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Features of Natural Translation in a Language Testing Environment

by

(C) Bianca Sherwood

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of the University of Ottawa
in partial fulfilment of the requirements for the degree of
Master of Arts in Translation**

Advisor: Brian Harris

**School of Translation and Interpretation
Faculty of Arts
University of Ottawa**

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ABSTRACT

Natural translation (NT) environments reflect and shape participants' expectations and assumptions about translation activities. This study explores the features of NT environments with particular emphasis on a language testing environment. The data consists of samples of natural translations of a translation task which is a sub-test of a second language competence test for candidates seeking admission to a bilingual university program. In order to compare strategies, the same task was administered to student translators with two to three years professional training. The study also includes a translation of the test text by a fully qualified professional translator.

The findings support the view that translating ability is a complex developmental cognitive competence. In performing the translation task, NT strategies tend to focus on a close linguistic matching of phrases. Student translators (STs), as is the case with the professional translator, appear to attend more systematically to a broader range of features including extra-linguistic factors. This attention to extra features may explain why most student translators were unable to complete the task in the allotted time. Nevertheless, the differences observed seem to be more a matter of degree than of type.

RÉSUMÉ

Les situations de traduction naturelle (TN) reflètent et alimentent les attentes et les perceptions des participants à l'égard de la traduction. La présente étude a pour but d'examiner les caractéristiques de ces situations, et plus particulièrement des tests de langue. Les données de l'étude sont des traductions naturelles d'une épreuve de traduction faisant partie d'un test de langue administré à des candidats à un programme universitaire bilingue. Pour pouvoir comparer les stratégies traductionnelles utilisées, la même épreuve a été donnée à des étudiants de traduction de deuxième et troisième années. Le texte de l'épreuve, traduit par un traducteur expérimenté, sert également de point de comparaison.

Les résultats démontrent que la compétence traductionnelle est une compétence cognitive complexe qui s'acquiert par étapes. Le traducteur naturel tend à favoriser une correspondance linguistique rigoureuse de segments d'énoncés. L'étudiant de traduction, de même que le traducteur expérimenté, semble faire intervenir, de façon plus systématique, toute une série de facteurs parmi lesquels des facteurs extra-linguistiques. Cette dernière approche pourrait expliquer le fait que les étudiants de traduction n'ont pu terminer l'épreuve dans le délai prévu. Quelle qu'en soit la raison, les différences observées semblent être davantage une question de degré que de stratégie.

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Features of Natural Translation in a Language Testing Environment

Natural Translation: The translation done in everyday circumstances by bilinguals who have had no special training for it. (Brian Harris, *The Importance of Natural Translation*, p. 6)

Environments are invisible. Their ground rules, pervasive structure and overall patterns elude easy perception. (Marshall McLuhan, *The Medium is the Massage*)

Introduction

Translating activities in bilingual environments are commonplace. Many day-to-day situations call on bilinguals to complete the communication circuit by acting as natural translators (NTs). These activities, in many instances, parallel the tasks of professional translators. Some of them have even drawn media attention.

One example is the literary translation project undertaken by 10- and 11- year-old schoolchildren of Henry Ward Elementary School in Gatineau, Quebec, who were so moved by Annette Muller's *La petite fille du Vel' d'Hiv*, the autobiographical novel of her childhood memories of the German occupation of France, that they decided to translate it into English to make it accessible to their Anglophone peers. Under the guidance of Elsa Zilberbogen and their teachers, Cindy Baily and Charlotte Olivier, they completed the translation of the entire work of 116 pages (Philips, pp. B1-B2).

A second example is the critical need for volunteer interpreters in the health care system. An American newspaper article, 'Language Barriers are Hindering Health Care' states:

As the population of the United States becomes ever more diverse and the languages spoken multiply, growing numbers of patients who speak no English are being isolated by language barriers. And hospitals are scrambling to find ways to communicate with them...So hospitals are frequently forced to hunt down volunteers, sometimes patients' children, or even bystanders in the emergency room. (Fein, 1997)

The article goes on to state that “according to the 1990 census, 14 percent of people in the United States over age 5 speak a language other than English at home, up from 11 percent in 1980.”

One hospital has a bank of employees representing 40 languages who volunteer to interpret when the need arises. Although there may be risks involved in relying on untrained community volunteers or family members, especially children, in interpreting in sensitive or complex medical situations, these volunteers perform an invaluable service when no other option is readily available.

Most instances of natural translating (NT), however, go almost unnoticed, as just another aspect of normal life. NT takes on such a variety of forms in such a wide range of contexts, that it calls for a broader definition of the concept of translation. In the Ottawa, Canada, area, where both French and English are spoken, administrative staff are commonly expected to translate correspondence, meeting summaries, and reports. Receptionists routinely translate information for clients. Meeting chairs and facilitators frequently do presentations either entirely in both languages, predominantly in one language, with summaries in the second, or partly in English and partly in French. School principals address parents in both languages, repeating in one language what they have just said in the other.

In the community, volunteer interpreters help out in police stations, hospitals and women’s shelters. Within the family, especially immigrant families, children often play important roles as translators and interpreters. Graduates are hired not only for their technical skills, but also for their language skills, with the expectation that they will be able to assist the employer in multilingual or international transactions. This is a partial list, based on the author’s personal experience. In short, in the workplace environment, as well as within the community and the family, countless bilinguals routinely perform translating activities as part of their daily tasks, based on the requirements of the situation, not always conforming to peoples expectations of what translation is.

The term 'translation' in the context of NT is used in a broad sense to refer to any activity involving the reformulation of a message from one language into a message in another language. NT can involve written, oral and signed modes. In professional translation, a distinction is made between 'translation' and 'interpretation,' where 'translation' refers to written, and 'interpretation' to oral modes.

Brian Harris first drew attention to this broad spectrum of widely practiced translating activities in his 1975 paper 'The Importance of Natural Translation'. Harris argued for a shift in focus in translatology, the scientific study of translation, towards *natural translation* (NT), defined as "The translation done in everyday circumstances by bilinguals who have had no special training for it" (p. 6).

Harris' view was based on the following postulate:

All bilinguals can translate. In addition to some competence in two languages L_i and L_j , they all possess a third competence, that of *translating* from L_i to L_j and vice versa. Bilingualism is therefore a triple, not a double competence and the third competence is bi-directional (*ibid*, p. 5).

He further stated that:

In NT, transmission of information is the prime aim and criterion of success: linguistic expression is relatively unimportant so long as it does not interfere with information (*ibid*, p. 14).

The present thesis examines the nature of NT from a relational perspective in order to study the patterns of interactions and relations involved in the interplay of environment, translator, translation user and translating task—the various components of what constitute 'everyday

circumstances'. In addition, it examines the developmental aspect of the cognitive competence involved in translating.

The first chapter examines the features of translation environments (TE) and the nature of translating ability.

The second chapter presents three TEs: the literacy-dominant professional TE; the family, school and social TE, which highlights the developmental aspect of translating ability; and the orality-dominant home environment in contrast to the literacy-dominant school environment of Fon children, studied by Christine Lozes-Lawani in her 1996 thesis, *La traduction naturelle chez des enfants fon de la République du Bénin*. This chapter also refers briefly to *Between Worlds: Interpreters, Guides and Survivors*, Frances E. Karttunen's study of translators, interpreters and informants from the past who developed their skills through practical experience in the field. The final section is a summary of the NT study dealing with French-English bilingual school-age children undertaken by Marguerite Malakoff.

Chapter 3 provides an in-depth analysis of a second language testing environment that makes use of translation as an instrument for evaluating second language proficiency.

Chapter 4, part 1, presents the first set of data, derived from samples of NT done by language test candidates. This chapter also includes observations based on the NT data.

Chapter 4, part 2, presents parallel data from translations done by third and fourth year translation students at University of Ottawa's School of Translation and Interpretation. Observations based on the data are included and the two sets of data are compared in order to explore the possible effects of translation training.

Chapter 5 provides analysis and discussion of the NT and student translation (ST) data. The last section includes an analysis of features of professional or mature-state translating ability as

demonstrated by a professional translation of the same source text that was the starting point for the translations on which the NT and ST is based.

The final chapter draws conclusions and makes suggestions for further study.

Chapter 1: Translation Environments and Translating Ability

1.1 The role of the environment

All TEs are determined by the system of expectations and the shared assumptions of participants on what translating is, what role it plays, and how the criteria for acceptability and success are met. Translation is a language act. As in any language act, common knowledge and experience, as well as the shared circumstances lead to strong convergence among participants on the common focus of attention. These mutual assumption schema allow participants to inform, predict and evaluate behaviors and outcomes. Positive or expected responses tend to further reinforce the assumption schema and strengthen the convergence. The higher the degree of convergence, the more stable the environment and the more standardized the expectations, so that environmentally determined expectations and interpretations gain easy acceptance, while an unexpected and unfamiliar approach may be misinterpreted or undervalued.

For example, the marking key in appendix A, p.143 reflects the assumption schema of the language teaching and testing environment. What is expected of test candidates is a linguistically matched equivalent of the source text. It can be seen in the marking key that the only variants allowed for are lexical or minor phraseological variants. Stylistic and discourse features are not valued as they might be in a professional translation training program. Testing conditions, especially the rigid fifteen minute time limit, encourage this linguistically-based approach. Overwhelmingly, the candidates conform to this expectation. As a result, the statistical correlations are consistently valid and reliable. (See appendix B.)

TEs are socio-culturally determined and their assumption schema are based on frequently unanalyzed systems of expectations and mutual assumptions reflected in implicit rather than explicit codes. These collective standards select features for focus and attention. The impact of environmental features is most clearly seen in institutional and professional practices.

Professional translation is one particular example of a TE. The section in chapter 2 entitled 'Professional TEs' provides a discussion of the features of this environment.

1.2 Abduction and inferencing as generalized mental processes underlying translating ability

In *Mind and Nature*, Gregory Bateson uses the technical term *abduction* to denote an extremely common human mental process. The process is so general and widespread that it often goes unnoticed. *Abduction* is defined as the ability to grasp relations and patterns of relations and apply them to other contexts:

...it is possible to describe some event or thing... and then to look around the world for other cases to fit the same rules that we devised for our description. We can look at the anatomy of a frog and then look around to find other instances of the same abstract relations recurring in other creatures, including, in this case, ourselves.

This lateral extension of abstract components of description is called *abduction*.

Metaphor, dream, parable, allegory, the whole of art, the whole of science, the whole of religion, the whole of poetry... the organization of facts in comparative anatomy – all these are instances or aggregates of instances of abduction, within the human mental sphere.

Every abduction may be seen as a double or multiple description of some object or event or sequence.

He goes on to say that two bodies of knowledge are related abductively if both fall under the same rules. "In each case, it is assumed that certain formal characteristics of one component will be mirrored in the other."

What seems to be the case is that there are, in nature and correspondingly reflected in our processes of thought, great regions within which abductive systems obtain (pp. 157-159).

Abduction, according to Bateson, acts as a counterpoint to analytical mental processes involving inductive and deductive inferencing, making a triad of *deduction*, *induction* and *abduction*.

The process of abduction appears to be very relevant to translating ability because translation involves the mapping of language-related patterns into one another. As will be discussed below, these patterns range from basic linguistic patterns to broad socio-cultural patterns.

1.3 Translating ability as an integrated cognitive skill set

Translating ability involves the interplay of a complex cognitive skill set supported by the generalized mental processes of abduction and inferencing, as well as an open hierarchy of more specialized processing levels in a multi-phase cycle of comprehension, production and comparison (Bell, pp. 12-14). This study will attempt to describe some of the processes involved with the aim of demonstrating that how these various processes are integrated and optimized depends on the nature of the translation task and on the requirements of the environment.

1.4 Developmental stages of translating ability

As well as being a complex cognitive competence, translating ability would seem to be developmental in nature. Harris and Sherwood argued for the developmental nature of translating ability in their 1977 article 'Translating as an Innate Skill.' Because the focus of this article was child translators, it discusses the early stages of translating ability. However, the evidence from studies of older children and adult NTs, discussed below, indicates that translating ability involves an extended and gradual period of development before reaching a mature state. Malakoff, for example, adds a 'metalinguistic awareness' stage (Malakoff, pp.90-99). The data analyzed in the present study, in the comparison between NTs and student translators (STs), also

shows evidence of distinguishable stages. This evidence is discussed after the presentation of the data.

1.5 Attaining the mature state

Current research supports the idea that the mind is structured in the form of interconnected modules, with many possible associations among the components (Smith and Tsimpli, p. 30). Translating involves the interface of the bilingual language faculty with other modules, and with real world experience. Humans are predisposed to selectively attend to certain aspects of their environment, and in this interaction between the mind and the environment, the environment influences the selection of relevant features. It seems plausible then, that amid all this complexity, more than one mental/environmental interaction path might lead to the mature state of translating ability. This mature state can certainly be achieved through training and apprenticeship, in the case of literacy-based, analytically predisposed environments, such as professional translating environments. But it may also be achieved more abductively through practical experience, especially the type of experience that involves the intense and urgent commitment of individuals caught up in exceptional and usually fortuitous circumstances, generally in orality-based environments. Such environments typically require inter-personal and intra-personal skills.

Frances Karttunen offers a vivid historical perspective on the role of NTs caught up in the tumult of their times whose contributions, up to the present, have gone largely unnoticed. Her opening paragraph shows the range of services rendered by this exceptional group:

This book is about individuals, many of them women, who have served as interpreters, translating their languages and also their cultures for outsiders. Some were guides and scouts who worked, voluntarily or involuntarily, for soldiers and explorers. Others had careers as assistants and missionaries and as professional civil servants, while others worked as what anthropologists and linguists call 'native informants'. They functioned

as conduits through which information flowed between worlds in collision, translating more than just words and bringing comprehensibility to otherwise meaningless static (Karttunen, p. xi).

It is likely that naturalistic environments, in contrast to professional environments, require a different emphasis in skill-set configuration. Literacy skills, for example, tend to be a key factor in professional translating, while orality skills tend to play an essential part in most instances of NT. But these boundaries are not rigid. For example, the professional escort or liaison interpreter shares with most NTs direct involvement in particular situations and a need to rely on interpersonal skills.

1.6 Frames of mind

Research in cognition supports the cognitive model based on distinct components of intelligence:

One of the most recent and influential conceptions of intelligence was posited by Gardner (1983). In his seminal book, *Frames of Mind*, Gardner proposed seven different intelligences: linguistic, logical-mathematical, spatial, musical, body-kinesthetic, interpersonal, and intra personal. Gardner relied on multiple sources of evidence that these are seven distinct components of intelligence, or, as he called them, 'frames of mind'. Each of these seven abilities responds selectively to localized brain damage (suggesting localization of brain function). There are autistic savants who excel in only one of these areas and are dysfunctional in the other areas, and exceptional prodigies with extraordinary ability in only one of these areas. These abilities are differentially valued in different societies, and they conform to commonly held intuitive notions about the way people differ (Halpern, p. 9).

If we accept the view that translating ability is a complex cognitive skill involving various levels of processing which call upon distinct components of intelligence, two conclusions may be drawn.

If individuals are endowed with different degrees and different components of intelligence, then we can expect differences in performance. On the other hand, if, as the author claims, “these abilities are differently valued in different societies,” and if we consider that translation generally entails cross-cultural interaction, the expectations and assumptions related to translation performance may vary across cultures and in different environments. For this reason, ‘environmental scans’ may provide valuable insights into the translation process.

1.7 Processing levels involved in translating ability

Several levels of processing involved in translating are discussed below. The first three level are within the language function. These include the lexical, morphological and syntax levels. Next, the text level is discussed. The text level is an interface level which relates the language function to other cognitive functions. At this level, analytical processes of inference and literacy skills come into play. The discussion next shifts to the discourse level, a representational level where communicative impact and reader response are the focus. The last level is the resonance level, which involves the individual participant’s role and engagement in the process. These sub-processes are conditioned by the translating environment, with its collective socio-cultural patterns of interaction.

Although these various levels are interrelated and integrated in dynamic ways that cannot be strictly isolated from the whole translating process, there are patterns that emerge in various TEs, suggesting that the levels are distinct and that it is possible to attend more closely to one or another level and weight the levels differently depending on the constraints set up by the system of expectations or assumption schema of participants in given environments. Examples of such environments are discussed in chapter 2.

1.8 Language-based processing levels

Of the several integrated but distinct levels of processing involved in translation, the first two levels: the lexical-morphological level and the syntax level are directly related to the mapping of linguistic patterns.

1.8.1 Lexical and derivational morphology level

Jules Ronjat, in his diary study *Le développement du langage observé chez un enfant bilingue*, noted that from the time his son began to speak, before twenty months of age, he could be observed rehearsing word-pairs in his two languages (Harris and Sherwood, p. 164). This observation indicates that translating ability at the lexical level manifests itself at the earliest stages of bilingual language acquisition.

Further support for the separation of the lexical-morphological from the syntax levels is found in *The Mind of a Savant*, the study undertaken by Neil Smith and Ianthi-Maria Tsimpli on Christopher, a language savant¹ who is able to converse in some 15 languages, while being severely impaired in his other cognitive functions. Christopher has had no instruction in translation but he enjoys translating, and often does it without prompting; yet the researchers state:

¹ The term 'savant' has here a specialized meaning corresponding to the Canadian Oxford Dictionary entry *idiot savant*, defined as "a person considered mentally retarded but who displays brilliance in a specific area especially related to memory skills."

In the past twenty years the term 'autistic savant' has become current in the literature. This is because it is estimated that savant abilities occur in 10% of the autistic population, whereas they occur in less than 1% of the non-autistic population, including those with mental retardation. The most common savant abilities include mathematical calculations, memory feats, artistic abilities and musical abilities. Language savants are a very rare type (Edelson, Aug 10, 1999).

A striking characteristic of his translation is its blending of the intelligent and the inept...While able to identify items from an awesome number of languages and provide a translation for them that gives at least clues about the content, Christopher regularly produces an output that is flawed to the point of incoherence (p. 158).

Typical examples are provided by frequent errors of agreement...However, these are syntactically determined matters of inflectional morphology, and his command of (lexically based) derivational morphology is much better. This is shown most clearly in mistakes of over generalization, where he extends a correct, regular pattern where it does not apply.

The asymmetry in his mastery of different aspects of morphology is a reflection of the general mismatch between his proficiency at word translation and his relative inefficiency at sentence translation, a contrast which is not unexpected given Lineberger's (1989:203) observation that "lexical and syntactic processes break down independently of one another".

A recurrent feature of Christopher's translation is the pervasive effect of his first language English, on the morpho-syntactic form of the various target languages he knows (*ibid*, p. 157).

Instead of changing the syntactic patterns of the source language into the corresponding patterns of the target language, Christopher appears to be guided solely by the syntax of the source language. In other words, he preserves the English syntax in his translations and maps new lexical items from the target language, both content and structure words, into the source language (English) structures.

Smith and Tsimpli's comments on Christopher's "flawed prowess at translation" (*ibid*, p. 156) indicate that their expectation is that translating ability, even at the early developmental stages,

involves a multiple-mapping process. Since cloze-type tasks involve patterns of both syntactic structures and lexical items, this may account for the high correlation between performance on cloze exercises and performance on translating tasks found in Marguerite Malakoff's thesis, *Natural Translation Ability in French-English Bilingual School Age Children: A Study of Source Language Errors in Native Child-Translators* (p. 131), and corroborated in the data from the second language proficiency tests which is analyzed in the present study.

Further support for the notion of distinct lexical processing is provided by Jean Aitchison in *Words in the Mind*. The following is an explanation of how the bilingual or multilingual mind might handle the various lexicons:

There is no general agreement as to how the various lexicons are organized in the minds of bilingual and multilingual speakers – though there is increasing evidence for a single integrated network. If a person knows two languages reasonably well, words are possibly subconsciously activated in both languages, then the language which is not wanted is suppressed. The fact that words from both languages are activated is shown by the occurrence of blends such as *Springling* (a blend of the English word *spring* and the equivalent German word *Frühling*). When one language is better known than the other, words in both languages may still be activated – but the more weakly activated will be suppressed, and the highly activated will 'block' access to it. This may be why it is sometimes difficult to remember a word in a foreign language. However, considerably more work is needed in order to understand fully how the various languages known by a single speaker are interwoven (pp. 236-237).

1.8.2 Syntax level

This level involves a more complex level of representation, still within the language function, but where language units are matched at the phrase and sentence level. A direct one-to-one matching of elements is not possible because, to conform to the syntax of the target language, many structural shifts are involved. At this level, a matching but not identical target language structure must be substituted for the source structure in order to preserve meaning. This transfer of structure patterns may involve, for example, shifts in word order, deletion or insertion of articles or shifts in verb tense or aspect. On the other hand, sentence boundaries are mostly constant across languages. It is at this level that most early stage, inexperienced translating transpires. Syntax-level translating seems to be the unanalyzed assumption schema adopted by NTs for translating written texts. Evidence for this approach is provided by the second language testing data analyzed below. However, it should be borne in mind that this data is all drawn from written texts and translations. Other data such as that provided by Lozes-Lawani and Shannon suggest that they may not deal with oral texts in the same way. Written texts, typically highly decontextualized,² verbally explicit, visually presented, and permanent, may predispose NTs to attend to this syntax level of abduction.

The syntax-level assumption schema appears also to be commonly held by those who use translations and are unilingual or have had little translation training or experience. This expectation of syntax-level translating is validated by one of the typical presentations of professionally translated commercial and official texts, which are printed in parallel columns or on facing pages, thus inviting or at least implying a matching of linguistic units.

The term *translation*, in fact, seems to be commonly reserved for this restricted meaning. However, there is an intuition of something beyond it. Frequently even clients of professional translators will ask for a translation that is not really a 'translation', but a 'good' equivalent of the

² Where there are no situational cues to aid comprehension.

source text. In fact, one researcher attempts to counteract this commonly held view of translation. Lynda Davey-Longstreet at her TESL Canada conference, 'C'est quoi encore/What's that again?', discussed her approach to a bilingual phrase book of pragmatic expressions for conversation management, which are listed under headings such as greetings, closures and cues for shifts in topic. She made the conscious choice of not putting the French and English equivalents beside one another, but instead divided the book into separate French and English sections. The reader has to invert the book and look up the corresponding headings to get the second-language equivalent. She did this, she explained, because she did not wish to give the impression that what she was offering was *translations* of expressions.

1.9 Interface of language function and other cognitive components

1.9.1 Text level

On a more overall level, abduction at text level involves taking into account text features of unity, cohesion and coherence and involves a broader level of text analysis. This level of analysis is closely linked to highly developed literacy skills and like all literacy skills, highly developed text level translation skills require training and practice. At this developmental stage, the translator is becoming aware of the more abstract and complex sub-processes involved in translating and of the highly decontextualized nature of the work of a professional translator. In the academic environment, text level translating predominates and the focus of study is generally on literacy-based translating activities.

1.9.2 Discourse level

On a level which goes beyond the text, translating is looked at as part of the communicating process. Attention shifts to features involving reader response such as intentionality, acceptability, relevance, informativity, and intertextuality (Bell, pp. 163-172). The effect on the reader and the relational aspect of text are the focus of attention. A strong literacy bias persists,

despite the attempt at integrating texts in a broader framework of ‘cognitive environments.’ In the theoretical discussions, inferential processes at this level are carefully analyzed, while abductive processes are not mentioned.

Sperber and Wilson’s relevance theory, cited also by Smith and Tsimpli, and by Wikkan, provides the theoretical underpinning for Ernst-August Gutt’s *Translation and Relevance: Cognition and Context* (1991). In the introduction to his relevance-theoretical approach, Gutt states:

According to Sperber and Wilson (1986a), the crucial mental faculty that enables human beings to communicate with one another is the ability to draw inferences from people’s behavior. Looked at from the communicator’s end, his task is to produce a stimulus – verbal or otherwise – from which the audience can infer what he ‘means,’ or, in the terms of relevance theory, what the *informative intention* is (*ibid*, p. 23).

The literacy bias resurfaces in the following statement:

Linguistic communication is the strongest possible form of communication; it introduces an element of explicitness where non-verbal communication can never be more than implicit (Gutt, p. 24).

However, Gutt’s discussion of context and the principle of relevance, does include the role of *environments*.

The context of an utterance is “the set of premises used to interpret [it]” (*ibid*, p. 15). As such it is a psychological concept: “A context is a psychological construct, a subset of the hearer’s assumptions about the world.” (Sperber and Wilson, p. 15) Hence in relevance theory context does not refer to some part of the external environment of the communication partners, be it the text preceding or following an utterance, situational

circumstances, cultural factors etc.; it rather refers to part of their “assumptions about the world” or *cognitive environment*, as it is called. The notion of ‘cognitive environment’ takes into account the various external factors but places the emphasis on the information they provide and its mental availability for the interpretation process.

The cognitive environment of a person comprises a potentially huge amount of very varied information. It includes information that can be perceived in the physical environment, information that can be retrieved from memory – in itself a vast store of information, including information derived from preceding utterances plus any cultural or other knowledge stored there – and further information that can be inferred from these two sources (Gutt, p. 25).

The term ‘environment’ is here used in a restricted sense and ‘information’ seems to refer to new knowledge acquired or derived only through facts and data which lend themselves to inferencing. The term *information*, however, can also have Bateson’s broader meaning of “news of a difference” (Bateson, pp. 76-77). This type of information can be accessed through pattern recognition such as prototype categories and other forms of perception that can modify our set of assumptions about the world through abductive modes.

1.9.3 Resonance Level

Unni Wikan in ‘The Power of Resonance’ uses *resonance* as a technical term in cross-cultural communication. Like *abduction*, the term *resonance* refers to an important and pervasive, yet generally unanalyzed psychological property or mental process. In her article Wikan attempts to define resonance and recounts with passion her personal struggle to achieve it.

From the perspective of an ethnologist and anthropologist who has done field work in Bali, Egypt, Oman and Bhutan and who has had to use translation as a means to transcultural understanding in environments where shared expectations and convergence of assumptions are

minimal, Wikan argues for a very human approach to translating. Words *per se* take on a highly symbolic value when the focus of attention is the mapping of cultures into one another. As a result of her uniquely personal experiences, Wikan is a passionate advocate of a “a procedure of going beyond words, of looking past outer trappings and semblances to that which counts more, similarities in human experience or ‘shared space’ as a path to mutual understanding ” (pp. 185-186). *Resonance* is what she attempts to achieve through this procedure.

This level of attention becomes particularly relevant in TEs involving languages and cultures with few common features. Examples of these types of TE are discussed in Chapter 2 under the heading NT and personal involvement.

Chapter 2: Features of Specific Translation Environments

2.1 The professional Translation Environment

As mentioned above, environments influence the selection of features to be attended to by participants. This is particularly true for well-defined, carefully circumscribed, codified, standardized and socio-culturally conditioned and sanctioned environments such as that of professional translation.

In 'Text, Discourse Community and Culture: A Social Constructive View of Texts from Different Cultures', Britt-Louise Gunnarson discusses the construction of academic and other forms of professional discourse with a focus on cognitive, societal and social processes by which "individuals and groups are actors and creators of meaning" (p. 159).

Socialization into a profession means learning how to discern the relevant facts, how to view the relationship between different factors. We are taught how to construct a grid or a lens to view reality in a professionally relevant way ... Each professional group also stands in a particular relationship to the society in which it operates; it performs certain functions and is given a certain place within that society ... Every professional group, like other social groups, is also formed by the establishment of an internal role structure, group identity, group attitudes and group norms.

Given the strong features that influence professional TEs, it is perhaps not surprising that despite the many documented instances of NT, twenty years after the introduction of the NT paradigm, Neubert and Shriev (1995), theorists with the text-based view of translation and mainly concerned with the induction of new translators into the profession, would fail to recognize the value of NT studies and assert:

Translation is bound to the communicative roles that *translations* and their source language progenitors play in social life. Translations are texts, and translation is a textual process in which linguistic form and process are incorporated. Texts are the building blocks of communication in general, and of translation in particular. *The text has to be considered the primary object of translation study* (p. 10, our italics).

Clearly, the assumption is that the agents of the communication process, the authors and translators, should remain invisible. The consensus in this assumption schema is that texts do the communicating, and that they are *written* or at least *literacy-based* texts such as formal speeches, conferences, presentations of findings, lectures, and technical reports. In terms of text genres, the assumption seems to be that they are of an official, commercial or technical nature, text types familiar to the participants in the professional environment, i.e., regular producers and consumers of such translated texts operating within a stable socio-political structure where cross-cultural effects are not seen to be problematic.

The authors go on to state:

Translation studies should be based on the observation of practice. Like the early ethnolinguists ... who observed language in use, translation scholars should observe the indigenous performance and natural uses of translation. Unlike speech, translation is not a natural competence. It is a result of experience, training, and the feedback effects of client-translator or translator-reader interaction. The hypotheses, models and theories developed in translation studies should be based on data collected from the body of translation practice. (*ibid*, p. 10)

Literacy is again clearly a biasing factor. The assumption is that to be able to translate one must be literate. This is surely an assumption that is only partially representative of the bilingual and multilingual world at large where it is common for people with low literacy skills to extensively interact in more than one language, often in situations of urgency or immediacy linked to the oral mode. Moreover, even speech acquisition requires input from the environment. While

experience or training are crucial factors in developing advanced translating ability, not everyone who translates is a graduate of a school of translation or works for clients in professional TEs.

Although the authors advocate the collection of data from the body of translation practice, their assumption schema will not allow them to recognize empirical NT studies. In a footnote to their first chapter they state:

We are opposed to the hypothesis that “the basic ability to translate is an innate verbal skill” (Harris and Sherwood 1978, p. 155). We also reject the concept of ‘natural translation’ (Harris 1977). The authors follow Delisle (1988, p. 20) who clearly distinguishes between bilinguals and professional translators:

The *bilingual* generally uses his or her knowledge of a second language to communicate orally; the *translator* uses texts. Consequently, the translator is never free to express his or her own thoughts. The translator is not free to take liberties with the source text and the original author’s ideas (our italics).

Newmark too believes that “the central concern of translation theory is to determine an appropriate method of translation.” He also argues that NT is useless for theory because it cannot inform us about method, untrained translators being amateurs at translation whose methods are unscientific (quoted in Shannon, p. 100). Delisle’s explicit statement of what he means by translation also reflects the values inherent in the professional TE with its clear literacy bias. On the other hand, Vygotskii in *Thought and Language* also made a distinction between what he termed *scientific* and *spontaneous* concepts, but he did not value one over the other; rather he showed the dynamic interaction between the two in developmental processes of cognition. The two processes, in his view, work in tandem to arrive at a balanced, mature state (p. 108).

2.2 Translating at home, in school, and within the community

In contrast to the literacy-centered, professional school definition of translating ability, Sheila Shannon in 'A Reconsideration of Natural Translation for a Theory of Translation' (1996) describes, from a sociolinguistic perspective, the influence of environmental features on how translating activities are valued within a society. Her study deals with Hispanophone interaction within English-dominated American society:

Without a sociolinguistic understanding about the U.S., a visitor might entertain the notion that the U.S. is a multilingual country. The reality is that the U.S. is a fiercely monolingual country... Eriksen (1992) made the observation that linguistic diversity in the U.S. is viewed "as something that should be tracked down, cornered, and exterminated" (p. 99).

A sociolinguistic portrait of the U.S. today includes monolingual English speakers whose family backgrounds often include languages other than English and immigrants who speak their mother tongues. Most bilinguals in the U.S. are school-age children of recent immigrants. Typically, these bilingual children are called upon to translate between the two monolingual worlds as language brokers (p. 99).

In defense of the study of NT, Shannon states: "And since bilingualism is the norm rather than the exception in the global community, taking into consideration what bilinguals do should not be a trivial pursuit" (p. 100). She deplores

...the lamentable waste of linguistic resources that a policy of monolingualism causes. They point out the irony of high school students studying foreign languages that are only valued if they are not associated with the immigrant groups who speak the languages. For example, the Spanish that an immigrant from Mexico speaks...is unashamedly

regarded as inferior by foreign language teachers and seen as something that must be forgotten in order that a standard be learned (*ibid*, p. 102).

The nature of linguistic diversity in the U.S. is such that, generally speaking, most speakers of other languages are the young and the old... While the shift to English occurs more slowly for Spanish speakers in U.S., generally it does occur by the third generation (p. 102).

Speakers of other languages in the U.S. are often to be found at the most remote socioeconomic and sociocultural margins of mainstream society, but they are enormously resourceful and refuse to be passive in their exile. As their children become bilingual by learning English at school, they are just one of the many linguistic and cultural resources that are available to help negotiate life with mainstream (English-speaking) society. As language brokers, these children do what comes naturally as part of being bilingual – they translate³ (p. 104).

Shannon describes three studies of NT that involve Mexican and Puerto Rican bilingual children. These ethnographic studies of language in its social context reveal recurrent patterns, corroborating the view that translating ability is a developmental cognitive skill.

The first study involves eleven-year-old, Leti, who had just taken over her older brother's role as the regular family interpreter. She was called upon to translate between her mother and the chiropractor. Her greatest challenge was acclimatizing to her new role of interpreter. A few practice runs along with some adult guidance helped her gain confidence and control. After some false starts, she was able to perform the task adequately for the purposes of the situation at hand. NT translating environments, particularly when children are involved, generally allow a

³ One of the earliest studies on child translation (Harris and Sherwood, 1978) also gives a brief case history of a child acting as language broker in an immigrant family.

wider margin of tolerance than would be accorded to professionals. Moreover, communication problems arising from lack of familiarity with a given context are not limited to language:

The difficulty that Leti had being the interpreter...was exacerbated by the nature of the situation itself. West (1984) reports an extensive literature on the miscommunication that doctors and patients have with one another even when they speak the same language. Leti encountered technical terms and ways of going about doctor's treatments and examinations with which she was not familiar (p. 105).

... one could postulate that bilingual children's ability to translate and experience with translation are possible ways to hedge against English monolingualism. If bilingual children's translation abilities could be recognized, appreciated, shaped and disciplined, then dual language development could result as well as the development of translation skills... The recognition of bilingual children's translation abilities could begin at school, where their bilingualism only has been insulted (p. 106).

Shannon's second study is of NT in the classroom. It reveals a problem brought about by affect and attitudes. The innovative translation curriculum described in her study was designed for nine grade-eight Puerto Rican students enrolled in a Spanish as a foreign language course. They were put in a separate class to learn about translation and to practice their translation. They were asked to participate in a variety of translating activities ranging from literary translation to videotaped role play.

For some sessions professional translators were invited as guest speakers. In one such session, involving poetry translation, the students experienced great frustration because their lexical and syntax level assumptions about translation were broken by the professional translator's resonance-level approach to the task of translating poetry. Their own phrase level attempts at back-translation did not correspond to the text of the source poem, and they could not accept the changes proposed by the professional translator. This strong affective response may indicate that

they had not yet reached the developmental stage where they were ready for this type of instruction; they could not yet easily attend to the resonance level of a text at this stage in their translating ability. Another possible interpretation is that their response may be a natural expression of the confusion they experienced at having to revise their assumptions. It may indicate that even at the optimal moment in the developmental process, the introduction of such new, assumption-overthrowing concepts are difficult to integrate. The difficulty may also have been compounded by the instructor's lack of expertise in teaching translation. As a result, though high achievers, the students were ambivalent about the project and offered resistance. They were resentful of being taken out of a Spanish course where they could have easily excelled and then being asked to perform exercises that were taxing and frustrating in a class that "demanded skills that they were more than willing to abandon, which included translating and their first language – Spanish" (*ibid*, p. 109).

Natural Translation was foreign to them at school and practicing professional forms of translation was a foreign way to view Puerto Rican bilinguals at school in their experience. The bilinguals in the field of professional translation were not familiar bilingual models to these students... The students' negative attitudes stemmed directly from societal attitudes about the two languages and about the habits of their speakers. NT suffered the same low status as the minority language (p. 109).

The third study deals with what Shannon calls an instance of "asymmetrical Natural Translation." It involves eighteen-year-old Nora who came from Mexico at age twelve and was able to act as official translator for the family from age fifteen. As a result, she had extensive experience with oral interpreting and written translation.

Shannon provides a transcript of Nora translating between her mother and the owner of the apartment building that Nora's mother manages. In this liaison interpretation context,⁴ Nora

⁴ Liaison interpretation is also called 'dialogue interpreting', see Wadensjö, 1998, *passim*.

conducts much of the interaction herself with the owner and makes a summary report to her mother after the English speaker has left. The summary is accompanied by many discussions over a period of time so that eventually her mother will get all the details and she will acquaint Nora with more information surrounding the kinds of things that are expected of her as a manager. Nora takes care of some of the managerial paperwork such as tenant applications and the like – most of this she does in negotiation with her mother. Shannon states:

This interaction has little to do with translation because it is asymmetrical with English dominating... Nora is on equal interlocutor terms with the owner and her mother is somewhere outside of the conversation. Nora says that this kind of interaction is typical when she has established some connection with the English speaker either because she is familiar with the situation or has had a history of interacting with the person, such as the owner. Nora does not translate simultaneously for the most part, and when she does her Spanish version is considerably shorter than what the owner has said in English (*ibid*, p. 116).

This type of translating activity might be considered as an instance of delayed and summarized consecutive interpretation. Nora is involved, experienced and competent enough to be accepted as a responsible language broker. Her main focus is on answering to the needs of the task and providing only the information required by the situation. She exercises judgement in her pragmatic application of her brokering skills. Simultaneous or complete consecutive interpreting is cognitively taxing and if a complete translation is more than the participants need or expect, then her approach may be considered an appropriate and successful application of translating ability. Such an explanation should be considered as plausible as the ‘asymmetrical translation’ view, since Nora is not only acting as translator, but also has a personal interest in the work being discussed.

Shannon’s assumptions and expectations about translating activities tend to be linguistically bound and literacy-centered. She expects a phrase level translation. From her sociolinguistic

perspective, she concludes from this instance of ‘asymmetrical conference translating’ that “Nora’s English ability is over-represented in this Natural Translation situation” (*ibid*, p. 116). Her interpretation is that:

This conversation is asymmetrical with Spanish relegated to a minimalist role, even silenced... Nora and her mother are of a lower socioeconomic class, have less education, and are members of a minority group. Nora has less control over the inherent power of the person in the middle (Anderson, 1976). However, Nora also has less control over the hegemony of English. By virtue of the fact that she is more mature and speaks English, the nuisance of translating everything into Spanish and from Spanish is diminished (p. 116).

Shannon says of Nora: “...she and her mother are much more like peers and such linguistic *loyalty* is not necessary...The relative status of the two languages, unless kept in check ...determine the shape of a NT transaction.”

Without dismissing this view, it is possible that Shannon herself undervalues the autonomy of individual agents within a social context, as well as the resonance level of interaction that an individual response would entail. Nora is called upon to be much more than a translator of linguistic messages and makes paralinguistic judgements accordingly. A disciplinary bias in one’s view of interpretation behaviour runs the risk of undervaluing the diversity and ingenuity to be discovered in NT activities, where the focus is on finding solutions to real-life problems rather than being linguistically faithful.

Allowing greater scope for individual action in specific situations does not, however, invalidate Shannon’s analysis of the importance of NT. Sociolinguistic factors have emerged as having an impact on the outcome of a translation interaction – the relative status of the two languages and the attitudes and behaviours that correlate with it. It is possible that NT is a more complex translation interaction than professional translation because there is considerable lack of control

over factors involved. Therefore, NT might be a good place to explore those factors and then examine how they impact outcomes of other types of translation.

At the same time, it is precisely because of the complexity of NT interactions that care must be taken in understanding and evaluating such interactions. It must be remembered that interpersonal relations are not on the same level as socio-cultural ones. As Wikkan argues (*op.cit.*, pp. 185-186), there is a danger in interpreting one in light of the other without taking into account the role of individuals.

2.3 Natural translation and personal involvement

In marked contrast to the prototype of the invisible, disinterested institutional translator, a very different image of the translator is portrayed in works such as Caroline Link's 1997 film *Beyond Silence*, which involves NT between sign language and spoken German.

Thelma Adams, in her New York Post review of *Beyond Silence* (Adams, 1998), writes:

In Beyond Silence the central character is Lara... The strong-willed girl acts as her hearing-impaired parents' ears. Lara often interprets language to suit her own interests – imagine a parent-teacher conference translated by the child in question.

As Lara grows up, her role as interpreter, mediator and informant for her parents in their interaction with the hearing community includes such activities as signing while her mother watches movies and interpreting banking transactions for both parents. The task of being a family interpreter is taxing and her young sister is loath to take over the task when Lara gets older and seeks her independence. Lara's role is similar to that of the immigrant children Shannon describes in her research.

2.4 Fon children and natural translation: an ‘environmental impact’ study

An interesting exploration of the interface of orality and literacy in a cultural context is Christiane Lozes-Lawani’s 1994 thesis *La traduction naturelle chez enfants fon*, in which she examines school children’s ability to retell a familiar traditional tale in their second language. She uses the story-telling protocol introduced into NT research by Harris (Harris and Sherwood, pp. 158-159). The children’s translations were tape recorded at school.

The medium used is oral translation in the form of consecutive interpretation from Fon – one of the most important vernaculars spoken in Benin (West Africa) – into French. The study centres on the translation of a folk tale.

This Beninese tale is popular, of average length for its type, and was tape-recorded from a traditional Fon woman story-teller. It was translated by fifty bilingual boys and girls aged from 8 to 12 years, in schools in Cotonou. The children were therefore all at about the same level of age, culture, language and education...

The hypothesis was that the children would not all translate in the same way: some would stay close to the wording of the source text, whereas others would use paraphrasing or adaptation techniques ... in this study the subjects’ interest was aroused by the use of an element of their education, that is to say the story telling, the ludic, educational and entertainment functions of which helped to produce a relaxed atmosphere for the recordings. The translations are analyzed on two levels: that of the whole text and that of the details and language of the translations. (Abstract)

Though not explicitly stated, this study attempts to evaluate children’s translating skills at the discourse and resonance level. The study is unique in that it addresses marked shifts in translating environments. The children learn their second language, the language of administration and commerce in their country, in a school setting or literacy-based environment.

Their first language, on the other hand, is acquired in the orality-based environment of home, family and community. Their experience of traditional folk tales derives from their orality-based first language. The study was conducted in a school setting, using unfamiliar technology – a tape-recorder – and the task was performed outside the expected context of story telling, i.e., individually, without a live audience and without the atmosphere typically associated with a story-telling environment. Even the story they heard in the recording was decontextualized – a disembodied voice from a machine instead of a live performer interacting with an audience. Lozes-Lawani discusses this triple environmental shift:

Il est essentiel de noter que le texte traduit, tel qu'il se retrouve dans la présente thèse, a subi une triple transformation: d'une mise en scène sociale à un contexte scolaire, de l'oral à l'écrit (par le biais de la transcription), et finalement, d'une langue africaine à une langue européenne. D'où de nombreuses pertes, du point de vue discursif, stylistique et linguistique (improvisation, expressions vocales et mimiques, images, onomatopées, jeux de mots, idéophones, chants, dances, formules initiales et finales, etc.). Par exemple, en français la formule consacrée: "Il était un fois..." suffit à introduire un conte, tandis qu'en fon, le préambule ou même la morale et le conte lui-même sont des prétextes de digressions, d'embellissement et de broderie, gages de la richesse expressive susmentionnée (*ibid*, p. 102).

Though the children were translating into their second language, by and large they were able to successfully relay the narrative thread of the story. However, many of the features of the oral tradition of story telling may have been lost perhaps in part because the research environment did not support them. Without taking into account the importance of environmental features in shaping translating activities it is difficult to account for such loss in resonance:

Quant à la signification morale du conte, aspect très important dans la culture fon, il ressort de cette analyse que tous les écoliers sont restés à un niveau superficiel, car il ne

se sont intéressés qu'à l'anecdote. À preuve, tous ont traduit littéralement la morale à la fin du conte, sans chercher à la comprendre en profondeur (p. 103).

Les traductions des écoliers donnent cependant une idée très appauvrie du langage du conte. Souvent le style est monotone et parfois lourd, sans pouvoir rendre au récit sa caractéristique vivante... On ne peut nulle part noter des traces de l'effort de création personnelle. Du fait qu'ils connaissaient parfaitement le trame de l'histoire, les écoliers auraient pu conter avec aisance et passion ou art, et se donner la liberté d'improviser ou de broder, à des fins d'embellissement, comme le ferait un vrai conteur. Cela n'aurait pas été au-dessus de leur force, car en général, ce sont les enfants qui ouvrent la veillée des séances de conte. Les femmes, puis en dernier lieu les hommes, ne prennent la relève que lorsque les enfants ont épuisé leur répertoire. C'est un procédé d'éducation qui vise à faire d'eux des conteurs en herbe, à les éveiller et à les sensibiliser à l'importance de l'expressivité et à l'extériorisation dans la communication (p. 105).

The study raises many questions. What is the impact of the literacy bias of the test environment on the children's perception of the task? Given the clear developmental nature of translating ability, is it possible that the discourse and resonance level of analysis are acquired at a later stage? Moreover, since evidence seems to indicate that translating into a second language is more cognitively taxing than into a first language (Malakoff, p. 53), perhaps the children could only attend to the more basic processing levels. Perhaps the children were not used to using French for socio-cultural activities and the research environment was not congruent with their expectation of a story-telling environment. This lack of convergence may also have affected their performance on the task.

The impoverished resonance in the children's translating seems to run counter to the expectation of the researcher, who feels that because the children were familiar with both the tale and the story-telling tradition, they might have reasonably conveyed some of those elements. But what were the children's assumptions about what was expected of them? All of these issues bring out

the importance of taking environmental factors into consideration, particularly when dealing with very diverse cultures.

2.5 Malakoff's study

Marguerite Malakoff's study is worth summarizing in some detail because of all the research done so far it is the closest to the present study for several reasons. Her subjects were relatively mature NTs. Both studies involve written translations, even though the NTs in the present study have a continuous text rather than isolated sentences. Both studies were done in similar environments: educational institutions. The data in both cases is derived from tests.

The subjects for her study were 92 fifth through seventh grade students ranging in age from 9.9 to 11.9. They were attending an international school in Geneva, Switzerland. The school has two programs of language instruction: English and French. Students get instruction in their second language from kindergarten. They are divided into groups according to levels of language ranging from beginner to fluent. Students from the two language programs are encouraged to interact regularly during recreation periods, sports classes and extra-curricular and social activities. All the subjects had English as the primary language of instruction and were advanced second-language learners. In her introduction she makes the following claim:

There has been very little empirical study of children's translation, and most evidence of translation ability rests on anecdotal evidence from naturalistic situations (Malakoff, p. 44).

By "anecdotal evidence from naturalistic situations" Malakoff is presumably referring to the bulk of the previous research on NT, including the early diary studies by Ronjat and Leopold analyzed by Harris and Harris and Sherwood, the studies of bilingual children by Swain and Wesche, as well as later case studies by researchers such as Harris and Shannon. It has to be borne in mind that Malakoff is working within the North American psychological research paradigm, which

stresses control over variables, sufficient empirical data, standardized protocols, replicable results and statistical analysis. From Malakoff's perspective, only empirical data derived from rigorously controlled testing conditions can provide robust evidence for translating ability.

However, her cross-disciplinary approach to the study of NT develops an important aspect of Harris' definition. Harris' research focuses on the circumstances under which NT occurs, as well as the cognitive aspect of NT. Malakoff's interpretation of 'natural' focuses on the cognitive skills involved, rather than on the translation situation *per se*. That is, NT is done by the child who has received no formal training in translation and is relying on a set of natural linguistic and cognitive skills. NT is concomitant to bilingualism, just as the ability to communicate is naturally inherent in the ability to speak a language. It is not a learned skill, such as learning a foreign language in an educational setting, but rather, it is a skill that develops from a natural and existing base, in the same way that mother-tongue language abilities develop (Malakoff, p. 7). Like speech, however, it is a relational skill which requires input and reinforcement from the environment.

With this approach in mind, her study investigates the nature of translating ability of fluent and non-fluent bilingual students:

The study examines the effects of level of bilingualism fluency, proficiency in the Source and Target languages of the translation, type of translation difficulty, and modality of task on performance. The study also examines the relationship between metalinguistic awareness and translation ability (Abstract).

Her subjects are 92 fifth through seventh grade French-English bilingual students. The translation tasks contain translation 'pitfalls' that are designed to elicit translation errors, which occur when a source language structure or lexical phrase is incorrectly inserted into the target language structure. Her goal is to examine the subjects' ability to access and apply linguistic knowledge. The tasks involve translating a series of isolated sentences. Her assumption schema

is also intrasentential (lexical and phrase levels) and is literacy-based. She is, in fact, examining an early phase of translating ability (see section 6.8 below). Her many findings, discussed in more detail in the sections below, confirm and enrich the insights into this developmental stage.

First of all, her research supports the notion of translating ability as being innate and developmentally acquired rather than learned:

The present findings are consistent with the claim that translation skill is a widely distributed ability among bilingual children. Bilingual students have little difficulty either understanding the demands of translation or completing context-reduced translation tasks. Even on written translation, where students were unable to receive experimenter prompting, students completed over 95 percent of the items. The findings further suggest that students do not translate on a word-per-word level and are not easily misled by translation pitfalls designed specifically to elicit linguistic confusion at points of potential contact and conflict between the two languages. Students translated over 90 percent of the items with only minor errors: over 50 percent were completed without any errors and students avoided translation pitfalls in over 60 percent of the items (p. 122).

While confirming that students do not translate on a word-per-word level, her study does indicate that their dominant strategy is to translate on a phrase-by-phrase level, following the phrase order of the source text. She also confirms that translating ability, developmental in nature, is not a unitary construct, but rather an integrated cognitive skill set. Her research shows variation in translating ability to be dependent on age, grade, fluency and language of instruction. Along with the factors which show a strong correlation with translating ability, Malakoff also discusses issues related to the distinction between lexical-morphological and syntax processing, the impact of literacy on translating ability, the emergence of strategies for shifting to higher processing levels, translating ability as a factor of experience, cloze task performance as a predictor of translating ability, the emergence of metalinguistic awareness and higher level analysis, and the impact of socio-cultural environments.

2.5.1 Age and grade related improvement

Supporting the hypothesis that translating ability is developmental in nature, Malakoff finds translating ability shows age and grade related improvement. She finds that third graders had the highest incidence of translation errors. “By the sixth and seventh grade, however, the translation was generally fluent and almost as rapid as if the student were reading the letter aloud in the Target Language” (p. 18).

Her findings also show that older students seemed to be undergoing a shift in level of awareness of the translation process. They “frequently expressed frustration with their translations and their inability to produce a more acceptable translation. Third and fourth graders appeared to be less aware of the pitfalls: these young students rarely appeared flustered or even aware of their mistakes” (p. 18). She also shows that “degree of fluency has a significant effect on translation performance regardless of grade” (p. 44).

2.5.2 Separate lexical-morphological and syntax processing

Malakoff strongly confirms Smith and Tsimpli’s findings of two distinct levels of processing. She also confirms the need for cycling back through processing levels to find solutions to semantic problems.

The sentence task, however, suggested that the type of pitfall might be important. Errors involving idioms and expressions were more common than structure-related intrusions errors at all grade levels and for both target languages. The error rate in the two oldest grades was lower than that in the two youngest, with the exception of items involving expressions or idioms.

Translation can be viewed as a language-based problem-solving task. The task requires the translator to reflect on the linguistic demands of the task and choose a successful

strategy... Whereas simple transformation rules may apply in the case of structure-based pitfalls (for example, reverse adjective-noun order), linguistic conflicts are likely to require more creative solutions in order to successfully convey the semantic intention of the original message (p. 125).

The present results show that students are producing semantically accurate translations, suggesting that they are processing the meaning of the task item in both languages. In addition, however, there is evidence that bilinguals have at some level, a common conceptual storage for both languages... (Were this not the case, in fact, bilinguals would not be able to translate or even access in one language knowledge obtained in the other) (p. 126).

The findings also suggest that different language abilities may be required to avoid structure-based and lexical-based translation pitfalls. Avoiding structure-based pitfalls relies primarily on accessing and using grammatical competence in the target language: the level of analyzed knowledge in the Source Language is not directly relevant to producing a correct target language sentence structure. Thus Non-Fluent students show a high rate of structure-based errors in their non-proficient language while showing a low rate in their proficient language (p. 127).

...the level of bilingual fluency has a stronger effect on linguistic knowledge relating to grammatical structure than it does to linguistic knowledge relating to the communicative use of language...The ability to identify lexical-based pitfalls requires that the translator be aware of the connotative uses of language. This knowledge is likely to be less language-specific than knowledge about language structure.... identifying lexical-based pitfalls, requires that the students contrast the connotative meaning of a given phrase in the two languages (p. 130).

2.5.3 Literacy focus and translating ability

Malakoff also alludes to the divergent configuration of skill sets required for literacy-based and orality-based translating ability. She also suggests that the emergence of the literacy effect occurs after third grade:

The literacy demands of written translation also places greater processing demands on the students, which may result in poorer performance. On the other hand, the written and more academic nature of the task may cause students to focus on and attend more closely to the (linguistic) accuracy of their responses. Oral translation resembles a situation of face-to-face communication, which allows for multiple cues and feedback (*op.cit.*, p. 124).

These results also suggest that the ability to produce grammatically correct sentences in the second language on a cognitively demanding task requires a high level of proficiency in the second language. This is consistent with the distinction between academic language skills and communicative language skills...everyday conversation requires lower levels of analyzed knowledge and cognitive control than do academic language-based tasks (p. 129).

Preliminary pilot results with literate younger students... suggest that fluent bilingual third graders are already proficient translators. These preliminary results also suggest that these younger students may not approach translation tasks in the same manner as older students. The third graders appear to translate more spontaneously, whereas the older students appear to regard translation as a language-based task (p. 133).

2.5.4 Emerging strategies for higher level processing

As did the candidates for the Second Language Tests (see chapter 4), Malakoff's subjects used alternative strategies when phrase-by-phrase translation created comprehension problems or failed to yield comprehensible output. Malakoff refers to these strategies as circumlocution, paraphrase and rephrasing. She does not mention best-guess strategies (see section 6.6 below), however, probably because the sentences in her tasks did not provide sufficient context for the students to reinterpret.

Two types of translation strategies were of special interest. The first is the use of circumlocutions, where the pitfall construction is avoided but the semantic intent is correctly communicated through a paraphrase. The second strategy I have termed *rephrasing*. In this case, the student replaces the problematic phrase with one that is related and more easily translated; however, the semantic intent of the original meaning is changed and the resulting translation is thus incorrect. Both strategies, however attempt to circumvent the pitfall with paraphrase – in one case the paraphrase is successful and in the other case, it is not (p. 114).

Both Good and Poor⁵ translators made use of paraphrase to circumvent translation pitfalls; a primary difference between the two groups was the success of the paraphrase strategy. Poor translators were also more likely to drop problematic elements ...again suggesting that they are recognizing the pitfalls, although not successfully avoiding them. Finally, the findings indicate that the most difficult items are similar for both Good and Poor translators (p. 121).

⁵ Subjects were classified in terms of their performance scores on the translation tasks (Malakoff, p. 103)

2.5.5 The role of experience

A strong linguistic background as well as translating experience, even at this stage, tend to enhance translating ability:

The analyses also suggest that the bilingual fluency underlying translation ability requires extensive linguistic experience. While the majority of Good French translators had spent more than seven years in Geneva, the majority of Poor French translators had spent less than seven years. This is consistent with the claim that the language skills required for cognitively-demanding tasks are not acquired as rapidly as everyday language skills. The background characteristics also suggest that Good translators do use their translation skill in everyday situations more than do Poor translators (p. 123).

2.5.6 Cloze task correlation

In Malakoff's study, cloze task performance emerged as "the single best predictor of translation performance" (p. 130). These findings suggest that the cloze task may be a useful diagnostic or pedagogical tool for translation training. In discussing the possible reasons for the strong correlation, Malakoff alludes to discourse and resonance levels of translating through her reference to 'world-knowledge.'

The high correlation with the cloze task is not surprising if one considers the nature of the two tasks. The Close task requires that students select a word that both fits the sentence structure and the context of the passage. Successful completion of the cloze requires that students focus both on the semantic intent and the sentence structure. This is also what is required to produce a successful translation, particularly if a lexical reformulation is required.

The cloze task... relies on high levels of analyzed knowledge in both grammatical and lexical domains. To successfully complete the task, the students must decide not only what word can grammatically fit into the sentence, but also what word will make sense within the sentence and the passage. This draws on a wider domain of linguistic – and in fact – world knowledge. Translation, as stated earlier, poses a similar problem (p. 131).

2.5.7 Metalinguistic awareness

Metalinguistic awareness seems to be tied to the ability to attend, through abductive or analytical means, to the various processing levels involved in mature state translating ability. The mature state is defined as the state reached by adults who have considerable experience in translating, whether through formal training or on the job.

...to be metalinguistically aware is to begin to appreciate that the stream of speech, beginning with the acoustic signal and ending with the speaker's intended meaning, can be looked at with the mind's eye and taken apart. (Tunmer & Herriman, 1984, p. 12, cited in Malokoff, p. 8)

It too appears to be developmental in nature, following a pattern of levels similar to translating ability.

The significant correlation (among Non-Fluent students) between metalinguistic awareness and translation into English only for written translation suggests that the role of metalinguistic awareness may be related to the difficulty of the translation task. The literacy demands of the written modality add an additional difficulty to the translation task in terms of the French source text – a difficulty that does not exist when the French source text is oral. To compensate for the additional difficulty, students may rely on their knowledge of English form and structure to correctly interpret and translate the French Source Language pitfalls into the English Target sentence (p. 93).

Formal instruction appears to be critical to the development of metalinguistic awareness. This recalls Vygotskii's discussion (see section 2.1 above) of the interaction between *scientific concepts* (those consciously learned in school) and *spontaneous concepts* (those acquired through day-to-day real world experience):

... receiving instruction primarily in only one of two languages enhances verbal reasoning in the language of instruction more than it does in the non-instructional language, even when the non-instructional language is the mother tongue (Malakoff, p. 125).

Better awareness of the translation process through formal instruction may strengthen metalinguistic awareness. Malakoff argues that translation as a pedagogical tool ought to be given serious consideration:

Analyzed knowledge in the Source Language, however, might impact on performance. This would depend on the extent to which analyzed knowledge of Source or the Target Languages has explicitly referenced knowledge about points of conflict between the two languages. Anecdotal evidence suggests that most students in the study had not explicitly related the two languages. This is not surprising. The language arts teachers make a point of relying exclusively on the language being taught: that is, French language teachers do not use or reference English in their instruction. The spontaneous comments of many of the Fluent students during the course of the oral translation tasks suggest that in the course of translation they suddenly noticed language differences. This anecdotal evidence supports the argument that as a pedagogical tool, translation "offers an easy avenue to enhance linguistic awareness" (p. 128).

2.5.8 Environmental support for translating skills

Like Shannon, Malakoff affirms the importance of the socio-cultural environment in validating bilingualism and translating ability:

Studies of ‘balanced bilinguals’ (bilinguals who have roughly equivalent abilities in two languages) suggest that bilingualism has positive effects on cognitive development under certain conditions. These conditions are that both languages be supported academically *and* emotionally by the community and the society at large. This is generally the case when the mother tongue and the second language are both valued by the society. (p. 4)

Chapter 3: Natural Translation in a Testing Environment for Language Teaching

3.1 Methodology

To explore the functioning of NT within a specific environment, NT data from a testing environment for language teaching was examined in this study. Past research indicates that NT is a cognitive ability concomitant with bilingualism. Since all bilinguals have, perhaps to varying degrees, this shared cognitive ability, such an exploration might reveal significant patterns in NT use of translation strategies and in common approaches to the translation task.

We are not seeking to evaluate the quality of the translations, but rather to look closely at how all subjects are able to produce a translation within a clearly defined situation and in view of the specific goal of passing the entrance exam.

We feel that this exploratory approach to the research is justified by the fact that there has been very little research in the area and none which is directly comparable.

3.2 The shifting role of translation in language teaching ⁶

Translation may be the ideal tool through which to measure bilingual proficiency because of its nature as a bilingual cognitive-linguistic skill. Its potential as an assessment tool, however, has received little if any attention. The relationship between Source and Target Language proficiencies and translation ability suggests that translation might provide a viable tool for assessing comprehension and production language abilities in bilingual

⁶ This type of translation is sometimes called 'educational translation' or 'academic translation'. In French it is called 'traduction scolaire' or 'traduction pédagogique' (Rubio, 1993, *sub voc.* 'academic translation').

students...Finally translation can also reveal points of possible linguistic confusion among students acquiring a second language (Malakoff, p. 132).

Malakoff's arguments for giving translation a more prominent place in the language classroom are largely a restatement of positions on translation defended in the past. Louis Kelly in his *25 Centuries of Language Teaching*, a historical overview of language teaching in Western culture, discusses the importance of translation-supported approaches to language teaching:

The history of language teaching is dominated by translation, which at certain times, has even driven reading and composition from the classroom. Translation into the second language is regarded as complementary to composition, its two special virtues being formation of a sense of style, and a rigorous training in perceiving the immense differences between resources of different languages. The only period from which it is largely absent is the Middle Ages. Simple translation has existed during most periods of language teaching. But during the Renaissance, it was supplemented by 'double translation', which combined translation in both directions with intensive reading. (Kelly, p. 17).

Translation, according to Kelly, was first used as a scholastic exercise by the Romans during the third and second centuries BC. They found that the difficulties entailed by translation made it appropriate only for the mature scholar (p. 171). The view that the task of translation, because of its complexity, is best left to the late stages of second language learning finds acceptance again in the twentieth century (p. 217).

After various ups and downs, translation began to re-enter modern language teaching, and gained momentum through its adoption into the Grammar-Translation Method, with its emphasis on grammatical principle and Cartesian logic (p. 138). Grammatical studies in the mother tongue served as the introduction to foreign-language learning, the categories of one being applied to the other. Whereas translation had served as an introduction to the arts of literature during the

Renaissance, in this period it became an all-purpose tool for establishing correspondences between home and target languages (p. 403).

In the nineteenth century, translation was generally seen by teachers as the only sure method of transmitting meaning. This assumption, however, was challenged by those who subscribed to the Direct Method. During the 20th century the tendency among language teachers who adopted the Direct Method was to reject translation on the basis that they saw no reason for the student's mother tongue to intervene (p. 14). This was the beginning of a reaction against the nineteenth-century emphasis on grammar (p. 176). Translation was not seen as a valid procedure in teaching meaning because it was felt that using a bilingual dictionary switched the learner's mind out of the language being learned and as a result encouraged translation instead of thinking in the new language. Although the rejection of translation became the 'trademark' of the Direct Method (p. 26), not all teachers shared this view. Some felt, as did Roman scholars, that translation presupposed a certain maturity and that translation exercises were best left until the end of the course (p. 139). Others saw translation as a useful intermediary stage (p. 24) and of considerable value in that the first-language vocabulary could act as a prop (p. 25).

For example, explanations in the first language are used in cases where foreign words cannot be translated directly because the object or concept are not identical in both languages. "As a teaching procedure this is undoubtedly very ancient, but the fluctuations on the meaning of the word 'translation' make the separation of this technique from that of ordinary translation quite difficult" (p. 26). This method is currently practised by French-language teachers at the University of Ottawa Second Language Institute. It is possible for them to integrate this translation-supported approach because the majority of their students have English as a first language or are allophones who have have learned English first and have achieved a fairly advanced functional level.

Further clarification of the usefulness of translation in modern language teaching resulted in a rethinking of aims and methods. The most important function of translation was seen to be the

sharpening of the student's 'linguistic sense' in both languages: "The value of translation, which is hardly recognized in the modern educational climate, is that it serves to clarify knowledge which would probably remain hazy without it" (p. 177). As a result, translating activities improve the student's sensitivity to the differences between the first language and foreign languages. Greater attention to differential analyses of languages refined the exercise, making it more useful and effective.

The late 20th century is witnessing a return to the Renaissance view of translation as a meaningful adjunct to language learning activities (p. 177). The mid-twentieth century is probably the only period since the Middle Ages in which translation was relegated to an advanced stage in language learning (p. 218). Its judicious reintroduction can serve to help fine-tune the learner's understanding of the second language while at the same time nurturing his or her translating ability.

3.2.1 Translation as a test of language proficiency

Kelly argues that one of the factors in the survival of translation is its importance in language testing. Various strategies evolved to close the gap between Direct-Method practice and official examination requirements. One of the chief obstacles to the 20th century restriction of translation to senior classes was the conviction that translation was the only practical way of checking that the pupil had understood the second language passage he had just read. However, translation was judged by its textual faithfulness to the original, not by the pupil's skill both in understanding the meaning and spirit of the passage and in writing his own language (*op.cit.*, p. 136). Given this historical perspective, it is therefore not surprising to find once again translation playing an important supporting role in language testing, as demonstrated by the data used in the present study. This is also the reason which Ladmiral gives for its persistence in the educational

curriculum in France, where translation has to be taught regularly in language courses because it forms part of the Baccalauréat examinations in foreign languages (Ladmiral, pp. 7-8).⁷

3.3 Data for the present study

It is with this in view that the Second Language Institute of the University of Ottawa includes a translation test as part of a battery for testing second language competence. The data for the present study is taken from the second language tests administered to applicants for admission to the Physiotherapy and Occupational Therapy Programs at the University of Ottawa in May, 1997. The tests were developed and administered by the Second Language Institute in consultation with a committee of representatives from the Departments of Physiotherapy and Occupational Therapy and the Admissions Service, under the direction of Catherine Read. Two parallel tests had been developed:

- 1 Language test (French second language, English mother tongue) Physiotherapy and Occupational Therapy, Admission Test 1997
- 2 Test de langue (anglais langue seconde, français langue maternelle), Physiothérapie et Ergothérapie, Test d'admission 1997

Language tests had been used as part of the admission process since 1985. As of 1997, the tests took one and one half hours to administer, compared to over two hours in previous years. The length of the tests had been reduced through the elimination of the first and second language composition component.

⁷ Another argument in support of translation in the curriculum was that of Jean Darbelnet, who pointed out that students translate to themselves anyway and so it is better to correct their errors (Darbelnet, p. 253). A similar view is expressed by C. V. Taylor in 'Why Throw out Translation?' (Taylor, pp. 56-58).

3.4 Composition of the test

The parts of the test battery used in 1997 were as follows:

Part 1 Listening comprehension

Part 2 Dictation

Part 3 Open cloze (second language)

Part 4 Translation (into first language)

Part 5 Open cloze (first language)

We are only interested in two parts of the test, the translation sub-test and the cloze tests, because of the high correlation with the translation test.

3.4.1 Validity of the test

In her 1995 internal report on the test Catherine Read states:

All the second-language components have been thoroughly researched and tested in the field, and the test is composed of 5 separate sub-tests, so that its reliability and validity are well established (p. 3).

Her report for 1997, the year from which the data for this study is taken, confirms the above assertion:

The means for the individual sub-tests are very stable from year to year, indicating that the test is working in a very similar way to previous years. The standard error of measurement remains at around 10% and thus it is advisable to assume that candidates within 10% of the cut-off of 75% would have sufficient knowledge of their second language to be successful in a bilingual program (*ibid*, p. 31).

3.4.2 Test administration and protocol

As the list of sub-tests indicates (see 3.4 above), the first three parts are completed in the second language and the last two are done in the first language. All test items in the French and English versions are parallel in terms of content, genre, difficulty level, register and type of exercise. The materials used for the test items were all authentic texts⁸ available in both English and French, geared to the general public and found in publications such as might be produced by Health Canada. The topics (for example, sports-related injuries, alternative medicine and health issues) are chosen for their relevance to students considering careers in Physiotherapy and Occupational Therapy.

There were 275 candidates, 210 for the Anglais Langue Seconde test and 65 for the French Second Language test.⁹ Most applicants were from Ontario and Quebec and were native speakers, the exceptions being a few allophones. Since the majority of the applicants applied for admission after completing secondary school in Ontario and two years of CEGEP in Quebec, the age range was 18 to 20. No data is available on the number of males as opposed to the number of females.

The tests were administered in large examination rooms during 19 test sessions in 8 locations: Ottawa, Toronto, Hamilton, Timmins, Sudbury, Moncton, Quebec City and Montreal. Testing procedures were highly standardized, and strict time limits for each test component were observed. Tests were handwritten and test candidates were free to make corrections. When

⁸ In second-language teaching, the term *authentic text* is used to refer to texts or text segments taken directly from any real-life source such as print media, radio broadcasts, television, films or the internet. Such texts, used in the development of teaching or testing materials, are kept in their original form, without any modifications to accommodate language learners. The widespread use of authentic texts, especially at more advanced levels, is a fairly recent trend in second-language teaching.

⁹ The difference in the numbers arises because in general there are more bilingual Francophones than bilingual Anglophones in Canada. This imbalance shows up particularly in a bilingual university which attracts students from both language communities.

candidates failed to comply with test instructions, special annotations were added to the comments column of the final report on the whole test (Read, 1995). Some such annotations related to the translation task. Some students, due to an oversight on the part of the invigilator, used more than the allotted time to revise their translations and so were able to increase their scores. In those cases the abbreviation NOMT indicates candidates who did not do the first language cloze but spent the time on the translation, thus inflating their mark by 5-10 points (Read, 1995).

Of the 275 candidates, 205 or 74% achieved the pass mark of 65%, a level deemed to be adequate for success in a bilingual academic program.

3.4.3 The cloze tests

First developed by Wilson L. Taylor in 1953, the cloze test is a method of test construction which consists of deleting words from texts and asking subjects to fill in the blanks. The standard version, known as the fixed ratio method, involves deleting a word at intervals of five to ten words. Other types of cloze exercises involve a variable ratio based on the rational selection of items such as content words, specific vocabulary items, parts of speech, affixes or particular types of grammatical markers (Oller, p. 42).

Given the human mind's tendency to complete incomplete patterns or sequences, the cloze procedure is essentially a cognitive task in that the subject has to reason and construct suggestions to fill the gap on the basis of the evidence derived from the context.

The reader's innate ability to produce grammatically appropriate sentences helps determine the grammatical class of the word to be produced. However, the completion of meaning, based on understanding and reasoning is a cognitive task (Lambert, p. 1).

One type of standard cloze test commonly used in second-language teaching and testing is the *multiple-choice cloze*. In this type of task, the student is given three to four options from which to select the best answer. The correct answer is called the *key*, while the other options are called *distractors*. Distractors are designed to attempt to misdirect or confuse. Effective distractors are words with similar meanings, words belonging to the same grammatical category or words with similar sound patterns.

In translation tasks, as we shall see, elements of the source text seem to act as distractors. The pull of the source text is so strong as to have an observable effect on the translated text. To some degree, this pervasive influence tends to have an impact at all levels, from the untrained natural translator to the skilled professional.

An *open cloze*, unlike a multiple-choice cloze, provides only a blank space and students may fill in any word they feel is appropriate. The open cloze can test for some abilities underlying production in addition to comprehension level since candidates must generate their own answers rather than simply recognize a suitable one from an available list.

The scores from the fixed-ratio cloze task of the language proficiency test used in the data for the present study have a consistently high correlation with the scores from the translation task (see appendix B for statistical analyses). Malakoff's data showed similar results (Malakoff, pp. 34-36).

3.4.4 Translation sub-test protocol

The translation task was allotted 15 minutes out of the two-hour testing session. Students were not allowed to consult any reference materials. The parallel English first language and French first language translation sub-tests were presented as follows:

TRADUCTION DE L'ANGLAIS AU FRANÇAIS

SOUS-TEST 4 (15 minutes)

Lisez attentivement le texte suivant. Ensuite dans l'espace réservé, écrivez une traduction française, à la fois complète et détaillée, des deux paragraphes encadrés.

Social Forces that Promote Weight Problems

When we think of community most of us think first of our geographical community where we live and what we call home. And it is in our geographical community where impersonal social forces and intimate personal forces have their major impact upon us. The six-fold larger prevalence of obesity is influenced by differences in social class, the effects of which are exerted upon us in large part in our geographical community.

Several major Canadian studies have shown a striking relationship between weight and socioeconomic status. In the Canadian Fitness Survey, females at the lowest income level had the highest prevalence of obesity (17%) compared to 5% of females in the highest income level. More recently, a study by Millar showed no clearcut pattern by income but a direct relationship between weight and educational level. For both males and females, those with some post-secondary education are less likely to be overweight or obese than those with lower levels of education.

Lifestyles of those with less education and/or the poor are influenced by unequal access to healthy food and physical fitness facilities and the persuasive advertising of calorie-dense foods that are low in nutrients. Individuals who work and live in environments that are most hostile, monotonous or outside their sphere of personal control are more likely to seek comfort in compensatory responses such as overeating and/or drinking alcohol.

Social-economic status can also play a significant role in an individual's ability to maintain an appropriate energy balance and thereby a healthy weight range.

TRANSLATION INTO ENGLISH

SUB-TEST 4 (15 minutes)

Read the following text carefully. Then, in the space provided on the next page, write a free translation of each sentence *in English* of the *sections in the box*, making as complete and detailed a translation as possible.

Facteurs sociaux qui contribuent aux problèmes de poids

Pour la plupart des gens, le terme collectivité désigne une entité géographique, le quartier où ils habitent, leur milieu de vie. Et c'est dans cet espace géographique que les facteurs sociaux impersonnels et les influences personnelles plus intimes agissent le plus sur les individus. La prévalence six fois plus élevée de l'obésité est due à des différences de classe sociale, dont les effets se font sentir en grande partie dans les collectivités géographiques.

Plusieurs importantes études canadiennes ont révélé l'existence d'une relation frappante entre le poids et le niveau socio-économique. Selon l'Enquête Condition physique Canada, ce sont les femmes dont le revenu est le plus faible qui présentent le taux le plus élevé d'obésité, soit 17 p. 100 comparativement à 5 p. 100 chez les femmes de tranche de revenu la plus élevée. Dans une étude plus récente, Millar n'a décelé aucune tendance définie selon le revenu mais a observé une relation directe entre le poids et le niveau de scolarité. Comparativement aux personnes moins instruites, les hommes et les femmes qui ont fait des études postsecondaires sont moins nombreux à souffrir d'embonpoint ou d'obésité.

L'accès inégal aux aliments sains et aux centres de conditionnement physique et la publicité convaincante sur les aliments peu nutritifs et riches en calories influent sur le mode de vie des personnes peu instruites ou à faible revenu. Les gens qui travaillent et vivent dans un environnement hostile, monotone ou sur lequel ils n'ont aucune prise sont plus susceptibles d'avoir besoin de trouver un réconfort dans des activités compensatrices comme la consommation abusive de nourriture ou d'alcool.

Le niveau socio-économique peut également influencer de façon importante sur la capacité d'un individu de maintenir un bon équilibre énergétique et, de ce fait, son poids dans l'intervalle généralement acceptable.

3.4.5 Field testing of test items

In order to maintain the validity and reliability of the admission tests, any new test items that are introduced are first carefully field tested. For example, to field test two new texts for the translation task, that year's test will include two separate translation tasks: the source text and one of the ones being field tested. Each of the new texts will be translated by half the test candidates. The text from the original sub-test will be translated by all the candidates and will serve as a benchmark. The results of the tests are compared and if there is a high correlation relative to the overall score the field tested texts can be later used as alternatives to the original test item.

In the case of the cloze tasks, they are first field tested by two groups: second language classes and native speakers. This pilot version is then revised and field tested by test candidates in a manner similar to the field testing of the translation task. If the new cloze performs well, it is used as an actual cloze test.

For both the translation and the cloze task, authentic texts are selected from sources such as bilingual government publications.

3.4.6 The purpose of the translation task

Both professional translators and NTs played a supporting role in the design of the whole admission test and not just the translation component. Professionally translated authentic texts on health related topics were used for the translation sub-test, while other items of the five sub-tests, dealing with similar themes, were translated by the test designers. The test designers considered the originals and the translations as equivalent for the purpose of the test. They also believed that by using professionally translated texts, they were ensuring fair test conditions and were developing a testing instrument likely to be reliable and to yield valid test results. In fact, the tests were field tested as independent sub-tests and their validity was confirmed.

3.4.7 Instructions for the translation sub-test

The directives and explanations, however, were prepared separately by a Francophone and an Anglophone member of the testing team. In other words, the test authors, who were themselves NTs, developed parallel framing texts to suit the requirements of the readership and purpose as they saw fit. As a result, the instructions for the French and English sub-tests differ somewhat. The French instructions do not include the idea of *free translation* and do not specify *each sentence*:

English	Read the following text carefully. Then, in the space provided on the next page, write a free translation of each sentence <i>in English</i> of the <i>sections in the box</i> , making as complete and detailed a translation as possible.
French	Lisez attentivement le texte suivant. Ensuite, dans l'espace réservé, écrivez une traduction française, à la fois complète et détaillée, des deux paragraphes encadrés.

Some colleagues who reviewed the test were uncomfortable with the discrepancy between the two sets of instructions and suggested that the instructions be sent out for professional translation.

At a graduate seminar on this thesis held in March 1998 and attended by translation professors and graduate students, and Dr. Marjorie Wesche, a professor of Second Language Teaching, the discussion became very lively on the juxtaposition in the English instructions of the term *free translation* and the phrase *as complete and detailed as possible*. For the translators present, this was a contradiction which would surely confuse the candidates, since the distinction between free and literal translation is so fundamental to translation studies. Dr. Wesche argued, however, that *free* in this context is commonly understood to mean not word-for-word. Candidates would understand from the instruction that they were to convey all the concepts contained in the original text, but express them in well-formed idiomatic English sentences. Catherine Read

confirmed this seeing translating ability as indicative of comprehension of meaning, adding that the purpose of the task was in fact to test for second language reading comprehension rather than translating skills, and that by using a translation task instead of the more conventional reading comprehension tests they could reduce the total time of the test and its marking considerably. The main function of translating in this instance is to provide an economical way of testing reading comprehension. According to Read, the task is also meant to simulate course activities which may involve reading in one language but discussing concepts in the other. For example, it sometimes happens that course manuals are in English but lectures and discussions are conducted in French. Only 15 minutes of test time are taken up by the translating task, and with the grid provided to correctors, with a bit of practice, the sub-test is relatively quick to mark and the scores arrived at by different markers hardly vary. In the several years that this test has been in use, no one outside the professional translating community has ever questioned the clarity of the instructions.

The English instructions also include the phrase *translation of each sentence*. Perhaps this might account for the fact that sentence boundaries are not shifted in the translation sample (see below). However, the French instructions do not mention the sentence level, yet sentence boundaries were equally respected in the French sample. The sentence level appears to be a very stable unit of processing.

The reason for the choice of the text entitled 'Social Forces that Promote Weight Problems'/'Facteurs sociaux qui contribuent aux problèmes de poids' was its high level of informativity. The text deals with an issue that is likely to be familiar to the candidates, and the text genre (academic writing) is familiar as well. However, the results of the research described are unexpected and some fairly subtle distinctions are made so that the applicant cannot guess at the content merely based on familiarity with the context, but has to be able to understand and restate fairly detailed and precise concepts. The marking key (see appendix A) counts 'units of meaning' which are demonstrated to have been correctly understood.

3.5 Selection of data for translation strategies analysis

An initial quick survey of the candidates' translations revealed that sentence boundaries were almost never shifted: the exact same sentence breaks found in the source text were used in the translation. For this reason, a sentence by sentence analysis of the samples of translations by test candidates was undertaken.

A set of 60 samples of translations into English and 60 into French were selected randomly, except that care was taken to include samples taken from different test sites. The source text consists of six sentences. For each of these sentences, ten translations are analyzed for each target language. In this way, some part of the translated text of the 120 test samples is used as part of the data for analysis.

3.5.1 Determining the source text and the translated text

The source of the texts used in the translation sub-test could not be traced. It is therefore not possible to know definitively which is the source text and which the professional translation. However, at a seminar presentation in March, 1998, Francophone participants were asked whether they felt the French text was originally written in French or whether it was translated. All agreed that it was most likely not an original French text, but when pressed to give direct evidence from the text itself to justify their consensus, they could only say that "the text did not flow like a French text."

In order to obtain a more precise evaluation, two French language teachers at the University of Ottawa Second Language Institute: Jacques Fleury and Alysse Weinberg were asked to comment on the text. They also agreed that the text was most probably a translation and were able to provide evidence from the text for their conclusion.

Both felt that the text was uneven. Some very complex sentence structures were very well rendered, using highly sophisticated structures. For example, the final sentence of each of the two paragraphs:

- (1) Comparativement aux personnes moins instruites, les hommes et les femmes qui ont fait des études postsecondaires sont moins nombreux à souffrir d'embonpoint ou d'obésité.
- (2) Les gens qui travaillent et vivent dans un environnement hostile, monotone ou sur lequel ils n'ont aucune prise sont plus susceptibles d'avoir besoin de trouver un réconfort dans des activités compensatrices comm la consommation abusive de nourriture ou d'alcool.

In example 2, Fleury was particularly impressed with the structure of the phrase *sur lequel ils n'ont aucune prise*.

On the other hand, there is one sentence segment that both agree is very awkward and would need to be revised. This is the first part of the last sentence of the lead-in paragraph:

- (3) La prévalence six fois plus élevée de l'obésité...

Both argued that *prévalence* is not a French word and Fleuri suggested this revision:

- (4) Le facteur prédominant est l'obésité qui est six fois plus élevé. Cette obésité est due ...

The word order of the first noun phrase of the first test paragraph was not acceptable to either:

- (5) Plusieurs importantes études

It was felt that the more standard word order was:

- (6) Plusieurs études importantes

Both felt a preposition should be added to the name:

(7) L'enquête condition physique Canada

To become:

(8) L'enquête *de* condition physique Canada

Both hesitated at the use of *influent sur* in the first sentence of the second test paragraph. A check in Petit Robert indicated that the expression does in fact exist; however, both agreed that a native speaker would far more frequently use *avoir une influence sur*.

In each proposed revision it seems evident that the language of the source text influenced the choices of the translator. It might be argued that if the author were bilingual to begin with, the influence may have come from the interface of the two languages in his or her own bilingual environment. It seems more probable, however, that the text was in fact a translation.

As a counterbalance, two English language teachers from the University of Ottawa Second Language Institute, Rhoda Diebel and Marlene Toews-Janzen, were asked to comment on the English text. The consensus was that although some parts of the text may be poorly phrased, with some faulty parallelism, the text probably was written by a native English speaker, as they were not able to find any evidence of second language or translation-type problems.

Based on these discussions, in the translation strategies analysis, the English text is considered the source text and the French, the presumably professional translation. The features of this professional translation are discussed in chapter 3 as a comparison to the features of natural and student translations. Since the professional translation into French also serves as the French source text, translations of this text into English are considered back translations.

3.6 Relevance to NT

As part of this series of second language competence sub-tests, the translation task is used to help assess the level of bilingualism of candidates applying to a bilingual university program. Within this environment of second language testing, NT has a secondary role, as the small amount of time assigned to it indicates. It is assumed, by all members involved in the process, including the consultative committee, the test designers and administrators, the Second Language Institute, the test candidates and the university community at large that translating ability is entirely expectable as part of the skills set of bilingual students.

Translating ability is taken for granted despite the fact that current approaches in North America to second language teaching seldom include translation (see section 3.2). The prejudice against translation is evident in both French and English language courses. Almost all English as a Second Language (ESL) materials are presented entirely in English, including directives and explanations. On the English side, this may be because people from many language backgrounds tend to take English language courses together and so it would be impossible to provide translating exercises or instructions in a language that would suit every student.

In the French as a second language courses offered at University of Ottawa's Institut des langues secondes, however, students do tend to have an English background in common. Because of this common language, materials designed for French as a Second Language often include directives and explanations in English, but these instructions are almost never translated into French. The only instances that approach translation at a restricted lexical level is English glosses of new French vocabulary.

Because translation tends to be so little used in language teaching, it is unlikely that the test candidates have had any formal translation training. It is more likely that, having been brought up in a bilingual environment, they have had experience in translating in family and social contexts and that the translating experience was predominantly oral rather than written. Those

who argue that translation is not a natural cognitive competence tend to make a distinction between the formal, decontextualized, written translations typical of the professional TE, and the oral, conversational, situation-bound translations of untrained bilinguals who serve as NTs. The present study represents a documented instance of NTs replicating the work of the professional translator in so far as the standard used for the marking key of the test was based on an authentic source text and a professionally translated text. Furthermore, the translation strategy analysis section of chapter 4 compares the strategies used by the professional translator to those used by the NTs.

Chapter 4: The Data

Two sets of data are presented in this chapter. Part 1 includes the NT data from the translation task which formed part of the second language competence test for admission to the University of Ottawa bilingual physiotherapy and occupational therapy programs

The data was examined in order to discover patterns of similarity in performing the translation task. An initial overview of the NT translations indicated that sentence boundaries were never shifted. For this reason the data is transcribed sentence by sentence. The source text comprises six sentences. Ten samples of each sentence, from different test candidates were included in the transcribed data. The data in Part 1 therefore represents sentence-length samples from 60 test candidates whose target language is English, and 60 whose target language is French.

Each section of data deals with only one sentence and is followed by notes providing observations and comments on the bolded and numbered items from the given sentence.

A more detailed discussion of translation strategies observed appears at the end of Part 1.

Part 2 includes parallel data from student translators, for comparison with the NT data. The ST data follows the same format as the NT data. However, since only 12 STs into English and 12 STs into French participated in the study, the entire translation from each student is included in the transcribed data. The letter in parentheses identifies each individual translator; for example, the labels F1(a), F2(a), F3(a), F4(a) indicate that the same ST (a) translated the four sentences (1,2,3,4) into French (F).

The numbered items in this set of data correspond to the same numbered items in the NT data. To facilitate comparison, numbered items from the NT and ST data are reproduced in chart form

in the section following the ST data. Numbers in parentheses following the items listed in the charts indicate the number of times the same translation solution was used.

While brief comments on similarities and differences are given following each chart, a more detailed analysis and discussion follow in Chapter 5.

Part 1 Data from Test Candidates

4.1.1 Legend

The following abbreviations and notations are used in the data presentation and analysis.

TE	English source text
TF	French source text
NE	Natural translation into English
NF	Natural translation into French
SE	Student translation into English
SF	Student translation into French
[]	omission
[text]	addition or explicitation
[]	no equivalent in the source text

(superscript) ⁿ Superscript numerals refer to the items in bold selected from the four sets of translation data: NT into English, NT into French, ST into English and ST into French. Numbered notes at the end of each set of sentences also correspond to these same items.

item (n) In the comparison of NT and ST data in part 2, the numbers in parentheses at the end of an item indicate the number of times that particular solution

was used. links corresponding items in the English source text, French source text, natural translation into English, natural translation into French, student translation into English and student translation into French. the number in parenthesis after each item indicates the number of instances the same translation was used within a given group.

4.1.2 NT data

Sentence 1 English Source Text (TE)	Sentence 1 Professional Translation/French Source Text (TF)
Several ¹ major ² Canadian studies have shown [] ³ a striking ⁴ relationship ⁵ between weight and socioeconomic status ⁶ .	Plusieurs ¹ importantes ² études canadiennes ont révélé [l'existence] ³ d'une relation ⁵ frappante ⁴ entre le poids et le niveau ⁶ socio-économique.

Sentence 1 Natural back translation (NE)
E1(a) A number of ¹ important ² Canadian Studies have revealed [] ³ an astounding ⁴ relationship ⁵ between weight and social class ⁶ .
E1(b) Several ¹ important ² Canadian studies have revealed the existence of ³ a striking ⁴ relationship ⁵ between weight and social economics ⁶ .
E1(c) Many ¹ important ² Canadian studies have shown the existence of ³ a surprising ⁴ relationship ⁵ between weight and socio-economic status ⁶ .
E1(d) Several ¹ important ² Canadian studies have revealed the existence of ³ a striking ⁴ relation ⁵ between weight and socio-economic levels ⁶ .
E1(e) The most ¹ important ² Canadian studies exist ³ in [] ⁴ relation ⁵ to entering the weight on the new social economy [] ⁶ .
E1(f) There have been several ¹ important ² Canadian studies that have unveiled the stunning ⁴ existence of ³ a link ⁵ between socio-economic scale ⁶ and weight.

E1(g)	More ¹ important ² Canadian studies reveal [] ³ a [] ⁴ relationship ⁵ between one's weight and their social economic level ⁶ .
E1(h)	Several ¹ important ² Canadian studies have shown [] ³ that an overwhelming ⁴ relation ⁵ between the weight and the social-economic level ⁶ .
E1(i)	Many ¹ important ² Canadian studies have uncovered the existence of ³ a striking ⁴ connection ⁵ between weight and the socio-economic level ⁶ .
E1(j)	Many ¹ important ² Canadian studies have revealed existence of ³ a [] ⁴ link/relation ⁵ that hits in between our weight and our social-economic levels ⁶ .

Notes on NT English Data

- 1 The cognitive environment (see section 1.9.2) determines whether *plusieurs* is better translated by *several* or *many*. Opinion was divided among NTs: 4 opted for *several* while the others opted for *many* or the neutral term *a number of*.
- 2 The consistent translation of *important* by its cognate shows the influence of the source text on lexical selection. According to the marking key, this was an acceptable equivalent. No NT used the term *major* as in the English source text. The influence of cognates is clear but it varies from about 3 to 10 on a scale of 1 to 10.
- 3 This item offers further evidence of source text influence. Five of the ten NTs translated the phrase *l'existence de*, although the other half did not.
- 4 The modifier *frappante* created some difficulty. An intensifier was seen to be needed for which no cognate is available. A wide variety of options was found, not always with the correct nuance of intensity. Perhaps the most appropriate choice and the one used in the source text: *striking* was difficult to access because there is no sound or visual similarity to the French word. However, there is a semantic similarity; *striking* can be considered a calque or literal translation of *frappante*. Three of the candidates used the same term as the source text: *striking*, while three others opted for deletion.

- 5 Only 3 NTs opted for the closest cognate *relation*. One NT offered 2 possibilities (*link/relation*) showing that the term required special attention. Four NTs chose the more appropriate cognate *relationship*, while 3 others opted for *link* or *connection*.
- 6 Five NTs opted for the most usual translation of *niveau* as *level* (Eaton, p. 32). One NT used the term *status* as in the source text.

Sentence 1 English Source Text (TE)	Sentence 1 Professional Translation/French Source Text (TF)
Several ¹ major ² Canadian studies have shown [] ³ a striking ⁴ relationship ⁵ between weight and socioeconomic status ⁶ .	Placers ¹ importantes ² études canadiennes ont révélé [l'existence] ³ d'une relation ⁵ frappante ⁴ entre le poids et le niveau ⁶ socio-économique.

Sentence 1 Natural translation into French (NF)
F1(a) Plusieurs ¹ études canadiennes d'envergure ² ont montré [] ³ une relation ⁵ évident ⁴ entre le poids et le statut ⁶ socio-économique.
F1(b) De nombreuses ¹ études importantes ² réalisées a Canada, ont démontrées [] ³ une relation ⁵ évidente ⁴ entre le poids et le statut ⁶ socio-économique.
F1(c) Plusieurs ¹ grandes ² études Canadiennes on montré [] ³ une relation ⁵ directe ⁴ entre le poids et le statu ⁶ socio-économique.
F1(d) Plusieurs ¹ études majeures ² canadiennes ont montré [] ³ une relation ⁵ étroite ⁴ entre le poids et le statut ⁶ socio-économique.
F1(e) Plusieurs ¹ recherches Canadiennes importantes ² démontrent [] ³ une relation ⁵ marquéé ⁴ entre le poids corporel et le statut ⁶ socio-économique.
F1(f) Plusieurs ¹ études Canadiens [] ² démontrent [] ³ une relation ⁵ surprenante ⁴ entre la pesenteur et le statue ⁶ socioéconomique.
F1(g) Plusieurs ¹ grandes ² études canadiennes ont démontré [] ³ une cohésion ⁵ surprenante ⁴ entre le poids et le status ⁶ socioéconomique.

F1(h)
Plusieurs ¹ études majeures ² canadiennes ont démontré [] ³ une relation ⁵ frappante ⁴ entre le poids et le statut ⁶ socio-économique.
F1(i)
Plusieurs ¹ études importantes ² faites au Canada ont démontré qu'il y a ³ un lien ⁵ énorme ⁴ entre le poids et le statut ⁶ socio-économique.
F1(j)
Plusieurs ¹ grosses ² études canadienne ont démontre [] ³ une relation ⁵ [] ⁴ entre le poids et le statut ⁶ socio-économique.

Notes on NT French data

- 1 In translating *several*, one NT chose *nombreuses*, perhaps because of the ambiguity of the French *plusieurs* (equivalent to *several* or *many*). The other nine NTs opted for *plusieurs*.
- 2 Only 2 NTs opted for the cognate *majeur*.
- 3 Only 1 NT felt the need to add the phrase *qu'il y a*, analogous to *l'existence de* added in the professional translation, even if *qu'il y a* is more colloquial.
- 4 As no cognate was available, the intensifier *striking* is conveyed by a wide variety of words (*évident*, *marquée*, *surprenante*). Only 1 NT used the semantic calque *frappant*. In Geneviève Mareschal's judgement, the more usual collocation would be *rapport marqué*, *important*, or *évident*. *Frappant* is used in sensory contexts such as *image frappante*.
- 5 The cognate *relation* is chosen by 8 NTs, and by the professional translator, although *rapport* is probably more frequently used. The other choices were *cohésion* and *lien*.
- 6 The cognate *statut* with several incorrect spelling variants was chosen over *niveau* or *rang*, which are more appropriate to *socio-économique*.

The dominant strategy is consistent in both directions; candidates translating into French also consistently follow the phrase order of the source text. They also choose lexical items from the same semantic category and resort to deletion to solve lexical level translating problems.

Sentence 2 English Source Text (TE)	Sentence 2 Professional Translation/French Source Text (TF)
In the Canadian Fitness Survey ⁷, [] ⁸ females at the lowest income level had the highest prevalence of obesity (17%) compared to (5%) ⁹ of females in the highest income level.	Selon l'Enquête condition physique Canada ⁷, [ce sont] ⁸ les femmes dont le revenu est le plus faible qui présentent le taux le plus élevé d'obésité, soit 17 p. 100 comparativement à 5 p. 100 ⁹ chez les femmes de la tranche de revenu la plus élevée.

Sentence 2 Natural back translation (NE)
E2(a) According to the study of Physical Fitness of Canada ⁷ it is ⁸ the women that have the lowest income who are suffering from the greatest obesity, comparatively 17%to 5% ⁹ to the women who had the higher income.
E2(b) According to the Canada Physical Condition study ⁷, it is ⁸ the women with the lowest salaries who present the highest levels of obesity, 17% compared to 5% ⁹ in women of the highest revenue category.
E2(c) The inquiry of the physical state of Canada ⁷ has shown that [] ⁸ women of a lower socio economic class show the highest levels of obesity at 17 per 100; while women of higher earning were at 5 per 100 ⁹.
E2(d) According to l'Enquête Condition physique Canada ⁷ the women whose income is lowest are those who ⁸ exhibit the highest obesity rate, being 17 out of 100 compared to 5 out of 100 ⁹ in the section of women with the highest incomes.
E2(e) According to the Canadian Physical Condition Inquiry ⁷ it's ⁸ the women who have the lowest salaries who also show a higher rate of obesity, considering 17 p. 100 compared to 5 p. 100 ⁹ among women from the slice who receive a higher salary.
E2(f) According to the Canadian Physical Condition Survey ⁷, it is ⁸ women with low revenues who showed the highest levels of obesity, at 17 percent as compared to 5 percent ⁹ for women in the higher revenue category.
E2(g) According to the Physical Condition Study Canada ⁷, [] ⁸ women who have the lowest revenues showed the highest rate of obesity: 17 out of each 100, compared to 5 out of each 100 ⁹ in women with higher revenues.

E2(h)

According to the Canadian Inquiry into Physical Fitness ⁷ it is ⁸ the women in the study that presented the highest levels of obesity: 17 p 100 compared to 5 p 100 ⁹ in the part of the study with the highest levels.

E2(i)

According to the Candian Physical Condition Enquiry ⁷, [] ⁸ women whose income is low present the highest rate of obesity, ie. 17 p 100 compared to 5 p 100 ⁹ in women of high revenue.

E2(j)

As for 'l'Enquête Condition physique Canada' ⁷, it is ⁸ women who's revenu is the weakest which presents the highest percentage of obesity, where it is 17 p. 100 compared to 5 p 100 ⁹ towards working women with high revenus.

- 7 Source text influence leads to the translation of *selon* by *according to* in eight of the samples.
- Most NTs attempted to translate the official title 'Canadian Fitness Survey'. Two NTs kept the title as it appeared in the source text.
- 8 The phrase *ce sont* is used in the French text to mark emphasis. Such phrases are not commonly used in English. However, under the influence of the source text, 7 NTs included a direct translation of it as *it is*.
- 9 Only 2 NTs adopted the English notation for percentages. (See section 4.1.1 on best-guess strategies for instances of special problems involved in translating mathematical concepts.)

Sentence 2 English Source Text (TE)	Sentence 2 Professional Translation/French Source Text (TF)
In the Canadian Fitness Survey ⁷ , [] ⁸ females at the lowest income level had the highest prevalence of obesity (17%) compared to (5%) ⁹ of females in the highest income level.	Selon l'Enquête condition physique Canada ⁷ , [ce sont] ⁸ les femmes dont le revenu est le plus faible qui présentent le taux le plus élevé d'obésité, soit 17 p. 100 comparativement a 5 p. 100 ⁹ chez les femmes de la tranche de revenu la plus élevée.

Sentence 2 Natural translation into French (NF)
F2(a) Dans un sondage Canadien de l'exercice ⁷, [] ⁸ les femmes qui possédait le revenu le plus bas possèdent le taux le plus élevé d'obésité (17%) comparé a celui de 5% ⁹ pour les femmes avec un revenu très élevé.
F2(b) Dans l'étude menée par 'Canadian Fitness' ⁷, ils ont découvert que [] ⁸ les femmes dont le revenu était plus bas avaient un taux d'obésité plus élevé (17%) tandis que les femmes avec un revenu plus élevé avaient un taux d'obésité moins élevé (5%) ⁹.
F2(c) Le sondage canadien de la santé ⁷ constate que [] ⁸ les femmes ayant un revenu inférieur à cel de la majorité ont une plus grande chance de souffrir d'obésité (17%) à comparer aux femmes, qui elles, reçoivent le plus haut revenu possible (5%) ⁹.
F2(d) Dans le sondage 'Canadian Fitness Survey' ⁷, [] ⁸ les femmes ayant le plus bas niveau de revenus possédaient le taux le plus élevé d'obésité (17%) comparé à 5% ⁹ chez les femmes se situant dans le plus haut niveau de revenus.
F2(e) Dans un sondage canadien sur la santé ⁷, [] ⁸ les femmes ayant un degré d'éducation faible souffre dix-sept pour cent plus d'obésité que ⁹ celles ayant un haut degré d'éducation.
F2(f) Dans le Sondage Canadien sur la Forme Physique ⁷, [] ⁸ les femmes ayant le salaire le plus bas avaient le plus haut taux d'obésité, soit dix-sept pourcent, comparément à cinq pourcent ⁹ pour les femmes ayant une rémunération élevé.
F2(g) Dans le Canadian Fitness Survey ⁷, [] ⁸ les femmes ayant le plus bas niveau de revenues étaient plus obèse (17%) que les femmes (5%) ⁹ ayant le plus haut niveau de revenues.
F2(h) Dans un sondage 'Candadian Fitness' ⁷, [] ⁸ les femmes possédant un status monétaire moindre ont le plus grand pourcentage d'obésité avec 17% et les femmes avec un bon status monétaire n'ont que 5% ⁹.
F2(i) Dans le sondage canadien sur la santé ⁷, [] ⁸ les femmes ayant le plus bas niveau de revenu on eu la plus haute prédominance à l'obésité (17%), comparativement à 5% ⁹ pour les femmes ayant le plus haut niveau de revenu.

F2(j)

Dans le sondage canadien sur la forme physique ⁷, [] ⁸ les femmes avec le revenu le plus bas avaient une plus grande tendance à être obèses (17%) comparées aux femmes avec le revenu le plus élevé ⁹.

- 7 Six NTs attempted to translate the title, while 4 kept all or part of the English title.
- 8 None of the NTs added the syntax marker *ce sont*.
- 9 The English notation of percentages was retained by all NTs.

Sentence 3 English Source Text (TE)	Sentence 3 Professional Translation/French Source Text (TF)
More recently, a study ¹⁰ by Millar showed no clear-cut pattern by income ¹¹ but a direct relationship between weight and educational level.	Dans une étude plus récente ¹⁰ , Millar n'a décelé aucune tendance définie selon le revenu ¹¹ mais a observé une relation directe entre le poids et le niveau de scolarité.

Sentence 3 Natural back translation (NE)
E3(a) In a more recent study ¹⁰ , Millar noticed no definite relationship concerning salary ¹¹ , but rather one between weight and education.
E3(b) In a more recent study ¹⁰ , Millar found no correlation with revenue ¹¹ but did find a direct relationship between weight and level of education.
E3(c) In a recent study ¹⁰ , Mr. Millar [] ¹¹ observed a direct relation between weight and the level of education.
E3(d) During a more recent study ¹⁰ , Millar did not see a definite tendency in relating obesity to the size of the revenue ¹¹ , but did however notice a direct relationship between a person's weight and his or her education.
E3(e) In a recent study ¹⁰ , Millar did not attribute any tendencies towards obesity due to class ¹¹ but due to education.
E3(f) In a recent study ¹⁰ , Millar decided that weight wasn't linked to revenue ¹¹ but observed a direct relationship between weight and level of schooling.

E3(g) In a more recent study ¹⁰, Millar found no definite relationship between income level and obesity ¹¹ but rather found a direct relationship between education level and obesity.
E3(h) In a recent study ¹⁰, Millar didn't find one solid piece of evidence that said it's the income ¹¹, but did find a direct relation between weight and the level of education.
E3(i) In a more recent study ¹⁰, Millar did not find a definite tendency according to revenue ¹¹ but observed a direct relationship between body weight and a person's level of education.
E3(j) In a more recent study ¹⁰, Millar didn't use income to determine the connection ¹¹, but instead observed a relation between weight and scholastic level.

- 10 All NTs were guided by the source text in their formulation of the introductory prepositional phrase *in a more recent study*.
- 11 In contrast to the highly standardized translations in 10, when direct translation is not possible, paraphrase gives rise to a wide range of solutions. This sentence provides a good example of the contrast between the standard phrase level translation of *dans une étude plus récente*, and the range of variation in the paraphrase translation of *n'a décelé aucune tendance définie selon le revenu*.

Sentence 3 English Source Text (TE)	Sentence 3 Professional Translation/French Source Text (TF)
More recently, a study ¹⁰ by Millar showed no clear-cut pattern by income ¹¹ but a direct relationship between weight and educational level.	Dans une étude plus récente ¹⁰, Millar n'a décelé aucune tendance définie selon le revenu ¹¹ mais a observé une relation directe entre le poids et le niveau de scolarité.

Sentence 3 Natural translation into French (NF)
F3(a) Plus réssament, une étude ¹⁰ par Millar a montré que la relation n'est pas avec le salaire ¹¹ mais plutôt entre le poid et le niveau d'éducation.

F3(b)	Plus récemment, une étude ¹⁰ de Millar démontre aucun patron défini quand au revenu ¹¹ mais une corrélation directe entre le poids et le niveau de scolarité.
F3(c)	Plus recement, une étude ¹⁰ par Millar démontre aucun lien par revenu ¹¹ mais une relation direct entre le poids et le niveau d'éducation.
F3(d)	Plus récemment, une étude ¹⁰ par Millar ne montre aucun patron clairement défini par le degré social ¹¹ mais une relation directe entre le poids et le degré d'éducation.
F3(e)	Récément, une étude ¹⁰ de Millar démontrait aucun patron exact de l'income ¹¹ mais une relation directe entre la pesanteur et le niveau d'éducation.
F3(f)	Récemment, une étude ¹⁰ faite par Millar ne démontre aucune tendance précise selon les revenus ¹¹ mais plutôt une relation directe entre le poids et le niveau d'éducation.
F3(g)	Plus récemment, une étude ¹⁰ par Millar a montré aucune coupure par revenu ¹¹ mais une relation directe entre le poids et le niveau d'éducation.
F3(h)	Plus récament, une étude ¹⁰ de Millar [] ¹¹ a montré qu'il y avait une relation direct entre le poids d'une personne et son niveau d'éducation.
F3(i)	Plus récemment, une étude ¹⁰ meneé par Millar n'a pas démontrées de liens évidents reliés au revenu ¹¹ mais plutôt une relation entre le poids et le degré d'éducation.
F3(j)	Plus récemment, une étude ¹⁰ conduite par Millar n'a montré aucun lien avec le revenu ¹¹ mais plutôt une relation directe entre le poids et le niveau d'éducation.

- 10 The influence of the source text is equally powerful in both languages. The dominant strategy whenever possible is to be guided by the language of the source text.
- 11 Similarly, paraphrase yields a wide range of possibilities for both source languages.

Sentence 4 English Source Text (TE)	Sentence 4 Professional Translation/French Source Text (TF)
For both males and females, those with some post-secondary education are less likely to be overweight or obese ¹² than those with lower levels of education.	Comparativement aux personnes moins instruites, les hommes et les femmes qui ont fait des études postsecondaires sont moins nombreux a souffrir d'embonpoint ou d'obésité ¹² .

Sentence 4 Natural back translation (NE)
E4(a) Compared to less educated persons, men + women with higher levels of education suffered less from the affliction of obesity ¹² .
E4(b) Compared to less educated persons, men and women who continued post secondary studies were less likely to suffer from high blood pressure or obesity ¹² .
E4(c) Compared to less educated people, men and women who did post secondary studies suffer less from obesity ¹² .
E4(d) Compared to people of lower schooling, there are less men and women with post-secondary educations who suffer from weight problems and obesity ¹² .
E4(e) Compared to less educated individuals, men and women who received post-secondary education were less likely to be burdened by obesity ¹² .
E4(f) Compared with the less educated people, the men and women who did post-secondary studies were not as many to suffer from obesity ¹² .
E4(g) Comparing to uneducated people, educated men and women are less likely to suffer from obesity ¹² .
E4(h) Compared to less educated people, men and women with postsecondary education suffer less from obesity ¹² .
E4(i) Comparing those less educated with those who possess postsecondary studies, those with more education are less likely to suffer from obesity ¹² .

E4(j)

Compared to people with less education, men and women that went on to post-secondary education **are less likely to suffer from heart or obesity** ¹².

- 12 Phrase order is invariant and always guided by the source text. The term *embonpoint* created a problem which some solved by a best-guess strategy (high blood pressure, heart), and others by deletion. One reason for the omission is that the NT was not familiar with the term or could not find an English equivalent. A second explanation might be that the term was omitted because it was considered redundant.

Sentence 4 English Source Text (TE)	Sentence 4 Professional Translation/French Source Text (TF)
For both males and females, those with some post-secondary education are less likely to be overweight or obese ¹² than those with lower levels of education.	Comparativement aux personnes moins instruites, les hommes et les femmes qui ont fait des études postsecondaires sont moins nombreux a souffrir d'embonpoint ou d'obésité ¹² .

Sentence 4 Natural translation into French (NF)
F4(a) Pour les hommes et les femmes, ceux et celles ayant une éducation post-secondaire ont moins de chance d'être [] obèse ¹² que ceux et celle ayant un niveau d'éducation inférieur.
F4(b) Pour les hommes ainsi que pour les femmes, ceux qui possèdent une éducation post-secondaire sont moins disposés à avoir un excès de poids ou être obèse ¹² que ceux qui ont un niveau d'éducation moins élevé.
F4(c) Les hommes et les femmes, qui ont fait leurs études post-secondaires, souffrent moins d'embonpoint ou d'obésité ¹² que les personnes ayant un faible degré d'éducation.
F4(d) Concurramment, les femmes et les hommes possédant une éducation post-secondaire ont moins de chance de devenir [] obèse ¹² que ceux eu celles ayant un niveau d'éducation inférieur à ceux-ci.

F4(e)	Chez l'homme et la femme, ceux qui possédaient un diplôme post-secondaire étaient moins portés à être [] obèses ¹² que ceux avec aucun éducation post-secondaire.
F4(f)	Pour les hommes et les femmes, ceux avec une éducation post-secondaire ont moins de chance de faire de l'embonpoint ¹² ou de devenir obèse que ceux avec un bas niveau d'éducation.
F4(g)	Pour les hommes et les femmes, ceux qui ont fait des études post-secondaire ont moins tendance à l'obésité ou à l'embonpoint ¹² que ceux qui ont moins d'éducation.
F4(h)	En effet, pour tout deux, mâle ou female, ceux ayant une éducation poste secondaire ont plus tendances à souffrir d'embonpoint [] ¹² que ceux ayant un niveau d'éducation plus bas.
F4(i)	Pour les hommes et les femmes, ceux avec une éducation post-secondaire sont plus apte a être [] obèse ¹² que ceux avec des niveaux d'education plus bas.
F4(j)	Pour les hommes comme les femmes, ceux qui possède des études post-secondaires sont moins apte à être [] obésse ¹² que ceux avec un niveau d'éducation inférieur.

- 12 Invariant phrase order and the frequent omission of the translation of *overweight* parallel the strategies used by the English NTs.

The English phrase *are less likely to be overweight or obese* created difficulty on two levels. The first was the lexical selection of an equivalent for *overweight*, which several candidates simply dropped as the term may have been judged redundant.

The second source of confusion for some candidates was the translation of *less likely*. It is possible that the mathematical relations embedded in this structure (less than/greater than) caused difficulty.

Sentence 5 English Source Text (TE)	Sentence 5 Professional Translation/French Source Text (TF)
Lifestyles of those with less education and or the poor are influenced by ¹³ unequal access to healthy food and physical fitness facilities and the persuasive advertising ¹⁴ of calorie-dense foods that are low in nutrients ¹⁵ .	L'accès inégal aux aliments sains et aux centres de conditionnement physique et la publicité convaincante ¹⁴ sur les aliments peu nutritifs et riches en calories ¹⁵ influent sur ¹³ le mode de vie des personnes peu instruites ou à faible revenu.

Sentence 5 Natural back translation (NE)
E5(a) Unequal access to healthy foods and to health clubs (physical conditioning centers) and []advertisements ¹⁴ based on foods that aren't nutritious and are rich in calories ¹⁵ , influence ¹³ the way of life of those people that are less educated or have a lower income.
E5(b) The unequal access to healthy food and to physical conditioning, as well as the []advertisement ¹⁴ of low nutrient, high calorie food ¹⁵ influences ¹³ the style of living of less educated people or those with a lower income.
E5(c) Inequal access to healthy foods and fitness clubs and []advertising's ¹⁴ focus on foods which have little nutritional value but are high in calories ¹⁵ have influenced ¹³ the lifestyle of less educated, lower income persons.
E5(d) Unequal access to healthy food and gyms and publicity advertising ¹⁴ food that has little nutritional value and is rich in calories ¹⁵ influences ¹³ the lives of the less educated and low income population.
E5(e) The unequal access to healthy foods and exercise centres and conflicting publicity ¹⁴ on non-nutritious foods rich in calories ¹⁵ influences ¹³ the way of life for a person of little education and low income.
E5(f) Unequal access to healthy foods and to physical conditioning centres and convincing publicity ¹⁴ about food less nutritious and rich in calories ¹⁵ influence ¹³ the style of life of people less educated or that have less revenue.
E5(g) Unequal access to health centres and gyms, and the lack of public's knowledge ¹⁴ of foods that are poor in nutritional value and which are rich in calories ¹⁵ has an influence on ¹³ the type of life of poorly educated and low income individuals.

E5(h)
Inaccessibility to nutritious foods and exercise centers as well as []publicity ¹⁴ promoting malnutritious foods which are rich in calories ¹⁵ influences ¹³ the lifestyles of those who are poorly educated or those with low income.
E5(i)
Unequal access to healthy foods and fitness centres and the flood of advertising ¹⁴ about junk food ¹⁵ is very impressionable ¹³ to the poorly education and economically deprived.
E5(j)
Inequal access to healthier foods and health clubs and the convincing advertisements ¹⁴ for food of low nutritional content and high in calories ¹⁵ have influenced ¹³ the way of life of those of low education levels and of low income.

- 13 There is no evidence of a shift to the passive voice in the translation of *influent sur*. However, three NTs made a shift in verb aspect and used the perfect aspect *have influenced* instead of the simple aspect used in the French.
- 14 Three NTs used the cognate *publicity*.
- 15 This sentence shows evidence of both strict adherence to source language phrase order and wide variation in paraphrase.

Sentence 5 English Source Text (TE)	Sentence 5 Professional Translation/French Source Text (TF)
Lifestyles of those with less education and or the poor are influenced by ¹³ unequal access to healthy food and physical fitness facilities and the persuasive advertising ¹⁴ of calorie-dense foods that are low in nutrients ¹⁵ .	L'accès inégal aux aliments sains et aux centres de conditionnement physique et la publicité convaincante ¹⁴ sur les aliments peu nutritifs et riches en calories ¹⁵ influencent ¹³ le mode de vie des personnes peu instruites ou a faible revenu.

Sentence 5 Natural translation into French (NF)
F5(a) Les styles de vie des gens qui ont moins d'éducation et/ou les pauvres sont influencés par ¹³ un accès inégal à la nourriture bonne pour la santé et les facilités physiques et les avertissements persuasifs ¹⁴ des aliments contenant beaucoup de calories et faibles en nutriments ¹⁵ .

F5(b)	Les modes de vie de ceux qui ont moins d'éducation et/ou les pauvres sont influencés par ¹³ l'accès inégal à une nutrition saine ainsi que les centres d'entraînement physique, et la publicité persuadante ¹⁴ de la nourriture basse en calorie ainsi que les nutriments ¹⁵ .
F5(c)	Le style de vie de ceux qui ont moins d'éducation et/ou les pauvres sont influencés par ¹³ l'accès inégal aux bonnes nourritures et aux centres de conditionnement physique et la publicité persuasive ¹⁴ des aliments contenant beaucoup de calories et moins de nutriments ¹⁵ .
F5(d)	Le mode de vie des personnes peu éduquée ou des personnes ayant un faible revenu, est influencé par ¹³ l'inaccessibilité à des aliments sains à la facilité pour faire des exercices physiques.[] ¹⁴ [De plus], les aliments à haute teneur en calories ne contiennent pas tous les nutriments nécessaires à une bonne santé ¹⁵ .
F5(e)	Le mode de vie de ceux et celles ayant un niveau d'éducation inférieur à la moyenne et/ou qui sont pauvres est influencé par ¹³ un accès inégales aux centre d'entraînement, de bonne nourriture et par la publicité persuasive ¹⁴ du manger faible en nutriments et haut en calories ¹⁵ .
F5(f)	Le style de vie de ceux avec moins d'éducation ou dans la pauvreté est influencé par ¹³ le manque d'accès aux aliments nutritifs, les centres d'activité physique et les promotions ¹⁴ d'aliments nutritifs faible en calories ¹⁵ .
F5(g)	Le style de vie de ceux qui ont un bas niveau d'éducation et/ou les pauvres sont influencés par ¹³ un accès inégal à de la nourriture santé et à de l'équipement de conditionnement physique et [] ¹⁴ sont [plus attirés vers] la nourriture à haute teneur en calories et à basse valeur nutritive ¹⁵ .
F5(h)	Le style de vie de ceux qui ont moins d'éducation et/ou qui sont pauvre influencé par ¹³ inégalité à l'accès à la bonne nourriture et au conditionnement physique et à la persuasion des annonces ¹⁴ des calories alimentaires qui sont moins nutritifs ¹⁵ .
F5(i)	Le mode de vie des gens ayant moins d'éducation ou étant plutôt pauvre sont influencé par ¹³ le fait qu'ils n'ont pas le même accès aux aliments bons pour la santé ainsi qu'aux centre sportifs, de même qu'a la publicité persuasive ¹⁴ sur les aliments réduits en calorie et aussi faible en nutriments ¹⁵ .

F5(j)

Le mode de vie de ceux ayant moins d'éducation et/ou les pauvres **sont influencés par** ¹³ un accès inégal à la nourriture santé et aux endroits conçus pour la mise en forme et [] ¹⁴ **l'apport de nourriture calorique qui est faible en nutriments** ¹⁵.

- 13 All NTs are guided by the source text passive construction *are influenced by* in their French translation *est/sont influencé(s) par*, even though passivization is far less frequent in French than in English.
- 14 All NTs follow the phrase order of the source text.
- 15 This items show further evidence of variation in paraphrase.

Sentence 6 English Source Text (TE)	Sentence 6 Professional Translation/French Source Text (TF)
Individuals who work and live in environments that are most hostile, monotonous or outside their sphere of personal control ¹⁶ are more likely to seek comfort in compensatory responses ¹⁷ such as overeating and or drinking alcohol.	Les gens qui travaillent et vivent dans un environnement hostile, monotone ou sur lequel ils n'ont aucune prise ¹⁶ sont plus susceptibles d' avoir besoin de trouver un reconfort dans des activités compensatrices ¹⁷ comme la consommation abusive de nourriture ou d'alcool.

Sentence 6 Natural back translation (NE)
E6(a) People who work and live in hostile, monotonous environments, or who have no control over these areas ¹⁶ are more likely to look for comfort in compensatory activities ¹⁷ such as the abuse of alcohol or food.
E6(b) People who live and work in a hostile environment, monotone, or where there is no prize ¹⁶ , are more susceptible to having the need to find compensary activities ¹⁷ like the abusive consumption of food or alcohol.
E6(c) Those who work and live in a hostile, boring environment or in places where they have no authority ¹⁶ are more susceptible to searching for comfort in [] ¹⁷ negative food consumption and alcohol.

E6(d)	People who work and live in a hostile, monotone environment where they have no power ¹⁶ are more susceptible to needing to find comfort in adictive activities ¹⁷ like the abusive consommation of food or alcohol.
E6(e)	People who work and live in a hostile environment [] or those who have no support ¹⁶ are more susceptible in finding comfort in activities that make them feel better ¹⁷ such as overeating or alcohol abuse.
E6(f)	People who work and live in a hostile environment, a monotonous one or one with no activity ¹⁶ are more susceptible to the need to find comfort in compensating activities ¹⁷ such as the abusive consumption of food or alcohol.
E6(g)	Those who live or work in a hostile or monotonous environment [] ¹⁶ are more susceptible to trying to find comfort in [] activities ¹⁷ such as abusing alcohol or food to compensate.
E6(h)	The people who work and live in an hostile environment, bored or who do not have anything to do ¹⁶ are more susceptible to the need of finding comfort in compensating activities ¹⁷ such as the abusive consumption of food or of alcohol.
E6(i)	People who work and live in hostile, monotone environments where they have little control ¹⁶ are more likely to find comfort in [] activities ¹⁷ such as alcohol abuse or overeating.
E6(j)	Also, individuals living in hostile or monotone environments [] ¹⁶ are increasingly likely to turn to food or alcohol for a sense of comfort ¹⁷ .

16 The French expression *sur lequel ils n'ont aucune prise* generated many different solutions, including deletion and one visual cognate: *prize*.

Sentence 6 English Source Text (TE)	Sentence 6 Professional Translation/French Source Text (TF)
Individuals who work and live in environments that are most hostile, monotonous or outside their sphere of personal control ¹⁶ are more likely to seek comfort in compensatory responses ¹⁷ such as overeating and or drinking alcohol.	Les gens qui travaillent et vivent dans un environnement hostile, monotone ou sur lequel ils n'ont aucune prise ¹⁶ sont plus susceptibles d'avoir besoin de trouver un reconfort dans des activités compensatrices ¹⁷ comme la consommation abusive de nourriture ou d'alcool.

Sentence 6 Natural translation into French (NF)
F6(a) Les individus qui vivent et travaillent dans un environnement ardue monotone et en dehors de leurs contrôle personnels ¹⁶ sont le plus souvent aptent a rechercher confort dans les réponses ¹⁷ comme trop manger ou boire de l'alcool.
F6(b) Les individus qui travaillent et vivent dans des environnements moins hostiles, monotones ou en dehors de leurs espaces de control personnel ¹⁶ sont plus sujets à chercher du réconfort dans des réponses compensatoires ¹⁷ comme manger trop et/ou consommer de l'alcool.
F6(c) Les individuels qui travail et qui vive dans des environnement qui sont plus violent, monotone ou hors de leur sphère de control personnel ¹⁶ sont plus apte à chercher le confort [] ¹⁷ en mangeant plus et/ou en buvant ces breuvages alcoolisés.
F6(d) Les individus qui travaillent et vivent dans des environnements qui sont plus hostiles, monotones ou à l'extérieur de leur contrôle personnel ¹⁶ sont plus portés à chercher le confort dans des réponses qui compensent ¹⁷ comme la suralimentation et/ou la consommation d'alcool.
F6(e) Les individus qui travaillent et vivent dans un environnement qui est plus hostile, monotone ou à l'extérieur de leur champ de contrôle personnel ¹⁶ ont plus tendance à rechercher du confort dans des réponses compensatoires ¹⁷ comme la suralimentation et/ou la consommation d'alcool.
F6(f) Les individus qui travaillent et vivent dans des milieux qui sont surtout hostiles, monotones ou en dehors de leur champ d'influence ¹⁶ sont plus portés à chercher le réconfort par des façons détournées ¹⁷ telles: trop se nourrir et/ou boire de l'alcool.

F6(g)
Les individus qui travaillent et vivent dans des environnements qui sont hostiles, monotones ou qui dépassent la sphère de leur contrôle ¹⁶ sont plus susceptibles de chercher du réconfort dans des réponses compensatoires ¹⁷ comme la sur-alimentation et/ou boire de l'alcool.
F6(h)
Les individus qui travaillent et vivent dans des environnements hostiles, monotones ou hors de leur contrôle personnel ¹⁶ sont plus apte à vouloir le confort dans les réponses qui compensent ¹⁷ comme trop manger et/ou boire de l'alcool.
F6(i)
Les personnes qui travaillent et vivent dans des environnements étant plus hostile, monotone ou à l'extérieur de leur cercle de contrôle ¹⁶ ont plus de chance de trouver du réconfort, en compensation, dans le fait de ¹⁷ manger plus et/ou boire de l'alcool.
F6(j)
Les individus qui travaillent et vivent dans des environnements plus hostiles, monotones ou en dehors de leur contrôle ¹⁶ ont plus tendance à trouver un réconfort dans [] ¹⁷ l'embonpoint ou dans l'alcool.

16 NTs attempted to translate directly the dead metaphor *outside their sphere of personal control*.

17 Six NTs used the cognate *réponse* to translate *response*.

4.1.2.1 Instances of best-guess strategies in translating sentence segments dealing with numbers

Sentence 2 Source Text	Sentence 2 Professional Translation
In the Canadian Fitness Survey, females at the lowest income level had the highest prevalence of obesity (17%) compared to (5%) ^{9a} of females in the highest income level.	Selon l'enquête condition physique Canada, ce sont les femmes dont le revenu est le plus faible qui présentent le taux le plus élevé d'obésité, soit 17 p. 100 comparativement à 5 p. 100 ^{9a} chez la femme de la tranche de revenu la plus élevée.

Sentence 2 Natural back translation	
E2a	According to the Study of Physical Condition of Canada, women who have low income have the highest obesity rate[] ^{9a} .
E2b	According to l'Enquête Condition physique Canada, it is the girls who have the highest obesity rate, compared between age 17 (100 lbs) and age 5 (100 lbs) in older women ^{9a} .
E2c	According to the Canada physical condition Survey, women who make the least have the highest obesity levels[] ^{9a} .
E2d	According to the Physical Conditioning Canada, the study shows that women of lower economical standing bear more weight than women of upper-middle class standing [] ^{9a} .
E2e	According to Physical Condition Canada, it is the women (females) where the results are weakest and represent the highest level of obesity; it is 17 pounds . 100, compared to five pounds . 100 for women from the highest income range ^{9a} .
E2f	According to the study on physical condition in Canada, it is low income women that have the highest rate of obesity: seventeen pounds overweight for every one hundred pounds compared to higher income women who are five pounds overweight for every one hundred pounds ^{9a} .
E2g	From the enquest 'Physical Condition Canada', it was found that women whose income is the lowest are of the greatest obesity paragraph 17 p100 compared to prg. 5 parg 100 women with higher income ^{9a} .
E2h	It was found that women who had lower incomes were the ones that were more obese, 17 lbs compared to 5 lbs for women with higher income ^{9a} .

- 1 These are good examples of best-guess strategies. The French notation for percentage was unfamiliar to some of the candidates. Several opted for deletion, but others constructed very clever contexts to arrive at 'plausible' interpretations. Note the shift of *women* to *girls* in E2b to try to fit in with the hypothesis that 17p.100 and 5p.100 was a reference to age.

4.1.3 Parameters used in the data analysis

4.1.3.1 Spelling

Samples were transcribed directly from the handwritten originals. Because of the rigid time constraint, because no dictionaries were allowed and because deciphering the handwriting is often difficult, spelling errors are treated as of no importance for the purposes of this study.

4.1.3.2 Frequency of use and collocation

The term *collocation* refers to lexical items commonly found together or within the same phrase. Examples are: *rang socio-economique/ socioeconomic status, physical fitness/conditionnement physique*. Frequency of use refers to the use of a lexical item within one or other of the two languages. Sensitivity to frequency of use and collocation becomes more evident in the later phases of translating ability.

4.1.3.3 Calques

A **calque** is any instance of a target text being overly influenced by the source text. A **lexical calque** refers to the inappropriate or unusual importation of a word or expression which is related by its structure or etymology from the source text into the target text. False cognates (*faux-ami*) are one type of lexical calque. An example is *both males and females* translated as *mâles et femelles* instead of *hommes et femmes*. Another example of a calque is the translation of *survey* as *sondage*, which means a *poll* rather than *enquête*, because of the similarity in sound, though the terms are not derivational cognates.

A **structural calque** occurs when the word order or phrase structure of a source text constituent serves as an exact model for the target text. However, the resulting translation is either not grammatically well-formed with respect to the target language syntax, or of a form so awkward

or unusual as to hinder intelligibility. An example of a structural calque containing a cognate is *lifestyles* translated as *styles de vie*.

4.1.3.4 Transpositions

The term *transposition* applies to any shift or grammatical category such as a shift from active to passive voice, or a shift from a nominal form to a verbal form. Examples are *lifestyles are influenced by* translated as *...influent sur le mode de vie*, and *overeating* translated as *la consommation abusive*.

4.1.4 Dominant strategy: the pull of the source text

As discussed above, the most general and widespread translation strategy demonstrated by the data involves translators being closely guided by the language structures of the source text. This approach involves reproducing as linguistically closely as possible, within the possibilities the target language grammar allows, each sentence constituent. The basic constituent for segmenting sentences appears to be simple phrases such as noun phrases, verb phrases and prepositional phrases. Phrase order is almost always modeled on the source text. Sentence boundaries are always respected.

Within phrases, shifts in word order may occur to accommodate the target language grammar. For example, adjectives are generally placed before nouns in English and after nouns in French. Some elements of a phrase such as articles or other determiners may be added or deleted depending on the requirements of the target language. Cognates are kept if they are intelligible in the target language. Of the range of possibilities available in the target language, the most common preference is for the one that most closely resembles the source text, but all translators are sensitive to the requirements of the standard grammar of the target language. In aiming for the highest possible linguistic correlation with the source text, frequency of use in the target language does not appear to be a mitigating factor for NTs.

4.1.5 Approach to translating strategies analysis

The most striking feature of the preceding samples of NT by test candidates, compared to the source text and the professional translation (see section 6.10), is the powerful influence of the source text. Whenever possible a strategy of phrase-by-phrase translation, preserving the phrase order of the source text, is followed. Other studies (Malakoff, Shannon) confirm that this is a consistent strategy generally applied at a certain developmental level of translating ability. An abductive language-based assumption schema appears to dominate; that is to say, once a phrase level pattern is mapped into the target language, if the translated output this mapping generates is comprehensible, then the translation task is assumed to be completed. Only when this strategy fails to generate comprehensible output, are the higher processing levels accessed: sentence level, text level, discourse level or resonance level. Perhaps because of the extra cognitive load imposed by higher level analyses, without special training, mentoring or extensive NT experience, these higher levels are applied inconsistently, especially when there is also a probable magnification of effect from time constraints. These more complex levels of analysis appear not to be consciously integrated into the assumption schema for translating until the mature state is attained.

The fact that even the professional translator was not entirely immune to the influence of the source text further attests the pervasive force of this phrase-level assumption schema. The present study does not examine whether literacy-based translating activities are more prone to its influence than orality-based activities.

4.1.6 Translation key

The markers of the test at the Second Language Institute consistently follow the marking key (see Appendix A) provided for them by the test designers.

4.1.6.1 Interpretation of translation key

The purpose of the translation key grid is to make the correcting of the translation task as efficient as possible. Correctors are instructed to look for the numbered items in the correction grid and to assign points or half points according to the indications on the grid. Each numbered item is worth one point, but some items are divided into two segments worth a half point each. The items need not appear in the order indicated, as long as these 'concepts' appear in the text. Additions are not penalized. Also, the marking scheme is intended as a guide rather than a rigid answer key. Correctors are encouraged to add acceptable and unacceptable answers to the existing list and so the answer grid itself undergoes a developmental process over time and is never considered definitive. It can be seen from the answer key that some entries allow for many acceptable translations, while others include many unacceptable ones. The answer grid itself thus shows a pattern of items that most discriminate successful and unsuccessful translations. Correctors are expected to use their judgement on whether alternative formulations are close enough to represent the intent and meaning of the source text segment. This allowance for variation reflects an understanding and acceptance of the decision-making process that is always at work in NT. The coherence of the text as a whole, however, is not taken into consideration; what matters is that students have understood the text segments well enough to provide second language equivalents.

From the test correctors' perspective, it is much more difficult to correct *indirect* translation approaches involving paraphrase, condensation and deletion. The expectation is that candidates will stick closely to the linear conceptual ordering of the source text. When there is a mismatch between these assumptions and the candidate's approach, the corrector must make judgements outside the guidelines to determine which portions of the translated text convey, in an accurate enough manner, the meaning of the original. In case of doubt, the candidate is generally given the benefit of the doubt.

Nevertheless, candidates who take too many liberties with the source text may well be penalized for having failed to correctly interpret the requirements of the task. In the environment of second language competence testing, candidates ought reasonably to know that a close or *direct translation* is expected because they are trying to demonstrate their ability to understand their second language.

4.1.6.2 The marking scheme as a reflection of an assumption schema

The marking scheme for the translation task offers further evidence of the syntax level assumption schema of this environment. The text is chunked into separate phrases, each with a one point value. As a result of this marking scheme, omissions are penalized while additions are not. Text level coherence and cohesion is not taken into consideration, possibly because it is assumed to be provided by the source text and to be fairly equivalent across languages.

The translation key provides a summary of the range of acceptable and unacceptable answers found in the test samples.

Part 2 Data from Translation Students

Clara Foz and Michelle Healey of the University of Ottawa School of Translation and Interpretation administered the translation sub-test under similar test conditions (15 minute time limit, no access to dictionaries) to translation students nearing the end of their second or third year of intensive translation studies. The ST sample consists of 12 translations into English and 12 into French. In all cases students were translating from their second into their first language. The students were asked to volunteer to participate in a research project but were not given any other information prior to completing the translation task. The same texts were translated by the STs and the NTs.

Part of the translation training involves frequent translation tasks under controlled conditions, including time limits, known as ETLs (*épreuves en temps limité*). Here the French source text contained 209 words and the English source text 157 words. Texts of 150 to 200 words would normally be allotted an hour under ETL testing conditions. Moreover, students are allowed to consult reference materials.

In contrast, under the test conditions here, they were allotted only one-quarter of their usual time for a text of equivalent length and complexity. Moreover, they were unfamiliar with the subject matter.

4.2.1 Level of bilingualism

The STs had to pass an entrance examination to gain admittance into the Translation B.A. program. To pass the entrance examination they had to demonstrate an advanced level of bilingual proficiency as well as advanced literacy skills in their first language.

Successful NT test candidates are also expected to test at a very advanced level of functional bilingualism. In both cases, fluent bilingualism is a requirement of the study program, and is essential to the exercise of their professions.

While both NTs and STs had to demonstrate advanced levels of bilingualism and literacy to be admitted into their programs, the STs also received specialized training which is likely to affect their performance. Translation training includes language skills courses to sensitize them to the need to write correct English or French, comparative stylistics to sensitize them to the differences between their two languages, terminology courses to impress on them the need to seek the most appropriate term and actual translation courses to give them practical experience.

4.2.2 ST data

Sentence 1 English Source Text (TE)	Sentence 1 Professional Translation/French Source Text (TF)
Several ¹ major ² Canadian studies have shown [] ³ a striking ⁴ relationship ⁵ between weight and socioeconomic status ⁶ .	Plusieurs ¹ importantes ² études canadiennes ont révélé [l'existence] ³ d'une relation ⁵ frappante ⁴ entre le poids et le niveau ⁶ socio-économique.

Sentence 1 Student Translation into English (SE)
E1(a) Many ¹ (important) ² Canadian studies have revealed [] ³ a shocking ⁴ relationship ⁵ between weight and social (level) ⁶ .
E1(b) Many ¹ important ² Canadian studies have highlighted [] ³ the significant ⁴ relationship ⁵ between weight and socio-economic level ⁶ .
E1(c) Several ¹ important ² Canadian studies have revealed [] ³ a striking ⁴ relationship ⁵ between weight and socioeconomic class ⁶ .
E1(d) Many ¹ important ² Canadian research has revealed the existence of ³ an alarming ⁴ relationship ⁵ between weight and socio-economic status ⁶ .
E1(e) Several ¹ important ² Canadian studies have uncovered the existence of ³ a shocking ⁴ link ⁵ between weight and the socioeconomic level ⁶ .
E1(f) Many ¹ significant ² Canadian studies have revealed [] ³ that a striking ⁴ relation ⁵ exists between a person's weight and their socio-economic environment ⁶ .
E1(g) Several ¹ major ² Canadian studies have revealed [] ³ a striking ⁴ connection/relation ⁵ between weight and social class ⁶ .
E1(h) Several ¹ major ² Canadian studies have revealed the existence of ³ a startling ⁴ connection ⁵ between weight and socio-economic status ⁶ .
E1(i) Several ¹ [] ² Canadian studies have [] ³ made a surprising ⁴ link ⁵ between weight gain and socio-economic levels ⁶ .

E1(j) Many ¹ extensive ² Canadian studies have revealed the existence of ³ a striking ⁴ relationship ⁵ between weight and socio-economic level ⁶ .
E1(k) Several ¹ extensive ² studies carried out in Canada have revealed [] ³ a striking ⁴ relationship ⁵ between weight and social economic levels ⁶ .
E1(l) Several ¹ important ² Canadian studies have revealed the existence of ³ a striking ⁴ relation ⁵ between people's weight and their socio-economic level ⁶ .

Sentence 1 English Source Text (TE)	Sentence 1 Professional Translation/French Source Text (TF)
Several ¹ major ² Canadian studies have shown [] ³ a striking ⁴ relationship ⁵ between weight and socioeconomic status ⁶ .	Plusieurs ¹ importantes ² études canadiennes ont révélé [l'existence] ³ d'une relation ⁵ frappante ⁴ entre le poids et le niveau ⁶ socio-économique.

Sentence 1 Student Translation into French (SF)
F1(a) Au Canada, de nombreuses ¹ études [] ² ont démontré qu'il existe ³ un lien ⁵ important ⁴ entre le poids et le statut ⁶ socio-économique.
F1(b) Plusieurs ¹ études canadiennes de grande importance ² on montré un lien ⁵ évident ⁴ existant ³ entre le poids d'une personne et son statut ⁶ socioéconomique.
F1(c) Au Canada plusieurs ¹ grandes ² études ont démontré [] ³ une relation ⁵ frappante ⁴ entre le poids et le statu ⁶ socio-économique.
F1(d) Plusieurs ¹ études canadiennes d'envergure ² ont démontré que l'obésité était ³ fortement ⁴ liée ⁵ au statut ⁶ socioéconomiques.
F1(e) De nombreuses ¹ études [] ² canadiennes on démontré qu'il y avait ³ un lien ⁵ [] ⁴ entre le poids et status ⁶ socio-économique des personnes.
F1(f) Un grand nombre ¹ d'études importantes ² réalisées au Canada ont montré [] ³ un lien ⁵ remarquable ⁴ entre le poids et le statut ⁶ socioéconomique.

F1(g) La plupart ¹ des études [] ² canadiennes menées ont démontré [] ³ une relation ⁵ étonnante ⁴ entre le poids des personnes et leur place ⁶ dans la société.
F1(h) Plusieurs ¹ études canadiennes de grande envergure ² ont relevé [] ³ un rapport ⁵ [] ⁴ entre le poids de l'individu et son statut ⁶ socioéconomique.
F1(i) Plusieurs ¹ grandes ² études canadiennes montrent [] ³ un lien ⁵ étonnant ⁴ entre le poids d'une personne et son statut ⁶ socio-économique.
F1(j) De nombreuses ¹ études canadiennes d'envergure ² ont démontré qu'il existe ³ une relation ⁵ frappante ⁴ entre le poids et le statut ⁶ économique.
F1(k) De nombreuses ¹ études canadiennes importantes ² ont démontré [] ³ un lien ⁵ étroit ⁴ entre le poids et la classe ⁶ socio-économiques des gens.
F1(l) D' ¹ importantes ² études canadiennes montrent [] ³ un lien ⁵ évident ⁴ entre le poids d'une personne et son statut ⁶ socio-économique.

Sentence 2 English Source Text (TE)	Sentence 2 Professional Translation/French Source Text (TF)
In the Canadian Fitness Survey ⁷ , [] ⁸ females at the lowest income level had the highest prevalence of obesity (17%) compared to (5%) ⁹ of females in the highest income level.	Selon l'Enquête condition physique Canada ⁷ , [ce sont] ⁸ les femmes dont le revenu est le plus faible qui présentent le taux le plus élevé d'obésité, soit 17 p. 100 comparativement à 5 p. 100 ⁹ chez les femmes de la tranche de revenu la plus élevée.

Sentence 2 Student Translation into English (SE)
E2(a) According to Physical Health Canada ⁷ , [] ⁸ 17% of women with low incomes are obese, compared to a 5% obesity rate ⁹ among women in the highest income bracket.
E2(b) According to? ⁷ , [] ⁸ 17% of lower income women are obese compared to 5% of higher-income women ⁹ .

E2(c)	According to the Enquête Condition Physique Canada⁷, []⁸ women with the lowest incomes were the most obese, i.e., 17 percent compared to 5 percent⁹ of women in the highest income bracket/group.
E2(d)	According to Condition physique Canada⁷, []⁸ women with the lowest income represent the highest rate of obesity, that is 17% compared to 5%⁹ for women in the highest income bracket.
E2(e)	According Physical Condition Inquiry Canada⁷, []⁸ women with the lowest income represent the highest rate of obesity, that being 17 per 100 compared to 5 per 100⁹ women with the highest income.
E2(f)	According to Canada's Survey on Physical Condition⁷, []⁸ women with lower income represent 17% of obese women compared to women who earn a higher income, who only represent 5%, respectively⁹.
E2(g)	According to Fitness Research Canada⁷, []⁸ obesity is most common in women with lower incomes - 17 percent compared with 5 percent⁹ of women in the highest income bracket.
E2(h)	According to the Fitness Canada Survey⁷, []⁸ women earning the lowest income have the highest rate of obesity, 17% compared to 5%⁹ of women earning the highest income/ in the highest income bracket.
E2(i)	Accdg. To a Condition physique Canada Survey⁷, []⁸ women with low income show the highest obesity rates at 17% comparatively to 5%⁹ in women with higher incomes.
E2(j)	According to the Canadian physical fitness survey⁷, []⁸ women at the lowest income level have the highest rate of obesity (17 per 100 compared to 5 per 100⁹ for women at the highest income level.
E2(k)	According to the Enquête Condition physique Canada⁷, []⁸ women in a low income bracket have the highest rate of obesity, 17% compared to 5%⁹ for women in a higher bracket.
E2(l)	According to the Canadian Study on Physical Condition⁷, []⁸ women with the lowest revenue represent the highest rate of obese people, or 17 percent as compared to 5 percent⁹ in women who belong to the highest socio-economic level.

Sentence 2 English Source Text (TE)	Sentence 2 Professional Translation/French Source Text (TF)
In the Canadian Fitness Survey ⁷, [] ⁸ females at the lowest income level had the highest prevalence of obesity (17%) compared to (5%) ⁹ of females in the highest income level.	Selon l'Enquête condition physique Canada ⁷, [ce sont] ⁸ les femmes dont le revenu est le plus faible qui présentent le taux le plus élevé d'obésité, soit 17 p. 100 comparativement à 5 p. 100 ⁹ chez les femmes de la tranche de revenu la plus élevée.

Sentence 2 Student Translation into French (SF)
F2(a) Dans le sondage sur la forme physique au Canada (Canadian Fitness Survey) ⁷, [] ⁸ les femmes appartenant au niveau salarial parmi les plus bas étaient plus susceptibles de souffrir d'obésité (17%) comparativement à 5% ⁹ des femmes qui ont le plus haut niveau salarial.
F2(b) Selon le 'Canadian Fitness Survey' ⁷, [] ⁸ 17% des femmes souffrant d'obésité ont une source de revenu bas contre 5% ayant une source de revenu plus élevé ⁹.
F2(c) La 'Canadian Fitness Survey' ⁷ a démontré que [] ⁸ comparativement aux femmes ayant le niveau de revenu le plus élevé, les femmes ayant le niveau de revenu le plus bas ont également le taux de prévalence de l'obésité le plus élevé ⁹.
F2(d) Selon un sondage de santé Canada ⁷, on enregistre ⁸ un taux d'obésité beaucoup plus élevé chez les femmes au revenu le plus faible (17%) que chez celles appartenant à la couche salariale la plus élevés (5%) ⁹.
F2(e) «Le Canadian Fitness Survey» a relevé que ⁷ [] ⁸ les femmes avec le revenu le plus bas ont une prépondérance pour l'obésité (17%) comparativement à 5% ⁹ pour les femmes ayant un revenu élevé.
F2(f) Selon le Canadian Fitness Survey ⁷, [] ⁸ les femmes au plus bas revenu montraient le plus haut taux d'obésité (17%) comparé à 5% ⁹ pour les femmes qui ont le plus haut niveau de revenu.
F2(g) L'étude canadienne sur la fréquentation des salles de fitness a démontré que ⁷ [] ⁸ les femmes qui perçoivent un petit revenu sont plus sujettes au problème de l'obésité (17%) que les femmes qui perçoivent un gros revenu ⁹.

F2(h) Selon le Canadian Fitness Survey ⁷ , le taux s'obésité chez les femmes (incomplete)
F2(i) L'enquête canadienne sur la santé physique a montré que ⁷ c'est chez ⁸ les femmes ayant la source de revenu la plus basse que l'on retrouve le plus grand problème d'obésité (17%), contre 5% ⁹ chez les femmes ayant la plus haute source de revenu.
F2(j) L'enquête sur la forme physique chez les Canadiens et les Canadiennes a montré ⁷ qu'il y a ⁸ un pourcentage plus élevé - (17%) de femmes obèses qui ont un revenu salarial plus bas que chez celles dont le revenu salarial est plus élevé (5%) ⁹ .
F2(k) Selon le Sondage canadien de la santé physique (Canadian Fitness Survey) ⁷ , [] ⁸ les femmes se situant au bas de l'échelle salariale étaient les plus susceptibles d'être obèses (17%) comparé aux femmes situées au haut de l'échelle salariale (5%) ⁹ .
F2(l) La recherche canadienne sur la forme physique permet de constater ⁷ que [] ⁸ les femmes dont le niveau salarial est le plus bas ont le plus haut taux d'obésité (17%) comparativement à 5% ⁹ des femmes au niveau salarial le plus élevé.

Sentence 3 English Source Text (TE)	Sentence 3 Professional Translation/French Source Text (TF)
More recently, a study ¹⁰ by Millar showed no clear-cut pattern by income ¹¹ but a direct relationship between weight and educational level.	Dans une étude plus récente ¹⁰ , Millar n'a décelé aucune tendance définie selon le revenu ¹¹ mais a observé une relation directe entre le poids et le niveau de scolarité.

Sentence 3 Student Translation into English (SE)
E3(a) In a more recent study ¹⁰ , Millar noted no relationship between income and weight ¹¹ , but did observe a direct relation between weight and level of education.
E3(b) In a more recent study ¹⁰ , Millar found no correlation between income and obesity ¹¹ , but found a direct correlation between weight and education level.
E3(c) In a more recent study ¹⁰ , Millar found no definite correlation with income ¹¹ , but did find a direct correlation between weight and education level.

E3(d)	In a more recent study ¹⁰, Millar did not discover any solid tendencies ¹¹ but uncovered a direct link between weight and the level of education.
E3(e)	In a more recent study ¹⁰, Millar did not notice any defined trend according to income ¹¹ but observed a direct link between weight and level of education.
E3(f)	In a more recent study ¹⁰, Millar did not find a direct correlation between weight and income ¹¹, however he did find a direct relation between weight and level of education.
E3(g)	In his most recent study ¹⁰, Millar did not reveal/establish a definite relation between obesity and income ¹¹; however, he did observe one between weight and level of education.
E3(h)	In a more recent study ¹⁰, Miller found no definite relation to income ¹¹, but observed a definite relation between weight and level of education.
E3(i)	In a more recent study ¹⁰, Miller did not detect a link with income/revenue ¹¹ but rather with school/academic levels.
E3(j)	In a more recent study ¹⁰, Millar did not discover any definite tendency according to income ¹¹ but observed a direct relationship between weight and education level.
E3(k)	In a more recent study ¹⁰, Millar did not detect a tendency according to income ¹¹ but observed a direct relationship between weight and the level of education.
E3(l)	In a more recent study ¹⁰, Millar did not detect any definite tendencies in relation to revenu ¹¹, but did observe a direct relation between weight and the level of education.

Sentence 3 English Source Text (TE)	Sentence 3 Professional Translation/French Source Text (TF)
More recently, a study ¹⁰ by Millar showed no clear-cut pattern by income ¹¹ but a direct relationship between weight and educational level.	Dans une étude plus récente ¹⁰, Millar n'a décelé aucune tendance définie selon le revenu ¹¹ mais a observé une relation directe entre le poids et le niveau de scolarité.

Sentence 3 Student Translation into French (SF)	
F3(a)	Plus récemment, une étude ¹⁰ effectuée par Millar a démontré que l'obésité n'a pas de relation directe avec le revenu ¹¹ mais plutôt avec le niveau de scolarité.
F3(b)	Récemment, une étude ¹⁰ menée par Millar n'a pas montré qu'il existait un pattern bien défini basé sur les revenus touchés de ces femmes ¹¹, mais plutôt qu'il existait un lien direct entre leur poids et leur niveau d'éducation.
F3(c)	L'étude plus récente ¹⁰ de Millar n'a pas démontré de corrélation claire avec le revenu ¹¹ mais a fait ressortir un lien direct entre le poids et le niveau d'instruction.
F3(d)	Une étude plus récente ¹⁰ menée par Millar n'a démontré aucune corrélation indéniable entre l'obésité et le salaire ¹¹, mais plutôt entre le poids et le niveau d'éducation.
F3(e)	Une étude récente ¹⁰ de Millar n'a pu conclure à une corrélation avec le revenu ¹¹, mais à une relation directe entre le poids et le niveau de scolarité.
F3(f)	Plus récemment, une étude ¹⁰ faite par Millar n'a pas montré de tendance précise selon le revenu ¹¹ mais un lien direct entre le poids et le niveau de scolarité.
F3(g)	Récemment ¹⁰, Millar a mené une enquête ¹⁰, non plus basé sur les revenus des personnes ¹¹, mais il a plutôt établi une relation entre poids et niveau d'éducation.
F3(h)	Dernièrement, une étude ¹⁰ faite par Millar ne démontrait aucune tendance liée au revenu ¹¹; elle établissait plutôt un lien entre le poids et le niveau d'éducation.
F3(i)	Une étude plus récente ¹⁰ de Millar montre qu'il n'y a pas de découpage selon la source de revenu ¹¹, mais un lien direct entre le poids et le niveau d'éducation.
F3(j) (incomplete)	
F3(k)	Plus récemment, une étude ¹⁰ menée par Millar n'a établi aucun rapport salarial évident ¹¹, mais a plutôt fait ressortir un lien direct entre le poids et le niveau d'éducation.
F3(l)	Plus récemment, une étude ¹⁰ par Millar ne voit pas de lien direct avec le niveau salariale ¹¹ mais plutôt avec le niveau d'éducation.

Sentence 4 English Source Text (TE)	Sentence 4 Professional Translation/French Source Text (TF)
For both males and females, those with some post-secondary education are less likely to be overweight or obese ¹² than those with lower levels of education.	Comparativement aux personnes moins instruites, les hommes et les femmes qui ont fait des études postsecondaires sont moins nombreux a souffrir d'embonpoint ou d'obésité ¹² .

Sentence 4 Student Translation into English (SE)
E4(a) Compared to less educated individuals, men and women with post-secondary instruction were less likely to suffer from (embonpoint) or obesity ¹² .
E4(b) Compared to less-educated people, men and women who have post-secondary education are less likely to be obese ¹² .
E4(c) Compared to people who have received less formal schooling, men and women who have studied at the post-secondary level are less likely to ____? ____ or to be obese ¹² .
E4(d) Compared to those with lower levels of education, men and women with post secondary schooling are less prone becoming obese ¹² .
E4(e) Compared to less educated people, men and women who completed postsecondary studies are less likely to suffer from weight gain or from obesity ¹² .
E4(f) In comparison with persons who are less educated, men and women who studied at a post-secondary level were less apt to suffer from ____? ____ or obesity ¹² .
E4(g) When compared to individuals with lower education, men and women who studied at the postsecondary level were less likely to suffer from weight problems? or obesity ¹² .
E4(h) Compared to lesser-educated persons, men and women who pursued post-secondary education are less likely to be overweight or obese ¹² .
E4(i) In comparison to less educated people, men and women with postsecondary studies are less likely to be obese or ____? ____ ¹² .

E4(j) Compared to those who are less educated, less men and women with postsecondary education suffer from overweight or obesity ¹² .
E4(k) Comparatively, men and women who have studied at a postsecondary level are less likely to suffer weight gain or obesity ¹² than people who a less educated.
E4(l) Compared to people with a lower level of education, men and women who have a post-secondary education are less likely to suffer from obesity or ¹² (Incomplete)

Sentence 4 English Source Text (TE)	Sentence 4 Professional Translation/French Source Text (TF)
For both males and females, those with some post-secondary education are less likely to be overweight or obese ¹² than those with lower levels of education.	Comparativement aux personnes moins instruites, les hommes et les femmes qui ont fait des études postsecondaires sont moins nombreux a souffrir d'embonpoint ou d'obésité ¹² .

Sentence 4 Student Translation into French (SF)
F4(a) Les hommes et les femmes qui ont une formation post-secondaire risquent moins de faire de l'embonpoint ou d'être obèses ¹² que ceux qui ont un niveau de scolarité plus bas.
F4(b) Les femmes et les hommes qui ont une éducation post secondaire ont moins tendance a souffrir d'obésité ¹² ou d'être au-dessus de leur poids normal que (incomplete)
F4(c) Autant les homme que les femmes qui possèdent une éducation post-secondaire sont moins suceptibles d'être obèses ¹² que les individus moin scolarisés.
F4(d) On remarque, autant chez les hommmes que chez les femmes, que les personnes ayant fait des études postsecondaires ont moins tendance à faire de l'embonpoint ¹² (incomplete)
F4(e) (incomplete)
F4(f) Pour les hommes et les femmes, ceux qui ont fait des études postsecondaires ont moins tendance à être obèses ou à faire de l'embonpoint ¹² que ceux qui ont un niveau de scolarité moindre.

F4(g)
Il en résulte que l'homme et la femme possédant une formation universitaire sont moins exposé au problème de poids et d'obésité ¹² que les personnes sans formation autre que celle de l'école secondaire.
F4(h)
Chez les hommes autant que chez les femmes, les personnes qui ont fait quelques études post-secondaires sont moins portées à être grosses ou obèses ¹² que celles qui ont moins d'éducation.
F4(i)
Aussi bien chez les hommes que chez les femmes, ceux ayant une éducation post-secondaire son moins portés à l'obésité ¹² que ceux ayant un niveau d'éducation moins avancé.
F4(j)
Chez les hommes comme chez les femmes on a constaté que les individus ayant complété des études post-secondaires risquent moins de prendre trop de poids ou de devenir obèses ¹² que ceux qui ont un niveau inférieur d'éducation.
F4(k) (incomplete)
F4(l)
Chez les hommes autant que chez les femmes, les personnes qui ont une éducation post-secondaire risquent moins d'être obèse ou de prendre trop de poids ¹² que celles qui n'ont pas a niveau d'éducation.

Sentence 5 English Source Text (TE)	Sentence 5 Professional Translation/French Source Text (TF)
Lifestyles of those with less education and or the poor are influenced by ¹³ unequal access to healthy food and physical fitness facilities and the persuasive advertising ¹⁴ of calorie-dense foods that are low in nutrients ¹⁵ .	L'accès inégal aux aliments sains et aux centres de conditionnement physique et la publicité convaincante ¹⁴ sur les aliments peu nutritifs et riches en calories ¹⁵ influent sur ¹³ le mode de vie des personnes peu instruites ou a faible revenu.

Sentence 5 Student Translation into English (SE)
E5(a)
Unequal access to enriched foods and fitness centres along with convincing advertisements ¹⁴ for little-nutrition, calorie-rich foods ¹⁵ influences ¹³ the life of an individual with little education.
E5(b)
Less-educated and lower-income people have less access to health products and gyms; convincing ads ¹⁴ for unhealthy, high caloric foods ¹⁵ influence ¹³ their way of life.

E5(c)	Unequal access to nutritious/healthy foods and to physical fitness centres, as well as enticing advertisements ¹⁴ for unhealthy, high-calorie foods ¹⁵ , influence ¹³ the lifestyles of people in lower-income or lower-education brackets.
E5(d)	The unequal access to healthy food and gyms and appealing advertisements ¹⁴ for fast food, high in calories ¹⁵ , plays a role on ¹³ the lifestyle of people with little education or a low income.
E5(e)	Unequal access to healthy food or physical fitness centres, along with convincing ads ¹⁴ on foods that are more nutritious and rich in calories ¹⁵ influence ¹³ the lifestyles of less educated people or low income earners.
E5(f)	Unequal access to health foods and fitness centers as well as convincing publicity ¹⁴ which promotes food rich in calories or with low nutritional value ¹⁵ influence ¹³ the lifestyle of people with a lower level of education or income.
E5(g)	Unequal access to health food and fitness centres, as well as alluring advertisement ¹⁴ for (incomplete)
E5(h)	Inequal access to healthy foods and fitness centres and the convincing advertising ¹⁴ for unnutritious foods that are rich/high in calories ¹⁵ influence ¹³ the lifestyle of lesser-educated or lower-income people.
E5(i) (incomplete)	
E5(j)	Inequal access to healthy food and physical fitness centres as well as convincing advertising ¹⁴ about high-calorie foods of little nutritional value ¹⁵ influence ¹³ the lifestyle of people who are less educated or in a low income bracket.
E5(k)	Unequal access to nutritious food and physical fitness centers as well as convincing advertising ¹⁴ of high calorie, low nutrition food ¹⁵ influences ¹³ the lifestyle of the less educated or low income group.
E5(l) (incomplete)	

Sentence 5 English Source Text (TE)	Sentence 5 Professional Translation/French Source Text (TF)
Lifestyles of those with less education and or the poor are influenced by ¹³ unequal access to healthy food and physical fitness facilities and the persuasive advertising ¹⁴ of calorie-dense foods that are low in nutrients ¹⁵ .	L'accès inégal aux aliments sains et aux centres de conditionnement physique et la publicité convaincante ¹⁴ sur les aliments peu nutritifs et riches en calories ¹⁵ influent sur ¹³ le mode de vie des personnes peu instruites ou a faible revenu.

Sentence 5 Student Translation into French (SF)
F5(a) Le style de vie de ceux qui ont moins d'éducation et (ou) des pauvres est influencé par ¹³ l'accès inégal à de la nourriture saine (incomplete)
F5(b) (incomplete)
F5(c) L'access inégal à des aliment sains et aux centres de conditionnement physique et la publicité persuasive ¹⁴ des aliments riches en calories et peu nutritifs ¹⁵ influent ¹³ le mode de vie des individus pauvres ou peu instruits.
F5(d) (incomplete)
F5(e) Les habitudes de vie des personnes moins éduquées, ou pauvres sont la conséquence du manque d'accès à de nourriture saine et aux installations de conditionnement physique et, (incomplete)
F5(f) Les styles de vie des gens qui ont moins d'éducation (incomplete)
F5(g) Le mode de vie des personnes pauvres d'une éducation médiocre et/ou pauvre ont moins accès à la nourriture saine et aux installations de salle de fitness sans oublier aussi la publicité persuasive ¹⁴ que la nourriture très caloriques est moins ... (incomplete)
F5(h) L'accès inégal à une alimentation saine et à des lieux de culture physique ainsi que les annonces publicitaires [] ¹⁴ d'aliments à haute teneur calorique mais peu nutritifs ¹⁵ influent ¹³ le style de vie des personnes ayant peu d'éducation et/ou qui sont pauvres.
F5(i) (incomplete)

F5(j) Les modes de vie des individus ayant un niveau d'éducation inférieur et/ou des pauvres sont influencés par ¹³ la difficulté à se procurer des aliments sains et à accéder aux (incomplete)
F5(k) (incomplete)
F5(l) Le style de vie des personnes moins éduqués et/ou plus pauvres est influencé par ¹³ l'accès inégal à des produits nutritifs et aux (incomplete)

Sentence 6 English Source Text (TE)	Sentence 6 Professional Translation/French Source Text (TF)
Individuals who work and live in environments that are most hostile, monotonous or outside their sphere of personal control ¹⁶ are more likely to seek comfort in compensatory responses ¹⁷ such as overeating and or drinking alcohol.	Les gens qui travaillent et vivent dans un environnement hostile, monotone ou sur lequel ils n'ont aucune prise ¹⁶ sont plus susceptibles d'avoir besoin de trouver un réconfort dans des activités compensatrices ¹⁷ comme la consommation abusive de nourriture ou d'alcool.

Sentence 6 Student Translation into English (SE)
E6(a) (incomplete)
E6(b) People who work and live in a hostile environment, or people who are bored ¹⁶ are more likely to find comfort in compensating activities ¹⁷ , such as the abuse of food and alcohol consumption.
E6(c) People who live and work in hostile, monotonous environments or in environments over which they have no control ¹⁶ are more likely to need the comfort of compensating activities ¹⁷ such as excessive food or alcohol consumption.
E6(d) People that work and live in a hostile environment (incomplete)
E6(e) People who work and live in a hostile, monotone (incomplete)
E6(f) People who work and live in a hostile or monotonous environment or in which they have no control ¹⁶ (incomplete)
E6(g) (incomplete)

E6(h) Those working and living in violent/dangerous, dull/dreary environments over which they have no control ¹⁶ are more likely to need to seek comfort in compensatory activities ¹⁷ like the abusive consumption of food or alcohol.
E6(i) (incomplete)
E6(j) People who live and work in a hostile or monotonous environment or in one over which they have no control ¹⁶ tend more often to seek comfort in compensatory activities ¹⁷ such as abusive consumption of food or alcohol.
E6(k) (incomplete)
E6(l) (incomplete)

Sentence 6 English Source Text (TE)	Sentence 6 Professional Translation/French Source Text (TF)
Individuals who work and live in environments that are most hostile, monotonous or outside their sphere of personal control ¹⁶ are more likely to seek comfort in compensatory responses ¹⁷ such as overeating and or drinking alcohol.	Les gens qui travaillent et vivent dans un environnement hostile, monotone ou sur lequel ils n'ont aucune prise ¹⁶ sont plus susceptibles d' avoir besoin de trouver un réconfort dans des activités compensatrices ¹⁷ comme la consommation abusive de nourriture ou d'alcool.

Sentence 6 Student Translation
F6(a) (incomplete)
F6(b) (incomplete)
F6(c) Les gens qui vivent ou travaillent dans des milieux hostiles, monotones ou contraires à leur choix personnel ¹⁶ , recherchent une compensation ¹⁷ dans la consommation excessive d'alcool ou d'aliments.
F6(d) (incomplete)
F6(e) (incomplete)
F6(f) (incomplete)
F6(g) (incomplete)
F6(h) (incomplete)
F6(i) (incomplete)
F6(j) (incomplete)

F6(k) (incomplete)
F6(l) (incomplete)

4.2.3 Comparison of NT and ST data

Sentence 1 English Source Text (TE)	Sentence 1 Professional Translation/French Source Text (TF)
Several ¹ major ² Canadian studies have shown [] ³ a striking ⁴ relationship ⁵ between weight and socioeconomic status ⁶ .	Plusieurs ¹ importantes ² études canadiennes ont révélé [l'existence] ³ d'une relation ⁵ frappante ⁴ entre le poids et le niveau ⁶ socio-économique.
Sentence 1 Natural translation into French (NF ¹)	Sentence 1 Natural back translation (NE ¹)
(NF ¹) plusieurs (9) de nombreuses (1)	(NE ¹) a number of (1) several (4) many (3) the most (1) more (1)
Sentence 1 Student Translation into French (SF ¹)	Sentence 1 Student Translation into English (SE ¹)
(SF ¹) de nombreuses (4) plusieurs (5) un grand nombre (1) la plupart (1) d' (1)	(SE ¹) many (5) several (7)

A higher proportion of translation students into English opted for *several* as the translation of *plusieurs* whereas a higher proportion of NTs chose *plusieurs* as the translation of *several*.

Sentence 1 Natural translation into French (NF ²)	Sentence 1 Natural back translation (NE ²)
(TF ²) d'envergure (1) importantes (3) grandes (2) majeurs (2) [] (1) grosses (1)	(TE ²) important (10)
Sentence 1 Student Translation into French (SF ²)	Sentence 1 Student Translation into English (SE ²)
(TF ²) [] (3) de grandes importance (1) grandes (2) d'envergure (2) importantes (3) de grande envergure (1)	(TE ²) important (6) significant (1) major (2) [] (1) extensive (2)

Fewer student translators opted for the cognate *important*.

Sentence 1 Natural translation into French (NF ³)	Sentence 1 Natural back translation (NE ³)
(TF ³) [] (9) qu'il y a (1)	(TE ³) [] (3) exist (1) the existence of (6)
Sentence 1 Student Translation into French (SF ³)	Sentence 1 Student Translation into English (SE ³)
(TF ³) [] (7) qu'il existe (3) existant (1) que l'obésité était (1)	(TE ³) [] (7) the existence of (5)

A higher proportion of STs into French added a syntax marker (*qu'il existe*), as would be expected in the target language. A higher proportion of STs into English opted not to translate *qu'il existe*, an element which is not required by the target language.

Sentence 1 Natural translation into French (NF ⁴)	Sentence 1 Natural back translation (NE ⁴)
(TF⁴) évident(e) (2) [] (1) direct (1) étroite (1) marquéé (1) surprenante (2) frappante (1) énorme (1)	(TE⁴) astounding (1) striking (3) surprising (1) [] (3) stunning (1) overwhelming (1)

Sentence 1 Student Translation into French (SF ⁴)	Sentence 1 Student Translation into English (SE ⁴)
(TF⁴) important (1) évident (2) frappante (2) fortement (1) [] (2) remarquable (1) étonnant(e) (2) étroit (1)	(TE⁴) shocking (2) significant (1) striking (6) startling (1) alarming (1) surprising (1)

Sentence 1 Natural translation into French (NF ⁵)	Sentence 1 Natural back translation (NE ⁵)
(TF⁵) relation (8) lien (1) cohésion (1)	(TE⁵) relationship (4) relation (3) link (1) connection (1) link/relation (1)

Sentence 1 Student Translation into French (SF ⁵)	Sentence 1 Student Translation into English (SE ⁵)
(TF ⁵) lien (7) relation (3) rapport (1) lié (1)	(TE ⁵) relationship (6) link (2) relation (2) connection (1) connection/relation (1)

STs tend to be less influenced by the source text in lexical selection. Fewer of them used a cognate to translate *relationship*.

Sentence 1 Natural translation into French (NF ⁶)	Sentence 1 Natural back translation (NE ⁶)
(TF ⁶) statut (10)	(TE ⁶) class (1) [] (1) status (1) levels (2) level (3) scale(1) economics (1)

Sentence 1 Student Translation into French (SF ⁶)	Sentence 1 Student Translation into English (SE ⁶)
(TF ⁶) statut (10) classe (1) leur place (1)	(TE ⁶) level (5) levels (2) class (2) status (2) environment (1)

Sentence 2 English Source Text (TE)	Sentence 2 Professional Translation/French Source Text (TF)
In the Canadian Fitness Survey ⁷, [] ⁸ females at the lowest income level had the highest prevalence of obesity (17%) compared to (5%) ⁹ of females in the highest income level.	Selon l'Enquête condition physique Canada ⁷, [ce sont] ⁸ les femmes dont le revenu est le plus faible qui présentent le taux le plus élevé d'obésité, soit 17 p. 100 comparativement à 5 p. 100 ⁹ chez les femmes de la tranche de revenu la plus élevée.

Sentence 2 Natural translation into French (NF ⁷)	Sentence 2 Natural back translation (NE ⁷)
(TF⁷) Dans un sondage Canadien de l'exercice (1) Dans l'étude menée par 'Canadian Fitness' (1) Le sondage canadien de la santé (1) Dans le sondage 'Canadian Fitness Survey' (1) Dans un sondage canadien sur la santé (1) Dans le Sondage Canadien sur la Forme Physique (1) Dans le Canadian Fitness Survey (1) Dans un sondage 'Candadian Fitness' (1) Dans le sondage canadien sur la santé (1) Dans le sondage canadien sur la forme physique (1)	(TE⁷) According to the study of Physical Fitness of Canada (1) According to the Canada Physical Condition study (1) The inquiry of the physical state of Canada (1) According to l'Enquête Condition physique Canada (1) According to the Canadian Physical Condition Inquiry (1) According to the Canadian Physical Condition Survey (1) According to the Physical Condition Study Canada (1) According to the Canadian Inquiry into Physical Fitness (1) According to the Candian Physical Condition Enquiry (1) As for 'l'Enquête Condition physique Canada' (1)

Sentence 2 Student Translation into French (SF ⁷)	Sentence 2 Student Translation into English (SE ⁷)
(TF⁷) Dans le sondage sur la forme physique au Canada (Canadian Fitness Survey) (1) Selon le 'Canadian Fitness Survey' (1) La 'Canadian Fitness Survey' a démontré (1) Selon un sondage de santé Canada (1) «Le Canadian Fitness Survey» a relevé que (1) Selon le Canadian Fitness Survey (1) L'étude canadienne sur la fréquentation des salles de fitness a démontré que (1) Selon le Canadian Fitness Survey (1) L'enquête canadienne sur la santé physique a montré que (1) L'enquête sur la forme physique chez les Canadiens et les Canadiennes a montré (1) Selon le Sondage canadien de la santé physique (Canadian Fitness Survey) (1) La recherche canadienne sur la forme physique permet de constater (1)	(TE⁷) According to Physical Health Canada (1) According to? (1) According to the Enquête Condition Physique Canada (1) According to Condition physique Canada (1) According Physical Condition Inquiry Canada (1) According to Canada's Survey on Physical Condition (1) According to Fitness Research Canada (1) According to the Fitness Canada Survey (1) Accdg. To a Condition physique Canada Survey (1) According to the Canadian physical fitness survey (1) According to the Enquête Condition physique Canada (1) According to the Canadian Study on Physical Condition (1)

STs tend to show greater concern for the accuracy of titles. They are more likely to transcribe the original title, with or without a translation.

Sentence 2 Natural translation into French (NF ⁸)	Sentence 2 Natural back translation (NE ⁸)
(TF⁸) [] (10)	(TE⁸) [] (3) it is (6) are those who (1)

Sentence 2 Student Translation into French (SF ⁸)	Sentence 2 Student Translation into English (SE ⁸)
(TF⁸) [] (8) c'est chez (1) qu'il y a (1) on enregistre (1) not complete (1)	(TE⁸) [] (12)

All STs into English opted to leave out the unnecessary phrase *ce sont*, while several STs into French added a phrase as required by the stylistic constraints of the target language.

Sentence 2 Natural translation into French (NF ⁹)	Sentence 2 Natural back translation (NE ⁹)
(NF⁹) (17%) comparé a celui de 5% (1) (17%) tandis que les femmes avec un revenu plus élevé avaient un taux d'obésité moins élevé (5%) (1) (17%) à comparer aux femmes, qui elles, reçoivent le plus haut revenu possible (5%) (1) (17%) comparé à 5% (1) dix-sept pour cent plus d'obésité que (1) soit dix-sept pourcent, comparément à cinq pourcent (1) (17%) que les femmes (5%) (1) avec 17% et les femmes avec un bon status monétaire n'ont que 5% (1) (17%), comparativement à 5% (1) (17%) comparées aux femmes avec le revenu le plus élevé (1)	(NE⁹) comparatively 17%to 5% (1) 17% compared to 5% (1) 17 per 100; while women of higher earning were at 5 per 100. (1) being 17 out of 100 compared to 5 out of 100 (1) considering 17 p. 100 compared to 5 p. 100 (3) at 17 percent as compared to 5 percent (1) 17 out of each 100, compared to 5 out of each 100 (1) where it is 17 p. 100 compared to 5 p. 100 (1)

Sentence 2 Student Translation into French (SF ⁹)	Sentence 2 Student Translation into English (SE ⁹)
(17%) comparativement à 5% (3) 17% des femmes souffrant d'obésité ont une source de revenu bas contre 5% ayant une source de revenu plus élevé (1) comparativement aux femmes ayant le niveau de revenu le plus élevé, les femmes ayant le niveau de revenu le plus bas ont également le taux de prévalence de l'obésité le plus élevé (1) un taux d'obésité beaucoup plus élevé chez les femmes au revenu le plus faible (17%) que chez celles appartenant à la couche salariale la plus élevés (5%) (1) (17%) comparé à 5% (1) les femmes qui perçoivent un petit revenu sont plus sujettes au problème de l'obésité (17%) que les femmes qui perçoivent un gros revenu (1) incomplete (1) (17%), contre 5% (1) (17%) de femmes obèses qui ont un revenu salarial plus bas que chez celles dont le revenu salarial est plus élevé (5%) (1) (17%) comparé aux femmes situées au haut de l'échelle salariale (5%) (1)	17% of women with low incomes are obese, compared to a 5% obesity rate (1) 17% of lower income women are obese compared to 5% of higher income women (1) 17 percent compared to 5 percent (1) 17% compared to 5% (3) 17 per 100 compared to 5 per 100 (2) 17% of obese women compared to women who earn a higher income, who only represent 5% respectively (1) 17 percent compared with 5 percent (1) 17% comparatively to 5% (1) 17 percent as compared to 5 percent (1)

Whereas NTs tend to retain the source text notation, STs into English made more frequent use of the English notation for percentages.

Sentence 3 English Source Text (TE)	Sentence 3 Professional Translation/French Source Text (TF)
More recently, a study ¹⁰ by Millar showed no clear-cut pattern by income ¹¹ but a direct relationship between weight and educational level.	Dans une étude plus récente ¹⁰, Millar n'a décelé aucune tendance définie selon le revenu ¹¹ mais a observé une relation directe entre le poids et le niveau de scolarité.

Sentence 3 Natural translation into French (NF¹⁰)	Sentence 3 Natural back translation (NE¹⁰)
(NF ¹⁰) Plus récemment, une étude (8) récemment, une étude (2)	(NE ¹⁰) in a more recent study (5) in a recent study (4) during a more recent study (1)

Sentence 3 Student Translation into French (SF¹⁰)	Sentence 3 Student Translation into English (SE¹⁰)
Plus récemment, une étude (4) Récemment, une étude (1) L'étude plus récente (1) Une étude plus récente (2) Une étude récente (1) Récemment une enquête (1) Dernièrement, une étude (1) [incomplete] (1)	in a more recent study (12)

Sentence 3 Natural translation into French (NF¹¹)	Sentence 3 Natural back translation (NE¹¹)
a montré que la relation n'est pas avec le salaire (1) démontre aucun patron défini quand au revenu (1) démontre aucun lien par revenu (1) ne montre aucun patron clairement défini par le degré social (1) démontrait aucun patron exact de l'income (1) ne démontre aucune tendance précise selon les revenus (1) a montré aucune coupure par revenu (1) [] (1) n'a pas démontrées de liens évidents reliés au revenu (1) n'a montré aucun lien avec le revenu (1)	noticed no definite relationship concerning salary (1) found no correlation with revenue (1) [] (1) did not see a definite tendency in relating obesity to the size of the revenue (1) did not attribute any tendencies towards obesity due to class (1) decided that weight wasn't linked to revenue (1) found no definite relationship between income level and obesity (1) didn't find one solid piece of evidence that said it's the income (1) did not find a definite tendency according to revenue (1) didn't use income to determine the connection (1)

Sentence 3 Student Translation into French (SF ¹¹)	Sentence 3 Student Translation into English (SE ¹¹)
a démontré que l'obésité n'a pas de relation directe avec le revenu (1) n'a pas montré qu'il existait un pattern bien défini basé sur les revenus touchés de ces femmes (1) n'a pas démontre de corrélation claire avec le revenu (1) n'a démontré aucune corrélation indéniable entre l'obésité et le salaire (1) n'a pu conclure à un corrélation avec le revenu (1) n'a pas montré de tendance précise selon le revenu (1) non plus basé sur le revenus des personnes (1) ne démontrait aucune tendance reliée au revenu (1) montre qu'il n'y a pas de découpage selon la source de revenu (1) incomplete (1) n'a établi aucun rapport salarial évident (1) ne voit pas de lien direct avec le niveau salariale (1)	noted no relationship between income and weight (1) found no correlation between income and obesity (1) found no definite correlation with income (1) did not discover any solid tendencies (1) did not notice any defined trend according to income (1) did not find a direct correlation between weight and income (1) did not reveal/establish a definite relation between obesity and income (1) found no definite relation to income (1) did not detect a link with income/revenue (1) did not discover any definite tendency according to income (1) did not detect a tendency according to income (1) did not detect any definite tendencies in relation to revenu (1)

The STs tend to be more controlled and idiomatic. More attention is paid to parallel structures.

Sentence 4 English Source Text (TE)	Sentence 4 Professional Translation/French Source Text (TF)
For both males and females, those with some post-secondary education are less likely to be overweight or obese ¹² than those with lower levels of education.	Comparativement aux personnes moins instruites, les hommes et les femmes qui ont fait des études postsecondaires sont moins nombreux a souffrir d'embonpoint ou d'obésité ¹² .

Sentence 4 Natural translation into French (NF¹²)	Sentence 4 Natural back translation (NE¹²)
ont moins de chance d'être [] obèse (1) sont moins disposés à avoir un excès de poids ou être obèse (1) souffrent moins d'embonpoint ou d'obésité (1) ont moins de chance de devenir [] obèse (1) étaient moins portés à être [] obèses (1) ont moins de chance de faire de l'embonpoint (1) ont moins tendance à l'obésité ou à l'embonpoint (1) ont plus tendances à souffrir d'embonpoint [] (1) sont plus apte a être [] obèse (1) sont moins apte à être [] obésse (1)	suffered less from the affliction of obesity (1) were less likely to suffer from high blood pressure or obesity (1) suffer less from obesity (2) suffer from weight problems and obesity (1) were less likely to be burdened by obesity (1) were not as many to suffer from obesity (1) less likely to suffer from obesity (1) are less likely to suffer from obesity (1) are less likely to suffer from heart or obesity (1)

Sentence 4 Student Translation into French (SF¹²)	Sentence 4 Student Translation into English (SE¹²)
risquent moins de faire de l'embonpoint ou d'être obèses (1) ont moins tendance a souffrir d'obésité (1) sont moins suceptibles d'être obèses (1) ont moins tendance à faire de l'embonpoint (1) incomplete (2) ont moins tendance à être obèses ou à faire de l'embonpoint (1) sont moins exposé au problème de poids et d'obésité (1) sont moins portées à être grosses ou obèses (1) son moins portés à l'obésité (1) risquent moins de prendre trop de poids ou de devinir obèses (1) risquent moins d'être obèse ou de prendre trop de poids (1)	were less likely to suffer from (embonpoint) or obesity (1) are less likely to be obese (1) are less likely to ___?___ or to be obese (1) are less prone becoming obese (1) are less likely to suffer from weight gain or from obesity (1) were less apt to suffer from ___?___ or obesity (1) were less likely to suffer from weight problems? or obesity (1) are less likely to be overweight or obese (1) are less likely to be obese or ___?___ (1) less men and women with postsecondary education suffer from overweight or obesity (1) less likely to suffer weight gain or obesity (1) are less likely to suffer from obesity or [] (1)

An effect of training appears to be the exercise of caution in cases of uncertainty. Several students left blanks rather than attempt to translate what appears to be an unfamiliar term (*embonpoint*).

Sentence 5 English Source Text (TE)	Sentence 5 Professional Translation/French Source Text (TF)
Lifestyles of those with less education and or the poor are influenced by ¹³ unequal access to healthy food and physical fitness facilities and the persuasive advertising ¹⁴ of calorie-dense foods that are low in nutrients ¹⁵ .	L'accès inégal aux aliments sains et aux centres de conditionnement physique et la publicité convaincante ¹⁴ sur les aliments peu nutritifs et riches en calories ¹⁵ influent sur ¹³ le mode de vie des personnes peu instruites ou a faible revenu.

Sentence 5 Natural translation into French (NF ¹³)	Sentence 5 Natural back translation (NE ¹³)
sont/ est/ [] influencé(s) par (10)	influence (6) have influenced (2) has an influence on (1) is very impressionable (1)

Sentence 5 Student Translation into French (SF ¹³)	Sentence 5 Student Translation into English (SE ¹³)
sont/est/[] influencé(s) par (3) influencent(2) [incomplete] (7)	influence (8) plays a role on (1) [incomplete] (3)

One ST made the shift from passive voice to active in French (*influencent*).

The problem with the time constraint begins to show up at this point in the text. Seven of the twelve STs into French and three of the STs into English were unable to complete this sentence.

Sentence 5 Natural translation into French (NF ¹⁴)	Sentence 5 Natural back translation (NE ¹⁴)
les avertissements persuasifs (1) la publicité persuadente (1) la publicité persuasive (1) [] (3) la publicité persuasive (2) les promotions (1) à la persuasion des annonces (1)	[] advertisements (2) [] advertising's (1) publicity advertising (1) conflicting publicity (1) convincing publicity (1) the lack of public's knowledge (1) [] publicity (1) the flood of advertising (1) the convincing advertisements (1)
Sentence 5 Student Translation into French (SF ¹⁴)	Sentence 5 Student Translation into English (SE ¹⁴)
la publicité persuasive (2) annonces publicitaires [] (1) [incomplete] (9)	convincing advertisements (1) convincing ads (2) enticing advertisements (1) appealing advertisements (1) convincing publicity (1) alluring advertisement (1) convincing advertising (3) [incomplete] (2)

An effect of training may be a heightened sensitivity to problems related to the use of cognates. This item shows one more example. Only one ST used the cognate *publicity*, while four of the NTs used it.

Sentence 5 Natural translation into French (NF ¹⁵)	Sentence 5 Natural back translation (NE ¹⁵)
aliments contenant beaucoup de calories et faibles en nutriments (1) nourriture basse en calorie ainsi que les nutriments (1) des aliments contenant beaucoup de calories et moins de nutriments (1) [De plus], les aliments à haute teneur en calories ne contiennent pas tous les nutriments nécessaires à une bonne santé (1) du manger faible en nutriments et haut en calories (1) d'aliments nutritifs faible en calories (1) [plus attirés vers] la nourriture à haute teneur en calories et à basse valeur nutritive (1) des calories alimentaires qui sont moins nutritifs (1) les aliments réduits en calorie et aussi faible en nutriments (1) l'apport de nourriture calorique qui est faible en nutriments (1)	foods that aren't nutritious and are rich in calories (1) low nutrient, high calorie food (1) foods which have little nutritional value but are high in calories (1) food that has little nutritional value and is rich in calories (1) non-nutritious foods rich in calories (1) about food less nutritious and rich in calories (1) foods that are poor in nutritional value and which are rich in calories (1) malnutritious foods which are rich in calories (1) junk food (1) food of low nutritional content and high in calories (1)
Sentence 5 Student Translation into French (SF ¹⁵)	Sentence 5 Student Translation into English (SE ¹⁵)
aliments riches en calories et peu nutritifs (1) d'aliments à haute teneur calorique mais peu nutritifs (1) [incomplete] (10)	little-nutrition, calorie-rich foods (1) unhealthy, high caloric foods (2) fast food, high in calories (1) foods that are more nutritious and rich in calories (1) food rich in calories or with low nutritional value (1) unnutritious foods that are rich/high in calories (1) high-calorie foods of little nutritional value (1) high calorie, low nutrition food (1) [incomplete] (3)

Sentence 6 English Source Text (TE)	Sentence 6 Professional Translation/French Source Text (TF)
Individuals who work and live in environments that are most hostile, monotonous or outside their sphere of personal control ¹⁶ are more likely to seek comfort in compensatory responses ¹⁷ such as overeating and or drinking alcohol.	Les gens qui travaillent et vivent dans un environnement hostile, monotone ou sur lequel ils n'ont aucune prise ¹⁶ sont plus susceptibles d'avoir besoin de trouver un réconfort dans des activités compensatrices ¹⁷ comme la consommation abusive de nourriture ou d'alcool.

Sentence 6 Natural translation into French (NF ¹⁶)	Sentence 6 Natural back translation (NE ¹⁶)
un environnement ardue monotone et en dehors de leurs contrôle personnels (1) des environnements moins hostiles, monotones ou en dehors de leurs espaces de control personnel (1) des environnement qui sont plus violent, monotone ou hors de leur sphère de control personnel (1) des environnements qui sont plus hostiles, monotones ou à l'extérieur de leur contrôle personnel (1) un environnement qui est plus hostile, monotone ou à l'extérieur de leur champ de contrôle personnel (1) des milieux qui sont surtout hostiles, monotones ou en dehors de leur champ d'influence (1) des environnements qui sont hostiles, monotones ou qui dépassent la sphère de leur contrôle (1) des environnements hostiles, monotones ou hors de leur contrôle personnel (1) des environnements étant plus hostile, monotone ou à l'extérieur de leur cercle de contrôle (1) des environnements plus hostiles, monotones ou en dehors de leur contrôle (1)	hostile, monotonous environments, or who have no control over these areas (1) hostile environment, monotone, or where there is no prize (1) a hostile, boring environment or in places where they have no authority (1) a hostile, monotone environment where they have no power (1) a hostile environment [] or those who have no support (1) a hostile environment, a monotonous one or one with no activity (1) a hostile or monotonous environment [] (1) an hostile environment, bored or who do not have anything to do (1) hostile, monotone environments where they have little control (1) hostile or monotone environments (1)

Sentence 6 Student Translation into French (SF¹⁶)	Sentence 6 Student Translation into English (SE¹⁶)
dans des milieux hostiles, monotones ou contraires à leur choix personnel (1) [incomplete] (11)	a hostile environment, or people who are bored (1) hostile, monotonous environments or in environments over which they have no control (1) a hostile or monotonous environment or in which they have no control (1) violent/dangerous, dull/dreary environments over which they have no control (1) a hostile or monotonous environment or in one over which they have no control (1) [incomplete] (7)

Sentence 6 Natural translation into French (NF¹⁷)	Sentence 6 Natural back translation (NE¹⁷)
a rechercher confort dans les réponses (1) à chercher du réconfort dans des réponses compensatoires (1) à chercher le confort [] (1) à chercher le confort dans des réponses qui compensent (1) à rechercher du confort dans des réponses compensatoires (1) à chercher le réconfort par des façons détournées (1) de chercher du réconfort dans des réponses compensatoires (1) à vouloir le confort dans les réponses qui compensent (1) de trouver du réconfort, en compensation, dans le fait de (1) à trouver un réconfort dans [] (1)	look for comfort in compensatory activities (1) find compensary activities (1) to searching for comfort in [] (1) find comfort in addictive activities (1) finding comfort in activities that make them feel better (1) find comfort in compensating activities (1) find comfort in [] activities (1) finding comfort in compensating activities (1) find comfort in [] activities (1) turn to food or alcohol for a sense of comfort (1)

Sentence 6 Student Translation into French (SF ¹⁷)	Sentence 6 Student Translation into English (SE ¹⁷)
recherchent une compensation (1) [incomplete] (11)	find comfort in compensating activities (1) need the comfort of compensating activities (1) need to seek comfort in compensatory activities (1) seek comfort in compensatory activities (1) [incomplete] (8)

Chapter 5: Analysis and Discussion

The tendency to overuse cognates is a lexical indicator of the Phase I (see section 6.8), NT assumption schema. Word pairs such as *relation (Eng)* and *relation (Fr)* or *major* and *majeur* are treated as equivalents because of the close sound or visual match. The use of lexical and structural calques as a translation strategy constitutes a path of minimum effort. NTs tend to overuse cognates more frequently than STs.

On the other hand, for both NTs and student translators, when direct word-for-word or phrase-by-phrase translation fails to yield a structure that conforms to the syntactic or semantic constraints of the target language, the strategy of **paraphrase** comes into play, yielding a wide range of variation in translation solutions.

5.1 Reproducing the original untranslated in the target text

The effect of training may account for the higher proportion of STs who simply reproduced the title 'Canadian Fitness Survey' as it appeared in the source text. It is professional practice not to translate titles for which there is no official or accepted translation. In some instances among STs a translation is provided in parenthesis immediately following the original title; this is a device commonly used by professionals.

5.2 Choosing another lexeme of the same semantic category

Often NTs choose a lexical item belonging to the same semantic category as the source language item, but with a different nuance or connotation. For example, in translating *frappant*, most NTs chose an 'intensifier' to signal emphasis or amplification; however, some of the choices such as *astounding*, *stunning*, *overwhelming* were too far from the intended degree of emphasis.

5.3 Explicitation

Explicitation, which involves adding information to clarify the language or context, may be based on real-world knowledge, textual knowledge, or may even be unjustified. This strategy occurs to a greater degree in the data for translation students. For example, to translate the term *weight*, several students added clarifying information in the translation such as *le poids des personnes*.

5.4 Omission

Omission refers to the common strategy of leaving out elements of the source text. Elements may be omitted for two reasons: involuntarily because the right word or phrase could not be found, or intentionally because the element was deemed unnecessary or inappropriate in the target language. STs tend to make wider use of this strategy.

5.5 Overtranslation

Overtranslation refers to the translating of elements from the source text that are superfluous in the target language. An example is the translation of *l'existence de* as *the existence of*. This strategy occurred with greater frequency among NTs.

5.6 Best-guess strategy

A best-guess strategy is used to compensate for poor source text comprehension. The context is interpreted to generate a plausible alternative.¹⁰ The most notable examples from the data involved the translation into English of the French notation for percentages.

¹⁰ This is also a strategy used by simultaneous interpreters, who call it 'winging it'.

5.7 Difference in speed of processing

The most salient point of contrast between NTs and STs is that while all the NTs were able to complete the translation task within the allotted time, only four of the twelve STs into English and one of the twelve STs into French completed the task.

Two types of factors might account for the marked difference in speed of translating. The first set of factors is environmental.

- STs may have been thrown off by the radical departure from their usual time limits and testing procedures.
- The text type and subject matter may have been more familiar and relevant to the NTs.
- Since for the NTs, as test candidates, the task was more than a classroom exercise, they may have had stronger motivation to complete the task.

The second set of factors may relate to something akin to the U-shaped behaviour, a concept discussed below, observed in adult second-language learners.

5.7.1 An analogue of U-shaped behaviour in formal translation training: automatic versus controlled processing

Kellerman describes the phenomenon as follows:

The term *U-shaped behaviour* is used ... to describe systematic linguistic behaviour over time as realized in three distinct stages. The first stage is characterized by performance on the part of learners... in some limited linguistic domain, which... accords with the target norm. The second stage is characterized by performance which is now deviant in terms of the target, and hence differs from performance in stage 1. The third stage marks a return to performance that matches the norm. U-shaped behaviour thus refers to this

tripartite sequence, where in stage 2, acquirers seem to ... 'go beyond success' (Kellerman, p. 345).

My third case concerns Dutch learners of German at university level, and their treatment of German idiomatic expressions. Jordens (1977) showed that second year learners tended to reject Dutch-like idiomatic expressions in German (whether correct or not) while first-year learners were relatively accepting. Third-year learners showed signs of being able to distinguish those expressions that were possible in German from those that were specific to Dutch. Jorden's stage 2 would seem to indicate that the learner becomes sensitive to the mismatch between the literal and figurative meanings of the idiomatic expressions; the more semantically opaque the expression, the more likely its translation equivalent to be rejected in the L2. Presumably at stage 1 learners do not concern themselves with this problem, working on the reasonable assumption that as German and Dutch are particularly close, they probably share idioms as well ... learners at this stage do not appear to be sensitive to the fact that such abstract semantic notions as hypotheticalness, causality, and metaphor are not given unique formal representations in their own language. For stage 1 learners, since these notions are handled in a particular way in Dutch, they will be thus handled in the same way in the L2. If learners at stage 2 lose confidence, so to speak, in this early assumption, this may lead to a concern that these notions should be explicitly expressed in the L2. Where Dutch, the L1, does not provide the basis for doing this, compensatory means must be found in the L2, and hence the change in the interim systems and the corresponding dip in performance described above. This is what makes the study of typologically related languages and how they are learned so worthwhile--we need to know why learners become dissatisfied with the possibilities of formal expression their own language offers them (*ibid*, pp. 351-352).

It would appear that cognitive processes involved in translation can be mainly automatic and unanalyzed or they can be mainly controlled and consciously analyzed. Controlled, analyzed processing seems to serve as a transition phase to a more complex level of processing. During

this transition phase, an enhanced awareness of task complexity develops along with an awareness of more options from which to choose.

Most acquired cognitive activities become automatic with extensive practice over time, and perhaps for the sake of cognitive economy; however, the learning phase is not. The 'attending function', a mental mechanism that monitors, interprets and filters present experience, would appear to be activated and foregrounded during the learning phase (P.G. Patel, personal communication, 1998).

It is possible that while acquiring new strategies through controlled, analyzed processing during training, students require extra time to attend to and integrate this new knowledge. Through training and experience, students broaden the range of options for selection, but in the transition phase experimentation creates more opportunity for error.

5.8 Developmental phases in the acquisition of translation competence

To take account of the transition between NT and mature state translation, three distinct phases can be postulated:

Phase I: NTs tend to rely on automatic, unanalyzed processing. They mainly attempt to reproduce the linguistic patterns of the source text at the simple phrase level through largely unanalyzed, automatic processing. The underlying assumption is that translation involves primarily a phrase-by-phrase match between source and target text.

Phase II: The student or apprentice phase is characterized by a re-examination of previous assumptions, perhaps causing anxiety and insecurity. The 'monitor' is activated as students are encouraged to consider a wider range of choices from options available in target language and to develop a sensitivity to a wide range of text, pragmatic and discourse features. The result is a growing awareness of the complexity of the task and of the need to attend to the various levels of

processing. This shift in perception brings about the realization that the cross-language mapping function involved in translation is not a direct mapping of a linguistic pattern from one language to another, but a mapping of much more complex patterns into different but analogous patterns in the target language.

5.9 Possible effects of training in Phase II

The main effect of training seems to be to oblige translation students to revise their system of assumptions and expectations and to attend to the various features of the translating process with a more controlled, strategy-based approach. As a result, it is possible that students experience a loss of confidence and acquire a self-conscious inhibition when they begin to realize that the phrase-by phrase approach to translation no longer yields acceptable results.

Through training students become sensitive to the various levels of processing beyond the lexico-morphological and syntax levels—overall text cohesion and coherence, audience response, author's intention and purpose, discourse features, intertextuality (standard common features of texts of the same genre or type), and cultural and ethical considerations.

At this stage students become aware of competing interests among strategies such as following the linguistic order and pattern of the source text, compensating for loss of emphasis, preserving the exactness of the message along with the integrity of the text, taking into account the effect of punctuation, maintaining a natural rhythm in the target text, avoiding cultural faux-pas and circumventing ethical dilemmas.

Training also seems to lead students to attend to and monitor other interlocking parameters, including the frequency of use of a structural or lexical item in the target language and parameters involving economy, fluency, correct nuance and connotation, appropriate collocation, context specificity, and technical precision. Moreover, it is likely that training promotes increased language proficiency as a result of language and writing skills courses. Lastly, formal

training may contribute to the development of a professional image and identity. For example, teachers transmit 'institutional norms' on how to achieve a flawless professional presentation, including conventions governing such features as correct and accurate rendering of titles, and appropriate notation, typographical mechanics and punctuation.

All of these parameters involve attending selectively to various features, and then reintegrating the results of the various analyses into the final form of the target text. Given the cognitive complexity of the task, it should not be surprising that translation students require much more time to complete a translation task than do Nts.

5.10 Phase III: Features of mature-state or professional translating

Phase III: The mature state of translating ability involves a rebalancing and reintegration of a new assumption schema, which may become through experience once again a mainly automatic cognitive skill set. The only example of a mature-state translation in this study is the professionally translated text which serves as the French source text. Although this study provides no data on the speed of processing for this third stage of translation ability, there is evidence of attending to processing levels beyond the phrase level in the translation. The mature state of translation ability appears to involve the ability to carry out an intricate and delicate balancing act involving interlocking processes. A detailed analysis of the features of a Phase III translation follows.

The following is an analysis of the features of the French translation of the English source text. This professionally translated version also served as the French source text for the admission test data. The numbers in parentheses indicate examples of features which are discussed following the presentation of the source and target text. The same number used more than once indicates other instances of the same translation feature. These text features show that the mature state translator attends to various processing levels either simultaneously or sequentially during the translating task. In the case of a sequential response, the possibility or necessity of one decision

may entail one specific course or may open up opportunities for other possible options. The NT and student data also showed a few instances of attention to these types of features.

5.10.1 Features of a professional translation

English source text:

Social Forces that Promote Weight Problems(2)

When we think of community most of us think first of our geographical community where we live and what we call home. And it is in our geographical community where impersonal social forces and intimate personal forces have their major impact upon us.(1) The six-fold larger prevalence of obesity is influenced by differences in social class, the effects of which are exerted upon us in large part in our geographical community.

Several major Canadian studies have shown a striking relationship between weight and socioeconomic status. In the Canadian Fitness Survey, females at the lowest income level had the highest prevalence of obesity (17%) compared to 5% (2)of females in the highest income level. More recently, a study by Millar showed no clear-cut pattern by income but a direct relationship between weight and educational level. For both males and females, those with some post-secondary education **are less likely to be overweight or obese** than those with lower levels of education.(3)

Lifestyles of those with less education and/or the poor are influenced by unequal access to healthy food and physical fitness facilities and the persuasive advertising of calorie-dense foods that are low in nutrients.(4) Individuals who work and live in environments that are most hostile, monotonous or outside their sphere of personal control(5) are more likely to seek comfort in compensatory responses such as overeating and/or drinking alcohol.(6)

Social-economic status can also play a significant role in an individual's ability to maintain an appropriate energy balance and thereby a healthy weight range.(7)

Professional Translation into French:

Facteurs sociaux qui contribuent aux problèmes de poids(2)

Pour la plupart des gens, le terme collectivité désigne une entité géographique, le quartier où ils habitent, leur milieu de vie. Et c'est dans cet espace géographique que les facteurs sociaux impersonnels et les influences personnelles plus intimes agissent le plus sur les individus.(1) La prévalence six fois plus élevée de l'obésité est due à des différences de classe sociale, dont les effets se font sentir en grande partie dans les collectivités géographiques.

Plusieurs importantes études canadiennes ont révélé l'existence d'une(8) relation frappante entre le poids et le niveau socio-économique. Selon l'Enquête Condition physique Canada, ce sont (8)les femmes dont le revenu est le plus faible qui présentent le taux le plus élevé d'obésité, soit 17 p. 100 comparativement à 5 p. 100 (2)chez les femmes de tranche de revenu la plus élevée. Dans une étude plus récente, Millar n'a décelé aucune tendance définie selon le revenu mais a observé(8) une relation directe entre le poids et le niveau de scolarité. Comparativement aux personnes moins instruites, les hommes et les femmes qui ont fait des études postsecondaires sont moins nombreux à souffrir d'embonpoint ou d'obésité.(3)

L'accès inégal aux aliments sains et aux centres de conditionnement physique et la publicité convaincante sur les aliments peu nutritifs et riches en calories influent sur le mode de vie des personnes peu instruites ou à faible revenu.(4) Les gens qui travaillent et vivent dans un environnement hostile, monotone ou sur lequel ils n'ont aucune prise(5) sont plus susceptibles d'avoir besoin de trouver un réconfort dans des activités compensatrices comme la consommation abusive de nourriture ou d'alcool.(6)

Le niveau socio-économique peut également influencer de façon importante sur la capacité d'un individu de maintenir un bon équilibre énergétique et, de ce fait, son poids dans l'intervalle généralement acceptable.(7)

Notes on numbered text segments:

- 1 Resonance, pragmatic, discourse and rhetorical considerations may have influenced the shift from the first person plural in English, which creates a personal, informal effect, to the more impersonal, abstract, objective formulation using the third person in the translation.
- 2 Different environments dictate specific conventions governing typographical mechanics, punctuation and notation. The translator conformed to the conventions of the target

language regarding use of upper and lower case letters in titles, and notation of percentages.

- 3 A semantic shift may provide new options in the target language while still conveying essentially the same message. In the segments in bold lettering (pp. 136,137), the source text refers to the likelihood of an *individual* being obese, while the target text refers to the statistical probability of obesity within the *group*.
- 4 This sentence as well as the previous one (3), with their re-arranged constituents and the transposition from a passive to an active verb, show the sentence and text level processing of the mature-state translator, in contrast to the phrase by phrase approach which dominates the approach to translating of NTs and STs.
- 5 Attending to the effect on the reader of the target text, the translator chose a metaphor more idiomatic and appropriate to the target language to replace the source language one. Rejection of the cognate *contrôle* may have been a factor in the decision.
- 6 The target text uses a more concise structure than the source text. The translator also makes use of a well-known collocation in the target language: *consommation d'alcool*. *Consommation* governs both eating and drinking. Nominalization is more frequent in French than in English. Attention to frequency of use may have motivated the translator's shift from the verbal forms *overeating* and *drinking* in the source text to the noun *la consommation* in the target text.
- 7 Here the translator opted to de-emphasize the notion of 'healthy'. According to Jean Delisle, the translator probably focussed his attention on the concepts 'range' and 'weight' rather than 'health'. Perhaps the translator was not familiar with the corresponding French term 'poids santé' and resorted to a paraphrase which lacked the precision of the source text. (Personal communication, 1999)
- 8 Attending to stylistic requirements of the target language (phraseology, collocation, explicitation), the translator added several elements that conform to target language usage.

Chapter 6: Conclusions

6.1 Similarities and differences between NTs and STs

The differences observed in the data between the approach of NTs and that of STs is more a matter of degree than of type. Translation students do tend to exhibit a developed sensitivity to the possible pitfalls of calques and to attend more closely to this and other text features than do NTs. They are also more likely to attend to stylistic constraints. However, although STs tend to attend more systematically to a broader range of features, a number of NTs were also able to find the same good solutions. Both groups had recourse to similar strategies such as transposition, explicitation, omission and paraphrase and changes of collocation.

On the other hand, the language of the source text had a strong influence on both groups albeit in varying degrees. Errors caused by calques, cognates and overtranslation were found in the translations of both groups, and even in the professional translation.

Both groups translate mainly at the word-phrase-sentence tri-level,¹¹ consistently conserving sentence boundaries. However, within the sentence, STs more frequently re-ordered phrases and made syntactic shifts in parts of speech in order to conform to usage in the target language. Such shifts are evidence of attending to text and discourse features.

Both NTs and STs exhibit the same basic skills. Both groups can convey meaning effectively from one language to the other most of the time. However, it appears that where NTs generally

¹¹ An interesting side-issue is whether emerging technologies can promote the renewed interest in translation in second-language teaching. The software program Transparent Language, for example, presents texts of *well-known stories* in a foreign language and displays translations of words, phrases and sentences on demand by the student. The structure of the program thus acknowledges *three levels of translation*, as well as presenting the original as a complete text (Quinlan, 1991).

focus on a problem-solving task embedded in a real-life situation, STs are being trained to put themselves outside the situation and to objectify the translation task *per se*.

In most NT situations, the environment, situational and context cues, often the assistance of other participants, and personal involvement compensate for any lack of linguistic precision. In the present data, outside assistance was not available; however, the NTs were dealing with a 'universe of discourse' that was familiar to them, namely health issues. They were also familiar with taking tests in a school environment. In contrast, STs, through training, are made consciously aware of parameters they must now take into account. These include precise nuances at the lexical level, a range of options at the syntax level, text features, discourse features, socio-cultural factors, client expectations and professional norms.

As a result, STs must re-configure their translation schema, taking into consideration various processing levels with a range of corresponding options. The full complexity of the task becomes apparent when they realize that each separate decision may have an impact on the whole text, requiring a re-evaluation of previous decisions.

This process seems to result in a transition phase characterized by U-shaped behaviour. The translations may be of better 'quality', but at significantly reduced speeds. The acquisition of mature-state translating ability seems to involve the adoption of a new translation schema which develops through extensive training and practice.

It would appear that translation training serves mainly to refine an existing cognitive competence and to instill the standards and conventions of the profession. This bears out what Alexander Ljudskanov wrote three decades ago:

Grâce à une certaine intuition et à une certaine habitude, chaque sujet bilingue traduit d'une manière ou d'une autre. Par conséquent, la science de la TO [traductologie] n'avait pas à s'occuper de la question comment apprendre à l'homme à traduire, mais de la

question comment lui apprendre à agir d'une manière ou d'une autre pour obtenir des résultats correspondant à certains critères acceptés à priori. (Cited in Harris, 1976, p.5)

6.2 Suggestions for further study

The figures provided in this study are not intended to provide significant statistics, but only to be indicative of possible tendencies worthy of further study.

The study looks at data from a large sample in order to discover *general* patterns common to NT. It may also be useful to look for *individual* differences in strategy and approach among NTs and among translation students during the transition phase.

Since numbers appear to involve cognitive processing separate from language, it is possible that the handling of data containing numbers or mathematical concepts may present particular problems for translation. Recall the unexpected problems some test candidates had in understanding the French notation for percentage (p. 100), even though the context seems unambiguous. It may be that the fact that they were processing mathematical data, and not only an unfamiliar notation that may have caused confusion.

By testing experienced professional translators under similar test conditions, more may be learned about the developmental phases of translating ability, including factors such as recovery from U-shaped behaviour, effect of training, and the impact of access to dictionaries and resource materials.

Interpretation students are accustomed to translating at high speed. How would they manage under similar test conditions?

This study has looked at translation of written texts between English and French in Canada. These languages and cultures have many common features. Does the dominant strategy adopted

by NTs differ for translation between languages and cultures that are not so closely related, such as English and Chinese or Korean?

Is the influence of the source text as pervasive in orality-based translating activities as it is in literacy-based activities.¹²

In the phase of 're-structuring' of student task perception and assumption schema, is there a need for students to be made aware of the phases of translating ability? Could explicit knowledge about the developmental phases of translating ability and the levels of processing involved in the task help translation students cope better and recover more quickly from U-shaped behaviour?

If translating ability is viewed as a cognitive competence widespread among bilinguals, there may be an optimal time for nurturing this skill. When and how are bilinguals encouraged, or should they be encouraged, to exercise their translating ability?

¹² Lozes-Lawani's study suggests that it may be.

Appendix A: Marking Key

TRANSLATION KEY (ENGLISH TO FRENCH)

Note: Each numbered segment has a one point value

1. Several (½) studies (½), (not <i>surveys</i>)
2. major (½) Canadian (½), important (½)
3. have shown , demonstrated, revealed have indicated, established (not <i>brought up</i>)
4. a striking relationship , remarkable(½), relation, significant, a distinct relation, a strong correlation (not <i>noticeable</i> , not <i>stunning</i> , not <i>shocking</i> , not <i>interesting</i> , not <i>close</i> , not <i>startling</i>)
5. between weight
6. socioeconomic (½) status (level), standing, social(½) status, (not <i>social economics</i> , not <i>class</i>)
7. According to , In
8. females , women
9. income (½) level (½), earnings (not <i>revenue</i> , not <i>wages</i> , not <i>pay</i>)
10. the lowest , (not <i>lower</i> , not <i>weakest</i>)
11. the highest , the most
12. the rate , incidence, level (not <i>percentage</i>)
13. of obesity
14. compared to , compared with, as opposed to (not <i>comparatively</i>)
15. level , bracket, category (not <i>slice</i>)
16. more recently , in a more recent study (not <i>most</i> , not <i>current</i>)
17. showed , discovered, found, observed (not <i>said</i> , not <i>see</i> , not <i>denounced</i> , not <i>state</i> , not <i>claimed</i> , not <i>declared</i>)
18. no (not <i>any</i>)
19. definite pattern , clear-cut pattern, correlation, tendency, specific link, any particular tendency (not <i>conclusions</i>)
20. by income , according to income, based on income
21. but observed , however, did observe, found, noted
22. a direct relationship , relation
23. education level , level of schooling, education, scholastic achievements (not <i>scholastic knowledge</i> , not <i>academic standing</i> , not <i>scholastic level</i>)
24. both males and females , men and women

25. some post secondary education , (not <i>completed high school</i>)
26. are less likely , less trouble($\frac{1}{2}$), less apt, less inclined, less prone, suffered less from (not <i>less numerous</i> , not <i>are few in number</i>)
27. be overweight , be obese, to suffer from obesity, to have a weight problem($\frac{1}{2}$) (not <i>less obese</i>)
28. unequal access , uneven, availability (not <i>inequal</i> , not <i>inability</i> to)
29. healthy food , nutritious, healthy diet, wholesome, nutritional meals
30. physical fitness (centres) , health centres/clubs, exercise (facilities) gyms, recreation facilities (not <i>conditioning</i> , not <i>education</i>)
31. persuasive advertising , convincing commercials (not <i>publicity</i>)
32. foods , (not <i>aliments</i> , not <i>elements</i>)
33. low in nutrients , lacking nutrients, less nutritious, with little nutrition, junk food (not <i>unhealthy</i> , not <i>empty calorie</i>)
34. rich in calories , calorie-dense, high in calories
35. influenced by , influence
36. lifestyles , way of life, styled life ($\frac{1}{2}$), daily lives ($\frac{1}{2}$)
37. (those with) less education , little education, are less educated
38. individuals , people
39. who work and live
40. in environments
41. hostile and monotonous , boring, mundane
42. or outside
43. their control , over which they have little (no) control (not <i>no hold on life</i>)
44. are more likely , tend to (not <i>susceptible</i>)
45. to seek , to try to find
46. comfort , to find an outlet (not <i>shelter</i>)
47. in compensatory responses , activities, reassuring activities
48. such as
49. overeating , eating excessive amounts of food, over consumption of food, food abuse (not <i>food</i> , not <i>abusive eating</i>)
50. or alcohol

Appendix B: Statistical Analyses

The following correlation tables are based on the various sub-tests (listening comprehension, dictation, cloze, translation and composition) that make up the following language tests:

Language Test (French Second Language, English Mother Tongue) Physiotherapy and Occupational Therapy Admission Test 1997, University of Ottawa, Second language Institute

Test de langue (anglais langue seconde, français langue maternelle) Physiothérapie et Ergothérapie Test d'admission 1997, Université d'Ottawa, Institut des langues secondes
Correlations for French Test Data

Correlations for French Test Data

	LIST	DICT	CLOZE	TRAN	COMP	LIST
LIST	1.0000 (64) P= .	1.0000 (64) P= .000	.6529 (64) P= .000	.6914 (64) P= .000	.4834 (64) P= .000	1.0000 (64) P= .000
DICT	1.0000 (64) P= .000	1.0000 (64) P= .	.6529 (64) P= .000	.6914 (64) P= .000	.4834 (64) P= .000	1.0000 (64) P= .000
CLOZE	.6529 (64) P= .000	.6529 (64) P= .000	1.0000 (64) P= .	.6327 (64) P= .000	.3395 (64) P= .006	.6529 (64) P= .000
TRAN	.6914 (64) P= .000	.6914 (64) P= .000	.6327 (64) P= .000	1.0000 (64) P= .	.4727 (64) P= .000	.6914 (64) P= .000
COMP	.4834 (64) P= .000	.4834 (64) P= .000	.3395 (64) P= .006	.4727 (64) P= .000	1.0000 (64) P= .	.4834 (64) P= .000
LIST	1.0000 (64) P= .000	1.0000 (64) P= .000	.6529 (64) P= .000	.6914 (64) P= .000	.4834 (64) P= .000	1.0000 (64) P= .
TOTAL	.8714 (64) P= .000	.8714 (64) P= .000	.7688 (64) P= .000	.8626 (64) P= .000	.7376 (64) P= .000	.8714 (64) P= .000

Correlations for French Test Data

Number of valid observations (listwise) = 64.0

Variable	Mean	Std Dev	Minimum	Maximum	Valid N	Label
LIST1	6.49	1.40	.5	8.0	64	
LIST2	5.93	1.09	2.5	8.0	64	
LIST3	11.22	2.20	5.0	16.0	64	
DICT	23.64	3.58	8.0	30.5	64	
CLOZE	24.93	5.04	10.5	34.8	64	
TRAN	25.00	7.12	3.0	38.0	64	
COMP	34.88	7.57	3.5	46.0	64	
LIST	23.64	3.58	8.00	30.50	64	
TOTAL	132.09	21.84	33.00	171.50	64	

Correlations for English Test Data

	LIST	DICT	CLOZE	TRAN	COMP	LIST
LIST	1.0000 (210) P= .	.9891 (210) P= .000	.8275 (209) P= .000	.8515 (210) P= .000	.2116 (210) P= .002	1.0000 (210) P= .000
DICT	.9891 (210) P= .000	1.0000 (210) P= .	.8221 (209) P= .000	.8401 (210) P= .000	.1945 (210) P= .005	.9891 (210) P= .000
CLOZE	.8275 (209) P= .000	.8221 (209) P= .000	1.0000 (209) P= .	.8699 (209) P= .000	.1703 (209) P= .014	.8275 (209) P= .000
TRAN	.8515 (210) P= .000	.8401 (210) P= .000	.8699 (209) P= .000	1.0000 (210) P= .	.1513 (210) P= .028	.8515 (210) P= .000
COMP	.2116 (210) P= .002	.1945 (210) P= .005	.1703 (209) P= .014	.1513 (210) P= .028	1.0000 (210) P= .	.2116 (210) P= .002
LIST	1.0000 (210) P= .000	.9891 (210) P= .000	.8275 (209) P= .000	.8515 (210) P= .000	.2116 (210) P= .002	1.0000 (210) P= .
TOTAL	.9285 (210) P= .000	.9182 (210) P= .000	.8965 (209) P= .000	.9104 (210) P= .000	.4418 (210) P= .000	.9285 (210) P= .000

Correlations for English Test Data**Number of valid observations (listwise) = 208.0**

Variable	Mean	Std Dev	Minimum	Maximum	Valid N	Label
LIST1	5.61	1.70	1.0	8.0	209	
LIST2	6.27	1.50	1.0	8.0	210	
LIST3	11.61	2.89	2.0	16.0	210	
DICT	23.44	5.40	7.0	31.0	210	
CLOZE	26.54	6.23	8.3	35.3	209	
TRAN	30.01	8.28	4.5	41.0	210	
COMP	34.51	7.12	6.5	47.5	210	
LIST	23.46	5.39	7.00	31.00	210	
TOTAL	137.82	26.40	58.20	176.50	210	

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