Developing Cognitive Strategies Through Pluralistic Approaches

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Introduction

Over the last thirty years, many researchers have explored the advantages related to bi/multilingualism. Bialystok (1987) was able to demonstrate the cognitive advantages presented by bilinguals as well as the increased ability of bilingual children to solve problems. Subsequently, Cummins (1991) stressed the interdependence of language skills in both languages in his theory of the common underlying proficiency: He considered that the use of two or more languages develops metalinguistic skills[1] that can be regarded as a comprehensive monitoring system related to all the languages that the multilingual speaker knows. Finally, the research led by Herdina and Jessner (2002) on multilinguals helped highlight the transversal nature of these benefits. They confirm the existence of a unique system, which they consider both specific and global. Additional research (Bono 2008a; Cenoz, Hufeisen and Jessner 2001; Clyne 2003; Ringbom 2007) has underlined these advantages in the context of the heightened ability of multilinguals to reflect upon the languages belonging (or not) to their multilingual repertoire. Gajo (2001), Herdina and Jessner (2002) and then Moore (2006) determined the nature of this strategic advantage as being metalinguistic.

As it is now commonly admitted that metalinguistic awareness is an essential component of multilingual competence, it seems interesting to adapt this hypothesis to the French institutional context, and more specifically to the 'strictly monolingual'[2] population. Is it possible to enable these students to develop such cognitive advantages without benefitting from an authentic multilingual situation? Can the strategies thus being used be transferred, *de facto,* to the learning of English as a foreign language (L2)?

To explore these research questions, I decided to confront French monolingual learners, who had benefited from four years of basic instruction in English, with pluralistic approaches based upon unknown languages (PAUL). Such an approach partially relies upon the definition given by Candelier (2008) and published on

the FREPA website (European Center for Modern Languages 2007): 'The term "pluralistic approaches to languages and cultures" refers to didactic approaches which use teaching/learning activities involving several (i.e. more than one) varieties of languages or cultures.' Furthermore, in PAUL sessions, students are in turn confronted with metasemantic, metasyntactic and metaphonological tasks[3]: They will need to build upon their prior knowledge of (in this case) two different linguistic systems (L1 French and L2 English) so as to solve the problem they are presented with. Finally, PAUL sessions are led in a systematic and regular way so as to provide comparable results.

This paper discusses the cognitive processes involved in the metasemantic problem-solving activities and therefore examines the implementation of learning strategies facilitating the decoding of a written source.

After exploring the theoretical background (taxonomy of learning strategies, underlying processes, crosslinguistic influence and the transfer of learning strategies), I will expose the research design and methodology being used before analysing and interpreting the data.

1 Theoretical background

1.1 Taxonomy of learning strategies

For Weinstein and Mayer (1986), learning strategies aim to facilitate learning and require a consciousness on behalf of the learner. Rabinowitz and Chi (1987) consider that strategies cannot be 'strategic' without a certain degree of consciousness. Therefore, they can no longer be considered as strategies as soon as they are implemented automatically. This is the reason why I will focus on conscious efforts made by the students to solve a problem, thus complying with the continua 'from conscious to unconscious,' as defined by Finkbeiner (2005: 60). These strategies will be analysed by studying the operations students 'consciously' implement when performing tasks that will enable them to solve the problem.

For O'Malley and Chamot (1990: 8), learning strategies can be divided into three categories: metacognitive strategies, cognitive strategies and socio-affective strategies. The focus of this paper is on cognitive strategies and their underlying processes. Although the framework is the taxonomy of cognitive strategies as proposed by O'Malley and Chamot, I would like to adapt it according to additional theoretical information and the specificity of my experiment, focusing on four types of strategies. The necessary adaptations will be explained below.

1.1.1 Translation strategy

For O'Malley and Chamot (1990: 120), implementing the translation strategy covers the use of the first language as a base for understanding and/or producing the second language. It is not, *per se*, an immediate word-for-word translation; it can also represent a connection between a linguistic element from the L3 with an element derived from

the L1 or the L2[4]. So this variable should be identified on the basis of indicators generally reflecting a comparison with the L1 and/or L2. Nevertheless, unlike O'Malley and Chamot, I would rather restrict the translation strategy to the direct activity of translation. It seems, in fact, essential to distinguish this strategy from the strategy of comparison.

1.1.2 Comparison strategy

The strategy I choose to call 'comparison' differs from the strategy of translation by the degree of consciousness that its implementation requires. When learners notice similarities between two languages, they show a metalinguistic activity (Gombert 1990), which is by definition conscious. They clearly express their reliance on their prior knowledge of the L2 or L1 as their answers reveal the identification of the linguistic proximity. Even if the underlying processes of translation can include comparison procedures (setting up L3–L2 connections in order to understand the new data before translating), the expressed consciousness needs to be taken into account as it plays a major part in the transferability of the strategy. If the student does not deconstruct the performed task consciously, he will not be able to activate the necessary schemata when faced with a situation that only presents structural similarities (Holyoak and Koh 1987).

1.1.3 Inferencing strategy

O'Malley and Chamot (1990: 120) define inferencing as follows: 'Using available information to guess meanings of new items, predict outcomes, or fill in missing information.' I therefore consider that the indicator for this strategy is the dependence on several elements of the sentence to infer meaning. The decision was made to rely upon this rather narrow definition of inferencing so as to be able to compare the results.

1.1.4 Deduction strategy

O'Malley and Chamot (1990: 119) consider deduction as 'applying rules to understand or produce the second language or making up rules based on language analysis.' Therefore, the reliance on a principle or rule is seen as an indicator of this strategy. For example, relying upon uppercase letters to recognize proper nouns can be considered a deduction.

The aforementioned strategies have been adapted and defined so as to provide a clear theoretical framework, thereby enabling the subsequent analysis. Even though the descriptions may appear restrictive and only describe certain aspects of the announced strategies, they are neither mutually exclusive nor do they pretend to encompass the entire scope.

1.2 Underlying processes

To be able to properly describe strategy use, one needs to take into account the underlying processes, which are a 'series of actions or steps taken in order to achieve a particular end' (Oxford Dictionaries).

1.2.1 *Top-down and bottom-up processes*

Following Howard (1985: 28), I choose to distinguish between low-level (bottom-up) processes and high-level (top-down) processes when studying the strategy of deduction. Once again, only certain aspects of the theory will be examined so as to facilitate the analysis. The identification of uppercase letters referring to proper nouns or the association of numbers with age will testify to the implementation of a bottom-up deduction strategy (which starts from the input), while relying on world or academic knowledge outside the input refers to a top-down deduction strategy.

Considering bottom-up or top-down processes is one way of analysing the processes underlying the stated strategies. However, sometimes learners indicate one strategy while implementing another one.

1.2.2 *Implicit and explicit metalinguistic activity*

Processes can be considered as explicit or implicit. Ellis (2008: 965) uses the term implicit knowledge to refer to the knowledge of language that is 'intuitive and tacit,' and explicit knowledge to indicate the 'knowledge of rules and items in an analysed form' (2008: 962). This distinction makes it possible to underline the situations when attention to language surfaces. I would like to borrow these terms so as to be able to properly term the way strategies are implemented by learners. Indeed, strategies can be consciously used and will thus be directly stated on the group sheets. However, sometimes the learner states a certain strategy while he 'unconsciously' resorts to another one. Using the term 'unconsciously' remains hazardous as the results do show a metalinguistic activity. Therefore, the term 'implicit' seems more appropriate.

1.3 Crosslinguistic influence or transfer?

When an individual engages in language learning, one can easily surmise that both prior linguistic knowledge and prior learning experience will play a part in this complex cognitive learning task. Therefore, transfer will not only be examined from a linguistic point of view but will also be explored from a cognitive point of view. Both theoretical fields will be drawn upon: First, the strategies used by the students to learn how to understand a text in an unknown language will be analysed, taking into account any existing crosslinguistic influence. Hence, the concept of psychotypology, the part played by the level of proficiency as well as the L1 and Ln factors, will be explored so as to understand the origin of the linguistic transfer. Secondly, transfer of learning will be examined so as to understand how learning strategies can be used in a different context.

1.3.1 *Crosslinguistic influence and multilingualism*

In the field of multilingualism, Herdina and Jessner (2002: 29) defined 'transfer' as a 'basically predictable static or monotonous phenomenon of the transfer of (the same) structures of L1 to L2'. It has also been called 'crosslinguistic interaction,' 'interference,' or more frequently 'crosslinguistic influence' (Sharwood-Smith and Kellerman 1986),

which can be considered as a 'super-ordinate term' (De Angelis and Selinker 2001: 42) and covers a wider spectrum of languages. As Sharwood-Smith (1994: 194) puts it, 'crosslinguistic influence' also 'means the influence of any "other tongue" known to the learner on that target language' ~~(italics in the original)~~. In this article, I will strive to understand how 'non-native language knowledge is … used and, more broadly, how it affects the acquisition and production process as a whole' (De Angelis 2007: 17).

1.3.1.1 The concept of psychotypology

Kellerman (1977) found it necessary to complete the theory of linguistic transfer using a psychological approach so as to be able to understand what makes language learners identify certain target structures with their L1. He thus developed (and was followed by many others) the concept of psychotypology or perceived language distance, which takes into account the fact that the subjective assessment of the typological proximity between languages can change learners' behaviour in lexical transfers (Deyrich 2007; Ellis 1994; Kellerman 1979, 1983, inter alia). This concept plays a major part in crosslinguistic influence since

> In any learner's attempt to acquire a new language, language distance is ultimately in the eye of the beholder. Research indicates that when everything else is equal, transfer will most likely result from a learner's judgment (made consciously or unconsciously) that particular structures in a previously learned language are quite like – if not the same as – structures in the target language. (Odlin 1989: 142).

It therefore seems essential to try and understand the learner's judgement regarding the structures of the new language (or target language) they are being confronted with, and to analyse the impact of such a consideration on his ability to understand the target language.

1.3.1.2 Part played by the level of proficiency

Studies on crosslinguistic influence in multilingual contexts have shown that the aforementioned phenomenon may not only come from an L2 that the learner knows well (Singleton 1987; Williams and Hammarberg 1998) but can also spring from lesser-known L2s (De Angelis 2005; Rivers 1979; Selinker and Baumgartner-Cohen 1995). The level of proficiency can be relatively low, as one to two years of formal education seem to be enough to significantly affect the production and development of the target language (De Angelis 2007: 34). One can therefore predict that the students observed in this study will be able to rely on their L2, since they have been studying English for four years and have reached an A1 level.

1.3.1.3 The L1 and Ln factors

Williams and Hammarberg (1998) underline the importance of the L1's instrumental role, since the L1 tends to be largely used when resorting to metalinguistic activities. Bardel and Falk (2007), however, consider that the 'L2 factor' can be more important than the typological proximity between the L1 and L3, as learners rely more upon

their L2 (Hammarberg 2001), whatever the typological factor. The L2 factor is 'a desire to suppress L1 as being "non-foreign" and to rely rather on an orientation towards a prior L2 as a strategy to approach the L3' (Hammarberg 2001: 36–7). For reasons of clarity in a multilingual context, I choose to follow Bono (2008b) and call this the Ln factor.

1.3.2 The transfer of strategies

Crosslinguistic influence plays a major part in the transfer of linguistic items. However, this research focuses on the transfer not only of lexical items but also of learning strategies in multilingual contexts.

The initial findings related to linguistic transfer are based on the traditional contrastive analysis hypothesis developed by Lado (1957). Interestingly, research in psychology adds to the characterization of transfer. Gick and Holyoak (1983) and then Holyoak and Koh (1987) consider it possible for a person who has first induced a schema from initial examples to solve novel problems that can be categorized as instances of this schema. However, if two situations are drawn from disparate domains, learners will mainly rely upon structural similarity to make use of the source analogue. Lots of discussions surround the term 'structural similarity,' which can involve building upon 'structural isomorphism between base and target domains' (Kokinov and French 2003: 114) or 'finding a correspondence between the conceptual structures of the two domains compared' (Gentner and Markman 2006: 1–2), the latter being the view explored in this article. It seems therefore possible to consider that strategies may be transferred inasmuch as the student recognizes structural similarities in the given tasks so as to resort to the adequate strategy.

In the context explored here, it seems important to study whether the acquired skills can be generalized to apply to other contexts. I will thus explore the '"transfer of Learning" [which] refers to how previous learning influences current and future learning or performance, and how past or current learning is applied to similar novel situations' (Haskell 2001; Speelman and Kirsner 2005). Indeed, one of the main preoccupations in the classroom is the transfer of learning, which is not merely the application of learning but the learning of something new.

1.3.2.1 The taxonomy for levels of transfer

In order to determine the impact of connecting past learning to new situations, Haskell (2001) devised a taxonomy for levels of transfer, building upon the research led by Gagné (1985), Gick and Holyoak (1987) and Perkins and Salomon (1988), *inter alia*. He considered that for transfer to take place, levels 4 (near transfer), 5 (far transfer) and 6 (displacement or creative transfer) needed to be reached. These levels can be described as follows (Calais 2006: 3):

Level 4: Near transfer

Near transfer occurs when we transfer previous knowledge to new situations closely similar to, yet not identical to, initial situations. Transferring our

experiences associated with driving a car with a manual transmission to driving a truck with a manual transmission reflects an example of near procedural transfer.

Level 5: Far transfer

Far transfer entails the application of learning to situations entirely dissimilar to the initial learning. This level of transfer of learning reflects analogical reasoning. For example, learning about logarithms in algebra and applying this knowledge in assessing the growth of bacteria in microbiology.

Level 6: Displacement or creative transfer

Displacement or creative transfer results in the creation of a new concept because of the interaction of the newly perceived similarity between the new and transfer of learning involves more than the mere insight that something is similar to something else.

Haskell also classified transfer according to the different types of knowledge upon which transfer is predicated.

1.3.2.2 Types of transferable knowledge

Anderson (1980, 1993) developed the adaptive control of thought (ACT) skill-acquisition theory, mainly building upon the distinction of declarative and procedural knowledge. As Mehrnoosh, Manijahand Daryoush (2013: 2) put it,

> Declarative knowledge is added into the memory through chunks and is activated and subsequently acquires strength as a result of frequent use, i.e. practice. Proceduralization takes place when declarative knowledge is transformed into procedures, production rules, for performing a skill. Production rules also require practice to acquire activation and strength. Practice at this stage results in automatization of skill.

Strategic knowledge (Flavell 1979; Weinstein and Mayer 1986) has also been regularly used by scientists working with cognition since it mainly involves knowledge of our own cognitive processes, occurring during self-monitoring of our progress when attempting to learn. Schoenfeld (1985) and Marzano et al. (1988) explored conditional knowledge, which is the knowledge or awareness of when to apply knowledge in a context-appropriate manner. Haskell (2001) added a fifth category, which is theoretical knowledge: It consists of 'our understanding of various explanatory connections regarding phenomena, cause and effect, and in-depth level relationships' (Calais 2006). However, declarative knowledge seems to be essential for successful transfer as it establishes the preconditions for the four other types. This is confirmed by Mehrnoosh, Manijah and Daryoush (2013) when they consider that 'availability of speeded explicit declarative knowledge, or at least partially acquired proceduralized knowledge can enable learners to generalize it to unfamiliar contexts.'

2 Research questions

Taking into account the research on crosslinguistic influence and transfer of learning, I will address the following research questions:

1. Which strategies do students resort to when trying to decode a text in an unknown language? What do these strategies reveal about crosslinguistic influence and underlying processes?
2. Which learning strategies are transferable from one language to another, and under what conditions?

3 Methodology

3.1 Participants

The research project was implemented by five lower secondary school teachers with students from year seven, aged twelve to thirteen (136 students over five forms), throughout the year 2011–12 in the regions of Limousin and Aquitaine (France). These students ~~have~~ studied one foreign language (L2 English) for four years. Out of the total sample of 136 students, only 88 are included in the study, as they are perfectly monolingual in their family environment (*cf.* bottom page note 2).

So as to be able to understand the implemented strategies, twenty-two groups of four were set up. Peer-to-peer explanations of a linguistic feature are said to be beneficial for second language (L2) development (Hulstijn and Hulstijn 1984; Sorace 1985; Webb 1989). I can therefore hypothesize that the verbalization of their understanding of the target form should help students become aware of the implemented strategy. The groups were set up according to various parameters (gender, learner of Latin, other L2, willingness to learn other languages, interest in reflexive practice, perception of personal grammar skills, results of pre-test) extracted from both the semantic pre-test and the pre-survey (see below) so as to be heterogeneous, yet of comparable structure.

3.2 Design

3.2.1 Experimental design

The strategy study is part of a larger experiment based on PAUL sessions and is thus set up in such a way as to confront students successively with three unknown languages (henceforth referred to as Ln): The first language is Dutch (chosen because of its typological proximity with English), the second is Italian (close to French), and the last is Finnish, an agglutinative language that presents no immediate similarity with any language they know.

The experiment includes, for each language, three successive sessions of metasemantic, metasyntactic and finally metaphonological activities. The sessions follow the same model so as to confer a certain systematicity to the regular exercise and to allow the comparison of the results. They take place on a monthly basis.

In this article, I will explore the results from the first session involving each language, which rely on metasemantic activities: Students are to solve the problem of access to meaning in the texts presented below.

Text in Dutch:

Hallo mijn vriend!

Mijn naam is Anneke en ik ben 12. Ik woon met mijn ouders, Marijke en Geert, in Amsterdam. Ik heb een grote broer; zijn naam is Hans en hij is 20. Hij woont in Duitsland want hij heeft een Duitse vriendin. Ik heb ook een kleine zuster; haar naam is Sara en zij is 8 jaar oud.

Schrijf vlug terug en vertel mij over je familie.

Beste groeten,

Anneke

Text in Italian:

«*Sono un topo molto famoso. Io sono piccolo, con grandi orecchie nere.*

Indosso pantaloni rossi con grandi bottoni bianchi. I miei migliori amici sono

Paperino e Pippo e la mia bella ragazza si chiama Minnie.

Mio padre è molto famoso: il suo nome è Walt Disney!

Chi sono io?»

Text in Finnish:

Päivi: "Rakastatko musiikkia?"

Timo: "Kyllä, minä rakastan. Lataan paljon musiikkia Internetistä.

Päivi: "Soitatko musiikkia?"

Timo: "Kyllä, minä soitan. Soitan pianoa. Sisareni Eija ei soita pianoa, mutta hän soittaa kitaraa. Entä sisaresi Nina?"

Päivi: "Sisareni Nina rakastaa rap-musiikkia. Rakastaako sisaresi Eija myös rap-musiikkia?"

Timo: "Ei, hän ei rakasta."

The three texts, while addressing different subjects (all chosen according to the A1 level of the CEFR), have similar structural characteristics: The students can rely upon eight cognates[5] (some are repeated) and can complete nine inferencing strategies and six deductions (three bottom-up deductions and three top-down deductions).

All three texts and accompanying worksheets have the same instructions: 'What do you understand?' and 'Explain how you proceeded to understand this piece of information.' No specific guidance is given by the teacher so that the results represent the strategies naturally implemented by students, without being influenced by the teacher.

Organization of the PAUL sessions

Each fifty-minute session is organized in three different phases:

1. The pupils have about five minutes of individual work for them to focus on the task.
2. The group work lasts for twenty-five minutes and requires the students to share their findings. By doing so, the students not only validate their own results but also enhance their understanding of the texts. They are also required to reflect upon the strategies they have implemented by discussing how they managed to reach the meaning. It is a 'reasoning-gap activity' as defined by Prabhu (1987).
3. The teacher leads a synthesis during which both the meaning and strategies are discussed.

3.2.2 Research design

The study followed a quasi-experimental, pre-test and post-test mixed method design. The PAUL sessions were administered by teachers of English and took place once a month, instead of their ordinary English class. Each one of them also taught English to another year-seven form (same age group) with a similar number of students, who then make up the control group. Both groups underwent a semantic pre- and post-test: Students were led to reflect upon a text in English, level C1 (their ordinary CEFR[6] target level being A2), and were asked to explain how they managed to access meaning. These tests were completed with pre- and post-surveys, so as to extract relevant additional data (i.e., group organization, opinion, etc.).

3.3 Corpus

For each metasemantic PAUL session, students filled in group sheets; the results recorded on the group sheets come from a consensus reached collaboratively through the comparison of individual ideas. The sheets were also compared to the recordings and transcriptions of the interactions, so as to determine which strategies were explicit and which were implicit. There are thus twenty-two group sheets and twenty-two transcriptions of the interactions for each language (Ln).

The corpus is also composed of the semantic pre- and post-tests and post-surveys, for both experimental and control groups.

3.4 Analysis

Two types of analyses were used in the quasi-experimental strategy study:

1. Qualitative analysis
   - A first qualitative analysis of the group sheets enabled the classification of the strategies explicitly mentioned by the students.

- A second qualitative analysis was carried out of both the group sheets and the transcripts of the group interactions; the question, 'How did you manage to understand [the above-mentioned information]?', made the students verbalize their thoughts and was thus used as a data elicitation method. For reasons of brevity, only some excerpts of the qualitative analysis will be given (see Table 3.1).

2. Quantitative analysis
   - A quantitative analysis of the qualitative results from the group sheets was carried out so as to be able to consider the frequency of use of each type of strategy that the students declared to have implemented (Figure 3.1). These results were compared to an ideal projection, as could have been achieved by a multilingual expert[7] who would reach a precise and complete understanding of the proposed texts. The graph representing these quantitative data (Figure 3.2) allows a better understanding of what strategies are either most attractive or least easily implemented by students.
   - A statistical analysis (Table 3.1) of the explicit strategies (organized according to the methodology proposed by Finkbeiner et al. (2012: 67)) enables us to visualize examples of the strategy, the percentages of use, the mean values and the standard deviation (SD).
   - An additional study (Table 3.2) of the number of groups having implemented these strategies is useful so as to complement some of the results.

Consequently, I can discuss what strategies are most readily used. The analysis of the evolution of practices over the three sessions should enable us to check if the mere contact with foreign languages triggers a consciousness of the implemented strategies. Finally, these results were triangulated with the results from the semantic pre- and post-tests and the post-survey so as to inform the transfer of strategy use to the L2 or to other extra-curricular situations.

4 Results

In order to determine which strategies students readily resort to when trying to decode a text in an unknown language, I examined the frequencies of the strategies explicitly mentioned by the students (Figure 3.1).

I then compared these results to the strategies an 'expert multilingual' would have used; the results can be visualized in Figure 3.2.

When observing Figure 3.2, one can see positive values (related to strategies of comparison and translation), which means that the implementation led by pupils is higher than the initial projection made by an expert, thus signaling the most readily used strategies. The negative values (related to inferencing and deduction) hint that these strategies are less implemented than is possible. So as to have a finer analysis of the implemented strategies and their frequency of use, Table 3.1 gives examples of these strategies and also shows the mean values and standard deviation (SD).
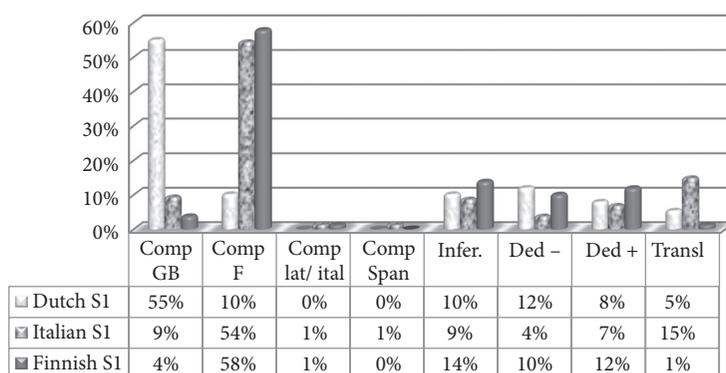
	Comp GB	Comp F	Comp lat/ ital	Comp Span	Infer.	Ded –	Ded +	Transl
Dutch S1	55%	10%	0%	0%	10%	12%	8%	5%
Italian S1	9%	54%	1%	1%	9%	4%	7%	15%
Finnish S1	4%	58%	1%	0%	14%	10%	12%	1%

Figure 3.1 Synthesis of the strategies declared by the students.

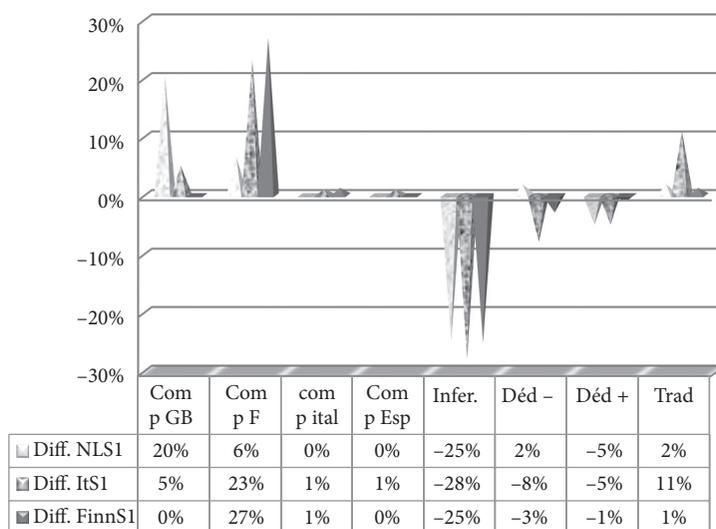|	Comp GB	Comp F	comp ital	Comp Esp	Infer.	Déd –	Déd +	Trad
Diff. NLS1	20%	6%	0%	0%	−25%	2%	−5%	2%
Diff. ItS1	5%	23%	1%	1%	−28%	−8%	−5%	11%
Diff. FinnS1	0%	27%	1%	0%	−25%	−3%	−1%	1%

Figure 3.2 Differential between the students' use of explicit strategies and the expected results.

4.1 Most readily used strategies: comparison and translation

A number of interesting observations can be made from Table 3.1 when considering the most readily used strategies (comparison and translation).

The source-language changes according to the language distance it presents with the Ln. There are thus, not surprisingly, a great number of comparisons with English when solving the access to meaning of a Dutch text (55 per cent, mean 4.33, *SD* = 1.68) and of comparisons with French when trying to understand a text in Italian (54 per cent, mean = 4.63, *SD* = 1.98). The standard deviation is quite high in both cases because of the differing value scale used by the students, but the hypothesis of psychotypology seems to be worthwhile examining.

Table 3.1 Frequency of strategies used by students during the metasemantic task (sample with $n = 88$).

Strategy definition	Language	Example	Mean	SD	% use
Comparison GB *Comparing new language items to English (L2)*	Dutch	*'Ca ressemble à l'anglais. Hallo ressemble à Hello (façon de l'écrire)'.* [It looks like English. Hallo is like Hello (the way you write it).]	4.33	1.68	55
	Italian	*'Nome. Ressemble au nom d'anglais = name'.* [Is similar to the English name = name.]	1.5	0.67	9
	Finnish	*'Musiikkia: fait penser à l'anglais music'* [makes us think of English music.]	1.2	0.45	4
Comparison F *Comparing new language items to French (L1)*	Dutch	*'zijn naam. Nous avons *penser à "son nom" en français'.* [Made us think of 'son nom' in French.]	1.7	1.17	10
	Italian	*'Il y a écrit grandi = grand ressemble au français'.* [You can read grandi = grand like in French.]	4.63	1.98	54
	Finnish	*'musiikkia: musique. Cela ressemble au français'.* [musiikkia: music. Looks like French.]	4.33	1.25	58
Comparison Spanish *Comparing new language items to Spanish*	Italian	*'Rossi, bianchi = rouge, blanc. C'est très logique car ça ressemble au français et ça ressemble à l'espagnol.* [It's very logical because it is similar to French and to Spanish.]	N/S	N/S	1
			N/S	N/S	

(Continued)

Table 3.1 (Continued)

Strategy definition	Language	Example	Mean	SD	% use
Comparison Italian *Comparing new language items to Italian*	Finnish	'Myös. Ma comme mio en Italien' [My like mio in Italian.]	N/S N/S	N/S N/S	2
Inferencing *Using available information to guess meanings of new items*	Dutch	'Nous avons penser à "parents" parce que c'est logique dans la phrase' [We thought of 'parents' because it's logical in the sentence.]	1.7	0.95	10
	Italian	'Si chiama Minnie. On a trouvé avec le contexte'. [I found it thanks to the context.]	1.75	0.89	9
	Finnish	'Kyllä, minä soitan. Soitan pianoa. Oui, j'en joue, je joue au Piano. On a trouvé grâce au français et au sens des mots'. [We found it thanks to French and the meaning of the words.]	2.75	2.04	14
Deduction bottom-up (D-) *Applying rules to understand the Ln.*	Dutch	'Anneke a 12 ans. Il y avait marqué 12. C'est de la déduction'. [Anneke is 12. There was written 12. It's a deduction.]	1.64	0.37	12
Associating capital letters or numbers to understand the Ln	Italian	'Paperino et Pippo amici Minnie. Les amis de Minnie -> Majuscules alors *nom *propre'. [Capital letters so it's a proper noun.]	1.2	0	4
	Finnish	'Soitatko musiikia? Fais-tu de la musique? On a trouvé grâce à la ponctuation (pour les questions)'. [We found it thanks to the punctuation (for the questions).]	1.14	0.36	10

Deduction top-down (D+) *Building on external knowledge to understand the Ln*	Dutch	'Je te dis au revoir de la part de ma famille. Logique par rapport à la lettre'. [I'm saying goodbye on behalf of my family. Logical since it is a letter.]	1.25	0.30	8
	Italian	'Walt Disney. Animateur de dessin animé'. [A cartoon animator.]	1.83	0.53	7
	Finnish	'*Sa ressemble à un dialogue ou une pièce de théâtre'. [It looks like a dialogue or a theatre play.]	1.73	0.52	12
Translation (verbatim) *Rendering ideas from one language to another in a relatively verbatim manner*	Dutch	'Il a une petite sœur qui s'appelle Sarah'. [He has got a little sister whose name is Sarah.]	0.8	1.41	5
	Italian	'Chi sono io? Qui suis-je?' [Who am I?]	3	2.14	15
	Finnish	'Rap mussiikkia: musique rap'. [rap music]	0.50	0	1

The results regarding Finnish are quite surprising: 58 per cent of the implemented strategies are comparisons with French (mean = 4.33; *SD* = 1.25). Even though the mean results are quite high, they do not support the psychotypology hypothesis. As a matter of fact, the students mainly relied upon the cognates present in the text; they only established the common genetics of these words without establishing a linguistic proximity between the language systems.

However, sometimes students did not rely on their L1 or L2 but on other languages. During the PAUL session on Italian, 1 per cent of the strategies (implemented by two groups) are a comparison with Spanish, a language they have not yet studied. The students have noted the Roman origin of the languages and draw parallels regarding lexicon. In one case, the reference is accurate (but not explicitly mentioned): '*Rossi, bianchi = rouge, blanc. C'est très logique car ça ressemble au français et ça ressemble à l'espagnol*'. [It's very logical because it is similar to French and to Spanish.] The other group inaccurately compared the language to Spanish, of which they have no knowledge: '*molto: ça ressemble à l'espagnol *moltum*' [it is similar to Spanish *moltum]. One can thus consider that, despite their lack of knowledge of the language, the awareness of language families (related to the concept of psychotypology) has enabled them to make such a comparison.

The results regarding translation strategies show a specific profile; when observing PAUL sessions in Dutch (5 per cent; Mean = 0.8; *SD* = 1.41) and Finnish (1 per cent; Mean = 0.50; *SD* = 0), pupils do not seem to favour this strategy as both the mean value and the standard deviation are low. It also appears that the translation strategy is less used during the last PAUL session, on Finnish. The results for Italian, however, show a higher reliance upon this strategy even though the value scale varies from one group to another (15 per cent; Mean = 3; *SD* = 2.14).

4.2 Least readily used strategies: Inferencing and deduction

The differential measurement (as shown in Figure 3.2) between potentially useful strategies and strategies actually implemented highlights the difficulty in resorting to inferencing and deduction.

The inferencing strategy is the least frequently used strategy, but the results show a slight increase over the three sessions, as the highest inferencing rate appears with the Finnish language (14 per cent; Mean = 2.75; *SD* = 2.04). Students seem to have developed their ability to resort to this strategy.

When considering the mean results regarding deduction strategies (whether bottom-up or top-down), they appear rather homogeneous. This is due to the type of texts that were submitted. All three contain proper nouns and/or numbers, which enable the learner to rely directly on the input so as to deduce meaning (bottom-up processes, indicated as 'Ded−'). They can also rely upon external knowledge, whether it is related to the world or academic ('Ded+', top-down processes). One can note the specific situation regarding Italian: The bottom-up processes are less readily implemented in this language.

Sometimes, having a more complete understanding of the groups' behaviour (Table 3.2) usefully complements the analysis of each strategy.

Table 3.2 Percentage of groups having implemented each strategy

		Comp GB (%)	Comp F (%)	Comp Latin (%)	Comp Span (%)	Infer. (%)	Ded- (%)	Ded+ (%)	Transl (%)
NLS1	% groups	95	41	0	0	45	55	45	23
ItS1	% groups	50	91	9	9	36	27	32	36
FinnS1	% groups	23	100	9	0	55	64	59	9

When observing the percentage of groups having implemented each strategy (Table 3.2), one can see that more and more groups resort to deductions, whether they are bottom-up (55 per cent of the groups resort to this strategy when observing Dutch and 64 per cent when observing Finnish) or top-down (from 45 per cent to 59 per cent). Once again, one can note the differing use of strategy when the students reflect upon Italian, results that will need to be discussed.

5 Discussion

When taking the use of strategy into consideration and relating it to the literature at hand, a certain number of remarks regarding the research questions can be made.

5.1 Research question 1: Students' strategy use

Analysing the preferential use of learning strategies makes it possible to examine the role of psychotypology during comparison phenomena as well as the effects of the L1 and/or L2 factors. To complete the analysis and to better understand the choices of the students, the quantitative analysis of the implemented strategies will be complemented by a quantitative analysis showing the number of groups that have made use of the various strategies. This triangulation should allow us to better understand student practices in solving the problem of access to meaning.

The students mainly resort to comparison and translation strategies, while strategies of inferencing and deduction seem to be more difficult to implement. Comparison is the most frequently used strategy by the greatest number of groups, but the source language depends on a great number of factors.

5.1.1 *Effects of psychotypology*

Students mainly resort to comparisons with languages that present the greatest linguistic proximity: When observing the Dutch language, 55 per cent of the implemented strategies are comparisons with English. The high rate of comparisons with English, a language typologically close to Dutch (used by 95 per cent of the students) favours the hypothesis of psychotypology (Kellerman 1979). This

is confirmed by the comparison rate of 54 per cent between Italian and French, comparisons made by 91 per cent of students. It seems therefore possible to confirm that the implementation of a strategy of comparison will first of all occur, in a privileged manner, according to the perceived typological proximity between the target language and the source language.

When students are confronted with a language that is typologically close to the L1 (Italian compared to French), they tend to rely primarily on comparisons and translations that are readily available strategies (69 per cent of the implemented strategies). It seems that this proximity has an inhibitory effect on the spontaneous implementation of the inferencing and deduction strategies (the lowest rate of the three languages, without guidance from the teacher). The perceived typological proximity to the L1 could therefore affect the transferability of these strategies. This echoes the observation made by Deyrich (2007), who considers that the subjective evaluation of the typological distance between languages changes the behaviour of the learners in lexical transfers.

5.1.2 *Effects of the L1 Factor*

The observation of the results related to the use of comparison strategies when accessing the meaning of the text in Finnish can highlight a predominance of comparisons with French (58 per cent), while only 4 per cent of the strategies are comparisons with English. As Finnish is a Finno-Ugric language with very little resemblance to French or English, the only cognates are internationalisms. However, internationalisms are characterized by their existence in many languages. In addition, the presented internationalisms (*pianoa, musiikkia, Internetistä, kitaraa*) belong to the students' vocabulary and had been studied during the English course. The preferential use of comparisons with French by 100 per cent of the students enables us to consider that, regarding lexicon, the L1 factor (Rothman, Iverson and Judy 2011) plays an essential part when there is no typological proximity. This L1 factor, that is to say the preferential use of the mother tongue, may also be influenced by the assumption of Matthey and Véronique (2004): They consider that since the L1 is used to talk about the strategy, it may influence the choice of the source language in an unconscious way, regardless of the target language.

The aforementioned L1 factor is confirmed when some students need to indicate the translation into French, even though they first translated the Ln (Dutch) into the L2 (English). It seems that the English language repertoire is not yet sufficiently stabilized for it to reach the status of reference language. The L1 factor could play a major role for students who have not yet reached a minimum level of competence in the L2; if they had, the L2 could have competed with the L1.

5.1.3 *Effects of the Ln factor*

Even if students resort to comparisons when the target and source languages are perceived as typologically close, the L1 factor seems to prevail without any typological proximity. Based on the research of Williams and Hammarberg (1998), Bardel and Falk (2007) posit that when a learner comes into contact with an unknown language

(L3 or Ln), he will be more inclined to use a language other than his L1. Trévisiol (2006: 7), building on the work of Williams and Hammarberg (1998), states that 'L2s are better candidates than the L1 to be activated as a provider of early language acquisition'[8] because of:

1. the fundamental difference between the acquisition mechanisms for L1 and L2. In the acquisition of L3, the same L2 acquisition mechanisms are reactivated, which in turn could reactivate other possible L2s.
2. the desire to erase the L1 which is perceived as inherently 'non-foreign' and therefore not suitable as a strategy for acquiring another LE[9].

The language provider would then be the language that fulfils the requirements of competence, typology, recent use of language and its status as L2, which corresponds to typical findings (for a complete review, please report to the comprehensive study led by De Angelis (2007)).

Although only 9 per cent of the groups have made comparisons with third languages (other than L1 or L2) during the three sessions, it is interesting to note that they are spread among six different groups. Using comparison strategies with Latin or Spanish during the sessions involving accessing the meaning of a text in Italian can be justified by psychotypology and the concept of language families. However, two groups performed comparison strategies with Italian (1 per cent of the implemented strategies) during the session on Finnish. Italian was the second unknown language presented in the context of the experiment. And yet, one cannot regard these sessions as involving the teaching/learning of a new language since no active use of Ln (Finnish) occurred. It is likely that due to the absence of perceived typological proximity, the L2 factor (Williams and Hammarberg 1998) played a major role; one could consider, expanding on the concept of 'foreignness' proposed by De Angelis (2005), that students have identified the Finnish language as 'foreign' so that they have associated it with languages they have an awareness about, without, however, having studied them. For this author, sometimes a trilingual speaker addresses an element from the L2 as belonging to the L3. It can therefore be unconsciously included in L3 production since it is associated with a foreign language.

One can imagine such a phenomenon occurring in the implementation of comparison strategies; students build on 'foreign' languages (regarded as 'foreign' to their usual linguistic environment) to access the meaning of a text in a novel unknown language. Students could thus establish stronger cognitive links between the various non-native systems in use and the mother tongue. Although the frequency rate is low, this result still raises the hypothesis of the L2 factor (which is also named the Ln factor so as to encompass all additional languages). Since 9 per cent of the groups have implemented a comparison strategy with third languages, it does not seem possible to discard the influence of the Ln factor on the choice of source language. One can therefore rightly raise the question of the status of English as an L2.

5.1.4 Special status of English as an L2

Taking into account the L2 factor theory (Williams and Hammarberg 1998), English as the L2 of these students should also benefit from the L2 effect: Students should

have resorted to their knowledge of the English language when confronted with an unknown language, all the more so when there is no linguistic proximity. However, the results here do not seem to support such a hypothesis. It seems that English has attained a special status within the language system of the students.

Even if it has been proven that with multilinguals a transfer can take place from a language that has been studied for only a year or two (Rivers 1979; Selinker and Baumgartner-Cohen 1995; De Angelis 1999, 2005), the results here seem to underline the fact that these 'monolingual' (in their home environment) students have not yet begun to behave in a similar way to a multilingual, even though they have been studying English for four years. The results of these authors only seem to be verified with a recently studied (or observed) Ln which can be used as a source-language when observing an Ln+1. When considering the results in the aforementioned experiment, an assumption can be made about the special status of the languages taught at school; students do not seem to consider such languages in the same way as an unknown language that is presented to them. Therefore, one can assume that the teaching/learning of a language can also play a role in the selection of the source language; learners do not consider languages they study at school and unknown languages they discover during PAUL sessions in the same way. They can, however, reactivate certain skills developed during L2 teaching/ learning situations.

5.1.5 *Building upon skills developed during the learning of the L2 (English)*

The inferencing strategy is the least frequently used strategy (see Figure 3.2); however, the results show a slight increase over the three PAUL sessions. Only 10 per cent of the declared strategies used to access the meaning of the text in Dutch involve inferencing, coming down to 9 per cent for Italian, even though the frequency raises to 14 per cent for Finnish (see Figure 3.1). For Bialystok (1980), the inferencing strategy can only be used if the student has achieved a minimum level of competence in his L2. In this experiment, students are confronted with unknown languages and are therefore very far from the minimum level of proficiency in these languages. And yet, some students manage to implement this strategy in a conscious way. It is therefore possible to hypothesize that they rely on the skills developed during their L2 learning. So, following the theory defended by Bono (2008b), it is noticeable that the learning dynamics related to the school environment can have a major impact on the transfer of linguistic elements, since learners tend to rely on their previous experience in learning a foreign language. In the present experiment, students who manage to implement an inferencing strategy have therefore probably developed this strategy while learning English (L2). It is quite remarkable that nearly half of the groups (44 per cent) who implemented an inferencing strategy when accessing the meaning of the text in Finnish had never been able to use this strategy before. One can therefore assume that this strategy has been used to overcome the lack of transparency presented by a language typologically distant from the L1 and/or L2.

5.1.6 *Relationship between top-down and bottom-up processes*

The graph showing the difference between the reported and expected strategies (see Figure 3.2) also underlines, a deficit of the deduction strategy, although to a lesser extent. This deficit is particularly pronounced for Italian, as it is at −9 per cent for bottom-up deductions and −6 per cent for top-down deductions. During the PAUL session on Dutch, 55 per cent of the students were able to identify textual elements contributing to their understanding of the text (see Table 3.2). However, only 27 per cent were able to implement bottom-up deduction strategies for Italian against 64 per cent for Finnish. A similar distribution for top-down deduction strategies can be observed: 45 per cent of the students use this strategy to access the meaning of the text in Dutch while only 32 per cent use it for Italian. This rate exceptionally rises to 59 per cent during the PAUL session on Finnish.

Students who cannot readily infer meaning may rely upon contextual and co-textual elements because their decoding abilities are underdeveloped. They might thus seek to compensate for problems of immediate accessibility of the text by setting up top-down processes. This concurs with the research led by Perfetti (1985), who focused on reading comprehension, as well as with the work by Tsui and Fullilove (1998) on spoken English.

However, the results appear to contradict the theory of the bottom-up dependency elaborated by Field (2004: 367) in reference to Cummins' research (1979); the latter considered that students need to have a minimum level of proficiency in order to be able to use high-level processes. This view is confirmed by Clarke (1980), who states that the poor readers' attention is so focused on decoding that they are unable to transfer to the L2 the top-down processes they would naturally resort to in their mother tongue. Stanovich (1980), however, considers that the relationship between top-down and bottom-up information is controlled by an interactive-compensatory mechanism. The results here seem to confirm this hypothesis since it appears that top-down information are used in a compensatory way, not to reinforce the meaning that has already been extracted from a text but to restore the parts that have not been fully understood.

One can thus conclude by saying that, in this study, the choice of strategy mainly depends on the perceived linguistic distance between the source language and target language (leading to the favoured strategies of comparison and translation). It will then vary according to the textual elements at hand (for inferencing and top-down or bottom-up deduction processes). However, the least readily implemented strategy is inferencing. Considering the transfer of these strategies should allow a better understanding of the results at hand.

5.2 Research question 2: Transfer of strategies

So far, the findings here have shown what kind of strategies are more or less implemented and some of the underlying processes that might prove useful for a better understanding of the implementation. These processes also play a part in the transferability of strategies as they will enable the student to activate the schemata they have previously been confronted with.

5.2.1 *Influence of the L2 on the transfer of strategies*

The least immediately accessible strategy is inferencing. Students use this strategy when confronted with a language typologically close to the studied L2; one can assume that this strategy was implemented during the learning of English and has been transferred to the new situation. Bono (2008b) notes that the learning dynamics related to the school environment can have a major impact on the transfer of linguistic elements, as learners tend to rely upon previous experience acquired during the learning of a foreign language. The results here tend to confirm that learning dynamics also influence the transfer of strategies. It seems that the skills developed during the learning of the L2 are transferable to an unknown language, provided a minimum threshold of competence has been reached in the L2. However, this strategy is less used during the PAUL session on Italian since the latter does not appear as having triggered the resort to strategies used during the learning of the L2.

The perceived typological proximity with the L1 could affect the transferability of these strategies, thus agreeing with the concept of psychotypology (Kellerman and Sharwood-Smith 1986). By expanding this hypothesis (drawn from observations made during production activities) to our situation (comprehension activities), it seems possible to assert that the learning strategies developed during the L1 are transferred to the Ln that presents a psychotypological proximity. Therefore, when students face languages they consider close to the L1 (French), they mainly rely upon comparison or translation strategies, which are immediately accessible strategies. It appears that the proximity to the L1 may have an inhibitory effect on other strategies such as inferencing and deduction, when not guided by the teacher. That is why, contrary to what has proven useful in research on transfer of lexical or morpho-syntactic items, the L1 may negatively affect the transfer of strategies.

This research shows that more and more groups resort to deduction strategies, whether they are bottom-up or top-down process oriented. Even though the number of groups resorting to inferencing does not increase, the overall use of inferencing strategies has improved. This tends to demonstrate that inferencing is probably the strategy that most requires training and is not easily transferred from one language to another, contrary to the strategy of deduction.

5.2.2 *Type of transferred knowledge*

In one of my previous articles (Dahm 2014), I analysed the type of knowledge that is being mobilized during PAUL sessions. The results showed that the strategies of comparison and translation mainly relied upon the conscious mobilization of declarative knowledge, whereas strategies of inferencing and deduction also required procedural knowledge, which is more difficult to mobilize. Students sometimes resorted to deduction by building upon their knowledge of grammatical rules. The fact that they were sharing this knowledge with their peers in the group turned their procedural knowledge into explicit declarative knowledge.

It thus seems possible to confirm that the availability of explicit declarative knowledge is essential to the transfer of learning strategies; by becoming aware of their procedural, conditional knowledge, students are able to verbalize the implemented learning strategies which enable them to generalize the new knowledge to unfamiliar contexts.

5.2.3 *Characterization of the situations allowing transfer*

The three sessions that have been analysed present a structural similarity through their organization, implementation and main objective (access to meaning problem solving). Even if the characteristics of the contingent situations do differ somewhat, their surface features are similar enough to allow spontaneous recognition of an analogue situation, which is an essential feature enabling transfer, as shown by Holyoak and Koh (1987). It is, indeed, essential for a transfer to take place – that the learner is able to select the source analogue. It is the structural similarity between the different PAUL sessions that enabled the students to gradually increase their consciousness of the implemented strategies and to resort to the inferencing strategy during the last PAUL session in Finnish.

When students are confronted with repetitive PAUL sessions, one can consider that they are transferring previous knowledge to new situations that are closely similar (surface features similarity). Near transfer seems to have occurred when reflecting upon the second or third unknown language (Italian and Finnish). However, so as to be able to analyse far transfer and/or creative transfer, the surface features need to differ. This can be studied by taking into account the results of the post tests and survey.

5.2.4 *From near transfer to creative transfer*

The analysis of the post survey underlines the fact that only ~~57~~ per cent of the pupils declare having personally used the learning strategies developed during the PAUL sessions in the English class, since the teachers never explicitly referred to them. However, the comparison of the semantic pre- and post tests[10] (of both the experimental and control group) allows us to make a few remarks. In both tests, pupils were asked to understand difficult texts in English (level C1 of the CEFR) and to explain what they understood. The results highlight the transfer of learning strategies to the L2 as existing, mainly for the comparison strategy (+8 per cent for the experimental group/−16 per cent for the control group) and for the inferencing strategy (+21 per cent for the experimental group/+15 per cent for the control group). Students also seem to be more willing to try and summarize the text, since 16 per cent of the pupils in the experimental group (against 6 per cent of the control group) proposed a summary of the meaning of the text in the post test. However, this change of attitude leads to greater risk taking, making them sometimes infer contradictory meaning.

Despite a lack of similarities between the test situations and the PAUL sessions, students seem to have transferred their learning strategies to a certain extent, however unconsciously. It seems possible, therefore, to consider that a certain amount of far transfer has taken place, since the strategies were applied in situations quite dissimilar to the initial learning.

The post survey shows that 37 per cent of the students declare having used the learning strategies outside school to try and understand new information in a different context. For instance, they have tried to understand labels on food products or leaflets in foreign airports. Even though no explicit link has been established, one can consider that for some of the students, creative transfer took place. They have been able to activate their metalinguistic skills autonomously, without any obvious similarities between the learning situations.

6 Conclusion

Through these pluralistic approach sessions on languages, where there are no learning goals, students have built abstract and unconscious schemata enabling them to solve the problem and thus develop cognitive strategies. Most of these strategies were successfully transferred from one session to another, as students managed to establish connections between different linguistic situations.

For the strategic benefits to be consciously transferred to the L2 they are studying, it seems necessary to make the students perform an activity that allows them to organize their experiences so as to bridge the gap between pluralistic approaches and the subject L2. This could be facilitated by introducing problem situations rooted in the English course that have structural similarities to the PAUL sessions that have been presented. It is, indeed, essential for a transfer to take place that students subjectively recognize common characteristics to the source task and target task. Only by doing so will they be able to fully benefit from pluralistic approaches and eventually increase creative transfer, whether consciously or unconsciously (Odlin 1989).

Notes

1 Metalinguistic skills are strategies that are applied, either consciously or automatically, to an oral or written linguistic interaction to allow one to think about language and a linguistic message, to analyse a message and to control language processing within the communicative culture (Bialystok, 1987).

2 I chose to specifically study those students who declared (in the pre-experiment survey) that they had no contacts in their direct environment with languages other than their L1 French and the L2 (English) being taught at school. The term 'typically monolingual' is a shortcut used to distinguish this school population from the multilingual students who declare being in contact with languages other than French (and English). However, one cannot consider that these children have no knowledge at all of the existence of other languages.

3 The tasks can be metasemantic if their purpose is to reflect on the meaning of the text, metasyntactic if the student is encouraged to reflect on grammatical elements, or metaphonological when he is led to reflect upon phonology.

4 We choose to name the different languages the learner is presented with according to a chronological order: the L1 therefore is his mother tongue, the L2 the first foreign language, the L3 the second one, etc.

5 'Having the same linguistic derivation as another' (Oxford dictionary, consulted on 10 November 2013. Available online: http://www.oxforddictionaries.com/definition/english/cognate).

6 CEFR: Common European Framework of Reference for Languages (Council of Europe 2001).

7 Three multilingual experts (speaking at least three languages different from the ones presented in the PAUL sessions) tried to solve the access to meaning problem and stated the strategies they used. The texts were then subsequently modified so as to present a similar number of implemented strategies, thus becoming comparable, whatever the language of the PAUL session. This only gives us an idea of what strategies seem most plausible for use, and is in no case a prescriptive mode.

8   Our translation of Trévisiol (2006: 7): 'les L2 sont de meilleurs candidats que la L1 pour l'activation en tant que langue fournisseur en début d'acquisition'.

9   Our translation of Trévisiol (2006: 7): '1. la différence fondamentale entre les mécanismes d'acquisition pour la L1 et la L2. Dans l'acquisition d'une L3, les mêmes mécanismes d'acquisition qu'en L2 sont réactivés, et ils réactiveraient à leur tour d'autres L2 éventuelles. 2. le désir d'effacer la L1 qui est perçue comme intrinsèquement 'non étrangère', donc non adéquate comme stratégie d'acquisition d'une autre LE'.

10   See Appendix 1 for the results.

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