences. NNSs at the pre-intermediate level constructed more complex sentences than NNSs did at the elementary level. As for compound sentences in the speech of NNSs at both levels, it can be said that there was interestingly a slight decrease in the number of compound sentences in the teacher talk of

NNSs at pre-intermediate level compared with the number at the elementary level but that does not form a markable difference (see Table 8).

Upon examination of the overall findings in relation to types of sentences, it can be concluded that speech addressing less proficient non-native learners should be less complex, as Chaudron (1979) and Gaies (1977) put forward. This is also in agreement with the findings obtained from the administered interview with NSs and NNSs at the elementary level and one NS at the pre-intermediate level stressing simplification of the language and avoidance of complex sentence structures.

Finally, syntactical modifications obtained from the quantitative data have also been supported by the findings of the interviews although the opinions of NSs and NNSs at the elementary and pre-intermediate levels on the kinds of syntactical modifications may differ. The results of the interviews have shown that NSs and NNSs at the elementary level focused on the idea that each proficiency level necessitated certain types of grammar structure and teachers needed to interact with the students according to the proficiency level of the learners. As for NSs and NNSs at the pre-intermediate level, only one of the NSs at this level emphasized the necessity of using simple structures with the beginners and he suggested that teachers should use more advanced grammar as the proficiency level of the learners progressed. The other NS and both of the NNSs at the pre-intermediate level also stressed the importance of the teacher talk being modified according to the proficiency levels of the learners because they stressed that using complex structures at the beginner or elementary levels might cause learners to lose their interest and motivation in language learning. However, they also suggested that the classroom language of the teacher should be a little beyond the level of the learners to provide comprehensible input as Krashen (1982) put forth. In other words, NSs and NNSs at the elementary and pre-intermediate level had similar opinions and beliefs on modifying the classroom language according to the proficiency levels of the learners whereas their points of views on the kind of syntactical modifications to be made could show differences.

Conclusion

The findings of the present study try to probe a phenomenon and arouse insights concerning syntactical modifications by native and non-native speakers of English in their speech when talking to non-native learners at the elementary and pre-intermediate levels. By means of the comparison of the teacher talk of native and non-native speakers, this study may contribute to more studies

in relation to the teacher talk of NSs and NNSs and its modifications, and it may raise awareness of EFL teachers regarding the importance of teacher talk.

Although further research is necessary to enhance the findings of this study, the present findings have several important implications for the field of foreign language teaching. First, comprehensible input is at the core of second or foreign language learning and teaching, and modifications in teacher talk can help non-native learners understand the input enabling them to acquire the language. In this sense, the linguistic input in teacher talk may be enhanced for the benefit of non-native learners.

Second, the data gained in this study or similar research may be used by in-service or teacher training programs to give more instructions about how to produce effective teacher talk providing comprehensible input to L2 learners. Furthermore, the findings of the study may be beneficial in terms of preparing ELT materials and resources which can be used in different classrooms and with various non-native learners to meet their need for comprehensible input.

Third, teacher resources may concentrate on the phenomenon of teacher talk by presenting and describing adjustments at lexical and syntactic levels in order to contribute to the development of professional skills and improvement of the quality of an ESL or EFL teacher.

Questionnaire

Background information of the participant

1. Name: ....

2. Surname: ....

3. Age: ....

4. Number of years in English language teaching: ....

5. University degree obtained and year: ....

6. Any English certificates: ....

7. Any master or doctorate degree: ....

<div align="right">Appendix 2</div>

Interview

1. Do you think that the language that the teacher uses in the classroom should change according to proficiency level of the students while interacting with them?
2. If so, what kind of modifications do teachers make in their speech? (Such as simplification, elaboration in the use of vocabulary or structures or some other modifications of the language)

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Arzu Ünel, Meryem Mirioğlu

Syntaktische Modifikationen in der von Englischlehrern – Muttersprachlern und Ausländern im Klassenraum gesprochenen Sprache

Z u s a m m e n f a s s u n g

Die von einem Lehrer im Klassenraum gebrauchte Fremdsprache ist die Grundlage der Kommunikation zwischen dem Lehrer und seinen Schülern und die Sprache des Lehrers (eng.: *teacher talk*) spielt dabei grundlegende Rolle. Zum Ziel der im vorliegenden Artikel dargestellten quantitativ-qualitativen Forschung wurden syntaktische Modifikationen im Englischen, die sowohl von englischen Muttersprachlern (eng.: *native speakers of English*) als auch von den englisch sprechenden Ausländern (eng.: *non-native speakers of English*) gebraucht waren. Die Schüler in der zu untersuchten Klasse verfügten über die Englischkenntnisse auf der Grundstufe und auf der Mittelstufe, und die Forschung wurde in Bezug auf türkische Schule durchgeführt. Die Ergebnisse zeigten bedeutende syntaktische Modifikationen beispielsweise im Bereich der Anwendung von verschiedenen Satztypen in der Sprache von den beiden Lehrergruppen auf, die offensichtlich vor allem vom Wissenstand der Schüler abhängig waren.

Tammy Gregersen
University of Northern Iowa, USA

Aligning Who I Am with What I Do:
Pursuing Language Teacher Authenticity

A b s t r a c t : This study explores the dynamic, interactive relationship between teacher identity and authenticity. Through an examination of several socio-cultural (social identity, situated learning, and image text) and psycholinguistic (individual differences) second language acquisition theories, a conceptualization of identity is provided. Subsequently, language teacher authenticity is characterized from both a philosophical and pedagogical perspective and connected to the notion of teacher identity. The final section of the paper presents research-based applications that include reflecting critically, redefining personal credibility, discovering one's personal style, displaying emotion and recognizing diversity to facilitate the positive-broadening quest of aligning one's identity (i.e., who I am) with authenticity (i.e., what I do).

K e y w o r d s : teacher identity, authenticity, social identity, situated learning, image text, individual differences

Introduction

In the repertoire of stories passed through the generations of the Lakota indigenous people from the Great Plains of the United States comes a wise, thoughtful creation story that sets the stage for the enigmatic synergy of human identity and authenticity. It begins with the Creator gathering all of Creation, and saying, "I want to hide something from the humans until they are ready for it. It is the realization that they create their own reality."

The eagle said, "Give it to me, I will take it to the moon."
The Creator replied, "No. One day they will go there and find it."
The salmon said, "I will bury it on the bottom of the ocean."
"No, they will go there, too."

The buffalo said, "I will bury it on the Great Plains."
The Creator said, "They will cut into the skin of the Earth and find it even there."
Grandmother Mole, who lives in the breast of the Mother Earth, and who has no physical eyes but sees with spiritual eyes, said, "Put it inside of them."
And the Creator said, "It is done."

This story speaks to the elusiveness of discovering one's *identity* and its corollary, *authenticity*. Taking my cue from the Lakota, I address this complexity on the first day of each semester in my TESOL Methods class with the following words to my pre-service teachers: "I cannot teach you how to be a good language teacher. I can only show you those things which research, my own experience, and 'best practices' have suggested as being potentially effective. You and you alone will need to look deeply inward, find your teacher self, and discover from among the myriad of methods and techniques you will be introduced to what works best for you and the unique group of learners you have in front of you at any given moment." For some, this invitation to explore is an exciting challenge. For others, this paucity of recipes is scary and daunting. In one word, I beseech my future teachers to be *authentic*—a virtue which cannot be achieved without first *knowing thyself* and formulating a comprehensive answer to the enigmatic question, *Who am I?*; thus making self-identity a precursor to authenticity. Authentic teachers teach like the people they are. Taylor (1991, pp. 35–36) suggests: "When we come to understand what it is to define ourselves, to determine in what our originality consists, we see that we have to take as background some sense of what is significant. Defining myself means finding what is significant in my difference from others." In this paper, I attempt to make the case that teacher authenticity means acting upon the cognizance of our uniqueness.

When our personal and professional identities are in sync, and when *who I am* and *what I do* are as congruent with one's true essence as they can possibly be, it is then that together with our students, we as teachers, experience well-being. When considering the pursuit of authenticity as a personal process of engagement that is manifested in teachers' lives and work, we acquire a deeper understanding of the kinds of practices and pedagogical encounters that enhance (and sometimes limit) learner and teacher development (Malm, 2008). This incredibly intimate process of self-discovery, however, is not a static, exhaustive, and consistent experience, but rather it is multiple, fluctuating, oppositional, and shaped by powerful social forces. On the one hand, the process of identity discovery is personal, defined by an individual's emotional, psychological, and cognitive drives; on the other, it is shaped and negotiated by social influences like power and co-constructed meaning-making. Parker J. Palmer (2007), in his book*, The Courage to Teach: Exploring the Inner Landscape of a Teacher's*

Life, wrote, "I want to learn how to hold the paradoxical poles of my identity together, to embrace the profoundly opposite truths that my sense of self is deeply dependent on others dancing with me and that I still have a sense of self when no one wants to dance."

The present study examines the ever-shifting, synergetic relationship between teacher identity and authenticity and attempts to demonstrate how reflecting critically, redefining personal credibility, discovering one's personal style, displaying emotion and recognizing diversity might facilitate the positive-broadening quest of aligning one's identity (i.e., who I am) with authenticity (i.e., what I do). To begin, I attempt to scale the very slippery slope of conceptualizing teacher identity. To this end, I elucidate four theories from a second language acquisition (SLA) perspective: social identity theory, situated learning, image-texts, and individual differences theory before highlighting several tenets from the discipline of education. Next, I examine the conceptualization of authenticity from both a philosophical and pedagogical perspective. Finally, I attempt to provide research-based applications concerning how to align our identities with authenticity. We take this self-discovery journey as teachers in the hopes of heeding our deepest personal and educational mission: "Our deepest calling is to grow into our own authentic self-hood, whether or not it conforms to some image of who we ought to be. As we do so, we will not only find the joy that every human being seeks—we will also find our path of authentic service in the world" (Palmer, 2001).

Identity Defined

From the outset, it is important to highlight the transformational and transformative nature of identity. Its formation is neither structurally determined nor context-free. Individuals are intentional and exert agency as they socially, culturally, and politically explore the identities assigned by others and those that are self-acknowledged (Varghese, Morgan, Johnston, & Johnson, 2005). In juxtaposing a variety of language teacher social identity theories, we can use them to enlighten each other and to mitigate the internal limitations of each if considered alone. To this end, let us examine three different sociolinguistic paradigms—social identity theory (Hogg & Abrams, 1998), the theory of situated learning and communities of practice (Lave & Wenger, 1991) and identity as image-text (Simon, 1995)—and discover where they intersect (Varghese, Morgan, Johnston, & Johnson, 2005).

Social identity theory promotes the notion that identity is based upon group membership and is shaped by social categories like race, nationality class, etc.,

that govern differences in power and status (Tajfel, 1978). Consequently, an individual's understanding of self is continually in flux and changes over time and within different contexts. Thus, group membership provides a sense of social identity and belonging in the social world and impacts one's self-esteem and sense of pride, carrying the implication that association with a negatively valued group even for a minimal time might result in a lowering of one's self-worth. Because we simultaneously belong to a myriad of different groups, membership in one group is often more relevant and influential than in another. With such powerful social consequences, one way to increase one's self-image is to enhance the status of the group. An example of the influence of social identity theory on language teacher identity is found in the idealization of the native versus nonnative speaker and the negative-narrowing self-perceptions that this might engender in nonnative speakers teaching a target language.

Although social identity theory is significant in the sense that it raises an individual's awareness of their status in a particular group, it is limited in its dependence on conflicting, fixed social classifications and prevents teachers from tracing their developing and ever-so-individual evolution. Nevertheless this theory can still offer useful insights into teacher self-perceptions, albeit more global and generic than the other two theories under investigation (Varghese, Morgan, Johnston, & Johnson, 2005).

A second insightful theory implicating teacher identity is situated learning. This theory links learning and identity by characterizing learning as a process of identification in which learning and understanding transpire and evolve as individuals participate in activities and become progressively more involved. Thus, communities of practice, comprised of numerous identities and levels of participation, are not precisely defined. They host members who share an appreciation about what they do and the meaning that this participation has in their lives and for their communities. In this theory learning occurs through co-participation and social engagement (Lave & Wenger, 1991). This view is especially significant to our current teacher identity conversation in that self-savvy teachers are as concerned with learning about their environments as they are about classroom skills (Darling-Hammond, 1990). Learning, therefore, is much more a process of *coming to be* by shaping identities in real-world endeavors, and it is this kind of learning—*participating in* rather than *being acted upon*—that is an important condition for successful learning (Lave & Wenger, 1991).

Even though situated learning theories allow us to conceptualize learning and identity construction as a process of being in evolving communities of practice, there are various limitations. One of the problems is the emphasis on how individual identity develops inside the structure of group practice instead of contemplating different forms in which identities are shaped through interaction. The emphasis on the group ignores the role of personal experiences and

motivations and cannot account for the power relations and underlying ideologies within groups (Varghese, Morgan, Johnston, & Johnson, 2005).

A third theory that taps into language teacher identity as a precursor to authenticity is the notion of teacher identity as a result of the co-creation of "image-text." Image-texts are created through daily school activities and reflect the familiar, emotional relationships that frequently grow out of teacher-student interaction. They are complex, multi-faceted representations, assembled with interpretations of immediate and observable experiences like classroom interaction, formal instruction, and assessment, but they are also guided by indirect and often indiscernible realities, like students' feelings about a teacher's ethnicity or gender, or on the other hand, a teacher's low expectations for a class based on the socioeconomic status of the school community. A teacher's personal stories, body language, clothes, and the connection of these with a student's personal previous experiences might also be found in the image-text generated by the class. The image-text reflects a variety of conflicting and harmonizing voices, is open to new interpretations that are superimposed upon preceding ones, and allows for both conformity and resistance. This theory highlights the notion that as teachers we are often times invisible to ourselves but students can "read" us and respond to aspects of which we are unaware (Morgan, 2002).

Image-texts demonstrate that as teachers we cannot always guarantee that our actions will have prescribed outcomes. We can, however, distinguish ourselves in ways that open up identity options not previously imagined, or that can inspire, for example, social practices or forms of participation we have not previously considered. At the same time, teacher identity as pedagogue carries potential dangers. Teachers have considerable influence on and, in some settings, substantial power over students' futures. Therefore, the notion of image-text helps us to see that as teachers, we need to present ourselves in ways that are not directly threatening or disrespectful but instead open to novelty and new interpretations (Varghese, Morgan, Johnston, & Johnson, 2005).

The three previous theories characterize identity-discovery as being formed and negotiated by social influences, but they do not directly address the individual emotional, psychological, and cognitive journeys teachers make as they seek the positive-broadening power of self-identification by personal rather than social exploration. We approach our language teaching with a myriad of different motivations and from a variety of diverse contexts. Our velocities, comfort zones, fortes, linguistic proficiency, and the journeys we embark on to reach our ultimate language teaching destinations are quite various. Theories that address these differences, their causes and outcomes, are collectively discussed under the umbrella of Individual Differences (IDs) and take the form of variables such as anxiety, beliefs, cognitive abilities, motivation, learning styles and strategies, and willingness to communicate (Gregersen & MacIntyre, 2014). While the majority of ID literature focuses on learner individuality, researchers

have also targeted teacher variables like language teacher anxiety and beliefs (Horwitz, 1996; 1988), and language teacher motivation (Dornyei, 2005) and there have been numerous investigations concerning the alignment of teacher and learner styles and intelligences. Traditionally, most of these traits have been studied as distinct variables; however, the discipline of applied linguistics has recently experienced a surge of research in dynamic systems that recognizes the complexity of language learning and teaching. Such recognition has resulted in attempts to assemble the large variety of isolated factors into coherent, cohesive systems (Gregersen & MacIntyre, 2014; Dornyei, MacIntyre, & Henry, 2015).

Individual teachers are each composed of a countless number of systems that have evolved in numerous diverse ways resulting in unique personalities. Each system must work congruently within itself and synchronously in combination with all the others. If our beliefs about our systems do not match the reality of them, the systems are bound to break down. Consequently, externally imposed beliefs have to be integrated within a system or they become wrenches in it. Each of us is composed of systems that are so complex that a great deal of introspection is necessary to realize how our own unique system really works. For example, imagine an introverted, private, serious teacher who is told that learners engage better with jokes and personal anecdotes. Such techniques might work authentically for the extroverted, self-disclosing teacher, but for the reserved, thoughtful teacher, those practices would seem fake and unauthentic.

Moving beyond SLA literature to research in general teacher education, we find concurrence with the notion that teacher identity is dynamic, that it fluctuates with time, and is impacted by a myriad of factors that are both internal (e.g., emotion) and external (e.g., life experiences) to the individual (Sachs, 2005; Zembylas, 2003). Accordingly, identity implicates both a person and a context, and according to Gee (2001), the idea of identity suggests a certain "kind of person" within a specific context. Although we all have a core identity—one that is relatively stable—various iterations of this identity surface as we engage with different people and settings. Gee isolates four ways of perceiving identity:

1. Nature-identity (developed from nature or originating in our natural state, something akin to individual differences research).
2. Institution-identity (resulting from a position acknowledged by authority, much like the categories created by society as found in social identity theory mentioned above).
3. Discourse-identity (rising from the discourse or opinion of others about us, similar to the co-construction found in image-text).
4. Affinity-identity (determined by one's practices in relation to external groups, comparative to the communities of practice in situated learning).

The emphasis in this view of identity is on the multifaceted nature of identity and its changing shape in terms of external influences.

Olson (2008) takes a sociocultural perspective in his proposition that teacher identity is both the process that results from influences upon the teacher and the product derived from the ongoing interaction of our own teacher development. He views identity as a term for the assortment of impacting factors found in the immediate contexts of "self, social positioning and meaning systems" (p. 139)—all of which fluidly influence and are influenced in a continually shifting construct. Such factors get entangled within the stream of teacher activity as we simultaneously respond to and navigate situations and interactions at any given moment. Hence, identity is linked to the collective discourses that contour our own individual circumstances and our individual contributions that supplement the contributions of a community (Sfard & Prusak, 2005).

In reviewing the three language-teacher-affiliated sociocultural theories, the psychological premises found in literature on the subject of individual differences, and the concurring literature from education research, we can see that the discovery of our teacher identities is intensely personal and psychological, as it integrates teacher's self-images and natural predispositions, but it is also deeply social and shared in that identity also considers the collective practices taking place in institutional settings like teacher education programs, schools, and even larger collectives like culture. Furthermore, teasing out language teachers' identities is not only a process of discovery that is intricately interwoven with language and discourse, but is also embedded in a concrete real-world phenomenon. As we construct, recognize, and embrace our teacher identities in pursuit of greater authenticity, it behooves us to take account of the way teachers' identities are individually recognized and discursively constructed and recognize the social forces to which teachers are exposed and attempt to understand the consequences these influences exert on individual self-definitions. In considering recommendations for teachers to align who they are with what they do, there needs to be sensitivity to the discourse and agency that the theory of image-text offers; however, suggestions must also consider the impact of situated learning that community-of-practice theory proposes. Yet, it is with identity theory and understanding the role of individual differences that teachers can conceptualize their individual psychological states. In short, multiple theoretical approaches are essential if teachers are not to lose sight of the real-world complexity of being true to themselves (Varghese, Morgan, Johnston, & Johnson, 2005).

In an attempt to bring some kind of consensus to this discussion on identity's definition, I end this section with Sachs (2005, 15f.): "Teacher professional identity … stands at the core of the teaching profession. It provides a framework for teachers to construct their own ideas of 'how to be', 'how to act', and 'how to understand' their work and their place in society." This idea of teacher identity rejects the notion that it is fixed but holds instead that it is negotiated through experience and the sense that individuals make of that experience. According to

Parker (2007), "Good teaching cannot be reduced to technique; good teaching comes from the identity and integrity of the teacher."

Authenticity Defined

To understand what "authenticity" means, we have to grasp the notions of difference, originality, and the acceptance of diversity. Taylor (1991) contends that in defining ourselves, we need to establish those elements that make us original while, at the same time, considering what is significant. Authenticity includes creation and construction in addition to discovery, uniqueness, and recurrent resistance to the roles assigned by society. Concurrently, authenticity demands openness to what is meaningful and self-definition through dialogue (Taylor, 1991).

Because teaching is relational in nature, it is "an emotional practice" (Hargreaves, 1998, p. 835). This is because "emotions are at the heart of teaching. They comprise its most dynamic qualities, literally, for emotions are fundamentally about movement." An examination of the emotions of teaching and educational change led Hargreaves to surmise that the emotional connection teachers nurture with their learners is pivotal to their decision-making about their methods, teaching contexts, and practice selections. The emotional rewards of teaching, the authority to make independent decisions, and to exercise personal discretion, initiative and creativity through their work are all vital to maintaining teachers' senses of self and to find their meaning via communication and dialogue with learners. Giddens (1991) contends that being true to himself means being true to what makes him original, and that this originality is so much his own; that it is only he who can articulate and discover it. He adds that in articulating his uniqueness, he also finds a definition of self (i.e., realizing the potentiality that is properly his own).

According to Laursen (2004; as cited in Malm, 2008), the following characteristics are typical of authentic teachers: personal commitment, embodiment of the task, realistic teaching intentions, respect for students, close teamwork with colleagues, and persistent determination for personal and professional growth. For Laursen, authenticity is one type of teachable teacher expertise directly connected to teaching quality which develops as an extension of basic, fundamental knowledge. Consequently, authenticity and professionalism are not in opposition; quite the reverse: authenticity is the epitome of professionalism where no division exists between person and professionalism.

Another affective dimension of authenticity relates to our affinity as teachers for the subject we teach (in our case, the target language), and engaging

our learners in genuine and candid interaction around ideas that matter. Such dialogue implicates virtues, such as being genuine, developing greater self-awareness, defining ourselves rather than allowing other people's expectations to manipulate us, allowing portions of ourselves to personally interact with our learners, and critically reflecting upon ourselves, others, our relationships and the content. Even more important perhaps is that teacher authenticity contains a moral dimension that urges us to explore the "horizons of significance" (e.g., standards of excellence) within which we define ourselves as educators and make decisions about the education of others. Being an authentic teacher demands that we search with an eye toward that which is outside ourselves because for authenticity to be meaningful it needs to be sought by considering significant issues and asking ourselves at every turn whether what we are teaching is in the best interests of our learners. This can only be discovered through negotiation and critical reflection (Kreber, Klampfleitner, McCune, Bayne, & Knottenbelt, 2007).

To sum up what has been said so far, teacher identity formation can be conceptualized as a socialization process wherein the way we think about our teaching and our teaching practices is influenced by a learning process that transpires in relationships with a community. From this viewpoint, the first idea for teachers to explore in aligning who they are with what they do is the degree to which their context interacts with their personal emotional and psychological factors. Directly related to this is the extent to which teachers have a sense of agency or, in other words, a belief that socially imposed elements are provisional and to what degree a teacher deems it possible to march to his or her own drum in teaching and learning practices. Furthermore, identity formation is a dynamic process that is linked to authenticity, and carries a moral value-laden dimension. Thus, the question a teacher needs to ask is not only whether he or she can create a unique teacher identity from within (as opposed to a response to external expectations), but also whether there is the potential to be a unique individually-defined teacher while at the same time connecting with and committing to something significant that lies beyond.

Aligning Our "Being" with Our "Doing": Practical Applications

Reflect Critically. To find our "inner teacher" and embrace it, we first need to personally and critically reflect upon whether we see any relevance in the notion of authenticity. Confronting this issue with honesty and integrity will require that we tap into our cognitive dimensions, as well as engage our hearts

and search for answers to questions about whether assigning a significant role to teacher authenticity rings true and feels right. In the end, we need to define for ourselves what the end of education is all about. Language teachers need to critically reflect upon the degree to which we feel we are "authentic," to contemplate how contextual factors influence our perceptions of ourselves and our language learners, including the myriad of assumptions we hold, and the decisions we make about the what, how, and why of being a teacher and teaching (Kreber et. al., 2007). Because teaching with authenticity reflects a profound sense of self-awareness and self-identity, we must look inward into our own selves without judgment and be open to inquisitorial, mindful inspection to consider how we think about ourselves and our classroom behavior (Cranton & Carusetta, 2004; Dirkx, 2006).

Redefine Personal Credibility. Successful teaching is not only a technique—authentic teaching emanates from the integrity of the teacher in relation to our target language and our learners—and from the unpredictable synergy of it all. Master language teachers anticipate great things from their learners and expect that their learners imagine great things of themselves (Quinn & Anding, 2005). Additionally, learners see master teachers as something more than content experts. Learners perceive great teachers as credible people (Palmer, 1990). According to Brookfield (1990), learners base teacher credibility on whether a teacher: (1) matches words with actions; (2) openly admits faults; (3) is seen in out-of-class contexts (i.e., is a "real" person); and (4) shows respect through active listening. Citing a variety of personal correspondences, Wright (2013) adds that teacher credibility also includes adapting courses to meet students' needs so they understand the value of the content. It also means providing insight into real-world professional experience so students believe the teacher knows what he or she is talking about. Credibility is particularly important for those instances when teachers need to criticize as it permits learners to realize that the commentary stems from the experience of knowing what is expected outside the four walls of the classroom.

Discover a Style. There is not a single recipe for how to teach a language. Teachers must bring their own styles and personalities into the classroom. Authentic teaching implicates more than mere behavior and techniques, and according to Quinn and Anding (2005), it is "about the expression of who we are" (p. 488). Style-savvy language teachers critically question every aspect of a class to develop a style, communicate effectively, and reveal their creativity. Because there are as many "teaching styles" as there are teachers, their sheer number and diversity make it difficult for educators to discuss teaching style in relation to methods. Hence, we need to find methods that value stylistic diversity and banish methodological reductionism from our professional conversations

(Palmer, 1998). In other words, language teachers have no need of copying others as there is much more to motivation than methods.

Displaying Emotion. Teaching is rooted in emotions that stem from the relationships present in the classroom. As language teachers, we often ignore or minimize the potent emotional context in which our work is embedded. Emotions are important in transmitting knowledge and they influence how it is received. The age-old saying, ''students may never remember what you taught them, but they will never forget how you made them feel,'' targets the conundrum challenging teachers every day we begin our classes: we seek our students' attention and try to connect and engage, but it is really their emotions we must deftly distinguish, sensitively navigate, and masterfully manipulate. The power of emotion in learning is laid bare when we consider the neuroscience behind it: emotion improves our capacity to create vivid memories of even the most trivial events. Hormones (norepinephrine) that are released during emotional arousal play a pivotal role in our emotional regulation of memory and enhance learning by inundating the brain with natural memory stimulants. In the classroom, we look for manifestations of these emotions in engagement or imagination. Although we might also incorporate other mechanisms with the hope of stimulating these same manifestations (e.g., grouping learners, giving them a voice and a choice, or participating in a think-pair-share among a variety of other techniques to increase engagement and/or creativity), none of these necessarily *cause* emotion because indeed emotion does not cause learning—emotion *supersedes* it (Tully & Bolshakov, 2010). For example, if we ask learners what they remember most about their favorite childhood teacher, they would likely say little about the subject but rather they might describe how this teacher made them feel—maybe it would be the sense of excitement or discovery as they learned new things, or the supportive classroom environment that incited them to take risks and make mistakes, or the confidence they felt because they were valued as human beings. According to Hansen (2001), few features in the classroom have a larger impact on learners' educational experience than a caring relationship with their teacher. As an example, imagine two language teachers covering the same grammar lesson on the past progressive. One is impatient with learners and corrects every error. The other is supportive and sensitively and judiciously corrects. Knowing only that, we can probably guess which learners will be more likely say, "I was sleeping during my last class." Learners who share caring relationships with teachers are academically more successful and demonstrate greater pro-social behavior (Cassidy & Bates, 2005).

Because how, when, and why we display emotion (and care) plays an important role in identity, aligning this facet of "who I am" with "what I do" needs reflection on our own experience with caring and emotion. Often, we unconsciously care for others the way we have been cared for—for better or

worse. James (2012) interviewed four different teachers at the same school who shared one particular learner and discovered that the teachers cared for the learner in different ways that were each congruent with the way they had been cared for as children. Teachers revealed that they did not ask anyone—including the learner himself—what the learner's needs might be. Instead, the teachers made assumptions about the learner's background based on their own childhoods. Teachers who reflect on their own past histories of care will increase their understanding of "who I am" and receive insight into the kind of care they might be extending to their learners, and this will allow them to better adjust their caring to fit learners' needs in terms of "what I do."

Recognizing Diversity. Building connections with students through authentic teaching demands understanding the different ways that students learn and what their individual expectations are (Brookfield, 1995). Through direct interaction between language learners and their teachers, we can develop an understanding of learners' past experiences and the influence such experiences have had (Moustakas, 1967). Assigning journal entries that prompt learners to deliberate about their views weekly classroom experiences and then using class time to address issues that learners write about might enhance the authenticity of the teacher and demonstrates the teacher's trustworthiness to the student (Brookfield, 2006). Learner feedback is often the best venue for improving teacher performance. According to Wiggins (2010), teachers can show authenticity by reading and acting upon feedback during a time when it can directly impact the learner making the comments, making it advisable to gather such feedback often during the course. Confrontation, which is meeting to resolve conflict or controversy, may ensue, but as Moustakas states, "Paradoxical as it seems, only when persons can openly disagree, if this is the reality of their experience, is it possible for them to establish genuine bonds" (1967, p. 23).

"If the teacher is effective, it is because she combines the element of having something important to say, demonstrate, and teach with being open and honest with students. The former quality is that of credibility, the latter the concept of authenticity" (Brookfield, 2006, p. 5). Grimmett and Neufeld (1994) introduce a phenomenon called authentic teacher motivation that strives to use intrinsic motivation. Authentic motivation occurs when teachers attempt to do not what the institution rewards, not what they themselves feel intrinsically and professionally satisfying, but that which is beneficial and essential for learners given any context and conditions. This results in doing what is right and important for the learners in all situations. They conclude that authentic teacher motivation "is moral; it is caught up in a struggle to do what is necessary and of value, not just for the organization nor just for oneself, but ultimately in the important interests of learner" (Grimmett & Neufeld, 1994, pp. 4–5). According to Brookfield (1990), "The problem with pursuing authenticity and credibility …

is that actions associated with these ideas often seem contradictory. In pursuing one you risk the threatening of the other" (p. 175). For example, extolling our own pedagogical virtues could be construed as arrogant but failing to acknowledge them might also end in reduced credibility. Authentic teachers therefore recognize the differences learners bring to the classroom.

Conclusion

"Knowing thyself" is a necessary precursor for language teachers to understanding their learners. Through continual reflection and dialogue with others, teachers enhance their self-awareness. We develop empathy, accountability and the positive-broadening emotions of reciprocated care and involvement. Respect for individual integrity is one of the cornerstones in a free society. As "me" and "I" interact synergistically and symbiotically and come into alignment with "what" and "who" we come to a greater understanding of the significance of being human (Malm, 2008).

The Lakota people of the Great Plains have it right. If we look deeply within ourselves, we might just realize that we indeed have the power to shape our own realities.

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Tammy Gregersen

Was bin ich und wie benehme ich mich:
in der Suche nach der Authentizität der Fremdsprachenlehrer

Zusammenfassung

Der Artikel bezweckte, eine dynamische Interaktion zwischen der Identität (eng.: *teacher identity*) und der Authentizität eines Lehrers zu schildern. Die von soziologischen Modellen, Kulturforschungen und psycholinguistischen Theorien abstammenden theoretischen Voraussetzungen ermöglichten, den Begriff „Identität" (eng.: *identity*) zu konzeptualisieren. Man definierte auch den Begriff „Authentizität eines Fremdsprachenlehrers" sowohl in Bezug auf Philosophie als auch Pädagogik. Am Ende wurden die beiden Termini – Identität und Authentizität des Lehrers – dargestellt und das im Zusammenhang mit Entwicklung der Nachdenklichkeit des Lehrers, Neudefinieren seiner Person, Entdeckung seines eigenen Stils, seiner emotionalen Selbstbeherrschung und Akzeptanz für Verschiedenheit, was dem Lehrer möglich macht, eigene Authentizität zu bestimmen, also die Frage zu beantworten: Was bin ich und wie benehme ich mich?

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