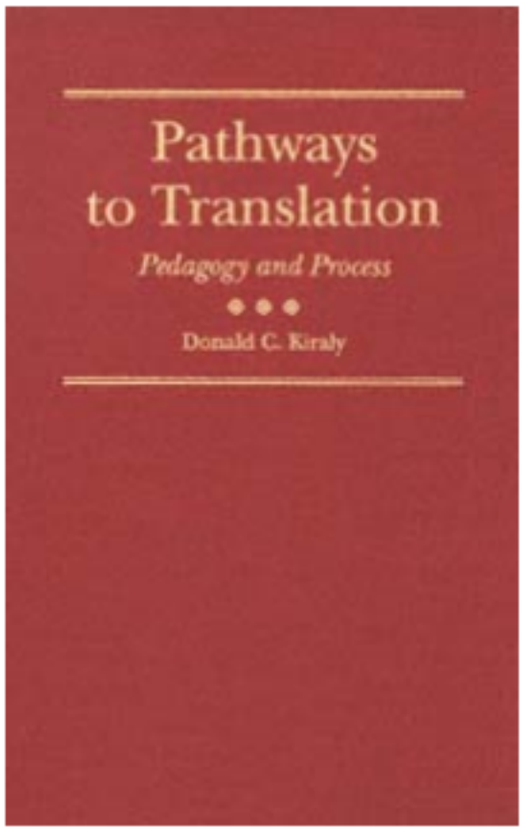

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Pathways to Translation

TRANSLATION STUDIES
Albrecht Neubert, Gregory M. Shreve, and Klaus Gommlich, Editors
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1 *Translation as Text*
Albrecht Neubert and Gregory M. Shreve

2 *Translating Slavery: Gender and Race in French Women's Writing, 1783-1823*
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3 *Pathways to Translation: Pedagogy and Process*
Donald C. Kiraly

Translation Studies is the successor of the German language series *Übersetzungswissenschaftliche Beiträge*, published since 1978 in Leipzig, Germany

Pathways to Translation

Pedagogy and Process

Donald C. Kiraly

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Foreword
Prescription and Description in Translation Teaching

Gregory M. Shreve

Translation as Text, the first volume of the Translation Studies series, described seven different models of translation: the critical, practical, linguistic, text-linguistic, sociocultural, computational, and psycholinguistic. The models are seven different disciplinary perspectives on translation. Volume 1 described the text-linguistic model and expanded its scope, arguing that a translation has essential textual characteristics that a translator must understand and then account for and manipulate in the act of translation. Volume 2, *Translating Slavery: Gender and Race in French Women's Writing, 1783-1823*, derives from the critical model of translation. It explores new ways to reflect on the ideology and values of translation. *Translating Slavery* argues that translation is a critical tool for revealing and constituting cultural values and idea systems such as those of race and gender. The present volume, *Pathways to Translation: Pedagogy and Process*, integrates the practical model and the psycholinguistic model. In the first volume we claimed that the practical model has the goal of understanding "the target text through a study of the processes of translation (translation behaviors, translation strategies) that lead to an acceptable translation . . . the major practical objective is determining how to transfer the contents of the source into the target" (Neubert and Shreve 1992, 18). The practical model, as a description of translation practice, emphasizes how translation is done. It is therefore the model embraced by translation professionals, translation teachers, and translation students. Donald Kiraly argues that the practical model cannot be the sole basis for a translation pedagogy; much of what we need to know to teach effective translation practice is hidden inside the mind of the translator. In fact, translation teachers began the line of inquiry We refer to as the psycholinguistic model when "they started to search for ways to adapt their teaching to reflect the cognitive demands translation made on their students" (Neubert and Shreve 1992, 30). *Pathways to Translation:*

Pedagogy and Process merges the psycholinguistic model of translation with the practical model to develop the foundations for a new approach to translation teaching. Donald Kiraly, both translation teacher and scholar, links translation theory to translation teaching and, even more important, links translation teaching to translation practice.

One of the recurring issues in translation pedagogy, is the relationship of theory to practice in the practical classroom. Here the word *practical* has a triple meaning. First, what is taught in the translation classroom has to be practical. We have to teach our students techniques that work, that will have a positive impact on their professional performance. Next, translation teaching has to emphasize translation. Students have to practice translation as a necessary preparation for a demanding career. Finally, translation teaching has to be based on translation practice, on what professional translators do when they accept their commissions and perform their tasks for clients.

All this is easier said than done. How do we, as translation teachers, know whether what we teach in our classrooms is practical? Have we measured the effects of our teaching methods on a translator's performance? Do we know how, or even if, our practice classes improve the quality of translations our students produce? Do we have description of professional translation practice to use a model in defining the objectives of so-called professional translator training? These are some of the piercing questions Kiraly asks in this volume. A translation pedagogy that works, that produces measurable improvements in quality, and that creates successful professionals cannot emerge full-blown from the brows of translation scholars. Translation pedagogy has to be based on theories of translation that emerge from translation practice itself.

A pedagogy of translation has to derive from an understanding of translation reality. If we define translation reality, at least for the sake of the present argument, as what translators do and what translators produceas both practice and productthen translation theory is the description and explanation of practice and product. A translation pedagogy without a theoretical basis will be a blind pedagogy. It will fail to set reasonable objectives, will be unable to create and apply methods appropriate to the learning task, will be unable to measure and evaluate re-suits, and will ultimately fail to create the effective translators our society increasingly demands.

Not just any translation theory will do. The theory or theories of translation we need are empirical understandings of what effective translation practice is and how it may be accomplished. This can be achieved only by engaging in the study of translation, by describing how successful translators do their work and achieve good resultsresults tailored to

a variety of different situations, catering to different intents and needs, and reached using a variety of different strategies.

The title of this foreword used the words *prescription* and *description;* I think too many professional translators of stature have rejected translation theory, and perhaps rightly so, as too academic, too divorced from reality, and propounded by those who, in many cases, have never experienced the rough-and-tumble world of the professional translator. Although certainly this characterizes some theorizing on translation it does not describe it all, especially the work of the last two decades, when translation scholars have increasingly focused on the description of translation realitywhat real translators really do. This move toward description is a move to understand translation practice and to communicate that understanding, not only to other scholars but to students. Albrecht Neubert, a translation teacher and translation scholar for over thirty years, once confided that his abandonment of the linguistic model of translation in the 1960s and his subsequent development of text-pragmatic models was motivated by the need to develop new ways of speaking and writing about translation that could work in the classroom in the form of teachable strategies and understandable concepts and that, above all, could predict and explain the changes that professional translators actually made to texts, something the linguistic model could never do. He wanted a translation pedagogy that would work, that could be practiced, and that would result in good practice.

The word *theory* has a popular meaning with some negative connotationsarmchair, overblown, impracticalbut this is not, in fact, what a theory is. Theories are explanations and descriptions of reality that have been verified or supported in some way, by test or experiment, or in the case of the present study, by the analysis of verbal report data. A translation theory appropriate for a translation pedagogyand it is not clear how many we have in our discipline by this definitionshould say something about how translation works and how it is done. We need to be able to provide explanations and the conceptual apparatus that goes with them if we are to teach effectively. Translation is both an observable social-communicative and a hidden cognitive activity. A great deal of what goes on in translation occurs hidden away; translation processes are not available for direct scrutiny. We have based much of our current translation pedagogy on incomplete, and in many cases incorrect, understandings of translation. Yet, because we want to teach translation to people who want to learn translation, we desperately need to understand these hidden processes.

We need a descriptive translation pedagogy. A descriptive pedagogy is one based on accurate theoretical accounts of translation processes. It

must offer insight, especially, into the hidden cognitive processes of translation. It must describe translation reality in such a way that we can answer pedagogically important questions: What is it that translators know? What do they do with what they know when they undertake to translate a source text? But it is not even enough to be merely descriptive.

Some descriptive theories have only structural validity. For instance, the many formal models of grammar in theoretical linguistics describe and explain language. They are even predictive of language behavior. Yet most of them do not reflect cognitive reality. They are theories of language but they are not psychologically validthey do not necessarily describe what goes on in the mind when language is used. Just because a model proposes a construct such as a transformation rule or a phrase structure grammar does not entail that there are neurological correlates of such constructs or even cognitive evidence of their existence or operation.

For a descriptive translation theory to act as the basis for a descriptive pedagogy it must have psychological validity. It must provide a description of translation as a real, not just as an imagined or supposed, cognitive activity. Teaching and learning are complementary (one hopes) activities whose arena of operation is the human mind. Our teaching methods are designed to have cognitive effects; they can transfer knowledge, they can introduce and exercise cognitive skills, or they can create situations that facilitate the transformation of conscious processes to automatic ones. Alternatively, teaching methods can work to place automatic operations under conscious control. If we want a pedagogy to be effective, we have to understand just how a teaching method affects the cognitive patterns and processes of the learner. If it is a translation teaching method, then we have to understand how translation-relevant cognitive processes are affected and effected.

The days are gone when, for reasons of sheer volume and demand for quality we could depend on serendipitous collisions of experience and bilingualism to produce natural translators to supply our growing demand for translators. Some natural capacities, like a good memory and creative thinking, for instance, are requisites. Learned skills such as a second-language competence are required. But contrary to the opinion of a great portion of the lay public, professional translation is not a natural talent of bilinguals; natural capacities and second-language competence are necessary but not sufficient. Even those bilinguals who develop into professional translators learn their professional skills in the translation school of hard knocks and experience. Bilingualism is only one of several talents and skills required of the translator. Research skills and

writing skills are just as important. A translation pedagogy is required to shorten the distance between the native translator, who has bilingual skills, and the professional translator. A translation pedagogy needs to explain how translation works, not just for professional translators but for translators everywhere along the learning curveit needs to explain how bilinguals translate, how novices translate, how professionals translate. Translation reality includes many different kinds of translation, the natural translation of bilinguals as well as the professional translation of the technical translator in the translation agency. A translation pedagogy has to encompass the range of translation reality because our students evolve along a path from natural translation to professional translation.

The old resistance to translation theory was based on the idea that the translation theoreticians were telling us how to translate, as if there were one and only one way. Douglas Robinson (1991) addresses this issue eloquently in *The Translator's Turn*. This prescriptive theory we have no place for. Nevertheless, students who come to our translation schools want us to teach them. This implies that we have to tell them something about methods, about strategies, about common translation problems and their typical solutions. They want to know how to do research and what the role of text analysis is. They want to know if the things we teach them really work. The translation classroom does not need to be authoritarian, with the teacher as the keeper of the flame of translation truth. Nevertheless, when students come to a university translator training program they want us to speak with authority. They expect that we know something about translation and that what we know is a distillation of our study and understanding of the translation reality of the free-lancer and the agency translator. Are we being prescriptive, then, telling them how to translate, even if we do it in a gentle, explore-all-the-options way? Well, yes. But if the translation theory upon which our teaching is based is descriptive and psychologically valid we can have authority without being authoritarian. If what we communicate to them in the classroom is based on practice, on what we understand by professional practice, then it is the profession, the practitioner in the collective, who is telling the student how to translate. When the doctor offers a medicine or a course of treatment he or she is prescribingso should the translation teacher describe and then prescribe the strategies and exercises than can allow the translation student to bring forth a healthy product.

Since translation practice is variousthe kind of translation we do depends on a myriad of variablesthe translation skills we teach our students must be flexible. We must teach students more than the mechanics of transposition. They should know how to be flexible in their

translation style, to assess the translation situation, and to look at all the pragmatic variables of the commission and adapt their translations accordingly. The), need to know how to produce the best translation possible for a particular client, for a particular time, and for a particular need. Our translation pedagogy has to merge the pragmatics of translation with the psychology of translation. If we have to teach flexibility in translation, we need to understand how professional translators adjust and adapt their skills to meet the demands of a job; this implies that we have to understand how the cognitive skills and processes of translation intersect with the pragmatic package that encloses the source text, the act of translation, and the target text-to-be.

Many translation teachers have only one objective for their translation classes. Students should translate better at the end of the class than when they began. It will be difficult to achieve even this objective if we do not understand what translation is. Translation, as Kiraly's study will show, is a mixture of controlled and uncontrolled processes. Some translation processes are intuitive, others consciously applied. To teach translation properly we need to understand the processes of translation and how they work together. Those skills that serve the student best if they are intuitive and applied automatically need to be instilled and encouraged by appropriately designed methods. Skills such as problem-solving that need to be consciously evoked and controlled must be imparted a different way. An assemblage of translation teaching methods must have a contour that matches the contour of the evolution of translator competence. To build the competence we want in our students we have to design precise pedagogical toolstools for particular purposes that will yield specific desired effects. These tools cannot be designed without the information a descriptive translation theory a theory that describes the social and cognitive aspects of translation, can provide. If we have such a theory, then when we teach or show students how to do something in the translation classroom and they ask us, "Why are we doing it this way?" we can be honest with them and say, "As far as we know, that's how translation works."

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Introduction

University-level translation programs around the world are teaching thousands of students each year, training them to become professional nonliterary translators. The primary objective of these programs is ostensibly to provide prospective translators with the skills and knowledge they will need to function as professional mediators between writers and readers who know different languages. Perhaps because foreign languages are the most distinctive tools of the translator's trade, there is a natural tendency to see the ability to translate as just another foreign language skill. After all, most people have done scholastic translation in one or another foreign language course at school or university. It is essential to keep in mind that this is a myopic and incomplete view of the translation activity that most professional translators are engaged in.

Scholastic translation consists essentially of replacing the linguistic signs written on a homework page with (allegedly) equivalent signs from another language. The purpose of the activity is to drill or test the student's knowledge of some aspect of the foreign language, for example, comprehension, vocabulary, or grammar. The instructor chooses the text and evaluates the quality of the translation. There is no actual communication situation, with a sender and a receiver of a message mediated by the translator. This is a purely noncommunicative, didactic activity that bears only a superficial resemblance to professional translation.

The professional translator works within a complex situational framework, under a variety of competing constraints, to communicate a complex textually embedded message to a nonreader of the source language. There may be several participants in the communicative situation on both sides of the language barrier. On the source language side is the author of the original message and a commissioner, either the author or someone else, who wishes to have that message or a related message communicated to particular readers of a different language. On the target

language side, there is the intended reader of the translated text and perhaps a host of other potential readers not envisioned during the act of translation. The professional translator enters the situation with a foot on either side of the language barrier and mediates among the participants, trying to produce a target language text that will communicate the message that the author wants to send, that the commissioner wants to have sent, that the user expects to use, and that will have the appropriate and desired effect.

Professional translators have a responsibility to each of the actors in the translation situation. They work under time pressure, often start with defective source texts, frequently get little feedback or additional information from the commissioner of the translation task; they are lucky if they can communicate with all of the participants in the process to clarify expectations or sort out difficulties. Professional translation is, to put it mildly, complicated and certainly involves more than just knowing two languages. It must be the task of the professional translator education program to teach students more than just how to make the interlingual connections between source and target translation units. Translator education needs to ensure that students graduate with the full range of skills necessary to be able to deal professionally (i.e., responsibly, effectively, and efficiently) with actors, messages, and texts in interlingual communicative situations. Based on this assumption, a central theme of this volume is that a key outcome of any translator education program will be to assist translation students in the development of their own self-concept as professional translators.

A peek into many translation classrooms suggests that the myopic view of translation as the simple replacement of linguistic signs in one language with equivalent signs in another is shared by more than a few translation instructors. This misconception has not been rooted out by translation scholars, enlightened teachers, and translation professionals. Until recently there has been little empirical research into the nature of professional translation activities and, consequently, little pedagogical theory based on empirical data on translation processes. In the field of second-language education, textbooks and academic works on teaching approaches, methods, and techniques abound, but such works are rare in translator education. This is symptomatic of a teaching field that lacks empirical data and elaborated theories about the nature of the skills to be taught and approaches for teaching them.

To train student translators, we must first ask what skills and knowledge professional translators have that our students do not yet have and, second, how we can effectively and efficiently create an appropriate learning environment for acquiring such skills and knowledge. In the absence

of a clear picture of what translation really entails, those translation instructors who actually are or have been translators can, at best, introspect on their own professional experiences and pass on hints, tips, and tricks to their students. Those translation instructors without professional translation experience have little choice but to turn the translation classroom into a language-learning classroom with an emphasis on contrastive linguistics. It cannot be expected that language instructors without professional translation experience will have a professional translator self-concept themselves or that they will be able to help their translation students develop one.

To investigate what actually occurs during the production of a translation, a line of research began to evolve in the mid-1980s that attempted to shed light on the mental processes involved in translation. The initial emphasis was on translation as a bilingual textual skill, rather than as a professionan integrated complex of skills marketed to paying customers. Only gradually and sporadically has there been an attempt to include the professional translator in research on translation and cognition. Although many normative, prescriptive theories have been proposed describing what translators should do and some attempts have been made to apply these theories in pedagogical contexts, no empirically based descriptions of translation processes have been proposed to serve as a basis for a systematic approach to translator education.

This book is a systematic elaboration of the issues underlying a descriptive translation pedagogy, a pedagogy based on the accurate theoretical description of translation practice. The volume is based in part on the observation of translators at work but also on an extensive survey of related research. The book is divided into four major parts: (1) a definition of the problema pedagogical gap in translator education; (2) theory development and the proposal of a two-dimensional social and cognitive approach to translation activity; (3) a case study of the actual mental processes of translation students and professional translators; and (4) conclusions and implications of the study and related theory of translation activity for a systematic approach to teaching translation and bringing students to a self-concept as professional translators.

Chapter 1 attempts to localize the problemthe lack of a theoretical model based on empirical evidence about the knowledge and skills involved in professional translation activities. In Chapter 2, sources of innovation and change for translation pedagogy are identified in the contemporary writings of translation educators and second-language education specialists. Chapter 3 proposes a multidisciplinary framework for a translation pedagogy, and presents a set of general research questions to be focused on in the subsequent study.

Chapter 4 proposes a dual theoretical approach to translation processes, emphasizing both social and mental perspectives. The social perspective is based on the linguistic theories of J. R. Firth, and the mental perspective draws on recent work in psycholinguistics. The Firthian model is meant to be basic, suitable for use as a consciousness-raising tool for translation students. A similarly basic cognitive model of translation processes is proposed in Chapter 7, drawing on the psycholinguistic literature and the data collected in the case studies.

Chapter 5 outlines case studies of translations completed by eighteen German subjects, nine translation students and nine professional translators, who thought aloud while translating part of a tourist brochure from English into German. The results of the case studies are discussed in Chapter 6. The analysis reveals a number of variables relating to the mental processes of translation: identification of translation units, translation unit length, movement through the text, progression through the translation process from the identification of a unit to be translated to the acceptance of a solution for that unit, and evidence of controlled and conscious translation strategies as well as relatively uncontrolled or intuitive processes.

Chapter 7 discusses the implications of the proposed social and mental models of translation and of the case studies and data analysis. The implications are given in the form of tentative answers to the set of general research questions posed at the end of Chapter 3. The chapter concludes by offering some basic principles for a systematic approach to translation teaching.

One
The State of Translator Education: Problems of Theory and Practice

Contemporary translator training programs operate under a major handicap, described concisely by Röhl: "Translators are being trained despite the absence of a systematically developed and tested translation didactics" (1983, 4). Wilss, a pioneering translation scholar writing about translator training in Europe, has stated the problem more explicitly: "There are, to my knowledge, no attempts to develop yardsticks and criteria for a comprehensive progress-controlled, phased T [translation] T [teaching] framework to build up a system of TT learning targets and, on this basis, to elaborate teaching and learning material for use in learner-group-specific TT classes or for self-teaching programs" (1982, 180).

Translation Instruction and the Pedagogical Gap

Königs's survey of translation instructors in foreign language teacher training and translator training programs provides evidence to support such statements. Königs asked eighteen translation instructors the question, "What are the specific objectives of the translation courses you teach?" Only seven of the instructors gave any answer. Königs's interpretation of this failure to respond was that the surveyed instructors had not given any real thought to the aims and expected outcomes of a translation skills course (1979, 116).

The lack of clear objectives, curricular materials, and teaching methods implies a pedagogical gap in translation skill instruction. Translation students attend classes and earn degrees in translation studies, but courses in translation skills instruction are usually not based on a coherent set of pedagogical principles derived from knowledge about the aims of translation instruction, the nature of translation competence, and an understanding of the effects of classroom instruction on students' translating

proficiency. The pedagogical gap represents the dearth of systematic approaches to the teaching of translation skills. It is an incomplete and unstructured understanding of what steps to take to train professional translators who can produce high-quality translations. This gap persists despite a limited but grouting literature in the field of translator training; this literature has introduced new models of translation processes, proposals for curricular planning, and many insightful and practical suggestions on how to teach translation skills.

Königs identified three approaches to translation skills instruction in the translation studies literature: (a) using a theory of translation as a teaching method, (b) basing a teaching approach on a simplification of a translation theory, or (c) applying a pedagogical filter to a theory of translation. According to Königs (1986), the problems predicted by the translation theory usually end up dominating the teaching approach, with the consequence that other potentially significant characteristics of the learning and translating situation are neglected. Königs suggests that a more satisfactory approach would combine a theory of translation with selected instructional situations and relevant contributions from related fields of study.

There is a popular misconception that translation involves little more than the mechanical replacement of linguistic elements in a text with objectively identifiable equivalent linguistic elements from a second languagea misconception perpetuated among translator trainees by traditional models of translation teaching based on the linguistic model of translation (Neubert and Shreve 1992, 19). The reality of professionalas opposed to didactictranslation is much more complex. A principal assumption underlying the present study is that a person translating a text for pragmatic purposes engages in a real act of interlingual and intercultural communicationthe production of a text with a specific textual function, information content, and identifiable readership. A real act of translation presupposes that the translator has cognitive, social, and textual skills and access to appropriate stores of linguistic, cultural, and real-world knowledge. Translation is more than just a linguistic activity.

As Königs suggested, only an interdisciplinary approach allows an adequate description of the many communicative factors involved in real translation; only an interdisciplinary approacha synthesis of the linguistic, social, and cognitive disciplineswill provide new principles to guide the teaching of translation skills. Chapter 3 develops an interdisciplinary framework for the development of a systematic approach to translation skills instruction.

The Performance Magistrale

The absence of an approach to translation instruction based on interdisciplinary foundations has meant the perpetuation of one-dimensional instructional practices that incorporate a single behaviorist principle: One learns how to translate by translating. The basic classroom activity used to teach translation skills, aptly labeled a *performance magistrale* by Ladmiral (1977), bears a strong resemblance to the antiquated grammar-translation method of foreign language teaching. House describes the typical translation classroom:

> The teacher of the course, a native speaker of the target language, passes out a text (the reason for the selection of this text is usually not explained, because it is often a literary essay that the teacher has just "found" by accident). This text is full of traps, which means that the teachers do not set out to train students in the complex and difficult art of translation, but to ensnare them and lead them into error. The text is then prepared, either orally or in written form, for the following sessions and then the whole group goes through the text sentence by sentence, with each sentence being read by a different student. The instructor asks for alternative translation solutions, corrects the suggested versions and finally presents the sentence in its final, "correct" form. . . . This procedure is naturally very frustrating for the students . . . . (1980, 7-8)

Describing her impressions of translation classes she attended at a university training program in Canada, Enns-Conolly illustrates the impact this instructional approach can have on students:

> These classes involved professors asking students for their renditions of particular sentences, and then pointing out the divergences from their own master copies. This was a rather frustrating experience inasmuch as my translation could be classified as inadequate on the grounds that it did not match the definitive criteria for rightness and wrongness, and my task as student was to approach rightness as much as possible. Under those circumstances it was difficult for any student whose translation differed from the master version to gain confidence in their own work. When I volunteered a rendition that the teacher believed to be inaccurate, I hesitated to enter further discussion afterwards. In the face of a right or wrong ruling on my work, my openness towards class discussion was thwarted. My

> underlying reasoning in translating was not considered, only my visible translation and how well it met the norm set by the teacher. (1986, 2-3)

Enns-Conolly identifies the theoretical foundations of the translation practice classes she attended: "Looking back on that translation training now, I believe that instruction was based on a view of language as scientific and law-governed. There was a sense of the existence of a body of language rules and translation rules that could be learned, and the students' task was to strive towards mastery of the governing principles" (1986, 2-3). Such classroom environments reflect an underlying grammatical model of translation teaching. According to Chau (1984b), a grammatical model of translation teaching uses a microlinguistic view of translation, equating translation processes with syntactic and lexical transfer processes. Two other translation teaching models described by Chau (1984b) are the cultural model and the interpretive model. The cultural model views language primarily as a manifestation of culture and sees translation as the description and explanation of one group's culture to an audience from another culture. The interpretive model considers translation a complex intertextual operation with emphasis on understanding the source language text. (Examples of the cultural and interpretive models are discussed in Chapter 3.) Chau claims the grammatical model is the best established of the three and apparently allows only instructional techniques based on the search for correct target language elements using comparative grammar. A more comprehensive view of translation as an interdiscipline should lead to a more realistic and effective approach to translation instruction and bring about a synthesis of the grammatical, cultural, and interpretive models.

The traditional translation classroom is overdependent on linguistics and is therefore dominated by the grammatical model of translation. But this is not the traditional classroom's only failing. Röhl (1983, 6-7) describes the extremely passive nature of traditional translator training in her account of a typical day as a translator trainee in a West German university program for translator training:

> I first became interested in this topic [translator training] the day I realized, after having spent the entire day attending translation classes, that instead of being filled with language, I had remained totally silent. In addition, my own personality (which was apparently superfluous in this situation), had once again remained outside the classroom.

> First, I sat silently in a translation practice class, listening to translation suggestions and sometimes marking corrections in my text; then I listened silently to a lecture read aloud by an instructor; then, in a seminar, I listened silently to a paper read aloud by a student. This was followed by a silent attempt in the cafeteria over a cup of coffee to pour fresh energy into myself in preparation for my afternoon classes. Then came my afternoon classes where I was also silent except in one class for final-semester students where there were only three participants.
>
> Then I went home to supper, listened silently to the news in Spanish and read a foreign language newspaper. Finally, I spent the rest of the evening in my room, bent silently over my translation texts. This summary of my day's activities may be a bit exaggerated, but my guess is that it is not atypical of the daily routine of student translators.

Gabrian's (1986) description of a typical translation practice class in another West German university translator training program further contributes to the impression that the performance magistrale is not an isolated phenomenon. In her critique of contemporary translation teaching practices, Gabrian identified a set of teaching characteristics that are obstacles to learning and that lead, ultimately, to nonprofessional translation behavior. These include

1. overfilled classes

2. translation practice oriented around the teacher's access to the ideal translation

3. lack of commonly accepted guidelines or standards against which student learning could be measured or assessed

4. a consumerlike attitude among students toward instruction; they attend too many classes in an attempt to amass knowledge quickly, but they are passive in receipt of that knowledge

Translation students should be active participants in their training, especially at the university. As Gabrian reminds us: "Universities are unlike schools in that it is not their task to spoon-feed knowledge to students to be memorized (but not digested) and regurgitated for exams. Rather, the main task of universities is to encourage students to think and act responsibly and independently." It is precisely responsibility and independence that must be the foundations of professional translation (1986, 54).

The Traditional Translation Classroom

Most university-level translator training programs have a variety of courses, including seminars in linguistics, literature, area studies, and classes in general foreign language skills. The courses and seminars of primary interest in this study are those in which learners are supposed to acquire translation skills (Enns-Conolly 1986; Röhl 1983; Wilss 1977). The translator training program that was the context for the case study which appears later in this volume offers courses that fall into two basic categories: translation practice classes and translation seminars. The translation seminars introduce special topics in translation theory, and each student is usually expected to present a translation replete with pertinent commentary. The number of such seminars required during a student's program of studies varies, depending on the language combination chosen. In no department is a student required to take more than one such seminar during the four-year program. As a rule, translation seminars are for advanced students who have already completed their *Vorprüfung* (intermediate exam) after four semesters in the program.

The translation practice classes are a significant part of the curriculum and are the primary opportunity for students to acquire translation skills. There are practice classes emphasizing both general and specialized translation (law, economics, science and technology, and medicine), and translation practice is taught in both directions (L1 to L2 and L2 to L1). There are no departmental course curricula to guide instructors of translation practice classes, and no common instructional materials are developed or used. Instead, individual instructors choose texts independently and have their students translate them. There is little coordination among instructors concerning text topics, evaluation procedures, course outcomes, syllabus design, or any of the other possible pedagogical issues. The following maxim caricatures the only (apparent) common pedagogical principle applied: At the end of the course, students should be able to translate better than they could before the course began.

Apparently, no attempt is made to apply general translation principles, derived from the body of translation studies literature, to translation teaching. Some of this blame certainly can be laid at the feet of translation studies itself. It is a young discipline and there is a variety of competing vocabularies, discourses, and models of translation. Nevertheless, for several years translation studies has converged on some common understandings, and even the debate on issues such as how to interpret "equivalence" in translation could have pedagogical value. Lacking a theoretical basis, translation pedagogy has failed to develop and has stagnated to the extent that only one outcome can be expected: students should pro-

duce translations that are as literal as possible and as free as necessary (Wilss 1982, 178). Further, there has also apparently been no attempt to apply general pedagogical principles to translation teaching. There has been little or no consideration of learning environment, student-teacher roles, scope and appropriateness of teaching techniques, coordination of goal-oriented curricula, or evaluation of curriculum and instructor.

The traditional translation classroom presumes that a transfer of translation knowledge takes place from teacher to student. The teacher, privy to the ideal translation (i.e., the inventory of equivalent elements), points out the students' deviations from the ideal, with the expectation that they will avoid making those same errors in the future. The task is presented as a search for source text element equivalents. As Tour), (1974, 187) so aptly put it, in this approach the translator is parasitic to the translation. The approach ignores virtually all of the factors that make each translation situation unique, including the translator's idiolect and stylistic preferences or variability of translation function. The concept of translation equivalence is, of course, a topic of contention in translation studies, but not even its current defenders presume that it equates with strict linguistic equivalence and would interpret it so naively in the classroom (Mossop 1983; van den Broeck 1980).

An alternative to the traditional, asystematic approach to translation teaching requires a solid theoretical framework, assembled from translation studies and from allied disciplines, and solid empirical data on the social and cognitive aspects of the translation process and of translation competence. There have been some ground-breaking psycholinguistic studies, primarily dealing with subjects who were foreign language students (i.e., subjects who were neither professional translators nor translator trainees). The results of these studies, even with such limitations, can be invaluable for establishing working hypotheses about the cognitive processes of translation and how language and sociocultural context intersect in cognition. To be truly effective, translation teaching will have to incorporate and interpret the results of empirical studies of translation in altered curricula, syllabi, methods, and objectives.

The Disparity between Translation Process and Teaching Practice

Translation teaching should be based on a theoretically adequate empirical description of translation behavior. A descriptive translation theory entails a descriptive translation pedagogy. Performance magistrale and

its underlying linguistic model of translation imply a prescriptive translation theory and a prescriptive theory of translation teaching. Krings has voiced the most severe criticism of prescriptive translation theory and its attempts to proposeand even imposesolutions to translation teaching problems in his extensive study on the psycholinguistic processes involved in translation: "Generally it can be stated that none of the models of translation processes developed so far within the field of general, theoretical translation studies can say anything at all about what actually happens from a psycholinguistic perspective during a specific, concrete act of translation" (1986, 6).

According to Krings, the data in his study suggest that the theoretical models developed to date are not predictive of the real processes involved and may even be misleading (1986, 7). Yet in the conclusion to his major case study on translation processes, Krings notes that his data do corroborate certain elements of several different approaches to translation studies (1986, 501-21). Many models of translation are intuitively appealing and apparently well-grounded in theories of comparative linguistics and stylistics (Vinay and Darbelnet 1958), sociolinguistics (Nida 1964; Pergnier 1981), hermeneutics (Steiner 1975), or special theories of translation (Seleskovitch 1976). These models focus on particular aspects of the complex act of translation, and though they may appear to contradict one another, it is probable that each tells a part of the whole story of translation and that empirical evidence can help put the cultural, interactional, cognitive, and linguistic pieces of the translation puzzle together.

The tentative nature of most of the contributions to translation teaching thus far is the result of the virtual absence of knowledge about what goes on in the mind of a person translating, whether that person be a foreign language learner, professional translator, or translator trainee (Krings 1986, 6). It would be understandably problematic, if not futile, to attempt to develop an effective systematic framework for translation teaching without a model of what real translators do when they translate (Neubert and Shreve 1992, 34). Over the past decade, an innovative line of research has developed with the goal of empirically investigating what goes on in the mind of a person while he or she is translating. The primary data collected and analyzed in these studies are verbal report data consisting of translators' own verbalizations about what is going through their minds while translating. Because of its empirical nature and its primary concern with empirical translation processes rather than with translation results, this research is a fundamental break with much previous research in translation studies, even those that have purported to describe translation process. With only translation results to examine, it is

difficult to reconstruct translation processes. If we cannot reconstruct the processes, we cannot develop teaching methods to allow translation students to acquire them, modify them, and refine them in pursuit of measurable improvements in the quality of the target text.

Initial results of this research promise to illuminate our understanding of how translation skills are acquired. Krings, identifying the reasons for the poor translation performances of his subjects, stated: "This [the students'] inadequate translational behavior was found to be caused mainly by the exclusive use of noncommunicative translation activities in foreign language classes. In these activities, the teacher assumes the role of both the client and the readership for a translation which has no communicative function and whose primary objective is the practice and testing of linguistic knowledge" (1986, 501).

This observation is one of the first empirically based criticisms of the traditional form of translation instruction (within the context of foreign language education) and echoes Enns-Conolly (1986), Röhl (1983), and Gabrian (1986). Krings also notices the passive, frustrating, noncommunicative character of translation instruction in translator training programs. This suggests that empirical research into translation processes can contribute to a better understanding of whether what we are doing in our translation classrooms is adequate, or even appropriate, for helping students acquire professional translation skills.

Although there has been considerable discussion of the reliability of verbal data for investigating mental processes, the tentative consensus is that verbal reports can be useful for the development, if not for the testing, of hypotheses about such processes. In the first major translation study to use verbal reports, Krings identified 117 attributes of translation processes, prompting him to remark in his concluding comments on the utility of his research design: "In my opinion, this supports the original thesis of this study, namely that through the systematic application of thinking-aloud as a means of data collection, one can investigate areas that were virtually closed off to all other research attempts in the field of translation studies, and that this method of research can enable the introduction of a line of research that is appropriate for research into translation processes" (1986, 484).

Translator Competence and Translator Training

An empirical description of translation processes implies the possibility of describing what a professional translator has to know and has to do (even if much of what he or she does is subconscious) to produce a high-quality

translation. Just as the idea of communicative competence has sparked considerable research and discussion in second-language education, the nature and possible components of a translation competence have recently become a major focus of interest in translation studies. Some theorists, like House (1980), have described translation competence as a fifth basic foreign language skill, along with reading, writing, oral comprehension, and speaking. Zalán (1984) claimed that terms like *translation competence* and *communicative competence* are not of much use in translation teaching because we cannot precisely determine the constituents of a competence. Thiel (1984) has also written extensively on this issue.

Wilss pointed out another problem with translation competence, noting that organizations requiring translation services have their own criteria of adequacy and quality. Therefore, "Translation competence as a uniform qualification for the professional activities of translators does not exist" (1976b, 34). He referred to another important aspect of professional translation practice when he said that those who are not freelance translators work primarily on a team basis (1974, 17). This may involve a group of similarly qualified translators who divide the work up among themselves, or there may be teams of two in which the translators review and proofread each other's work. Alternatively, a group of three or four translators may work under a supervisor. The important point, and one with major implications for training, is that translators often have to work cooperatively. This is especially true because of the limited knowledge that most student translators acquire in their area of specialization and because graduate translators often find themselves obliged to do translations in an area in which they have not specialized (Holz-Mänttäri 1984). Do Wilss's caveats imply that a specific, one-size-fits-all translation competence is an illusory goal for translation pedagogyor that translation teachers must strive for a more generalized translation competence adaptable to many work situations? What skills and knowledge are common to all translators, regardless of context?

Taking a first step toward identifying the skills and knowledge a professional translator must have, Wilss described translation competence as the union of (a) source language receptive competence and (b) target language reproductive competence within (c) a supercompetence (1982, 58) reflecting the ability to transfer messages between the two languages. For Wilss, the supercompetence is intertextual and not purely interlinguistic; this explains why an individual who is fluent in a foreign language is not necessarily an effective translator.

In the translation studies literature there is no significant description of the native and foreign language components of translation competence. If language competences are referred to at all, they are usually

described in traditional linguistic terms. According to Wilss, "because translation competence is partially an interlingual competence, it is clearly marked off from the four traditional monolingual skills: listening, speaking, reading, and writing. Because translation competence is a super-competence, it requires not only a comprehensive syntactic, lexical, morphological knowledge of the respective source and target languages but a complete stylistic (textual) knowledge of the respective source and target language text worlds as well. Finally, the supercompetence implies the ability to synchronize these two (source and target) monolingual knowledge areas and bring about a communicatively effective interlingual and intertextual transfer" (Wilss 1976a, 120). Some elements of translation competence are shared with bilinguals, but Wilss's description of the supercompetence implies that others are not.

A major controversy in the field of translation studies illustrates the importance of differentiating between the partial competencies involved in translation. This controversy centers on whether the ability to translate is innate or learned. On one side is the idea of natural translation, originally introduced by Harris and Sherwood (1978). Harris and other researchers, including Toury and Lörscher, claim that the ability to translate is innate. They feel that translation competence automatically begins to manifest itself with the onset of second-language learning and that all second-language learners are incipient translators. From this perspective, there is no essential difference between the translation behavior of professional translators, translator trainees, and second-language learners. Given this view, translator training is an intervention in the natural evolution of translation competence in the increasingly bilingual individual.

Toury criticized the noninnate view of translation competence, described as

1. the ability to decompose texts according to text types

2. the ability to identify a hierarchy of the relevancy of features of different types

3. the ability to transfer fully and efficiently those relevant features, in order of their relevancy across linguistic and other semiotic borders

4. the ability to recompose the text around the transferred features. (The recomposed text must meet measures of acceptability in the target language and target culture.) (1974, 88)

Toury claims that the noninnate model sees translation activity in a prescriptive and idealistic way that does not reflect the way human trans-

lators really behave. A more realistic approach, in his view, centers on the idea of the native translator (i.e., an individual having certain innate translation capabilities not duplicated in any other translator). For other discussions of this approach see Harris (1977), Harris and Sherwood (1978), and Lörscher (1986). In the native translator, translation competence is a subcompetence integrated in a bilingual's general communicative competence. The purpose of a translator training program would be to intervene in the ongoing process of translation competence development and help (native translator) students move faster and more effectively along a continuum from incipient translator to active, professional translator.

Hönig (1988a) takes a different position and defends the noninnate view precisely because he considers translation a principled, strategic process that begins with translation-specific textual analysis and results in a target language text with a specified, or at least specifiable readership, and a particular textual function. From Hönig's perspective, second-language learners cannot really translate because they have not acquired an understanding of translation as a unique form of communication. They do not understand the situational factors that must be considered in doing translation, the strategies that can be used to do it, or the criteria against which the results must be evaluated for adequacy or quality. He describes translation done by untrained individuals as a mere transcoding from one language to another.

These apparently opposite points of view are not necessarily mutually exclusive. Translation is a unique form of interlingual communication, and because communication is an innate and incipient capacity in humans, we can see communication between different language communities using distinct language systems as a natural ability that emerges with the onset of second-language learning. Hönig makes an important point, however, when he claims that the language activity called translation that is a part of many second-language learning programs is not *real* translation, in that it does not involve a *real* act of interlingual communication. Instead, it serves only the purely didactic functions of teaching and, especially, testing language knowledge.

A more appropriate objective of translation pedagogy might be translator competence rather than translation competence. In choosing this term, emphasis is placed on the complex nature of the professional translator's task and the nonlinguistic skills that are required. This term also allows us to distinguish between the more general types of native and foreign language communicative competence the professional translator shares with bilinguals (as native translators) and the translation skills that are specific to professional translation and which most bilinguals do

not develop naturally. Translation pedagogy must ask itself what the specialized skills of the professional translator are.

Specialization is a standard objective of translator training programs. Schrodt described the ideal characteristics of a student who has successfully completed specialized translator training: "[The student should be] able to translate very difficult scientific and technical texts from source language into a foreign language (even under time pressure) so that the result is perfect with respect to both content and language. He should also be able to interpret specialized conversations and conferences quickly and without error. He should also be able to translate the same type of texts out of a second foreign language" (1976, 212).

Most translator training programs accept the requirement for specialized (by subject area) translation training uncritically (Thiel 1984, 272). In Thiel's article on learning objectives for translation programs she says that a graduate translator must be able to carry out a variety of translation-related activities. She also points out that the specialized translation training students receive will usually have only very limited application once they begin working. Because of the restricted job market, new graduates cannot be at all certain of finding employment in their area of specialization. Free-lance translators must be prepared to accept translation assignments in such a diverse variety of fields that they cannot possibly expect to receive specialized training in all of them. This is why Thiel stresses that general translation should receive the main emphasis in translator training programs. Perhaps specialization in specific domains is not what is required. Perhaps more generalized specializations such as research skills, terminology management, and familiarity with electronic information sources will be of more use.

Concerning language direction in translation (i.e., from or into the mother tongue), some scholars say that in a pedagogical environment one must differentiate between L1 to L2 and L2 to L1 translation (Wilss 1982, 77). This is because it is assumed that students cannot possibly know the foreign language as well as their mother tongue. Röhl, however, cites Michea on the one-stage translation process of the bilingual individual: "One does not transpose from one language to the other; one plays two different keyboards. One has two collections of models and patterns at one's disposal and in order to compose one's sentences, one must sometimes refer to one collection and sometimes to the other" (1983, 22). This view, shared by many translation theorists including the *Ecole de Sens* led by Seleskovitch, suggests that there is no a priori difference between translation into and out of one's mother tongue. Gleason (1980) also raised doubt about whether L1 to L2 translating activity is

really all that different from L2 to L1 translation. In his view, both activities involve language comprehension and production, and he suggests that similar cognitive processes are involved in both types.

From a pragmatic perspective, Wilss suggested that the West German translator market expects translators to translate into foreign languages: "The three West German university schools for translating and interpreting, in order to provide the market with optimally qualified graduates, are compelled to offer two-way translation classes and require examination papers in both directions" (1982, 183). Schmitt's recent large-scale survey of salaried and free-lance professional translators in Germany supports this claim. Schmitt (1990) found that about 50 percent of the translations done by his respondents were into a foreign language.

Röhl (1983, 31), citing Hohnhold, also found that "translations are very often done into a translator's foreign language." A survey of professional translators in West Germany found that over 92 percent of the respondents employed by firms translate at least part of the time into a foreign language; the survey indicated that 31 percent of free-lance translators do so (Silbermann and Hänseroth 1985). Six of the nine graduate translators who participated in the case study detailed in this volume also translate professionally from their mother tongue into a foreign language (German to English).

It is of vital importance to the field of translator training to ask whether professional translators can realistically be expected to translate adequately into a foreign language; whether the skills involved in both directions are the same; and whether the skills involved in this type of translation activity can be trained in the same way as skills involving translation into one's mother tongue. If, as appears to be the case, translators are likely to find themselves translating into a foreign language as part of their professional activities, then clearly this translation direction should be given special consideration in translator training. As translation scholars and teachers we appear to be of two minds about this issue. An oft-repeated maxim in translator training is that translators should not translate into a foreign language. Yet translation skill-building classes in which translations are prepared into the students' foreign language form a significant part of many translator training curricula.

Clearly there are several challenges for translation educators to face on the way to developing a systematic pedagogy of translation:

1. the absence of a systematic approach to translation education based on both pedagogical and translation principles

2. the failure of translation pedagogy to use relevant contributions from other disciplines (sociology, anthropology, cognitive science, and psy-

chology) and research from modern translation studies as foundations for translator training

3. a one-dimensional view of the process of translation, characterized by overdependence on the linguistic model of translation and a discounting of the social and cognitive realities of professional translation

4. the failure to merge the grammatical model of translation teaching with the interpretive and cultural models of translation teaching

5. a dependence on the teacher-centered performance magistrale in the translation classroom

6. an acceptance, and even encouragement, of a passive role for translation students

7. a failure to undertake (and to apply the results of) empirical research on translation processes as a means to build a model of translation and translator competence upon which a translation pedagogy may be based

8. an inability to distinguish the components of translator competence and to distinguish language-related competences shared with bilinguals from professional competences

9. an absence of criticism of old practices and assumptions about curricula, including the usefulness, effectiveness, and teaching methods of certain specialized translator training, such as translation into the foreign language

Two
Models for Change in Translation Pedagogy

As translation assumes greater importance in international journalism, entertainment, commerce, science, and technology and as the demand for translators and high-quality translation grows, it is more important than ever for translation educators to develop a systematic approach to translation teaching practice. This systematic approach must combine a sound translation pedagogyone that is not just an uncritical adaptation of foreign language teachingwith translation studies, with an interdisciplinary mix of linguistics and the social and cognitive sciences, and with empirical studies of professional translation practice. There are many sources of innovation to inspire change in the way we prepare future translators.

This chapter examines the relationship between translation teaching and foreign language teaching. Whereas a translation pedagogy must look to translation studies itself for inspiration, the pedagogy of translation is historically linked to foreign language teaching. Perhaps because of the sheer number of students learning foreign languages, the field of foreign language teaching has enjoyed greater attention than has translation teaching and has a correspondingly larger body of literature. Translation skills are largely language-related skills, and the areas of study related to the learning and teaching of foreign languages have much to offer in the way of inspiration and innovation for translation skills instruction.

Innovation in Translation Teaching

Scattered throughout the professional journals that deal with translation studies are a few pioneering contributions that face the problems of translation pedagogy. The contributions deal with selected elements of the translation learning environment, including instructional techniques,

classroom atmosphere, teacher-student relations, student motivation, and assessment of translation quality. These initiatives have, for the most part, been presented without a comprehensive theoretical foundation and with no basis in empirical evidence about what translators do when they translate or how they acquire and develop the skills they need to translate more efficiently. These initiatives to change derive primarily from the individual teaching (and sometimes translating) experiences of translation instructors and can serve as a source of pedagogical innovation. But a deeper understanding of translation processes is required to evaluate each of these teaching innovations as part of a systematic approach to translation pedagogy. The following survey is representative rather than exhaustive.

Ladmiral identified the performance magistrale or teacher performance that epitomizes the teacher-centered character of many translation classrooms. As Ladmiral describes this traditional approach, "The more or less faulty performances of students are the trials and errors that mark the itinerary that must take them to the level of the instructor, which is considered the ideal" (1977, 508). For Ladmiral, it is the complete replacement of linguistic norms with pedagogical ones that allows translation teaching to ignore a "feel" for the foreign language, which would otherwise be an important element in creating translation competence. He proposes breaking the stranglehold of teacher performance on classroom practice and moving away from a focus on the eradication of errors toward the positive development of students' knowledge and skills.

Holz-Mänttäri also emphasized the value of student-centered translation teaching in an article on translation quality assessment. She identified students' autonomy from the instructor as a primary objective of a translator training program. As she maintains, there can never be an ideal or perfect translation or only one way to produce an adequate translation. Holz-Mänttäri feels it is the responsibility of translation teachers to help students see alternatives, the range of possible translations for any given source text. "The task of the instructor is to show various paths to learners and to make the students independent from himself. The graduate will then later be able to adapt to and act responsibly in any professional situation" (1984, 180-81). Holz-Mänttäri also criticized the traditional teacher-centered approach because its concentration on students' grammatical errors leads to the neglect of translation performance (1984, 180). She says of her own approach to translation teaching: "I try to set up my classes so that each student learns how to develop an approach to translation that is adapted to her own, personal characteristics and that allows her to act as a responsible translator" (1984, 177).

Newmark espouses a similar approach: "You can no more teach someone to become a good translator than to become a good linguist. All you can do is to give some hints, give some practice, and if you are lucky, show more or less how the job can be done. . . . If you're a teacher [you can] arouse the keenness and enthusiasm which may make them capable of making progress under their own steam" (1980, 127). Newmark also emphasizes the need for active student participation in the translation class: "Clearly the future of profitable teaching lies in some kind of role-playing, simulation exercises, real or imaginary situations" (1980, 130).

The teacher performance in translation practice classes has its parallel in translation seminars, where each student prepares a paper on a specific topic and reads it in front of the class. Skerritt has pointed out the obvious when it comes to the development of the essentially creative adaptive and analytical skills of the translator: "The most inadequate teaching method one can imagine in translation studies, especially with respect to creativity, is the lecture or traditional seminar in which a paper is read aloud by a student. . . . It has further been proven that while lectures are an appropriate and efficient teaching method when the teaching and learning objectives are the transmission of knowledge and information, small-group work is the most effective when it comes to working with knowledge, and when comprehension and the development of analytic, critical, and creative abilities are involved" (1980, 36).

Some translation educators have also emphasized the need for realistic, practice-oriented classroom activities. Sager, aware that the teaching situation is by definition an artificial one, suggests greater realism: "There is a strong tradition of role-playing in language for special purposes (LSP) teaching which can be applied to the translation specification, and indeed, must be applied if the student is to be given any serious guidance in professional techniques of translation" (1984, 338).

Other researchers have suggested that translation instruction also include a focus on text analysis and the characteristic features of different types of texts. Van den Broeck (1980) and Toury (1980) independently proposed text type-oriented theories of translation in which translation norms and pragmatic text considerations play a central role. In text-based teaching approaches, the student moves to the forefront of the learning situation as a decision maker. The teacher provides the student with tools, not for producing the ideal translation but for dealing with text-specific and situation-specific variables and for producing an optimal translation under the given circumstances. Neubert (1984, 62) also stressed the textual nature of translation and its importance in the translation class: "Text awareness should first of all be trained in one's mother tongue." In

Neubert's view, there is a prototypical L2 text corresponding to the actual L1 text the student confronts as a translation problem. An important step in the translation process, then, is to discover this prototypical L2 text through familiarization with parallel texts.

Röhl's (1983) study examined problems of student-teacher relations and learning atmosphere in translator training programs. She was particularly concerned with the emphasis on students' inadequacy and incompetence, on the mass production of translators who have primarily learned how to adapt their translating styles to please their various teachers, and the general passivity and absence of communication which are the natural consequences of performance magistrale. These classroom results are particularly dismaying fruits of a program of studies that should have as its aim the training of responsible, autonomous language specialists (Röhl 1983; Gabrian 1986; Ladmiral 1977).

House (1980) proposed a student-centered approach based on communicative translation for use in the teaching of translation skills to foreign language student teachers. Her method has application in the translation seminar. House justifies a communicative translation method in foreign language teaching because in most of the German *Länder* the primary teaching objective is the development of communicative competence. As principal outcomes for this type of translation learning situation, House stressed students' independence from the teacher, students' participation in the selection and production of original texts for translation, and the integration of spoken and written language in the translation instruction process. According to House, "Students should be made to forget pedagogical context and to simulate a real act of communication in which s/he is personally implicated" (1980, 10).

Skerritt shares her view of the ideal translation seminar: "The instructor's only task is to create relationships that allow students to find their own way, and to confront them with problem situations that relate to them and that motivate them to look for solutions" (1980, 34). Skerritt based his approach on the humanist, learner-centered school of educational psychology represented by Rogers, Piaget, and Ausubel. Some sample activities that Skerritt mentioned as consistent with this tradition and with a realistic, practice-oriented translation teaching approach include:

1. getting-to-know-you activities to reduce anxiety and promote a cooperative environment. (Skerritt sees this type of activity as an essential precondition for student-oriented activities.)

2. learning cells, that is, tutoring activities in which the student playing tutor is also clarifying concepts for himself or herself

3. buzz groups and the Tasmanian model of initial pair or small-group work, followed by large-group interaction

4. brainstorming

5. simulations and role-playing

Several translation teaching specialists have discussed the importance of an appropriate evaluation technique for the translator in training. Ladmiral (1977) criticized traditional testing practice as the easy way out for the translation teacher and as a totally inappropriate method for testing the acquisition of translating skills: "It is easier to penalize the errors that can be identified as deviations from the instructional norm that is being taught and to simply add them up" (1977, 507). As an alternative, Holz-Mänttäri (1984) proposed the use of commented translations in which students must justify the translation decisions they have made and display the effective use of resource materials. In this way, students can prove that they are translating responsibly. The texts used for evaluation should be authentic texts students could expect to encounter in the course of their professional activities. A realistic translation test requires task specifications (text source and original function-intention, translation readership, and translation function); Holz-Mänttäri saw this as important not only for evaluation purposes but throughout a student's training (1984). Neubert (1984) and Gabrian (1986) have also proposed using commented translations for evaluation.

Hönig (1988b) proposed introducing a basic course in translation studies in the translator education curriculum. In such a course students would gain a deeper understanding of professional translation practice, including an appreciation for the process of text comprehension, a recognition of the difference between sign-oriented and meaning-oriented translation, and a grasp of the complex structure of translation competence, including the role of translation-oriented text analysis as a key first step in all professional translation tasks. The course would come at the beginning of a student's program of studies to lay the groundwork for the development of translator competence. Students would not participate in translation practice classes until they had an understanding of professional translation and demonstrated an ability to approach translation tasks in a principled and aware manner.

Two major contributions to the field of translator training also distinguish translation principle from translation practice: *L'analyse du discours comme méthode de traduction* (Delisle 1984) and *Textanalyse und Übersetzen* (Nord 1988). As the titles of these works suggest, they argue the principle that translation should essentially involve (a) an analysis of the source language text and (b) production of a target language text based on that

analysis. Both works have a theoretical basis (the *théorie du sens* for Delisle, and pragmatic, text-typological theories derived from Bühler's *organon* model for Nord), but neither purports to have a systematic empirical foundation based on observations of what professional translators actually do.

In her translation pedagogy Nord (1988) emphasizes the following points:

1. The teaching of translation skills must proceed separately from foreign language learning in a translator training setting.

2. Translation practice should simulate actual professional translation tasks (i.e., the practice texts should be authentic, translation task specifications should be provided to students at the start, and evaluation of translation products should be based on the original task specification).

3. Instruction should allow for the incomplete nature of the translation student's foreign language competence.

4. The following set of translation difficulties should be dealt with in the instructional setting: (a) text-related difficulties (i.e., text-internal factors), (b) translator-related difficulties (insufficient L1 and L2 competence), and (c) difficulties in using tools (inadequate or inappropriate use of dictionaries or unavailability of reference materials).

Delisle also proposed an approach based on textual analysis. The theoretical foundation of his approach, the *théorie du sens*, views the translation process as one of (a) comprehension of the source text, (b) extraction of the extralinguistic sense from the source text, and (c) reformulation of the extracted sense in the target language. The approach teaches students how to identify, to extract, and to reformulate sense interlingually. Delisle proposes a structured set of translations requiring and exercising different student skills and tacticsessentially a programmed series of instructional activities. Both Delisle (1984) and Nord (1988) focus their translation pedagogy on the specific skills that translator trainees should acquire, while neglecting other essential factors in the pedagogical situation. Examples are the type of instruction that is most appropriate (deductive or inductive); the appropriate roles of teacher and student in the teaching and learning process (whether the performance magistrale carries over from traditional teaching approaches); and how pedagogical intervention can build professional responsibility and translation confidence. Some of the issues in the pedagogy of translation cannot be resolved by looking just at the translation skills required; we must also understand the kind of

pedagogy that is required. The literature of foreign language teaching provides a source of inspiration and innovation.

Communicative Language Teaching

Wilss (1982) described translation competence as subsuming three partial competences: first-language competence (L1), second-language competence (L2), and a supercompetence that allows mediation between L1 and L2. One cannot simply presuppose native language and second-language competence in the translation training context; these competences are a fundamental part of the translator's tool kit, but they may be differentially and incompletely developed. The integration of language competences in overall translation competence links translation skills instruction to foreign language teaching. Language teaching can clarify the nature of the L1 and L2 competencies that a professional translator must possess and use when translating. The systematic elaboration of a translation pedagogy need not retrace the evolution of foreign language teaching. Translation pedagogy can profit from the extensive experience and knowledge gained in that field for the development of its own specialized teaching approaches.

Roberts's article on the teaching of English as a second language (1982b) described three basic contemporary approaches to foreign language teaching methodology: (a) traditional, (b) communicative, and (c) humanistic-psychological. The first category includes such well-known methods as grammar-translation, direct, audiolingual, and cognitive code learning and has as its primary objective the development of linguistic competenceknowing about the system of language. The other two approaches, the communicative and humanistic-psychological, have as their primary objective the development of communicative competence in the L2. Communicative competence is knowing how to use language as opposed to knowing about language as a system. The communicative approaches mentioned by Roberts are primarily descendants of the British or Firthian School of Linguistics. Roberts criticizes the communicative approaches for concentrating too much on syllabus design and not enough on other elements of pedagogy.

The primarily American humanistic-psychological approaches, which usually have also been at least partially inspired by Firthian linguistics, try to incorporate the "whole student" in language learning. Roberts says that this approach places the student in the foreground and considers affective aspects of the language learning situation to be as important

as cognitive ones. He criticizes such approaches for sometimes overstressing affective factors. They are as obsessed with affect as the British school is with linguistics. Roberts identifies a third major group in the communicative tradition, theorists who seem to fit between the extremes represented by the communicative and humanistic-psychological approaches.

These contemporary nontraditional approaches to second-language teaching are grounded in significant research into the nature of language use and the relationship of language use to the learning of communicative language skills. Because translation is motivated by language use, some of the important language and language learning concepts that have Evolved within the communicative approaches to second-language education can serve as a point of departure for developing a systematic translation pedagogy. Some relevant concepts include:

1. language function

2. communicative competence

3. the monitor model

4. interlanguage theory

5. creativity and active student participation

The Functions of Language

Language function is a concept derived from the linguistic theories of Firth (1951, 1957, 1964), Palmer (1968), and Malinowski (1965) and further elaborated by Halliday (1970) and Hymes (1971). Savignon describes a language function as "the use to which language is put, the purpose of an utterance rather than the particular grammatical form an utterance takes" (1983, 13). This matches the Firthian concept of context of situation. Halliday has described language as having three basic functions: an ideational function to express content, an interpersonal function for the establishment and maintenance of social relations, and a textual function, which allows for the creation of coherent discourse (1970). As Berns remarks: "In essence, a functional approach to language is based on an interest in performance, or actual language use. It is thus in decided contrast with the Chomskyan concern with the linguistic competence of the ideal speaker-hearer" (1984, 5).

Halliday's functions have received two basic pedagogical interpretations. On the one hand, theorists such as Wilkins (1974), Widdowson (1978), and Van Ek (1980) have developed functional syllabi in which the functions of language become the center of classroom activity. On the other hand are theorists such as Puchta (Gerngross and Puchta 1984),

Savignon (1983), and Di Pietro (1980) who see the functions of language as an important aspect of foreign language education but not as the key element around which classroom practice should revolve: "We highly value the work on syllabus construction by D. A. Wilkins (1976) and Van Ek (1977), but we do not think that the functional-notional approach can be the core concept of a new curriculum. If we really want our pupils 'to do things with words' in a foreign language, the key concept must be a pedagogical one linking the pupils' selves with topics relevant to them" (Gerngross and Puchta 1984, 91). Similarly, Breen and Candlin have pointed out that "The 'functional' aspect of language seems, at first sight, a more realistic basis for language teaching. However, it seems to us that recent efforts to incorporate 'functions' into language teaching materials are based upon inappropriate and quite misleading assumptions. First, that functions are 'items' like categories of grammar or rules of syntax; second, that an utterance is likely to be associated with a single function; and third, that there is a predictable relationship between a function and its syntactic or textual realization" (1980, 109).

Communicative Competence

The knowledge and the ability to communicate, to interact socially with language, are referred to as communicative competence. As early as the 1960s, Jakobovits distinguished between linguistic competence and communicative competence: "Everyone accepts the notion that language is a means of communication, but there is much less agreement about just what is involved in the ability to communicate. The distinction between 'linguistic competence' and 'communicative competence' is either not explicitly considered in most FL courses or it is tacitly assumed that the former must precede the latter so that a certain high level of linguistic competence must be present before attempting the functional use of the FL" (quoted in Savignon 1983, 23).

This tacit assumption has been at the center of the communicative competence controversy in foreign language education since Savignon's 1972 dissertation in which she demonstrated the practicality of a pedagogy based on the acquisition of communicative competence. Canale and Swain (1980) identified four partial competencies under the umbrella concept of communicative competence. These include grammatical competence (linguistic competence in a strict sense), sociolinguistic competence (using language appropriately in situations), discourse competence (understanding and using texts), and strategic competence (the ability to keep communication channels open, especially when other competencies are insufficiently developed). Although the exact nature

of the partial competencies included in a more general communicative competence is still unclear, foreign language educators are increasingly advancing communicative competence as the primary objective of foreign language education and teaching. The implications of accepting this competence as a primary learning objective for second-language education are clear. As Maley states: "The important point is that it is no longer what the students know about the linguistic system which is important but what they can do with the language in the real world" (1982, 58).

The Monitor Model

Krashen (1982) proposed a theory of particular significance for foreign language education. He described a cognitive device within the learner's communication system that monitors his foreign language production, much as a similar monitor keeps tabs on our L1 production. The monitor is responsible for finding and correcting errors in speech or writing by invoking learned rules. The monitor model distinguishes between learning (which is rule-based and conscious and can be either deductive or inductive) and acquisition (the integration of foreign language elements into a student's internalized L2 system). Krashen asserts that adults and children must "acquire"not just learnif they are to develop real communicative competence in the foreign language.

One part of Krashen's theory that other theorists (and perhaps many second-language teachers) find particularly disturbing is his insistence that learning never becomes acquisition. If substantiated, this would mean that much of the time we spend drilling and teaching grammar rules will never contribute to our students' foreign language communicative competence. Instead of grammatical rules (or for that matter functional rules) Krashen sees understandable input and a low affective filter as the key elements in the foreign language classroom: "What current theory implies, quite simply, is that language acquisition, first or second, occurs only when comprehension of real messages occurs, and when the acquirer is not 'on the defensive'" (1982, 6). The affective filter is Krashen's description of the defense mechanism students use in stressful communicative situations. It reflects the observation that because one's mother tongue is an integral part of one's psyche and personality, students often perceive a foreign language as a threat to their personal integrity. In addition, if emphasis is placed on the student's inability to master, manipulate, and memorize to the teacher's satisfaction, more stress is likely to develop and a serious barrier to learning is likely to result: "All other things being equal, it appears that students who have a negative impression of the learning experience itself are not likely to be successful in

learning the FL" (Prokop 1975, 113). Röhl's poignant description of a translation classroom comes immediately to mind.

Any foreign language pedagogy, including a translation pedagogy, must consider Krashen's criticism of grammar teaching; as he points out, a student can know and implement only a tiny fraction of the known rules of grammar for a given foreign language. He does admit that the monitor, which applies grammar rules to spontaneous speech and writing, can and should be effectively used to give polish to a student's L2 production just as it does for the native speaker's L1. But because the monitor's rule capacity is limited, we should teach only those rules that are simple and portable; others, even if learned, will simply not be used in spontaneous speech. Krashen (1982) also points out that during multitasking, that is, when one is engaged in more than one language activity at a time, rule use is particularly difficult. Translation is probably just such a multitasking situation.

The monitor theory also presents another claim that condemns a basic assumption of most language methods and teachers. Krashen sees evidence for a natural order of learning in the foreign languages, resisting the imposition of order from the outside. Krashen opposes the idea of finding out what the natural order of acquisition is and adapting our teaching materials to it because this would encourage teachers to revert to authoritarian teaching.

Considerable criticism has been leveled at Krashen, most of it directed at his rejection of the possibility that learning can become acquisition. Di Pietro (1980) saw the psychological underpinning of the learning/ acquisition distinction as weak and proposed a three-way division instead: unconscious, preconscious, and conscious, a distinction allowing for a movement from rule learning to automatic language use. James (1980) criticized Krashen's hypothesis for not being falsifiable. Krashen claims that monitoring can take place through the application of rules and by a "feel" for the language, but unless it is possible to discriminate between these two monitoring processes, James says, there is no way to verify the hypothesis. Instead, James suggests a distinction between knowing rules (the conscious application of rules) and the automatization of rules as a key to understanding variation among learners and students' errors. As James reports, McGlaughlin also proposes the elimination of the distinction between learning and acquisition and instead prefers "controlled" versus "automatic" processing (1980, 104). Despite the criticism, Krashen's (1982) hypotheses seem very much worthy of further investigation, and, as Roberts indicates, Krashen's contributions have become guiding principles in foreign language education research: "While monitor theory remains a theory, it is too comprehensively documented to be

ignored, and it contributes very considerably to the philosophy that adult learners are capable of doing much more for themselves than was at one time considered possible, if only the learning environment will allow them to use their natural capability by, among other things, supplying as much rich intake as possible in an atmosphere of relaxed acceptance" (1982b, 179).

Interlanguage

Another model that has received a great deal of attention in second-language education during the last fifteen years is the interlanguage theory. Unlike the monitor model, which suggests that acquisition follows its own course largely unaffected by learning, the interlanguage theory presupposes that previous (first) language learning strongly affects all subsequent (second) language learning. First proposed by Selinker (1972), interlanguage theory has been elaborated by many prominent linguists. Basically, the theory assumes that a set of latent language structures in the brain is transformedby the infant in the case of L_1 and by all second-language learners in the case of the L_2into the realized structures of a particular grammar. The latent psychological structures involved in L_2, acquisition are connected with five basic processes:

1. language transfer

2. transfer of training

3. strategies of second-language learning

4. strategies of second-language communication

5. overgeneralization of L_1 linguistic material

Interlanguage would view student errors as evidence of transfer processes and of attempts at creating learning and communication strategies. The interlanguage, then, is an idiolect specific to each language learner and reflects the language and language use hypotheses the learner makes and tests at any point in the development of L_2 mastery. For a comprehensive overview of interlanguage research, see Faerch and Kasper (1980). Interlanguage theory raises fundamental questions about the nature of foreign language learning, but it also sheds considerable light on the underlying causes of student error, particularly persistent student error (or *fossilization* in Selinker's terminology). An investigation of students' translation errors might be useful for developing instructional approaches and would indicate the way that translation students attempt to internalize translation skills.

Creativity and Student Participation

Most of the communicative and humanist-psychological approaches to language learning stress the importance of creativity, an affectively adapted learning environment, and active student participation in the foreign language classroom. There is a strong humanistic tradition in foreign language teaching led by second-language education specialists such as Moskowitz, Rivers, Curran, and Stevick (Roberts 1982a) which has stressed the development of a learner-adapted learning environmenteven for the adult learner, generally neglected by traditional methodologies. Roberts (1982a, 99) places Savignon in the humanistic-psychological school because she places great emphasis on student needs. Birkmaier reflects an increasingly popular view in the humanist branch of second-language education, stating that "language can be taught effectively only if it is the basis for a genuine personal relationship between teacher and students, which gradually evolves into a complex network of relationships among students based on cooperative work and the normal social interplay of language" (1971, 349). Krashen (1982) has similarly underscored the tremendous importance of a low affective filter in adult foreign language acquisition.

All of the language learning principles discussed so far imply the active participation of learners in the learning situation and the instructor's responsibility to stimulate creativity. Once the language teaching community recognizes language and language learning as communication and recognizes that the whole person is involved in the communication process, the implications for student creativity and interaction are self-evident. Contemporary second-language education theory places considerable emphasis on the unique nature of learners and their learning strategies, which can only imply the individualization of the learning process. Krashen's emphasis on relevant, interesting material also reflects a general interest in the student as a wholea living, breathing person with a mind, needs, interests, and background that extend beyond the classroom.

Savignon proposed a list of tenets for communicative foreign language education entailed by the language and language learning principles which have been appearing over the past decade (1983, 23-24). These tenets can serve to establish a link between the patterns of language learning and classroom practice:

(a) Language use is creative. Learners use whatever knowledge they have of a language system to express their meanings in an infinite variety of ways.

(b) Language use consists of many abilities in a broad communicative framework. The nature of the particular abilities needed is dependent on the roles of participants, the situation, and the goal of interaction.

(c) L2 learning, like L1 learning, begins with the needs and interests of the learner.

(d) An analysis of learner needs and interests provides the most effective basis for materials development.

(e) The basic unit of practice should always be a text or chunk of discourse. Production should begin with the conveyance of meaning. Formal accuracy in the beginning stages should be neither required nor expected.

(f) The teacher assumes a variety of roles to allow learner participation in a variety of communicative situations.

A New Pedagogy of Translation

The present situation in translation pedagogy is marked by the lack of a set of appropriate teaching and learning principles. The pedagogical gap mentioned earlier is a gap between classroom practice and a detailed understanding of translation processes and competences and how they are acquired. Some isolated initiatives in the translation studies community focus on the main problems of translation skills instruction and suggest ways to deal with them. New ideas include

1. moving from teacher-centered to student-centered instruction

2. using teaching methods that foster responsibility, independence, and the ability to see alternatives

3. using methods such as role-playing and simulation that create a greater sense of realismand thereby generate enthusiasm and overcome passivity

4. fostering creativity and encouraging cooperation through small-group techniques

5. giving students tools for using parallel texts and textual analysis to improve translation

6. teaching translation as a realistic communicative activity

7. adopting new approaches to translation evaluation, such as commented translations

8. developing a sense of profession through a basic or core course in translation studies that develops broad translation principles and attaches them to translation practice

These valuable initiatives mirror a movement in the field of second-language education away from passive rote memorization and teacher-dominated classrooms and toward a learning environment in which students actively participate in the process leading to the acquisition of communicative skills. The recognition that translation is a special form of communicative language use opens the way to a search for sources of innovation in translation instruction as a unique form of second-language education. Some of the general principles derived from second-language research can undoubtedly be applied to translation teaching.

The communicative approach to second-language teaching has important implications for translator training. House (1980) recognized these implications early on. Translation is ultimately a professional and not an academic exercise. Students should acquire translation skills whenever possible by using them in situations that simulate real translation contexts. Translators' communicative competence is not just knowing about translation as an ideal set of language correspondences or even about how to use languageit is about knowing how to use translation to communicate interlingually. As Wilss pointed out, translation or translator competence is not entirely an ability to use foreign languages; translation is an interlingual language function. Because translation is not entirely dependent on foreign language skills, a translation pedagogy cannot be identical with a foreign language pedagogy.

Foreign language education approaches that strive to build communicative competence focus on grammatical, sociolinguistic, discourse, and strategic competences; translator education will certainly have to account for these competences and for additional translator competences as well. Translator competences will certainly include the interlingual transfer ability implied by Wilss's supercompetence, but they may also include research skills, the ability to write in the native language, creative thinking, and the skills and understandings implied by the word *professional*.

Communicative language teaching provides translation teachers with ideas for improving translation pedagogy. These ideas can be important as sources for developing hypotheses and designing research agendas. Krashen's notion of affective filter already connects to a long-standing concern of translation pedagogues. But there are other important ideas for the translation teacher to consider:

1. Does the concept of a language monitor have any implications for translation pedagogy? Is there a translation monitor (or can a translation monitor be developed) responsible for finding and correcting translation errors by invoking learned translation strategies or principles?

2. Does the monitor model's distinction between learning and acquisition have implications for translation teaching methods? Are translation skills learned or acquired, and is it possible for learned skills to become acquired?

3. Does the distinction between controlled and automatic processes have any implications for translation teaching? Do we know how, or even if, controlled processes (which we presume are the currency of our translation classes) become automatic? Which translation processes are automatic and which are controlled in professional and novice translators?

4. Does interlanguage theory have any implications for the theory of native translation? Is the development of professional translation heavily influenced by previous language learning and any natural processes of translation? If translator training is an intervention in a natural evolution of translation skills in bilinguals, does the analysis of error patterns yield evidence of attempts to build translation strategies?

An integration of existing work in translation pedagogy with the literature of second-language education yields more questions than answersbut they are extremely useful questions. This book cannot answer all of the questions posed but will select a few for closer scrutiny and for experimental test.

Three
Translation Pedagogy, Translation Process

The research questions addressed in this book reflect (a) the unsatisfactory current state of affairs in translation teaching, (b) the valuable pedagogical and empirical research initiatives generated within the field of translation studies, and (c) potential sources of innovation from the field of second-language education. In the preceding chapters many ideas were put forward for consideration. If these ideas are grouped by broad category, they point to important issues a translation pedagogy should be concerned with. Pioneering translation pedagogues, House and Wilss among them, all express an interest in defining the nature of translation (and translator) competence. Second-language education researchers and researchers in the psychology of translation indicate how important a better understanding of language and translation processes might be for translation teaching. Communicative language teachers and translation scholars share a common interest in the evolution of competence, including the relationship between learning and acquisition (even if there is disagreement, as, for instance, about the concept of the native translator). Finally, all of those translation scholars who have considered the state of translation teaching have remarked on the pedagogical gap between classroom practice and a detailed understanding of translation processes and competences. The following research questions are suggested:

1. Is it possible to develop a model of translation processes to serve as a frame of reference for translator trainees and for translation teaching?

2. Is it possible to identify the general and specialized components of translator competence as targets for pedagogical intervention and development?

3. What are the initial steps to take in filling the pedagogical gap in translation teaching?

These are broad research questions, and in the course of the book I will attempt to provide some answers. Of course, most of the questions will generate more specific questions. For instance, is it realistic to expect a specialized skill like translating into a foreign language to be part of a translator's competence? Some of these specific questions will be answered as well.

A Model for Translation Pedagogy

The object of the present study is to investigate how (and whether) translation processes and competences can be understood and then influenced for pedagogical purposesfor the development of more confident, creative, and competent translators. A model of a possible translation pedagogy is presented in Figure 1 to provide a context for the investigation. The model emphasizes the need to consider translation processes in translation pedagogy. Adapted from Stern's (1983) model of second-language learning theories, translation pedagogy divides into three areas or levels: (a) a theoretical foundations level emphasizing the multidisciplinary theoretical origins of translation pedagogy and providing a teachable model of translation process and competence, (b) a theory of methodology, based on a model of how translation processes and competences are learned or acquired, which serves to provide principles for guiding the teaching of translation, and (c) a practice level which activates the methodological theory in the classroom through specific curricula, syllabi, evaluation schemes, text selections, and other teaching practices.

The disciplines given in level 1 are those that intersect with the model's emphasis on translation processes and competences given the following assumptions: (a) translation is linguistic behavior, (b) translation also involves cognitive information processing, (c) translation is a form of communicative interaction in a social and cultural context, and (d) translation learning is intrinsically related to second-language learning but is not coextensive with it. The disciplines named in the model are also those from which primary contributions to the foundations and principles level of a translation pedagogy can be drawn. The present study deals primarily with theory development at level 2 and is a process and competence based theory of the methodology of translation pedagogy. A methodological theory focuses on developing pedagogical interventions (methods) that reflect the relationships among (a) professional translation practice, (b) translation skill learning and acquisition patterns, (c) translation teaching activity, and (d) the cognitive, social, and linguistic

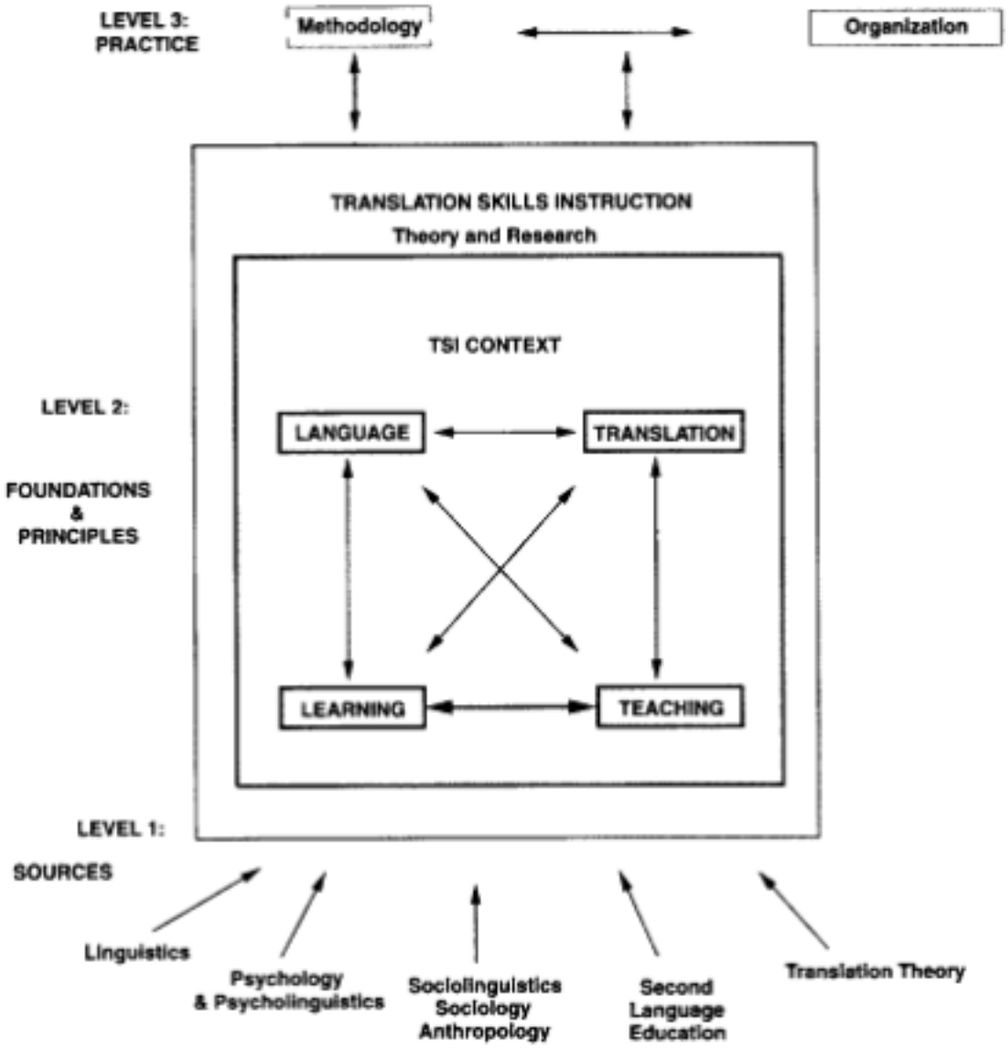


Figure 1.
A model for translation pedagogy

characteristics of translation processes. Level 3 represents the practical level of methodology development such as the organization of courses and programs and is not dealt with in detail in this volume.

The extensive research findings of second-language education have already provided considerable insight into the relationship between language use, language learning, and language teaching. Analogously, the present study is primarily concerned with the nature of translation processes and how they relate to translation practice, translation learning, and translation teaching. Just as the processes involved in language use in general have been observed from both a cognitive perspective (psycholinguistics) and a social perspective (sociolinguistics), it was

deemed appropriate to consider both the cognitive and social aspects of translation processes in this study.

Empirical Research on Translation Processes

The relatively late appearance of empirical research into translation processes in translation studies is partially owing to the fact that, until recently, there were no research methods available with which one could observe psycholinguistic processing phenomena. The only method used to date (in translation studies) to gather information on cognitive translation processes is introspective data analysis. Ericsson and Simon (1980, 1984) showed that most cognitive activities are subconscious and/or subcontrol (i.e., not subject to overt cognitive control by the individual). Therefore, the only activities available for observation are those that enter short-term memory and remain long enough to be verbalized. A debate has raged between proponents of verbal report research and those who question its validity. This debate has been reviewed extensively in the related experiments and, therefore, only a brief summary will be included here (Krings 1986; Börsch 1986).

Research Methodology: Verbal Report Data Analysis

The principal data-collection technique employed in verbal report experiments is some variant of the talk-aloud or think-aloud protocol (TAP). The distinction between thinking aloud and talking aloud is that the former should ideally represent subjects' unmonitored verbalizations of their thoughts, while the latter suggests that subjects verbalize something about their cognitive activities, whether simultaneously or in retrospect. In verbal report experiments, subjects are requested to express orally their thoughts or subvocal verbalizations while carrying out a cognitive task. These verbalizations are recorded and then analyzed with the objective of obtaining information about what is going on in the subject's mind while doing the task. Such an approach adds a new perspective to experiments in human behavior because the subject becomes a co-observer. Researchers do not agree on the reliability and validity of subject verbalizations.

The use of introspective data for the investigation of mental processes has been roundly criticized by a few language researchers, notably Nisbett and Wilson (1977) and Seliger (1983). Nisbett and Wilson argued that conscious awareness is limited to the products of mental processes and cannot reflect the processes themselves. But as White points out, "The

problem is that no satisfactory definitions of product and process in terms of mental events exist" (1980, 105). Smith and Miller (1978) go so far as to suggest that no distinction can be made between processes and the interim products of those processes.

Nisbett and Wilson (1977) elicited introspective data from subjects in a series of experiments. They claimed that the results revealed that the mental processes underlying choices, judgments, and behavior are not accessible to direct introspection. Ericsson and Simon (1980) refuted this notion, claiming that inconsistencies between verbal reports and other data presented by Nisbett and Wilson were caused by the experimental situations and procedures. Similarly, Smith and Miller (1978) found that tasks that are interesting and challenging to the subjects are much more likely to result in reliable introspective reporting. Nisbett and Wilson deliberately chose experimental tasks that were uninvolving.

According to an extensive research review by Ericsson and Simon (1984), subjects do, given the right conditions, have access to considerable data about their own mental processes. The conditions they found to be essential are the following:

1. The data must be accessible to the subjects.

2. The most reliable data will be those reported as close to the occurrence of the behavior as possible (i.e., true introspection will produce the most reliable reports and delayed introspection the least).

3. The researcher must interfere as little as possible in reporting the data.

4. Subjects must be trained in producing introspective data and must be given practice in it before the data are collected.

Seliger (1983) criticizes the use of introspective data from a purely theoretical position. First, he questions the reliability of introspective data. His claim is that we cannot know to what extent such data reflect processing or simply result from subjects guessing or inferencing after the fact. This criticism may be valid for delayed or even immediate introspection, but true introspection, or thinking aloud, would seem to circumvent his criticism by occurring simultaneously with the observed behavior. Seliger does admit that introspective data may be useful for generating, if not for testing, hypotheses about mental processing.

Seliger's position represents the traditional, quantitative position in language research, admirably described by Börsch (1986). From this perspective, only directly observable and quantifiable facts can be objects of empirical investigation. A more qualitative position presumes

that the subject is an expert at what he or she is doing; the focus shifts from a validation that depends on the measurement of objective (observable, quantifiable) phenomena to a "communicative validity" grounded in the interaction between the subject and the researcher. Börsch notes that the classical approaches discount verbal data, but in "qualitatively oriented approaches, they [introspective data] are often used as the main, indispensable source of data, sometimes to be supplemented by other kinds of observations" (1986, 202).

The debate over the validity of introspective data is far from over. In the absence of other techniques for examining mental processes and the importance of proceeding with the research, however, the use of introspective data in the present study is at least partly justified by Börsch's conclusion that "researchers increasingly tend towards believing that think-aloud and self-observational procedures are the only way to get access to what happens inside human beings when thinking or acting" (1986, 203).

One of the main criticisms of introspective data is that the findings can never be complete; not all of the mental processes associated with a cognitive task will be verbalized. This criticism has been discounted by supporters of introspective methods. They claim that even if verbal reports are necessarily incomplete and do not reveal everything, what they do reveal is important. This is the philosophy adopted in all of the major case studies on translation processes reported on in this chapter. They are all concerned with the systematic and strategic (ergo conscious and retrievable) processes used by translating individuals. Hönig (1988a) notes, in his report on small studies using translator trainees as subjects, that a great deal of what goes on in the translator's mind appears to be, and in fact must be, subconscious and therefore not available for verbal reporting. From the perspective of translation skills pedagogy, this is a major concern. Can we ignore subconscious processes just because there are no experimental methods for revealing them? A translation pedagogy must try to address the question of the level and distribution of translation processes. Although clearly some processes are primarily overt and conscious applications of learned techniques or strategies, others are hidden and subconscious, applied automatically, and derived from experiencean intuitive "feel for the languages." Some conscious strategies, applied over a long period of time, can become automatic and unavailable for reflection during a verbal report. Translation processing is probably a mix of conscious and subconscious processesa mix that may change as translators proceed through their training and become more professional. The more automatic a process, the deeper inside the

cognitive "black box" it is. The automatic and conscious processes will respond to pedagogical intervention in different waysand the former only to the extent that they can be identified.

It is essential to have a well-founded understanding of how, and to what extent, translation behavior can be modified through the teaching of conscious translation strategies. It is important to determine whether specific pedagogical intervention techniques can be used to develop the different translator competencies. Solutions to these problems and questions depend on whether verbal report data can outline a topology of translation processes. A major concern of the present study is to investigate the extent to which verbal report techniques reveal translation processesand indicate what processes are not revealed.

Survey of Empirical Studies on Cognitive Translation Processes

Empirical research into translation processes dates from the 1984 study by Dechert and Sandrock. Since their pioneering work, several other studies have appeared that share a common focus on psycholinguistic translation processes and a common methodology, the collection and analysis of introspective verbal data through talk-aloud protocols (Gerloff 1986; Königs 1987; Krings 1986; Lörscher 1986). The objective of these studies was to investigate the actual nature of the mental processes and strategies involved in translation. Before these studies were done, no empirical data were available on mental processing during translation. Each of these research studies advanced our understanding of translation processes, and the results have consistently supported the utility of talk-aloud data collection and protocol analysis in the translation studies. Even though only one of the studies published to date has specifically investigated the translation issues that are of primary concern to the present research (processing differences between translator trainee and professional translator), they all have yielded results that inform the present study. A brief overview of these analytical methods and empirical results follows.

Dechert and Sandrock (1984)

The subject of this study was an advanced university student of English philology who produced introspective data while doing a written translation. The original text was in English and was taken from a foreign language textbook designed for use at the tenth grade level. The subject

was limited to fifteen minutes for the translation and was allowed the use of dictionaries. In addition to taping the subject's verbalizations during production of the translation, Dechert and Sandrock recorded the time the subject spent thinking and talking about each translation unit.

Dechert and Sandrock (1984) and Krings (1986) noted the following patterns in the data:

1. The sentence was the basic unit of translation.

2. Once a solution had been found for the translation of a source text unit, subjects tended to keep their initial solution.

3. There was a strong tendency to retain the syntactic structure of the source text despite deviations from the norms of usage of the target language.

4. There was a tendency to translate at the lowest (word) level and to move to the next translation unit level when the initial attempt failed.

Gerloff (1986)

In Gerloff's pilot study at Harvard University, five American students of French produced a think-aloud protocol while translating a text from French into English. The subjects were not permitted the use of dictionaries. Gerloff devised two category systems for analyzing the talk-aloud protocols. The first was a system for analyzing text-processing strategies and employed thirty-five categories, divided into eight groups:

1. problem identification

2. linguistic analysis

3. storage and retrieval

4. general search and selection

5. inference and reasoning

6. text contextualization

7. eliciting

8. extratextual or language use and task monitoring

The second system provided categories for identifying linguistic levels of the source text at which individual translation strategies operated:

1. morpheme or phoneme

2. word

3. group (more than one word, not a complete clause)

4. clause

5. sentence

This system allowed Gerloff to look at the amount and proportion of processing done in each language and at each linguistic level of analysis. The system permitted comparisons of analyses across subjects to determine whether, for example, professional translators tend to translate larger units than do novices. Similarly, translators' strategy preferences could also be identified.

Lörscher (1986)

In Lörscher's study, German subjects (who were studying to be English teachers) translated a written text orally into English while producing talk-aloud data. Lörscher claimed that this was a more natural process than a written source-to-written target translation accompanied by verbal data. Krings points out, and justifiably so, that this is not the case. The production of a sight translation changes the parameters of a translation task considerably because the translator cannot backtrack and review interim translation products.

Krings (1986)

Krings's dissertation is one of two major empirical studies published to date on the psycholinguistics of translation. In his review of previous talk-aloud studies on translation, Krings identified certain problems, which he attempted to avoid in his own study.

First, the text chosen in the Dechert and Sandrock (1984) study was too simple. Krings believes that translation units that are not problematic will usually be translated automatically and will not be verbalized. This would explain why Dechert and Sandrock found relatively few translation problems. Krings was also suspicious of the ratio of time spent translating a source text segment to the time spent reading it. In the Dechert and Sandrock study the ratio was only three to one, whereas the mean ratio in Krings's study was about twenty-five to one, indicating the relative simplicity of Dechert and Sandrock's text. Krings had his students translate a text that included many potential translation problems, expecting that such a text would elicit more processing data than an easier text.

In Lörscher's (1986) study, subjects were not permitted to use dictionaries. Krings criticized this constraint because the use of dictionaries and other reference sources is part of conscious translation strategy, and there is much to be learned about the research aspect of translation. For instance, do translators uncritically accept translation equivalents proposed by bilingual dictionaries, or do they use collocational or connota-

tional knowledge (if they have it) to evaluate the proposed equivalents? It might be interesting to determine whether professional translators and translator trainees use dictionaries in the same way and whether they have systematic strategies for retrieving translation equivalents with the help of dictionaries. How are such lexicographic retrieval strategies integrated with other translation strategies?

Krings does not agree with Lörscher that written source-to-oral target translation combined with talk-aloud data production is a more natural translation activity than written source-to-written target translation. Professional situations in which translation is performed in a written-to-oral mode are rare, although these situations occur in pedagogical contexts. Oral-to-written modes occur, as for instance, gisting in the intelligence community (listening to an oral text such as a radio broadcast and writing down a target language summary). A translator who is producing a written text is obliged to deal with the physical presence of the evolving text, regardless of the textual unit being treated at any particular moment. Previously translated portions of the text exert a constraining influence on portions as yet untranslated. In written-to-written contexts, the translator has the option of focusing on and monitoring coherence and cohesion in the translated text, even after equivalents for translation units have been found. When producing an oral translation, however, one cannot maintain the entire text in short-term memory, which precludes text-level operations almost entirely. The translator is constrained to focus on smaller segments of the text not much larger than a sentence or an individual translation unit.

Krings criticizes Gerloff's 1986 study on the grounds that the research objective was primarily to examine comprehension and production from the perspective of second-language use; there was no specific intent to investigate professional translation processes. As a result, Gerloff does not distinguish between (a) comprehension problems, (b) combined comprehension and expression problems, and (c) expression problems. Krings also cites Gerloff for failing to identify what she means by the term *translation strategy*. Because she does not define the term, her study cannot distinguish between strategic (controlled) and nonstrategic (automatic) aspects of text processing. Krings claims that Gerloff makes a serious error when she assimilates strategies into processes. Because she directly categorizes each verbalization into one of the thirty-five process categories, she suggests that there is a one-to-one correspondence between strategies and processes. As Krings correctly points out, the literature on verbal data has established that this cannot be assumed to be the case. Although verbal data do give evidence of mental processes, they cannot be claimed to be isomorphic with those processes. The implication is that

Gerloff's system of quantification is more problematic than it appears to be. In Krings's own study, there is no claim of one-to-one correspondence between verbal data and processes. Instead, verbal reports are interpreted as indicators of strategy use which allow the researcher to draw inferences about underlying processes.

Krings's eight subjects were German university students close to completing their master's level teaching degrees in English. Four of the subjects translated into English and the other four into German. Introspective data were collected on audiotape during translation production. Krings's data analysis yielded 117 translation strategies and suggested two hypotheses or models explaining translation processing, one to describe L1 to L2 translation processes and the other to describe L2 to L1 translation processes. These models take the form of flow charts that outline the sequence of identifiable cognitive processes related to any given translation problem; the models use the terminology of the communication strategies of Faerch and Kasper (1980). Krings found that most of the basic strategy categories were the same in both language directions, but the order of application of the strategies depended to a great extent on language direction. The models proposed by Krings suggest that his subjects' translation procedures were applied linearly, moving in systematic progression from one strategy to the next.

Königs (1987)

This study involved five German subjects, two second-semester university students of Spanish philology, two students nearing the completion of their master's level program in Spanish, and one professional German translator. The subjects translated two texts taken from a travel brochure that had originally been written in German and subsequently translated into Spanish. The subjects were videotaped while they translated and produced think-aloud data.

Königs identified two types of translation units, (a) units translated spontaneously (i.e., for which the translator had identified a one-to-one correspondence with a target language unit) and (b) units posing translation problems. Königs determined that this second kind of unit was problematic because of (a) gaps in the translator's L2 competence, (b) gaps in the translator's translation competence, (c) specific linguistic translation difficulties at the word, sentence, or text level, (d) specific content difficulties, or (e) performance difficulties. According to Krings (1986), the differentiation between spontaneously translated units and problematic units is found in all of the investigations of translation processing done to date.

Krings later criticized Königs's study for its use of a previously translated text. In his opinion, any errors made in the original translation (from German into Spanish) could unduly affect the back translation; it is also likely that the Spanish text would be syntactically assimilated to the German text in ways that authentic texts would not be. Krings therefore recommends that only authentic texts be used for this type of processing research.

These pioneering studies have to a great extent substantiated the applicability of talk-aloud research to empirical studies on translation processes. But only Krings specifically draws conclusions from his data relevant to the teaching of translation skills to future translators. The research projects summarized here evolved independently, suggesting that the time had come in the development of the discipline of translation studies for investigating the cognitive processes involved in translation. All of the studies were case studies, and virtually all of the published studies used subjects who were neither professional translators nor translator trainees. In fact, only Hönig presented studies on the cognitive processes of translator trainees (1988a, 1988b, 1990). The subjects in the other experiments were second-language learners at the secondary school level, philology students, or secondary school teachers in training.

The claim made throughout the present investigation that professional translation is not a simple transcoding process and that translator competence is not coextensive with second-language competence casts doubt on the validity of extrapolating from the results of data gathered from nontranslators. It cannot be assumed that the expectations and under: standings of a nontranslator instructed to "translate" for a research study is more than remotely similar to a professional's understanding of the process. Nevertheless, the data-collection and analysis techniques proposed in these pioneering studies can be applied to experiments involving professionals and translator trainees; results of new studies can help determine exactly how the translation processes of the three groups differ or converge. Krings, Lörscher, Königs, and the other researchers have proposed hypotheses about the cognitive processes of professional translators which will be considered among the research questions motivating the present study. A common theme of these hypotheses is that professional translators and nontranslators process differently.

In the only systematic study of the cognitive translation processing of a professional translator, Krings (1986) found evidence to prove that professionals and nontranslators translate differently. Although his initial hypothesis was that the automaticity of processing increases with the development of translator competence, after comparing the verbal report data from a case study of a professional to the results of his original

study of eight English student teachers, he found evidence to suggest that just the opposite occurs. His professional translator used a bilingual dictionary far more often than the students did (student use was averaged). Krings also found evidence differentiating professional from nonprofessional translation. In his studies the professional proceeded in a more concentric fashion through the text, as opposed to the lineal progression of the nontranslator. His professional subject verbalized approximately twice as many options for translation units that did not end up in the final translation product than did the average student. He found that the student teachers processed the source text only to the extent necessary to find a microcontextually adequate solution, whereas the professional made efforts to acquire a deeper understanding of the textthe professional translated in the macrocontext. These results indicate a higher level of conscious control in the professional translator, the first evidence, perhaps, of the existence of a translation monitor.

Intuition and Translation Processes

Reacting to increasing interest in verbal report analysis as a method for gaining access to mental translation processes, two recent contributions to translation studies have emphasized the importance of considering uncontrolled or subconscious mental processestranslation intuition in any discussion of cognitive translation processing. Wilss (1988) stresses the lack of precision and general agreement on definitions of intuition; he also cites the dearth of insight into the role of intuition in translation and its absence in recent empirical research. For example, in reference to Krings (1986), the most extensive investigation of cognitive translation processes to date, Wilss states: "Krings does not provide conclusive evidence regarding the nature or specific function of intuitions in translation behavior. Nor is there, to my knowledge, any other publication in the field of Translation Studies that could help us deal competently with the concept of intuition" (1988, 130).

Citing Bruner, Wilss presents a clarification of intuitive processing that serves to distinguish it from the controlled strategic processing studied up till now in TAP studies.

> Analytic thinking characteristically proceeds a step at a time. Steps are explicit and usually can be adequately reported by the thinker to another individual. Such thinking proceeds with relatively full awareness of the information and operations involved. It may involve careful and deductive reasoning, often using mathematics or

> logic and an explicit plan of attack. Or it may involve a step-by-step process of induction and experiment. Intuitive thinking characteristically does not advance in careful well-defined steps. Indeed it tends to involve maneuvers based seemingly on an implicit perception of the total problem. The thinker arrives at an answer, which may be right or wrong, with little if any awareness of the process by which he reached it. (1988, 133)

Given the vague understanding of intuitive processes, they will be considered here simply as uncontrolled mental processes. Intuitions will include such phenomena as spontaneous associations between words and concepts; spontaneous determinations of accuracy or equivalence where no conscious rule is invoked; and spontaneous determinations of acceptability (relative to the target speech community), also where no conscious rule is invoked.

Wilss sees a danger in verbal report research in that it misrepresents translation behavior, casting it, perhaps unintentionally, as a primarily logical, step-by-step strategic process. Uncontrolled, intuitive processes are certainly involved that cannot be inferenced from verbal report data, and because of that they are ignored or undervalued. Wilss's reservations are not particularly damning because he assumes that translation intuition is brought to bear only after attempts to solve translation problems strategically have failed. Hönig (1990) agrees with Wilss's concern that intuitive processes get lost in verbal report analyses but does not agree with his understanding of the role of intuition in translation processes. As Hönig points out, Wilss sees intuitive processes as the translator's last resort, emerging after controlled processing has failed to provide an acceptable solution to a perceived translation problem. Hönig argues another view; controlled cognitive processes actually serve to guide or structure translators' intuitions, which occur as subprocesses in almost all translation procedures: "There is a lot to suggest that intuitive judgments and spontaneous associations are involved in virtually all translation procedures" (Hönig 1990, 6).

Hönig conceptualizes cognitive-intuitive processing chains, where controlled processes alternate with intuitive ones in a manner that is neither predetermined nor completely describable. Hönig may be describing the operation of a translation monitor that intervenes whenever intuitive processing fails to yield solutions. The pattern of monitor invocation would be text and context dependent. In describing his observations of translator trainees engaged in translation, Hönig states: "It was strikingly clear in every case, that regardless of the solution that was finally reached, there was no systematic cognitive path that had led to it.

Cognitive and intuitive factors alternate without any observable coordination and without evidence of a progression of mental steps" (1990, 8-9).

We are left, then, with two contradictory hypotheses that have equally contrary implications for a theory of translation teaching. If, as Wilss has suggested, translation is primarily controlled processes with occasional, last-resort intuitive interventions, then an analytic approach to translation processing could be taken. A model that identified correlations between translation problems encountered, translation strategies implemented to solve those problems, and translation products yielded by the strategies could be developed. The identification of correlations could encourage the development of rule-based translation instruction, in which strategies would be memorized for controlled application to corresponding translation problems.

If, as Hönig has suggested, translation processing does not proceed in an orderly, step-by-step fashion and if strategies mix unpredictably with intuition, it will be more difficult to create or defend a rule-based approach to translation. Hönig takes his argument a step further and makes concrete proposals for translation instruction based on his understanding of the relationship between controlled and intuitive processes. A primary objective of the empirical portion of this investigation is to attempt to account for intuitive processes in the analysis of verbal report data, to represent such processes in the TAP instrument, and to address the pedagogical relevance of the relationship between conscious strategy and intuition in translation.

Pedagogy and Process: Research Questions

In light of the preceding discussion, specific research questions that must guide the case studies that are to follow are posed:

1. Can a data analysis method be developed that can be readily applied to verbal report data on translation processes and that could be used in further experiments to deepen our understanding of translation processes?

2. What processing phenomena can be identified in the verbal reports of translator and translator trainee subjects?

3. Is there a clear distinction between the approaches that professional translators and novices take to foreign language translation?

4. Is there evidence of differences between professionals and novices regarding their expectations of what their completed translation should

be like and, if so, what are the repercussions of this expectation on translation processing?

5. To what extent can intuitive or relatively uncontrolled processes be accounted for in the analysis of verbal report data and represented in a TAP instrument?

6. Does automatization of translation processes increase with the evolution of the translator's competence?

7. Can evidence be found in verbal report protocols to support or contradict the proposed social model of translation processes as a basis for a translation pedagogy?

8. Can evidence be found in verbal report data to contribute to a tentative model of cognitive translation processing that could serve as a theoretical foundation for the development of a translation pedagogy?

These specific research questions for the case studies are intended to uncover empirical evidence that will help answer the more general research questions given at the beginning of this chapter. An understanding of what translators actually do mentally when they translate is essential for the development of translation pedagogy.

Four
Integrating Social and Cognitive Translation Processes

Translation scholars have often focused on discrete areas of the complex sociocognitive behavior that is professional translation. This book attempts to outline a more global view of translation behavior, approaching translation processes from two points of view: (a) the social involvement of the translator in an act of communication and (b) the cognitive activity that goes on within a translator's mind while translating. The position taken here is that these two aspects intertwine and must be investigated together to establish a comprehensive foundation for translation teaching and learning.

Translation from a Social Perspective

Firth's linguistic theory is the social foundation for the approach to translation pedagogy developed here. Firth, doyen of the London School of Linguistics, based his theory on the concept of context of situation (CS) introduced by Branislaw Malinowski (1965), an anthropologist who did research on language use in traditional societies. Malinowski (1965) and Firth (Palmer 1968) understood language use as a meaningful activity in itself, rather than as a mere reflection of reality or a tool for transferring thought. Firth saw language as a highly complex social phenomenon whose constituent parts, both linguistic and extralinguistic, interrelate. In Firth's linguistic theory the context of situation consists of a set of abstract categories identifying and classifying the situational factors influencing the production and comprehension of an utterance and its constituent parts. Meaning resides in a text as a unique co-occurrence of a specific set of these situational factors. From such a perspective, lexical items taken out of context can have only potential meaning. They acquire specific or situated meaning only when used in communicative interaction. Firth identified the following components of the context of situation:

1. features of participants, including personalities (the interacting parties in a communicative event) and persons (individuals present but not actively involved in the communicative exchange)

2. verbal action and nonverbal action

3. relevant objects and nonverbal, nonpersonal events

4. effects of verbal action

Firth's view of language is holistic and social; he does not ignore the situational factors involved in language use, criticism that can be leveled at the behaviorist and mentalist linguistic traditions. Firth focuses on the context of language interaction and stresses the need to account for the communicative event in the study of language. A similar view of language underlies a number of general theories of translation, including those of House (1977), Neubert (1968, 1973), Nida (1977), Pergnier (1978, 1981), Reiß (1977), and Toury (1980). Its implications have yet to be incorporated into a systematic approach to translation teaching and learning.

Catford (1965) based his influential work, *A Linguistic Theory of Translation*, on his interpretation of Firth and Halliday (1970). Catford understood the translation process as "the replacement of textual material in one language (SL) by equivalent material in another language" (1965, 1). For Catford, the translation process is a search for the formal or functional target language equivalents of such source language linguistic elements as morphemes, words, clauses, and sentences. Catford appears to see the sentence, rather than the text, as the largest translation structure to be considered. This suggests that translation processing primarily involves the retrieval and matching of source and target linguistic elements in a search for equivalents to insert into target sentence semantic and structural slots. Formal equivalents are lexical items that can be objectively identified as equivalent in meaning in two different languages, while functional equivalents are grammatical constructions that serve the same linguistic function in two language systems.

Catford's understanding of translation, depicted in Figure 2, is shared by the layperson, the foreign language teacher, and the novice translator trainee. It is a very narrow application of Firth's linguistic approach. Although it is clear that translators do focus on specific textual elements at the sentence level as they proceed through a translation, they are not constrained to operate only at that levelthe professional translator cannot operate only at the sentence level. Hönig's finding that professionals progress concentrically through a text indicates movement between levels of linguistic processing. The translator operates with a broad range of elements extending outward from discrete words to the communicative event within which words and sentences occur.

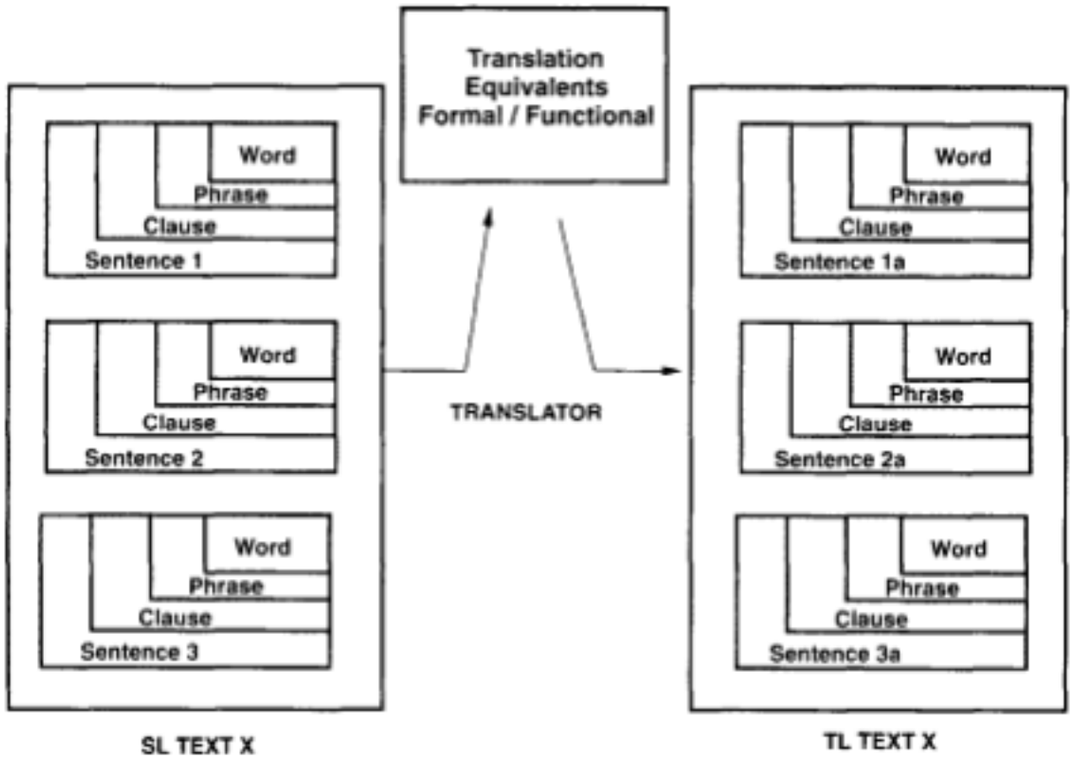


Figure 2.
Process of translation as presented by Catford

A translation context of situation places the translator as a participant in a much broader communicative activity and defines a translator's self-concept. The context of situation and the translator's self-concept that is its cognitive reflection guides the translator through the process of translating a text, allows effective analysis of the source text, and helps identify the target readers. As a part of the translator's self-concept, the translation monitor may factor communicative and social variables into translation processing and tell the translator when he or she cannot handle a particular translation task, when to look terms up in a reference work, and when to depend on strategy, rather than intuition, in solving particular translation problems.

Viewing an act of translation as the replacement of linguistic material in one language by linguistic material in another language presupposes a relationship of systemic linguistic equivalence between elements of different languages. Despite the existence of bilingual dictionaries and their implicit claim that such equivalence exists, however, equivalence in potential meaning of general language words in two language systems must always be conditioned by two factors, the context of situation and the

textual profile of the target text in which the word must appear. If translation is a form of language in use, then the equivalence of linguistic elements can be established solely at the level of communicative and textual usageby a comparison of the role the elements play in the communicative event and in the respective texts (Neubert and Shreve 1992, 140-46). We can always speak only of an equivalence conditioned by communicative and textual function. The recognition of this conditioned equivalence suggests that the translator, who is using language for communicative purposes, should be more concerned about striving for equivalent communicative and textual effects on interlocutors than on an ideal matching of very low-level equivalent linguistic elements.

This is the view presented in many modern translation theories, including those that deal with questions of translation skills instruction: Hönig and Kussmaul (1982), House (1977), and Reiß (1977). As Toury (1980) has stressed, however, producing even a functionally equivalent text in the target language is not the only or, perhaps, even the most important task that a translator is engaged in. It is one of a series of options that the translator may select as the task specification in a given translation situation, depending on the complex interplay of the situational factors involved.

From a sociolinguistic perspective, professional translation production can be subject to widely varying constraints. These include the translation norms of the society within which the translator is working, the employer's expectations concerning the form and function of the translation, and the translator's own understanding of the function of the translation being produced. For example, a translation might be needed simply to inform an L2 readership of certain information expressed in an L1 text, or an employer might expect a translation to have as close to the same effect on readers of the translated text as the original text had on the readers of the original text. A translator might be expected to stick as closely as possible to the syntactic structure of the original text or might be allowed a great deal of freedom to break away from the linguistic form of the original. The varying translation contexts of situation do not all lead to functional or even textual equivalence.

If translation is interlingual communication involving both L1 comprehension and L2 production, then Catford's description of translation processes is also inadequate from a psycholinguistic perspective. Language comprehension is a complex process of meaning creation involving the interplay of top-down (schema-based world knowledge) and bottom-up (language-based) processes. From such a perspective, the original text in an act of translation is the starting point of a complex cognitive process involving extralinguistic knowledge of the world and the subject

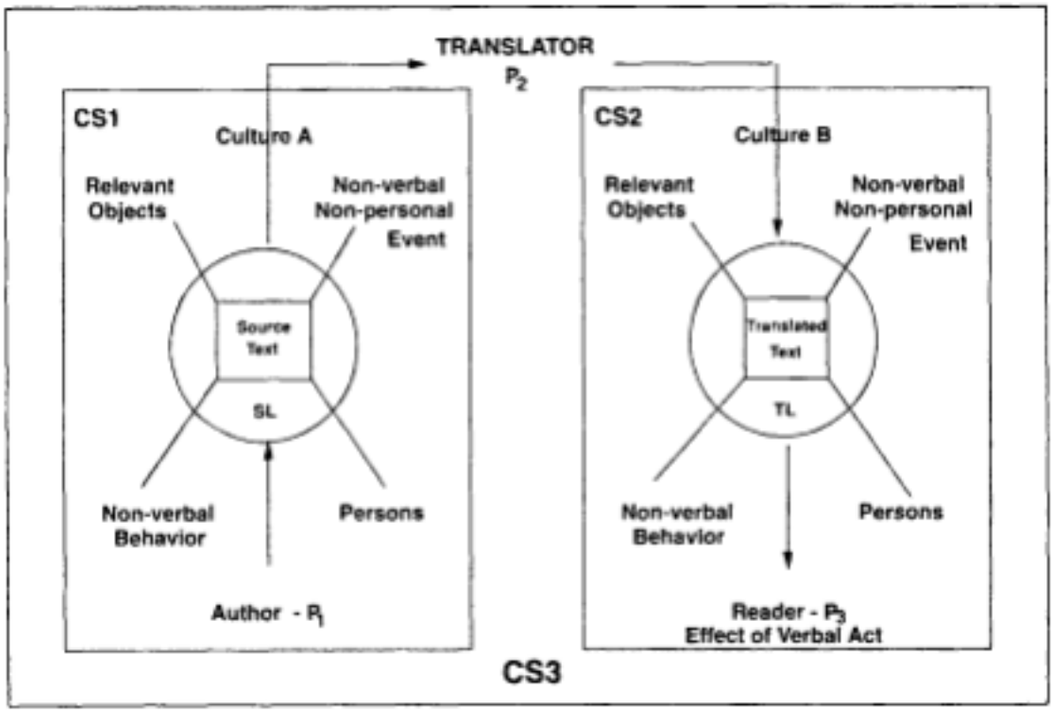


Figure 3.
A social model of translation processes

matter involved, as well as communicative and linguistic knowledge (either conscious or subconscious) of grammaticality, collocation, style, textual conventions, sociolinguistic appropriateness, and translation norms for two languages representing two distinct cultural realities.

A Firthian view of the translation process, presented in Figure 3, is an attempt to represent the sociolinguistic complexity of the translation situation. In this model, the translator is considered an active participant in three interrelated contexts of situation: the CS1 of the original text, the CS2 in which the translated text will be embedded, and the CS3 in which the translator resides while translating. The translator's role is complex, involving L1 text comprehension, L2 text production, and detailed decision making, including evaluating how the original CS1 relates to the CS2.

The text comprehension and text production processes involved in translation are based on general text production and comprehension, although task specifications may influence these general cognitive processes (Shreve, Schäffner, Danks, and Griffin 1993). In translation, the translator reads and understands a text, not for personal consumption but to translate it. Translation is usually not motivated by the translator's own ideas, intentions, and desire to communicate or create an effect on

a reader; translation production is initially motivated, although not completely determined, by the ideas and intentions of a different participant in the communication processthose of the author of the original text. The source text serves as a linguistic key that helps the translator unlock meanings enclosed in the CS1. The translated text is the linguistic key for the L2 reader to unlock meaning carried in the CS2 The CS3 corresponds to the actual translation context where the translator's understandings fuse with the perceived meaning of the CS1 and project a new meaning through the resources of the L2 into the C2. In Firth's words: "We never really live in the present. In any situation in which we find ourselves there is a hangover of the past . . . the shell of our immediate future surrounds our heads which are fraught most with a germ of futurity. In any situation the normal human being and his environment are one; the past merges in the present in which the future is always on the point of being born" (Palmer 1968, 172). This is the inescapable reality of professional translation behavior when the translator reaches back into a closed, finished communication, merges his or her own knowledge, competence, and affective self with it, and projects the result of that interaction to future L2 readers.

This model places responsibility for decision making on the translator. Depending on the interplay of situational factors, the translator can choose to replace elements in the source text with formally equivalent elements from L2. Or the translator may decide to break away from the linguistic structure of the original text. The translator may decide that certain factors of the CS1 are irrelevant with respect to the CS2 and, as a result, need not be represented linguistically in the CS2. The translator may make meanings explicit in the translation that were implicit in the source text because elements of the CS2 make such explicitation advisable or necessary. The intersection of the three contexts of translation guides the translator's decision making.

The Firthian conception of meaning is complicated when applied to translation. In his general linguistic theory Firth understood meaning as resident in the interaction of the components of a specific context of situation. The translator, as a participant in a translation context of situation, both becomes and creates meaning in CS3. Each translator interacts with a source text in a unique way, dependent on such factors as grammatical, sociolinguistic, stylistic, and textual competencies in the L1 and L2, familiarity with the subject matter in the source text, perception of his or her own role in that particular translation situation, affective attitude toward the subject matterin fact, an infinite array of highly individualized factors that can never be replicated in another translation situation, even when they involve the same translator.

Firth did not personally propose the view of translation presented here, but this translation model derives from his general theory of language use. Firth's own ideas on translation are most comprehensively discussed in the article "Linguistics and Translation" (Palmer 1968), in which he discussed types of translation (creative, official, machine, and as a linguistic technique) and the importance of restricted languages for translation. Although it was Firth who proposed investigating translation equivalence at the microlinguistic levela suggestion pursued by Catford (1965)it is clear from Firth's own writings that his understanding of language use leads most directly to the social view of translation proposed here:

> I want to make it clear that the linguistic systems and structures are related to the systems and structures in the events, relevant objects and people and what they are doing. You have the option of connecting structures and systems of language with structures and systems of thought or with structures and systems in situations comprising the human participants, their non-verbal behavior, the relevant objects and other events, and these alternatives. I suggestdifficult though it may appearthat the situational matrix is the more manageable one and more easily related to problems of translation. (Palmer 1968, p. 91)

Translation and the Firthian Model

A survey of several modern translation theories reveals a continuum extending from linguistic transfer approaches that see translation as a search and replace operation performed on linguistic equivalents, to message transfer approaches that view translation as a process involving the transfer of messages. In linguistic transfer models like Catford's, linguistic codes are the starting and ending points of the translation process. The process is primarily one of linguistic structure search, retrieval, matching, and replacement. At the other extreme, Seleskovitch's (1976) meaning transfer approach, based on her studies of interpretation, assumes that the translator begins with the linguistic material in a text but immediately and spontaneously distills the extralinguistic meaning from that material. It is this extralinguistic meaning that is then reexpressed in the target language, without regard to the linguistic structure of the original text. Newmark is one of several translation theorists who have criticized Seleskovitch: "The basis of Seleskovitch's theory is unsound. Translation and interpretation have to be based on words, sentences, linguistic mean-

ing, languagebecause apart from the interpreter's paralanguage and body language . . . they have no other material foundations. Meaning does not exist without words" (1982, 98).

Newmark seems to have bypassed a crucial point here, which is that while linguistic material carries and may partially compose potential meaning, it is not the entire source of meaning for a text or segment of a textmeaning derives from the text in its context of situation. From a Firthian perspective, the criticism one might level at Seleskovitch is that her model suggests that the original textconsidered only as a complex linguistic structurepossesses a full or complete (as opposed to a potential) meaning. The implication is that the translator's job is to discover this meaning and render it, and no other meaning, into the target language. This position is as untenable as Catford's because it ignores the derivation of meaning from contexts of situation and the translator's incremental creation of meaning through communicative interaction with the source text and with the source and translation contexts of situation.

Nida (1977) proposed a meaning transfer approach that he calls a sociolinguistic or sociosemiotic approach to translation. In his view, translation is the search for the "closest natural equivalent" of source language translation units. These are functional equivalents, or linguistic elements that can carry a similar communicative (contextualized) meaning in texts in different languages. Although Nida has always been concerned with message transfer and the effect of translation on the L2 audience, in his early work he proposed a technique based on transformational grammar to get at the "near kernel" of a sentencethe level of meaning just above deep structure. His more recent writings suggest that the functional equivalence he sees as the objective of translation behavior is on the level of language in context rather than language system. Nida's work comes from the restricted domain of Bible translation. Although he does offer considerable insight into the communicative nature of translation processes and the importance of the text as the superordinate unit of translation, his methodological framework makes it difficult to apply his theory to more common translation tasks and translation pedagogy. Pergnier (1981), a translation scholar of the *école de sens*, also places great emphasis on recognizing that, in Saussurian terms, translation processes act on *parole* rather than *langue*. Pergnier, like Nida, recognizes that the context of language use decides the range of appropriate translations.

Many translation theorists avoid the problem of the linguistic transfermessage transfer continuum by advocating a bipolar continuum of translation approachesat one pole are approaches that favor the source language and at the other approaches that favor the target. Newmark (1982), for example, proposes a distinction between semantic translation and

communicative translation. In semantic translation the translator attempts to render, as closely as the semantic and syntactic structures of the second language allow, the exact contextual meaning of the original text. In semantic translation the objective is to convey and reveal the original author's thought processes and even use of the source language, rather than rendering a text in the target language that could have been written in that language.

Communicative translation attempts to produce, via the target text, an effect on target language readers that is as close as possible to the effect the source text originally produced on source text readers. The translator assumes the right to improve the original text (in the interests of the reader) and adapts the text as much as possible to target language textual and cultural norms. Certain texts, especially those closely bound to the source culture and its values (literary and authoritative texts) might require semantic translation, while others, including the nonliterary translations that most graduates of translator training programs are likely to encounter professionally, would require communicative translation. Regardless of the form of translation, Newmark proposes a series of rules for translators to follow. These rules are prescriptive strategies to be memorized and applied in the appropriate circumstances.

House (1977), like Newmark, distinguishes several alternate forms of translation, based on function. Overt translationproduction of a target language text that is obviously a translationis appropriate when the readership of the translated text is not directly addressed, that is, when the translated text is not to be considered "a second original" (1977, 106). According to House, historically linked and "timeless" texts should be translated overtly. Covert translation is prescribed when the source text is not tied to the source language community and cultural system and should read like a "second original" in the target language.

Reiß (1977) bases her bipolar approach to deciding a translation process on text type. Reiß converted Bühler's textual functions to text categories that translators can identify and use to select the translation process needed to produce an adequate translation:

1. expressiveto express an author's emotions or opinions

2. presentationalto report information

3. vocativeto elicit a response

4. multimediawhere two or more media are joined in one text

According to Reiß, any given text type would correspond to a textual function. For example, literary and philosophical texts have an expres-

sive function, advertising texts a vocative function, and popular literature, contracts, and instruction manuals would have a representational function. Reiß claims that the translator must first analyze the original text to learn its function and the author's intentions and then determine the target language audience and the textual function the new text is to assume in the target community. Reiß's main contributions as a Firthian are her focus on the text as the basic unit of translation and her stress on the translator's decision-making role. Although it is widely recognized that Reiß's text typology has been a major contribution to the study of translation, it has also received considerable criticism on several key points.

Koller (1978) points out that texts may have other functions than those Reiß proposes. Additional functions might include convincing, evaluating, teaching, and invoking reflection. These functions may be mixed in the same text, distributed among textual segments. Koller also criticizes Reiß because she has only addressed only the first of three essential questions:

1. What is meant by "text type"?

2. What are translation methods?

3. How are text-type and translation method related?

Philosophical hermeneutics has made some significant contributions to the study of translation. The hermeneutic approaches to translation proposed by Chau (1984a) and Steiner (1975) place great emphasis on the interaction between translator and text. These approaches assume that the translator enters a dialogue with the source text and that the translator's intellectual, cognitive, and affective faculties interact with the text to create meaning. This volume develops the interaction of text and translator as a central premise of translation skills instruction, but the hermeneutic perspective will be difficult to employ in translation pedagogy. As Chau has noted, the proponents of the approach insist that hermeneutics cannot change behavior: "Steiner, among the best qualified scholars to speak on this topic . . . agrees without a single doubt: a translator cannot improve himself by reading Hermeneutics . . . . The same view (inapplicability of Hermeneutics to anything) is expressed by just about every serious Hermeneutic scholar I have met" (1984a, 76-77).

Chau, however, breaks the mold by proposing a set of important ideas that a translator or translator trainee can acquire through a study of hermeneutics; these ideas take a central position in the proposed translation pedagogy:

When a translator understands the insights outlined in the last section, he is no longer the same. Probably:

(i) He is more humble, as he is fully aware of his existential limitation in his relation to the ST, himself being a finite being.

(ii) He is more honest, as he admits that neither his reading nor his rendering are canonical.

(iii) He is a more efficient interpreter, as he realizes that apart from employing various scientific means to understand the ST, he must "lose himself" in the communion before any valid interpretation comes about.

(iv) He is more confident, as his personal creativity under the given historical conditions of human existence is affirmedhe knows that no translator needs to be haunted by the myth of the reading and the translation.

(v) He is more responsible, as he realizes the active creative role of the interpreter in shaping the meaning of a text, and therefore works harder to improve himself as a partner. To prepare himself to participate in such "self-forgetful communion" he will constantly sharpen his tools for interpretation via every possible means. (1984a, 76)

The translation theory synopses in this chapter have served to suggest how translation scholars have tended to focus on specific aspects of the translation process (linguistic translation unit, message transfer, authority of text, text function, text type), without investigating the full range of factors that come to a juncture to contextualize the act of translation. The complex interactional context of translation behavior implied by a Firthian model suggests that a translator's ability to perform in the profession depends on the extent to which the translator or translator trainee has become aware of the extent and influence of this social interaction and has developed a set of coherent expectations regarding his own role as a professional translator. An individual who has developed a professional translator's self-concept will take the multiple social factors identified in this model into account and will translate differently fromand more adequately thanthe individual who sees in the translator's task only the mechanical retrieval and matching of predetermined, objectively identifiable translation equivalents.

The Firthian model of translation as interaction can serve as a firm theoretical foundation to guide both curriculum and course development in training programs for professional translators. A more extreme view suggests that to address the pedagogical needs of the translator

trainee, translation courses and curricula must incorporate a principled, coherent understanding of the types of social-communicative relationships illustrated in the model.

Translation and Cognition

The Firthian conception of translation provides a theoretical perspective on the social articulation of translation activity. It reveals how the production of a translation is an act of interpersonal communication within a complex web of interlingual, intercultural, and intersituational factors. The social act of translation has a cognitive aspect, the intersection of the external context of situation with the translator's internal knowledge sethis or her knowledge of language, textuality, subject, culture, social interaction, and knowledge of how to use that other knowledge to comprehend the original text and produce the translated text.

The Firthian perspective is useful in developing a model for translation teaching and learning because it defines the translator as person and interactant and emphasizes the external constraints that impinge on translation. Because it emphasizes the translator as a key player in the act of translation, we can use it as a basis for developing a translation pedagogy that addresses the passivity that Röhl identified in the traditional classroom and for reducing the stultifying effects of Ladmiral's performance magistrale.

The translator's articulation with the social is only one articulation that a model of translation skills instruction demands. A pedagogy of translation also needs to understand how cognitive processes and knowledge structures (translator competences) articulate with the context of situation. A pedagogy of translation needs to understand how the context of situation is processed and competences of several kinds brought to bear in text comprehension and production. A focus of interest then, for an investigation of the cognitive processes involved in translation is on how translation-relevant knowledge is stored and accessed during translation production. Cognitive studies would also provide evidence for or against the position this volume takes on the social articulation of translation; there should be reflections of the socially articulated translation task in the cognitive activity. Cognitive evidence of the task context or CS_3 should emerge in an identifiable translator's self-concept and in indications of the operation of a translation monitor. Further, these reflections of task should share some characteristics with other forms of communicative behavior, especially cross-language behavior. A basic thrust

of a pedagogy of translation must be whether translators actually do take the constituents of the translation context of situation into account during translation production. Or do they merely retrieve and insert replacements based on correspondences of form and function as Catford (1965) proposes?

Investigating cognitive translation processes is essential for the establishment of realistic learning objectivespedagogical outcomesfor translation skills courses and programs. Such outcomes would be based on the observed nature of the cognitive resources that the translator uses during translation, including knowledge systems that translators can and do access and strategies that translators use to apply their knowledge to the comprehension and production phases of professional translation.

The purpose of the psycholinguistic study that appears in Chapters 5 and 6 is to begin an investigation of the cognitive articulation of translation processes with contexts of situation, with special reference to the implications of this articulation for translation pedagogy. This is preliminary research, but it can lay a more comprehensive foundation for level 3 research in translation skills instruction (teaching methods and instructional organization from Figure 1) than could principles and foundations developed from either a social or psycholinguistic perspective alone.

Psycholinguistics of Language Processing

Two integrated activities, the comprehension of the original text and the production of the target text, frame the cognitive activity involved in translation. Language comprehension and production have been described in terms of information processing, as cognitive activities that involve accessing, analyzing, and manipulating data. A psycholinguistic model of translation processes, proposed in Chapter 7, derives from an integration of Boekaerts's (1981) general model of language comprehension and production with the results of the case studies presented in the next chapters. Boekaerts's model is typical of contemporary psycholinguistic research and is presented here as an instrument for describing text comprehension and production for translation purposes.

In Boekaerts's model, L1 and L2 language comprehension and production involve cognitive processes that access linguistic, conceptual, and episodic information under the control of planning processes directed toward achieving communicative goals. Linguistic, conceptual, and episodic information can be stored in memory (in the form of schemata, or organized blocks of interrelated information) or carried by language

input. Boekaerts proposed the existence of (a) a subconscious work space that can simultaneously process several information elements of different types and (b) a conscious processing unit (CPU), where only small amounts of information can be held passively for up to a few seconds or operated upon cognitively. She describes the exchange between these two structures as a bottleneck caused by the limited processing capacity of the conscious processing unit.

Boekaerts identified three different types of understanding that can be involved in comprehension (paraphrased here):

1. input-based (bottom-up) understanding based on linguistic information present in the input and language-specific information from long-term memory

2. schema-based (top-down) understanding that draws on information stored in long-term memory schemata (In Boekaerts's terms [1981, 33], schemata are "data structures in which abstract, generic knowledge about a specific aspect of reality is stored.")

3. contextual understanding, based on information drawn from the linguistic context and the extralinguistic situational context

The comprehension process begins with language input; the input is processed simultaneously in all three modes of understanding. Linguistic input evokes relevant schemata to allow the language user to make inferences about intended meaning. The inferences evoke or trigger schemata stored in long-term memory and combine with them to form what Tannen (1979) described as an expectation structure progressively modified as new information is made available from the input. Comprehension in one's native tongue takes place primarily in the subconscious workplace, and it is only when problems arise in matching input to expectations that small amounts of information will be loaded into the conscious processing unit, where the language user can focus on the perceived problem and resolve it using comprehension strategies. Comprehension problems can arise because of the lack of domain-based or culture-based knowledge schemata, the absence of knowledge about relevant discourse conventions, or the absence of linguistic information (e.g., lexical knowledge and syntactic framesthe latter are templates for grammatical structures and idiomatic expressions that can be implemented automatically, allowing for rapid language processing and production). The second-language learner is likely to encounter more comprehension problems than the native speaker, especially with respect to culture-specific discourse frames, L2 culture-based knowledge schemata, and L2 linguistic knowledge. Boekaerts summarizes her general view of

the comprehension process as follows: "The learner can only make sense of a verbal message whether it is presented in the native language or a foreign language, in an oral or in a written form when he can locate and activate stored information viz. (1) language-free information stored in relevant memory schemata . . . and (2) language-specific information stored in the lexicon and the rule system of the target language" (1981, 39). Utterance production, in Boekaerts's view, begins with the planning stage: "Planning a message refers to a set of cognitive processes which translate the speaker's (or the writer's) basic ideas, his goals or intentions, into a series of sentences. The product of the speech planning act can be executed by giving specific commands to the vocal or the graphic motor system" (1981, 40).

Planning is not the single initial stage in the text or discourse production process. Boekaerts identified several other parallel, integrated processes:

1. activation of one or more memory schemata

2. location and activation of specific knowledge about the encoder and about the specific context in which the message is communicated

3. activation of the discourse schema . . . and the selection of an appropriate discourse plan based on processes 1 and 2

4. search for appropriate propositions within these activated schemata and a preliminary ordering according to the selected discourse plan

5. activation of language specific knowledge from memory

6. generation of individual sentences based on processes 4 and 5

7. issuance of commands to the vocal or the graphic motor system to utter strings of sounds or to write strings of letters (1981, 40-41)

The major empirical studies on the psycholinguistic processes of translation (Krings 1986; Königs 1987; Lörscher 1986) have focused on the set of translation production plans that correspond to the communication strategies Faerch and Kasper identified in second-language comprehension and production. These strategies are "potentially conscious plans for solving what to an individual presents itself as a problem in reaching a particular goal" (1980, 56). Faerch and Kasper classified second-language communication strategies into three groups:

1. formal reduction strategieswhere the language user employs a reduced linguistic system in an attempt to fulfill the established goal

2. functional reduction strategieswhich involve changing or reducing a communicative goal to avoid a problem

3. achievement strategies (which involve an attempt to solve a problem by expanding one's communicative resources)

Krings (1986) found evidence for translation strategies corresponding to those identified by Faerch and Kasper although the subjects in his experiment did not have any training in translation or experience as professional translators. This gives some initial empirical support to the contention that translation shares some cognitive processes with other forms of communication.

Boekaerts's model does not clarify one aspect of the comprehension and production processes discussed earlier in this volumethe distinction between automatic and controlled processes. The assumption that the human mind is an information-processing system with limited capacity has led some researchers (Schneider and Schiffrin 1977; Schiffrin and Schneider 1977) to say that the essential dichotomy in language processing is not between conscious and subconscious but between automatic and controlled. McGlaughlin, Rossman, and McLeod claim that the two dichotomies do not represent the same underlying phenomenon: "The distinction between controlled and automatic processes is not based on conscious experience. Both controlled and automatic processes can, in principle, be either conscious or not" (1983, 140). These investigators argue, from their work in second-language education, that automatic processing develops through practice, the consistent mapping of the same input to the same pattern of activation over many trials. Once learned, automatic processes are difficult to suppress. Controlled processes, in contrast, are not a learned response; they are a temporary activation of procedural elements in a sequence. The subject attends to the processes, and because attention is required, only one such sequence can normally be controlled at a time without interference. According to McGlaughlin, Rossman, and McLeod, controlled processes require more time for their activation than do automatic processes, but they have the advantage of being easy to set up, change, and apply to new situations.

Two aspects of this conception of information processing are especially important here. First, McGlaughlin, Rossman, and McLeod claim that learning involves the transfer of information to long-term memory and that controlled processes regulate learning. McGlaughlin, Rossman, and McLeod (1983, 140), citing Schiffrin and Schneider (1977), argue that "it is controlled processes that regulate the flow of information from working memory to long-term memory. Learning involves time, but once automatic processes are set up at one stage in the development of a complex information-processing skill, controlled processes are free to be allocated to higher levels of processing. Thus controlled processing can

be said to lay down the stepping stones for automatic processing as the learner moves to more and more difficult levels."

Another significant contribution of their research involves applying the implications of the distinction between automatic and controlled to the distinction between learning and acquisition. From a learning perspective, the controlled-automatic distinction relates less to conscious versus subconscious awareness and more to the degree of routinization and establishment in long-term memory of the skills in question. To the extent that routinization has not occurred, information-processing techniques can be said to be imperfectly mastered, temporary, and subject to controlled processing. To the extent that the skills are well-mastered and permanent, information processing can be said to be automatic. Optimal performance requires an optimal blend between automatic and controlled processing. It is important that routine activities become automatic so that resources are available for higher-order processing, but at the same time, failure to employ controlled processes, especially at more "global" activity levels, can lead to rigidity and sterility.

Cognitive Language Processing and Translation

The Firthian perspective on translation as a social interaction involving three separate but interrelated contexts of situation suggests that there is a significant increase in the complexity of the cognitive processes involved in translation as compared to a more typical instance of monolingual or bilingual text comprehension or production: (a) two systems of cultural, social, and knowledge-based schemata must be available for access in long-term memory; (b) two linguistic systems and their associated schemata must have been adequately acquired to allow automatic L1 comprehension processing and L2 production processing; (c) both L1 and L2 discourse systems must be available in memory; and (d) translation-related schemata (knowledge of how to translate) must have been internalized, including appropriate notions of the translator's role in the translation process and of the translation's quality or adequacy; strategies for linking L1 comprehension and L2 production; and specific strategies for translation problem-solving. An essential step in the development of a systematic approach to teaching translation is clarifying the relationships between these complexes and then developing methods to activate, exercise, and routinize a student's ability to integrate this nexus of systems and schemata.

Many modern translation scholars, including Hönig (1988a), Neubert (1984, 1985), Neubert and Shreve (1992), Newmark (1982), Reiß (1977), and Toury (1980), view the text as the global unit of translation. The text is a realization in language of a communicative interaction; during translation processing the source text is parsedtreated in smaller (i.e., subtextual) linguistic/textual and semantic/propositional units during text comprehension. During text production subtextual propositional and linguistic units must be produced but then assembled to create a complete target text. The text, as a global translation unit, cannot be translated "at once." It must be treated in smaller units, with the integrity of both source and target text and their demands to be treated as integrated communicative units acting as controls in the translator's comprehension of the source and production of the target. This conception implies that the translator invokes a continuum of translation processes to solve different translation problems at different levels, from global textual operations involving changes of textual function to word replacements using spontaneously associated elements from the target language within the scope of a single sentence.

There is support for this multilevel conception of translation processes from varied and independent sources, including psycholinguistics, the translation skills instruction approach of Delisle (1984), and several empirical studies of translation processes that have used verbal report research methods. Summarizing the results of several of these studies, it is possible to arrive at a taxonomy of the processes central to translation and critical in the development of a pedagogy of translation.

Automatic Search and Retrieval Procedures

Le Dorze and Nespoulous, using a K. I. Forster model, claimed that some L1 lexical items in a bilingual's mind are tagged with a corresponding translation equivalent in another language and that a translator employs an automatic cognitive procedure to find the corresponding equivalent of a source text translation element. This "quasi-automatic" translation strategy could explain the processes used to identify lexical items used frequently during the translation process (1984, 78). Delisle proposes another view of automatic processes as they relate to translation problemsolving: "In some cases the discovery of an equivalent does occur more or less spontaneously. During these moments of inspiration, the linking of concepts is instantaneous. It results from perfect comprehension of the ideas to be rendered and the direct availability of the linguistic means to express them" (1984, 82).

Delisle bases his approach to teaching translation skills on the *théorie du sens*, which claims that translation always involves extracting extralinguistic meaning from a text. Such a view suggests that the translator always has access to the relevant meanings in the source text and is always able to manipulate his or her comprehension to extract and reproduce the meaning bound up in the text. From a Firthian perspective of translation, this view devalues the translator's role and ignores the fact that the act of translation has semantic effect. The translator's perceived role in the translation process and the translator's professional experience merge with the meanings taken from the source text and create new meanings and meaning potentials that may be activated in the target text.

Krings (1986) notes that the distinction between automatically or spontaneously translated text elements and those subject to deeper processing emerges in all of the empirical studies of translation processing done to date.

Shallow Linguistic Analysis Procedures

As Le Dorze and Nespoulous (1984) note, it is not yet possible to decide whether bilinguals have separate semantic fields attached to their dual lexical stores, or whether there is a common conceptual semantic area linking the two stores. The two investigators rightly suggest that the separate field hypothesis has greater face validity given the apparent fact that language systems distribute semantic meaning in very different ways.

Deeper linguistic processing can occur if no automatic translation equivalent is available. In this circumstance, the translator would have access to L2 semantic data through the L1 and can choose an equivalent L2 element based on L2 semantic information. According to Le Dorze and Nespoulous: "This vision of translation processes would explain situations in which the translator does not have the equivalent lexeme at his disposition immediately, which would make it necessary for him to move back tip to the level of semantic representations before finally choosing the most adequate lexeme to transmit the content of the L1 word that is to be translated" (1984, 79).

For Delisle this semantic level of linguistic processing is not conceptually viable because, as the various proponents of the *école de sens*, especially Pergnier (1978), have repeatedly stressed, semantic meaning is only potential meaning and is different from the contextual meaning of linguistic elements used in communicative interaction.

Inferences about Real-World Context

Le Dorze and Nespoulous, using a model proposed by M. F. Garrett, suggested a third and highest level of translation processes. At this level, inferences about the real-world context underlying a written text initiate language comprehension: "In fact, Garrett insists that lexicalization in the context of sentence production takes the route of the representation of the message, and that lexicalization has two sides: semantic and formal. In adopting this model, we might suppose that the translation of a sentence requires an analysis of its content, which would require the translator to move a long way back up in the production chain until the level of message representation had been reached" (1984, 79). This is the level of processing that Delisle accepts as true translation as opposed to transcoding: "Equivalence that is established only on the lexical or sentence level is the result of a purely linguistic analysis (transcoding); but the equivalence that emerges from the dynamics of discourse is the product of an interpretation (translation) . . . an exegetical analysis is one of the fundamental characteristics of translatory activity. Without it, there is no translation" (1984, 69).

From these arguments it appears that a leveled set of cognitive translation processes is necessary to account for real translation practice. Le Dorze and Nespoulous (1984) suggest that different patterns of processes could occur in any given translation situation depending on the translator's competence and familiarity with individual linguistic elements and the frequency with which the items had been encountered previously in translation. Research using think-aloud data during translation suggests that all three levels occur in the translation activity of an individual translator.

Five
A Case Study of Psycholinguistic Processes in Translation

Design of the Study

A case study based on the design proposed by Yin (1984) investigated the research questions proposed in Chapter 2 and gathered empirical support for the exploratory hypotheses elaborated in Chapter 3.

The Subjects

The following criteria controlled the selection of subjects: native tongue, first foreign language, number of years of English instruction in school, time spent in English-speaking countries, professional translation experience, and extent of translation training. The objective for controlling subject selection was to identify two sets of subjects: (a) a group who had completed a translator training program of studies and had some experience as professional translators (professionals) and (b) a group who had no professional translation experience and whose members were at the beginning of their program of studies (novices).

Eighteen native German-speaking subjects took part in the experiment, including nine novices enrolled in the second semester of a West German university-level translator training program and nine graduates of the same program. The major foreign language studied by all of the subjects was English. None of the subjects had spent more than twelve months altogether in an English-speaking country, and none of them were native speakers of English.

The novices were second-semester students in the translator training program. They had all completed the mandatory *Grundkurs*, the basic studies program in English. This one-year program includes traditional foreign language classes covering pronunciation practice, English grammar, conversation practice, vocabulary, and style. All had taken the first-

semester translation practice class but none had taken any course in translation theory.

All of the subjects who were graduates of the program were working as professional translators or had done at least some professional translation work since graduation. Six of them said that at least 50 percent of their professional work involved translating texts from German into English. Three of the graduates were employed by firms. These three subjects reported that their professional translations were almost exclusively technical materials. The other three active translators worked free-lance and translated a variety of text types.

The Task

The task involved two simultaneous activities. The subjects were to translate the introductory text segment from a tourist brochure describing the city of Frankfurt and to verbalize their thoughts while translating. (The source text is given in the Appendix.) The task was presented as a simulated professional translation activity. The subjects were to translate the text as if it were to be printed and distributed to English-speaking tourists coming to Frankfurt. After completing the translation, the subjects were to respond to a set of questions designed to elicit reactions to the experimental situation.

Data Collection

A native speaker of English, who was a near-native speaker of German and who had completed a *Diplom* in translation at the West German university where the subjects either were or had been students, collected the data as principal investigator. Data were collected from each subject during a single session held at the investigator's home. The principal investigator tried to make the subjects feel at ease before data collection began. The subjects translated at a large table with commonly used reference works within reach. A tape recorder was placed out of sight under the table, and a microphone was placed on the table off to the side.

The experiment presented the task as a simulation. Subjects had the complete brochure containing the experimental passage available to them; they received instructions to translate the introductory page for inclusion in a similar publication for English-speaking tourists. The subjects were told they had ninety minutes to finish the translation but were actually allowed to continue working until the task was completed. The investigator described the experiment as an attempt to find out what the

subjects were thinking while translating, and he instructed the translators to try to do the best job possible. He stated that the quality of their translation was of secondary importance compared with the thinking processes involved while they translated.

The investigator then gave a brief introduction on how to produce think-aloud data. Subjects were told not to report retrospectively on how or why they had translated a particular passage but simply to verbalize thoughts as they became conscious of them. In this way an attempt was made to obtain concurrent introspective data. The data collector had the subjects begin to translate a different section of the brochure (not the experimental passage) to ensure that they were producing verbal data that could be considered concurrent introspection and not delayed retrospection. Time spent on this verbal report training session was between five and eight minutes. At the end of the training session, the investigator reminded the subjects of the task and data collection began.

The investigator remained in the same room but out of sight of the subjects during data collection. The only verbal intervention during the translation was to remind the subjects to think aloud if pauses between verbalizations lasted more than five seconds. When the subjects informed the data collector that the task had been completed, the data collector carried out the post-TAP interview.

Data Analysis and Data Categories

Data derived from three sources: (a) the think-aloud protocols, (b) the post-TAP interviews, and (c) quality evaluations of the translation products.

The TAP Data

The raw TAP data totaled thirty hours of taped verbal data. Transcription of the tapes produced eighty-four single-spaced pages of think-aloud protocols and twenty pages of post-TAP interview data. Because of the volume of data produced and the scope of the present project, the analyses included only the protocol segments corresponding to the first paragraph of the experimental passage. An instrument was developed to represent the protocol data in charts.

The researcher's sensitivity to present or potentially present processing phenomena was undoubtedly influenced by descriptions of such phenomena in Krings (1986), Gerloff (1986), and Lörscher (1986), but

no specific set of translation processes or process classifications was identified before the data analysis. Instead, the descriptors of processing phenomena used in this study evolved inductively from the data. The processing phenomena found in the data are narrow generalizations of events that appear to be taking place during the production of the translations. The researcher coded TAP data from the first paragraph of the translation for all subjects in random order. Each processing event identified in the data was categorized according to previously identified phenomena. Descriptions of processing phenomena indicators were modified to account for successive phenomena and new indicators were added as new phenomena were encountered.

Process Indicators

The following are the major classes of processing phenomena (apparent objects of processes, indicators of processes, and progression of processes) appearing in the data used to structure the diagrams used to analyze the TAP protocols. (Protocol diagrams are given in the Appendix.)

1. Translation units: subjects appeared to search for translation solutions for the following types of source text elements: (a) word, (b) word string, (c) suprasentential, or (d) text. (Processing at the text level is henceforth described with reference to translation expectation structure.) Translation units are indicated by a symbol in the top row of the protocol diagrams.

2. Nonproblem units: translation units solved by the subjects with no processing-related verbalization. Nonproblem units are indicated by a letter in the top row of the protocol diagrams. The segment of the source text corresponding to each letter is listed on the data report that accompanies the diagrams. The graphic representation of nonproblem units indicates a spontaneously produced interim translation solution and is linked to the symbol for acceptance of the solution by a dotted line.

3. Problem units: translation units that appeared to pose problems for the translator and are marked by the application of translation strategies. Problem units are indicated by a number in the top row of the protocol diagrams. The segment of the text corresponding to each number is listed on the data analysis report that accompanies the diagrams.

4. Translation unit processing: the vertical lines descending from the unit symbols at the top of the protocol diagrams correspond to the

subject's progression from identification of the unit through either acceptance of a solution or abandonment of the unit.

5. Translation strategy application: indicators of apparently or potentially conscious strategy use were coded by arbitrarily chosen symbols. The application of such strategies is marked by a solid line linking strategy symbols and identified processing indicators.

6. Intuitive translation processes: processes inferred from the production of interim translation solutions without indication of conscious strategy use. The occurrence of intuitive processes is marked by a vertical dotted line.

7. Progression through the text: processing of each translation unit resulted in either (a) an accepted translation solution, which prompted the subject to move on to the next translation unit, or (b) no accepted solution, marked by movement on to the next unit or a return to a previous unit for further processing.

The symbols listed in Figure 4 represent the processing indicators found in the data. Processing indicators are verbal report data that can be used to infer a cognitive process or the progression of cognitive processes. A brief description of processing indicators follows.

1. Rephrase source text segment: the subject verbalized a source language paraphrase of either a source text element or an interim translation unit.

2. Search monolingual dictionary: implemented to gather information about either an interim translation unit (target language) or a word in the source text (source language).

3. Employ mnemonic aid: multiple verbalizations of a source text unit in an apparent controlled attempt to force the spontaneous production of an interim translation solution.

4. Back translate: verbalization of a spontaneously produced translation unit from the target language into the source language. This may have been an attempt to monitor the acceptability of an interim translation solution by focusing on potentially equivalent source and target language elements so that differences in functional, formal, or potential meaning value could be identified intuitively.

5. Break off attempt: apparent abandonment of a strategy being carried out that had not produced the expected results.

6. Search L1-L2 dictionary: verbalization stating that a subject planned to search for information in a bilingual dictionary.

7. Identify problem: the beginning of a series of processing steps aimed at


Accept Interim Solution


Attempt Syntactic Reconstruction


Back Translate

Break Off Attempt

Break Off Translation and Restart


Employ Mnemonic Aid


Identify Problem


L1-L2 Dictionary Search


Make Extra-Linguistic Judgment


Make Intuitive Acceptability Judgment

Monitor for TL Accuracy


Monolingual Dictionary Search


Proposed Dictionary Solution

Recontextualize

Reduce Meaning

Refer to Translation Expectation Structure


Rephrase ST Segment


Uncertainty Regarding Acceptability


Intuition-Based Proposal


Unsuccessful Dictionary Search

Figure 4.
Processing indicators

the solution of a translation problem. It was sometimes verbalized and sometimes inferred.

8. Monitor for target language accuracy: controlled comparison of interim translation solutions with the subject's target language rule system.

9. Reduce meaning: implemented when the translator was unable to find an acceptable solution to express what he or she perceived to be the intended meaning of the source text element. It represents an attempt by the translator to identify some part of the source text element that can be processed and for which a translation solution can be found.

10. Make extralinguistic judgment: overt reference to an item of cultural, social, physical, or discourse knowledge that the translator perceives is relevant to solving a translation problem.

11. Recontextualize: translator establishes a potential context of situation in which an interim translation solution could occur in an attempt to provide a basis for intuitive or controlled evaluation of the proposed unit.

12. Refer to translation expectation structure: overt reference to the expectation structure the translator begins with regarding the characteristics the text should have.

13. Make intuitive acceptability judgment: evidence of a conscious but uncontrolled (intuitive) decision regarding the acceptability of an interim translation solution. A specific verbalization of the judgment was sometimes present in the data and sometimes not.

14. Attempt syntactic reconstruction: the subject overtly decided to attempt to reorder a given translation unit by applying a specific syntactic frame.

15. Accept interim solution: the transition of processing focus from one translation unit to another. It appears at the bottom of each processing string unless the translator moved on to process some subsequent (or previous) unit in the source text without accepting any tentative solution.

A subset of process indicators reflected knowledge states or changes of knowledge state in the translator's workspace. These phenomena most likely reflect attempts to add information to allow smooth progression of the processing chain.

16. Unsuccessful dictionary search: indicates that no potentially acceptable translation solutions were found during a dictionary search.

17. Proposed dictionary solution: appears each time that a subject vet-

balized a potential translation solution as it was found in a dictionary.

18. Intuition-based proposal: represents the verbalization of what appear to be spontaneous associations.

19. Uncertain acceptability: overt recognition that knowledge stored in memory is inadequate for monitoring a given interim translation solution.

To illustrate how the protocol diagrams represent the verbal data, a TAP analysis from subject "Ralph," a novice translator, is presented below. Refer to the Appendix for Ralph's complete protocol. Boldface passages are source text units; nonproblem units are in boldface capitals and problem units are in boldface numerals; italics are verbalizations. The *xx* symbol indicates a pause.

Subject Ralph's Protocol

After reading the entire source text aloud, Ralph made one comment regarding his translation expectations before returning to the beginning of the text. He read each source text segment aloud before verbalizing during translation.

The first evidence of cognitive processing is his initial evaluation of the function of the text and probable characteristics of the audience for the translation.

> *Na klar, das ist also ein Werbetext, denke ich mir, und wenn ich das ins Englische übersetze, ist das also auch für Amerikaner und Engländer vielleichtnoch, aber nehmen wir mal als Hauptziel Amerikaner, dann kommt das mit der Tradition ja wahrscheinlich sehr gut an, darauf fahren die ja ab xx dann fange ich einfach mal an xx.*

He then moves on to the introductory line of the text, which he decided to leave as it stood in the original text; he justified this decision by referring to the Liza Minnelli song containing the same line:

Source Text Element (STE): Willkommen, Bienvenue, Welcome!

> A. *Die ersten drei Willkommen, lasse ich die in dieser Reihenfolge xx muß sein, aufgrund des Liedes xx willkommen lassen wit unübersetzt, bienvenue auch, welcome erst recht xx*

The next unit is nonproblematic for Ralph:

STE: Frankfurt freut sich auf Ihren Besuch.

B. *ja, das können wir so stehen lassen, Frankfurt* C *is looking forward to your visit xx*

Ralph then reads the next segment aloud and comments on the "romantic" style used in the text. This serves as an indicator for the translation expectation structure identified at the beginning of the task.

da wird es romantisch xx (City . . . Europas) xx naja, ich denke, da wird es eine echte Werbeschrift, die Sprache halten wir romantisch bis auf die Kacke hauend

The word Frankfurt (C) is retained without comment, and an automatic interim translation is produced and accepted immediately afterward:

D. Großstadt, big city

Ralph now comes to his first real problem unit in the text. He makes a comment on the "romantic" style of the expression and then says that he does not know if the same expression exists in English. After recognizing that he does not have the necessary information to accept the unverbalized interim solution, the subject states the need to resort to a German-English (G-E) dictionary. He looks up the term *Herz*. This dictionary search produces no information that will help him solve the problem, so Ralph decides to look up a different word *(mitten)* in the same dictionary. Ralph verbalizes only one dictionary equivalent and decides to use it.

STE: Im Herzen Deutschlands

1. *im Herzen, im Herzen, das ist ja sehr romantisch xx außerdem weiß ich nicht, ob es das im Englischen gibt, in the heart of Germany xx im Herzen, das muß ich jetzt mal nachschlagen (G-E) xx . . . Herz, also beim Wörteraussuchen kann ich nicht groß noch was denken xx. . . da steht es nicht xx probieren wir es mal mit mitten, vielleicht steht es da (G-E) ich denke einfach, middle, in the middle of Germany . . . .*

The next translation solution is produced spontaneously:

STE: City im Zentrum Europas

E. . . .*big city in the middle . . . in the center of Europe.*

Ralph then reads the entire next sentence and produces a solution for part of the sentence spontaneously before verbalizing a problem with the remainder of it:

F. STE: An dieser Stadt kommt niemand vorbei.

Ralph focuses on the problem unit in the sentence separately from the rest of the sentence. First, Ralph states that he will look up the word *vorbeikommen*. After looking up the word, Ralph partially verbalizes thoughts that suggest he might be monitoring the proposed dictionary solution. The evidence for this is not clear, however, so it is not coded. Ralph then accepts the dictionary solution even though it has already appeared in the translation. Still unhappy with the solution, Ralph stops verbalizing, suggesting that processing has moved to a more automatic level.

STE: vorbeikommen

2. *vorbeikommen: (xx werde ich auch nachschlagen, vorbeikommen (G-E) xx . . . vorbeikommen, you just, ja, you, das kann man auch nicht ??? , you just can't pass* F., *oder, nee, wir haben schon so oft* F., *you just can't pass this city, haben wir zwar auch schon, abet das ist egal xx.* [Five second pauseData collector reminds subject to continue speaking] *ich denke an die englische Formulierung, irgendeine, nicht die, irgendeine xx*

The next unit is the link between two sentences; Ralph automatically decides to accomplish the linkage joining the two together.

G. *(Dafür. . . Mainmetropole) xx ach, das schließen wir einfach mat an den näichsten an und machen da einen anderen schnitt, because of, you just can't pass this city because of, because of xx*

Ralph's repetition of several words, from both the source text element and small parts of an interim solution, seems an overt attempt to produce a spontaneous equivalent at the uncontrolled level of processing. This tactic is unsuccessful, and Ralph then states the need to consult a German-English dictionary. Ralph reads off three potential dictionary equivalents and adds a negative intuitive judgment regarding only the third solution. Because this strategy is also unsuccessful, Ralph decides to reduce the meaning of the original unit.

STE: verkehrsgünstig

3. *because of his, his, the city ?, its xx günstige xx because of its, günstig, muff ich nachschlagen, weiß ich nicht (D-E) xx . . . günstig, favorable, bei Reisen, zeitlich, reasonable, good, da hötte ich auf drauf kommen können xx das klingt gut, well situated xx aber das paßt nicht zum Verkehr, well situated, nee xx dann machen wir das because of weg, because it is well situated, . . . da könnten wir eigentlich einen Punkt machen xx*

Ralph decides to eliminate the last unit of the sentence and not to attempt to render it at all in the translation:

H. *und die dynamische Mainmetropole lassen wir erst einmal stecken*

The subject begins to translate the final sentence in this paragraph without even reading the unit aloud in German:

STE: Mit dem großten Flughafen

I. *the biggest airport xx*

STE: dem wichtigsten Bahnhof

J. *the most important, die Aufzählung machen wir einfach so, Bahnhof, railway station xx*

Ralph begins to translate the third unit in the series automatically but then comes across an incongruity, presumably on the level of translation expectations. He refers to the text type and then makes an extralinguistic judgment on the intended meaning of the original segment.

STE: und dem verkehrsreichsten

4. *the most frequented, and the most, obwohl, verkehrsreichste, bei einer Werbeschrift ist das ja, na egal, es geht darum, daß man es erreichen tut, the most frequented,*

The subject first produces an automatic interim translation segment but decides spontaneously that he should look up the source text word in a German-English dictionary. He reads off the proposed dictionary equivalent and accepts it.

TABLE 1
Five-point scale for rating translations

Scale rank	*Description*
1	This is a totally unacceptable translation.
2	This is a poor translation. It would require major improvements before it could be submitted to an employer.
3	This translation is marginally adequate. It has several errors and would require a moderate amount of work to prepare it to be submitted to any employer.
4	This is basically a good translation. It does have some minor errors, but they could be eliminated quite easily.
5	This is a very good translation. It contains no errors with respect to the norms of the TL and it is a functionally acceptable translation of the source text.

STE: Autobahnkreuz

5. *Autobahnkreuz xx highway cross, das gucken wit lieber nach (G-E) xx . . . highway wollte ich schreiben . . . Autobahnkreuz, intersection, motorway intersection, na gut xx . . . .*

The Post-TAP Interview

Subject Ralph's responses to the questions asked during the post-TAP interview were transcribed and used to provide additional support for the investigator's interpretations of the TAP data. Relevant segments of the post-TAP interview are included in the narrative of Ralph's protocol. The translation products are included in the Appendix·

Quality Assessment

Translation products were evaluated through (a) a global quality assessment of the translation by two independent raters and (b) a rating by the

investigator of the functional acceptability for the target text solution for each translation unit. Both of the quality assessment raters were native speakers of English with a near-native command of German. One of the raters was a professional translator and the other a teacher of English as a second language with no translation training and no professional translation experience. The raters were to read all of the translations and then go back and indicate the quality of each on a five-point scale shown in Table 1. The average mark given by the two raters in the global assessment is shown in the data report for each subject in the Appendix. The average marks given for the novice and professional subjects are discussed in Chapter 6.

The researcher evaluated each translation unit according to its formal accuracy with respect to the norms of English and its functional adequacy within the translated text. Each unit was judged to be either acceptable (+) or unacceptable (-). These marks are shown both at the end of each processing string in the protocol diagrams and before each corresponding unit in the data reports. The average number of acceptable unit solutions is indicated at the bottom of each data report.

Six
The Translation Case Studies:
Analyses and Findings

Inductive analysis of the TAP data produced an instrument for representing the subjects' translation processing graphically. These protocol diagrams are given in the Appendix. The information in the diagrams includes (a) translation units processed, (b) progression from the initial identification of each unit through the acceptance of a translation solution for that unit, (c) progression of processing through the text from the first unit through the last, (d) indicators of conscious or potentially conscious strategies for solving problems, and (e) inferred indicators of intuitive or automatic processes.

Evidence of Cognitive Translation Processing

A review of the diagrams provides evidence that the verbal report data are able to indicate the particular segment of the source text that was the focus of attention at any given moment during the production of the translations. As Boekaerts's and other contemporary cognitive processing models suggest, only a limited amount of information can be present at any given time in short-term memory, focused on for controlled cognitive processing, and made available for verbal reporting. The verbal reports were always clear in pointing to the chunk of source text receiving attention because they always made explicit reference to the chunk. Thus evidence for translation units was readily available. Evidence of controlled operations on these units was available.

Evidence of subconscious or automatic processing was not so apparent in the verbalizations and could only be inferred from the reports. It is also likely that such processing occurred at several levels and perhaps on different chunks of the text at the same time. The protocol diagrams in this study, paralleling other TAP studies on translation processes, give direct evidence only of cognitive phenomena in short-term memory.

Translation Unit Length

Table 2 indicates the distribution of translation units for the subjects as a whole. The data analysis revealed that the majority of the units translated by the subjects were at the word and word string level. Only on rare occasions did the subjects consider linkages between sentences while translating. There were also few overt references to the text level. The few text-level references that were made included the author's communicative intentions, the intended function of the translation, or the reader's expectations. These rare verbalizations indicate awareness of the contexts of situation affecting the translation but not the extent or nature of their operation in the translation process.

Problem Units versus Nonproblem Units

There was a major distinction between two types of translation units: (a) units that were problems and required cognitive attention and the application of conscious or potentially conscious strategies and (b) units whose solutions came from intuition and spontaneous association, apparently without the intervention of problem-solving strategies. The mean number of problem units encountered in the text was 9.5 and the mean number of nonproblem units was 7.72. All of the subjects encountered both types of units in the text segment analyzed. Three of the subjects encountered very few problem units (Kate, Ralph, and Arnold), while four others encountered very few nonproblem units (Lawrence, Dorothy, Andrea, and Ina). The other eleven subjects had a balance of problem and nonproblem units.

Subjects' Control over Translation Processes

The dotted lines in the protocol diagrams indicate uncontrolled processes as inferred from the verbal data. The straight lines link potentially conscious strategies with the identifiable results of strategy implementation. The distinction is based on the previous discussion of automatic versus controlled processes discussed by Boekaerts. Because there is not sufficient evidence that processes are either completely controlled or completely automatic, they are referred to as relatively controlled or automatic.

Examples of relatively controlled processes include (a) identification of a problem followed by a bilingual dictionary search, (b) retrieval of a single bilingual dictionary equivalent followed by acceptance of the equivalent as the solution to the translation problem, and (c) identifica-

TABLE 2
Translation unit length for all subjects

Unit length	*Total*	*Mean*	*(SD)*
Word	128	7.1	(1.91)
Word strings	171	9.5	(1.3)
Suprasentential	14	0.78	(0.79)
Text	15	0.83	(1.21)

tion of a potential translation solution in a bilingual dictionary followed by a monolingual dictionary search.

If no evidence was found for the conscious application of a translation strategy, relatively uncontrolled (intuitive) processes were inferred. Examples include the spontaneous production of a tentative translation solution, acceptance of one of several tentative translation solutions with no overt reference to the underlying reason, or verbalizing uncertainty regarding the acceptability of a tentative translation solution.

Progression through the Text

All of the subjects read through the entire source text before beginning to translate. Shreve, Schäffner, Danks, and Griffin (1993) have investigated the role of reading in translation, but this study did not gather evidence about reading. Only four of the subjects verbalized a translation expectation structure at the beginning of the task. Several subjects identified particular translation problems after the first reading, but none looked up any words in the dictionary before beginning to translate, and none produced tentative translation solutions to problem units before initiating the translation with the first source text unit. The subjects progressed through the text in a basically linear fashion, producing translation solutions for individual elements as they appeared sequentially in the text. There was very little backtracking to previous units in the source or target text. Upon completion of the translation, twelve subjects returned to the beginning of the text and stated their intention to reread the translation, either with or without reference to the source text, with the objective of identifying inadequately solved problems. Only three of

TABLE 3

Findings of the quality assessments for all subjects

Mean Evaluation	*Score*	*SD*
Percentage acceptable translation solutions	50.96	(0.14)
Global evaluation of translation quality		
Rater A	2.25	(0.28)
Rater B	1.94	(0.65)
Mean score A and B	2.10	(0.46)
Inter-rater reliability	r=0.61	

those subjects made any changes in the translation during or after rereading. This editing and revision process was reported by Séguinot (1982) in her 1981 study of Canadian translators.

Progression through Translation Units

Because relatively uncontrolled processes were involved in the translation of virtually every translation unit in the data, much of what was going on in the translator's mind during translation was not available for verbalization. The strategy indicators identified do not seem to appear in a regular pattern and do not suggest that subjects implement predetermined sets of strategies to solve particular translation problems. If this were the case, regular sequences or complexes of indicators would appear. Instead, they apply one of several possible strategies to produce tentative translation solutions or to produce new information (e.g., alternatives from dictionaries) that can be tested for appropriateness, either on a controlled or relatively uncontrolled level. This pattern suggests the existence of a translation monitor invoked at times when relatively uncontrolled processes fail to produce results.

Translation Quality Assessment

Overall the quality of the translations produced was quite low; assessment information came from the researcher's evaluation of the functional adequacy of elements translated and the global evaluation completed by two independent raters. A Pearson product moment correlation

TABLE 4
Comparisons between novices and professionals

	Group			
	Novices		*Professionals*	
Variable	*Mean*	*SD*	*Mean*	*SD*
Number of elements	17.56	(2.83)	17.00	(1.40)
Element type:				
Problem elements	10.00	(4.06)	9.11	(3.11)
Nonproblem elements	7.56	(2.45)	7.89	(2.13)
Element length:				
Word	7.78	(2.10)	6.22	(1.31)
Word string	9.33	(1.33)	9.67	(1.25)
Suprasentential	0.44	(0.68)	1.11	(0.74)
Text	0.67	(0.82)	1.00	(1.49)
Translation evaluation				
Percentage acceptable elements	49.68	(0.14)	52.24	(0.14)
Global rating (Mean score of raters A and B)	1.96	(0.29)	2.24	(0.50)

(Hopkins and Antes 1978, 269) was done to test the inter-rater reliability of the global assessments. The weak correlation of 6.01 was influenced by the narrow range of 2.25 on the five-point rating scale. Table 3 summarizes the findings of the quality assessments.

Differences between Novices and Professionals

Several variables were used to compare the novice and professional subjects in the group to see if there was support for hypotheses regarding differences between nonprofessional and professional translators raised by the previous TAP studies on translation processes. Table 4 summarizes these findings.

Because the case study methodology used was based on replication logic rather than sampling logic, it would not be appropriate to extrapolate from these findings to the populations of novice and professional translators. The small amount of data analyzed in the study is also inadequate for generalizing about the typical translation behavior of the subjects in the study But for these subjects and for the translation segment analyzed in the study, there do not appear to be major differences between the way translations were processed or in the quality of the translations produced by these two groups. In fact, the similarity, of these two groups is striking with respect to all of the variables that emerged during data analysis, including the number of elements translated; the number of problem and nonproblem elements encountered, the length of the elements translated, the number of acceptably translated elements, and the global quality of the translation.

On the basis of these observations, a case could be made for arguing that there is no difference in the translation competence of the subjects for translations done into English. Translation quality assessment measures indicated that, on the average, neither group produced particularly good translations. When asked in the post-TAP interview whether they felt competent translating into English, most of the subjects responded negatively. The novices' answers were skewed, however, by a perception of translation as a classroom task and, for the professionals, by an understanding of translation as a career. The post-TAP interview also provides an interesting perspective on the notion of translator self-concept developed in Chapter 4. Three novices stated that they actually preferred translating into English but not because they felt more competent doing so:

> I don't like to translate into German very much because if you make a mistake there, it's worse, since German is your native tongue and you should be able to speak it well. But if you make a mistake translating into English, it's not as bad because you are trying to learn English and you can always say, well, this is not my mother tongue.
>
> At the beginning, I found it much easier to translate into English because I don't have as much knowledge in English as I do in German. In German, I am much more aware of connotations and the slight nuances that every word implies, so I find it much more difficult to produce a satisfying text in German because I expect more of myself than I do when I translate into English.
>
> It is much more difficult to translate from English into German, because it is easy to understand an English text, but when I have to

> decide which of these innumerable connotations I should use in producing the German text, it becomes very difficult. On the other hand, I am usually pretty sure about what is expressed in a German text, so the only problem I have is finding the English version and I don't have to struggle with the meaning of the text itself.

Another novice felt she was more competent to translate into English because of the negative feedback she had received in translation practice classes:

> I think it's easier for me to translate into English. I have noticed that in tests at the university, my grades were better into English than into German. I used to think I could express myself well in German, but lately I have the feeling that I can't do it as well anymore.

The other five novice subjects expressed a lack of confidence in their ability to express themselves well in English, as exemplified by the statement of one of the five:

> It's much more difficult to translate into English because I have the basic problem of the uncertainty of not knowing whether what I'm producing is really English. But in German I have at least a basic idea of what I'm doing.

All of the professionals expressed some lack of confidence in their ability to translate competently from German into English, even though all but three of them had indicated that they translate regularly in this direction:

> I don't feel as competent translating into English as I do into German, but I have to do it constantly, if not almost exclusively. I am only able to do it because the textual material I deal with is quite simple. It is technical and comes from a narrow field that I am now quite familiar with. The sentences tend to be short and the style is not all that important. It's primarily a question of vocabulary. But when it comes to terms like *lebendig* in this text, I just don't know whether the term I have found to correspond to it is really correct or whether I am just copying it down because it is there.

> I seldom translate into English actually. I like to do it, but I just don't feel competent enough to do a translation from beginning

> to end into English. If I can get a native speaker to read through it, then that's a different matter. For this kind of translation, where a lot of colloquial language is involved, I just don't feel confident enough about my own competence.
>
> I translate only into English, but I can only do it because I work together with engineers who are native speakers of English. The engineers' technical knowledge complements my language ability. I work very closely with these engineers. You can only do that kind of work in a team.
>
> It's been so long since I've translated anything into English that I am very uncomfortable with it. I didn't dare do much of anything and in fact, I didn't feel good about any of the constructions I came up with. If I had had a text like this, written in good English about New York, I think I could have done an excellent job, but I am just not competent to do this kind of a text into English.

Subjects' Reactions to the Experimental Situation

When asked if the experimental conditions were similar to those under which they normally translate, the novices almost universally agreed that they were in fact very similar: they tended to translate at a desk with pen and paper, surrounded by dictionaries. Several of the novices mentioned that they do not usually concentrate as hard as they did on doing a good job because they normally translate for classes, where quality is not so important.

On the other hand, all but one of the graduates employed as professional translators stated that they no longer translate with pen and paper but instead use a computer. The following comments by the professionals are illustrative of the differences they noticed in moving from a pedagogical translation environment to a professional one:

> I would say that the influence has been rather negative. Since it never goes fast enough, you tend to just type the first thing that comes to mind, but by hand, I do it slower. I've also noticed that I'm not very careful about reading.
>
> With regard to technique, I don't read through the whole text anymore before I begin translating. Even though in this experiment I realized that I wasted a lot of time thinking about what I was going to write when there was plenty of helpful information later on in

the text. Then I did go through and read the whole thing. But normally, I don't anymore. There is usually just too much to read and I don't have time.

By the time I would have finished reading, I've almost finished translating. So I just go through and translate sentence for sentence. When I use the computer and see Frankfurt, I type Frankfort; I see Großtadt and type city; I see Herz and type heart. And then I print it out and read it, but without comparing it to the original. When I was a student, I read through the whole text first and was prepared to translate it the way it was supposed to be in its finished form.

If I were to get this text from an employer, I would probably talk to him and find out what exactly my task is. I would presume that they really want to attract people to the city, and so I wouldn't cling as much to the individual words as I did. I would have to have more of a free hand with the layout of the text. So the translation I did here was more academic somehow. I translated it more as I would for the university than for a real employer. If it had been a real translation task, I think I would have been freer with my translation than I was.

The ease with which subjects dealt with thinking aloud varied widely. Most of the novice subjects mentioned that it was most difficult at the beginning but got easier as they moved through the task. Several subjects mentioned that they regularly talk aloud to themselves when they translate at home. The subjects' opinions differed with respect to the extent they felt their verbalizations really reflected their thought processes while translating:

Sometimes I put obstacles in my own path because I realized that I was thinking on several levels at the same time. While I was explaining my thinking regarding a particular sentence, my mind was going back to another sentence where I had miscalculated something.

I don't think there is much difference between what I said and the way I normally think while translating because I have to make clear to myself problems that occur. And it is only a small step from making something clear to myself and expressing it clearly.

Actually, when you're sitting alone at home, even though you don't say all of this out loud, you still think the same thing.

Several subjects indicated that they did not feel that all of their thoughts were being verbalized:

> Of course, not all of my thoughts were expressed, mainly because they come and go too fast. A tenth of a second after I've thought something, I don't know anymore what exactly it was or how it developed.
>
> It was of course tiring to talk that much, but otherwise, it was quite clear to me that what I was saying was what was really going through my mind; so I didn't have any difficulty expressing itin fact less than I thought. But there were a few things that I wasn't able to verbalizethings that occurred to me very briefly were not expressed. But they were associations that had something to do with my own experiences and not with the content of the text or language elements.
>
> When I think something, I think it only for a second or so, but it might take fifteen seconds to say, and during that time, I've kept thinking about the words. So there are many things that I didn't say because they would have interrupted my thinking processes.

Answers to Some Research Questions

As a conclusion to this chapter, the findings of the case studies are grouped below under the case study questions originally posed at the end of Chapter 3:

1. Can a data analysis method be developed that can be readily applied to verbal report data on translation processes and that could be used in further experiments to deepen our understanding of translation processes?

A data analysis method was developed that does provide an insight into several types of data produced in the verbal protocols: progression through the text, indicators of specific translation strategies, progression through problems, and the inferred existence of relatively uncontrolled processes. This method could be adapted for further research into translation processing, but it must be kept in mind that only indicators of relatively controlled processes are likely to appear in TAP data; relatively uncontrolled processes will continue to escape this kind of inspection. The analytic method might prove particularly useful in longitudinal case studies to determine whether a subject's ability to apply con-

trolled processes changes with training, professional translation experience, or time spent in an L2 environment.

2. What processing phenomena can be identified in the verbal reports of translator and translator trainee subjects?

The categories of processing phenomena identified in the case study data were found in the data for both the novice and professional translator subjects in this study and were virtually identical to those found by Gerloff (1986), Krings (1986), and Lörscher (1986). These were a limited set of strategy indicators representing the occurrence of relatively controlled processes. TAP methodology does therefore appear to be an appropriate methodology for identifying certain conscious strategies.

3. Is there a clear distinction between the approaches professional translators and novices take to foreign language translation?

Quality assessment measures of the target text did not reveal a clear difference in the translation competence of professional and nonprofessional subjects. There were no clear differences between the observed translation processes of the translator trainees as a group and the graduate professional translators as a group. Perhaps the level of translator confidence, presumably associated with long professional experience, is a more important factor that can be revealed only by longitudinal studies.

4. Is there evidence of differences between professionals and novices regarding their expectations of what their completed translation should be like and, if so, what are the repercussions of this expectation on translation processing?

Very few of the subjects referred overtly to their translation expectations. Of those who did, some were novices and some were professionals. This suggests that translation expectations may influence relatively uncontrolled processes and are not identifiable in verbal protocols. Translation expectations may be factored into translation processes before translation begins. The subjects applied conscious strategies most often to the smallest identified translation units (i.e., at the word and word string levels), whereas one would expect translation expectations structures to induce strategies at the text level, such as revision and editing. Few subjects engaged in editing, where one would expect translation expectations to show their influence.

5. To what extent can intuitive or relatively uncontrolled processes be accounted for in the analysis of verbal report data and represented in a TAP instrument?

The data analysis supported the psycholinguistic model underlying the TAP methodology in demonstrating that only relatively controlled processes were available for verbal reporting. In similar investigations carried out on translation processes, the presence of controlled process indicators

led the researchers to place emphasis on those particular processes in the data analyses, while to a great extent ignoring intuitive processes because the TAP instrument provides little direct evidence of their operation. In the present case studies, the occurrence of relatively uncontrolled processes was inferred when there was an absence of controlled process indicators in the data. Since the subjects were encouraged to produce an unbroken stream of thinking-aloud verbalizations, it was assumed that controlled processes would be indicated by identifiable markers. As can be readily seen from the individual protocols, relatively uncontrolled processes were inferred in the translation of virtually every unit found in the data. Inferences could also be made regarding the more precise nature of these processes, but because they are by definition not accessible for reporting or other observation, an attempt to make any further inferences is bound to involve a large measure of speculation. The psycholinguistic model proposed in response to case study question 7 suggests a general categorization of the types of information that may be involved at the subcontrol level of cognitive processing, but no attempt will be made here to define the nature of such processes more precisely.

6. Does automatization of translation processes increase with the translator's competence?

No answer to this question can be given on the basis of the data collected. The two quality assessment measures did not show a clear difference in translator competence for the experimental task between the novice and professional translator subjects. More systematic methods of translation quality assessment will have to be developed and implemented in future studies to identify more clearly translations that are adequate from those that are less adequate. The data do suggest that L1 to L2 translator competence does not necessarily increase with traditional training, as this was one factor that clearly differentiated the two groups of subjects.

The research shows the limitations of verbal protocols in gathering data about uncontrolled processes; lack of direct evidence coupled with lack of a clear distinction between the professional and nonprofessional groups prevented any findings about automatization. Longitudinal studies following the same subjects over the course of several years, or alternatively, designing a study in which the difference in years of experience between novice and professional is emphasized may provide more evidence of automatization.

7. Can evidence be found in verbal report protocols to support or contradict the proposed social model of translation processes as a basis for a translation pedagogy?

The TAP data analysis revealed that relatively controlled processes were primarily related to the resolution of translation problems at the word or word group level (i.e., in the identification and monitoring of L2 linguistic units that the subjects considered to be appropriate translation elements). In the TAP data, there were few indicators of conscious awareness of the social and communicative factors involved in the translation of the particular text. When such indicators were present, they tended to come in the form of a verbalization where the subject indicated an awareness of functional or communicative constraints that were to guide in a very general way the subsequent translation of the individual elements of the source text. Awareness of social and communicative constraints would logically precede the actual translation (e.g., subject Ralph's introductory verbalization) and perhaps set processing boundaries that would have an effect on subsequent uncontrolled processing and would not be indicated verbally. There is evidence for the social model of translation, but verbal report data appear to capture evidence of translation processes occurring after contextual information has already been accounted for.

8. Can evidence be found in verbal report data to contribute to a tentative model of cognitive translation processing that could serve as a theoretical foundation for the development of a translation pedagogy?

The data analysis showed that only certain translation problems appeared to be a focus for controlled processing. Verbalizations revealed that conscious strategies were implemented only when subjects were unable to produce an acceptable translation solution for a source text unit through spontaneous association or other unidentifiable uncontrolled processes. The absence of logical or patterned sequences of controlled processes leading to accepted solutions suggests that translation strategies are used to provide input for uncontrolled processes. The implications for translation pedagogy are that translation practice (classes in which translation is done) should focus on developing the ability spontaneously to associate source and target language elements with a high degree of accuracy and on applying translation strategies to resolve problems that occur. This implies a passive translation monitor invoked to provide input to failed or weak associations or to evaluate translation results at a textual or functional level during revision. It is significant that the final decision made in the processing chain for each translation unit was in almost every case an intuitive one.

The data analysis also showed that certain knowledge sets and an awareness of knowledge states can be involved in translation processes. The strategy indicators revealed that subjects could be aware of (a) translation expectations, (b) problems in producing acceptable translation

solutions, (c) differences in functional equivalence between source text elements and tentative translation solutions, and (d) the lack of adequate knowledge to allow them successfully to solve translation problems.

Seven
Implications of the Case Study for Translation Pedagogy

Translation pedagogy is still in its infancy; translation teachers are still searching for methods to provide a systematic education for professional nonliterary translators. The pathway to new methods and teaching philosophies is still cluttered with the archaic techniques and preconceptions of normative, *langue*-based teaching approaches. The way is blocked by a persistent image of the instructor as the guardian of translatory truthkeeper of "the correct translation." This study has served many purposes. It has been a review of the relevant and often conflicting literature; it has raised some pertinent questions; and through an empirical case study, it has tried to answer those questions and provide support for building a new approach to translation pedagogy. The conclusions drawn at the end of such a study are signposts along the way toward a new model of translator training. They are not prescriptions detailing the only way to train translators; they are recommendations whose authority comes from a broad survey of the literature on translation and second-language education and on empirical studies of translation processes.

The opening paragraphs of Chapter 3 posed some broad research questions. By way of conclusion, this study returns to provide some initial and partial answers to those questions.

1. Is it possible to develop a model of translation processes to serve as a frame of reference for translation instruction?

2. Is it possible to identify the general and specialized components of translator competence as targets for pedagogical intervention and development?

3. What are the initial steps to take in filling the pedagogical gap in translation teaching?

Can a Model of Translation Processes Serve as a Model for Translation Instruction?

This book has examined translation both as an external communicative and social activity and as an internal cognitive activity. In Chapter 3 a

social model of translation, derived from the theories of J. R. Firth, proposed that translation had three interacting contexts of situation. The first, or source context of situation (CS_1), contains (a) the author and readers of the source text and the role relationship(s) between them, (b) the linguistic material in the text itself, (c) the people, objects, and events referred to in the text, and (d) the effect of the text on the original readership. The target context of situation is projected by the translator and derives fromand this is just a partial listingknowledge of the actual target audience and text situation and task specifications. Between these two contexts is the translation context of situation (CS_3). This is the context from which the translator identifies and chooses elements of the CS_1 to guide the production of the translation and from which elements of the CS_2 are evaluated to assess the adequacy of target language choices. The translator develops a sense of the potential target text from the contexts of situation. Under ideal circumstances, observation or query can reveal the components of the CS_1 and CS_2. The translator context of situation is not open to direct observation. Its components are internal and mental; they are competences, sets of assumptions, knowledge sets, and images of role active while a particular translation is being done. An important external manifestation of the CS_3 is the translator's self-concept: the image of the translator's social role, the translator's appraisal of his or her competency for translating a particular text, and understanding of responsibility toward the other personalities in the translation context of situation (author, commissioner, user, and reader).

The translator's self-concept is a mental construct that serves as the interface between the translator's social and psychological worlds. The self-concept includes a sense of the purpose of the translation, an awareness of the information requirements of the translation task, a self-evaluation of capability to fulfill the task, and a related capacity to monitor and evaluate translation products for adequacy and appropriateness. The translator's self-concept allows for the integration of the social world of translation into the cognitive one and is a requisite for the translator's ability to project a translation expectationthe major indicator in the protocols of the translator's factoring of the three contexts of situation.

Is there a reflection in cognitive translation activity of this Firthian conception? Do the empirical results of the case study merge with the social and cognitive models of language use and translation discussed in previous chapters? To help answer these questions, the model in Figure 5 represents the cognitive system(s) that appear to be active during translation.

The principal components of the model are (a) information sources, including long-term memory, source text input, and external resources

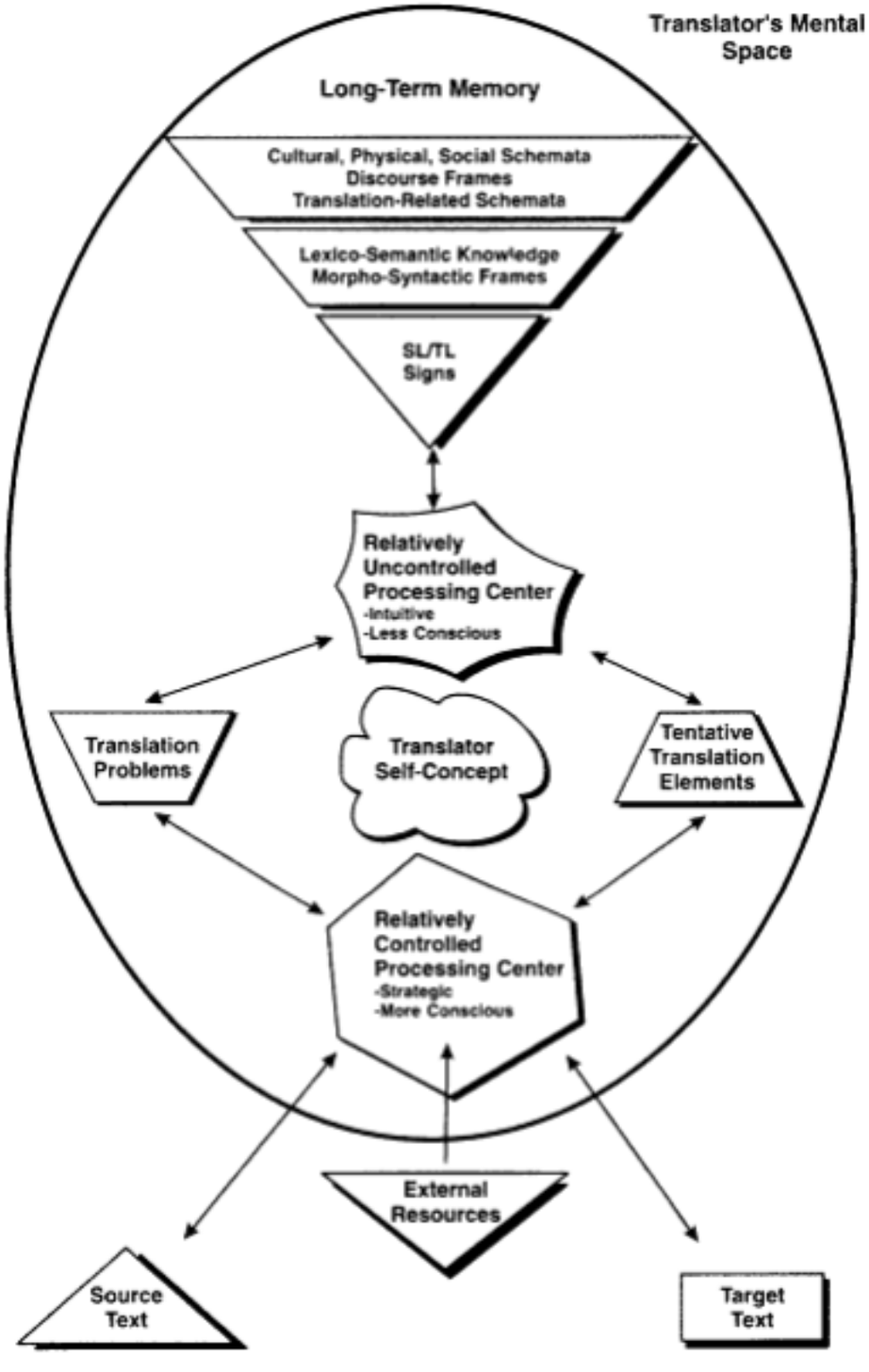


Figure 5
A psycholinguistic model of translation processes

(e.g., reference books, data bases, native-speaker informants, subject experts); (b) the intuitive workspace, which is relatively uncontrolled and subconscious; and (c) the controlled processing center. In this model, the translator's mind is an information-processing system in which a translation comes from the interaction of intuitive and controlled processes using linguistic and extralinguistic information. The cognitive model of translation given in Figure 5 is supported by much of the evidence gathered in the protocols.

Sources of Information

Long-Term Memory

There are three major sources of information available to the translator: knowledge stored in long-term memory, source text input, and external resources. Long-term memory may hold mental networks containing knowledge of the physical world; knowledge of source and target cultures; and L1 and L2 lexico-semantic information, morpho-syntactic frames, and relevant source language and target language signs. Long-term memory also contains the translator's knowledge about translation itself. Translation-related schemata include the translator's understanding of translation norms and learned strategies, criteria for quality assessment, and potential sources of error when translating. An expectation structure (a projection of what a translation should be like) derives from the translator's knowledge of translation when it intersects with the multiple contexts of situation. The expectation structure is a master plan (or a set of constraints) for a translation in progress; it is a set of potentials for a translation-to-be. Neubert and Shreve (1992, 13-14) have referred to this structure as a virtual translation. The empirical data suggests, albeit weakly, that both professional and nonprofessional translators project translation expectations and that these expectations play a role in guiding translations. The protocols of Connie, Edna, Ina, Laurence, Phil, and Ralph all yielded some evidence of the influence of translation expectations. Is this evidence for the validity of the Firthian model? While the protocols are suggestive, they failed to produce conclusive evidence of the translator's ability to factor social variables into the cognitive translation task and the extent of their influence on the translation. The design of the study may not have been conducive to producing evidence confirming the Firthian model of translation.

Translation-relevant knowledge in long-term memory is essentially different from that derived from external resources because it resides in a complex web of other information (it is part of a greater associated

knowledge network) and comes in large part from the personal experience of the individual translator. This is information such as experience with parallel texts, absorbed in communicative contexts and applied by analogy, in similar communicative contexts, as for instance, textual prototypes (Snell-Hornby 1988; Neubert 1984; Neubert and Shreve 1992). The protocols of professional translators should provide evidence of the influence of greater stores of translation-relevant knowledge, but this was not the case in the present studygiven the assumption that greater stores of translation-relevant knowledge should have resulted in higher quality, ratings. Longitudinal studies or different criteria for discriminating the professional and nonprofessional subjects might provide a clearer picture.

Clearly the translation-relevant knowledge in long-term memory is congruent with the translator context of situation (CS_3); long-term memory contains the specific linguistic and translation competences, sets of assumptions about communication and texts, domain-specific knowledge sets, and the translator's self-conceptall elements of the CS_3.

The CS_2 is also, to a large extent, a phenomenon of long-term memory; it is not permanently resident because it is a projectioncreated anew for each translation task. The CS_2 is assembled from information already present in long-term memory (e.g., the translator's competence, including experience with similar situations) and (if available) from external information sources such as client task specifications and conversations with prospective readers. If no external information is available, the CS_2 is completely a projection.

Source Text Input

The source text input at a very simple level is the linear sequence of signs and co-text of any given element in the source text. The signs and sign configurations (morphemes, words, sentences and sentence groups, global textual profile) are processed as a connected incoming stream and invoke relevant knowledge structures in long-term memory. In translation, as opposed to interpreting, the source text remains available for repeated input. The translator can read and reread the text, perhaps to look for linguistic patterns (alliterative chains, patterns of lexical or grammatical cohesion) or to make associations not made during the first reading. The source text is, of course, static, and the sequence of characters never changes upon rereading; but in some sense it is dynamic because the mental representation of the text in the translator's mind can be altered by rereading, and new triggers for invoking knowledge frames in long-term memory may be encountered.

The source text is never processed as a simple linear sequence of signs, but simultaneously as a social interaction structure, as a propositional structure, and as a complex index to socially shared knowledge. Thus it carries with it, either as explicit or implicit textual references, or as part of an inferred pragmatic bundle, all of the elements of the source context of situation (CS_1). These references serve to activate the translation-relevant segments of the long-term memory.

External Resources

Additional information not derivable from the input or retrievable from long-term memory can be retrieved from outside reference sources; this access is the result of applying specific strategies. Much of the information provided or activated by a text is processed automatically; individuals are not generally conscious of all or even much of the textually activated information being transferred, retrieved, stored, and comprehended. These activities generally require little conscious attention. Only when problems arise in the processing of the input (an unfamiliar word) or during the production or monitoring of a suitable translation element (failure of a word meaning to fit semantically with words already chosen) do controlled processes come into play. Knowing when and how to work with external resources is clearly a vital skill for the translator. External resources can provide the translator with missing pieces of the translation puzzle, but they cannot replace the experience-based knowledge stored in long-term memory. The protocols (e.g., Ralph's) are a useful tool in providing evidence of how and when external resources like dictionaries fit into cognitive translation processing.

The Intuitive Workspace and the Controlled Processing Center

Think-aloud protocol research and psycholinguistic research findings make it possible to describe some of the translator's mental processes, peeling away the outer shell of Toury's (1982, 25) mysterious translation "black box." A part of the translator's mind is still hiddenthat part of the mental space where intuitive processes occurthe intuitive workspace. Boekaerts's (1981) distinction between the subconscious workspace and the controlled processing center has been modified on the basis of the present study to account for the understanding that controlled and subconscious processes are not absolute dichotomies. The modification proposes an intuitive (or relatively uncontrolled) workspace where information from long-term memory is synthesized with information from source text input and external resources without conscious control.

Two kinds of products emerge from the workspace: tentative translation elements and translation problems. Tentative translation elements are (at least initially) untested, unmonitored products of spontaneous associations made in the workspace level. Spontaneous associations may occur purely at a formal level as the result of learning or acquisition, or they may be functional equivalents established through an intuitive assessment of textual and situational information in the workspace.

Tentative translation elements either bypass the controlled processing center or go on to one of two types of monitoring: target language monitoring in which the individual invokes stored target language rules against which the tentative translation elements are tested for syntactic fit and semantic accuracy, and textual monitoring in which evaluation against the meaning(s) and forms of the source text and internal expectation structures (e.g., conceptions of what the target text should be like or is expected to be like) takes place.

Translation problems emerge from the intuitive workspace when automatic processing does not produce tentative translation elements. These problems are considered in the controlled processing center and a strategy is chosen and implemented in an attempt to deal with them. Strategies do not solve translation problems; they are merely plans carried out in an attempt to solve problems. A failed strategy, may cause the problem to be sent back to the intuitive workspace with additional information not previously taken into account (e.g., as the result of the subsequent application of a rereading strategy). If the workspace is unable to produce an adequate solution as measured against the translator's expectation structure and translation monitor, a tentative translation element will be proposed and accepted based on the inadequate information available, or the element in question may be dropped and the search procedure will begin again.

Can Components of Translator Competence be Identified for Pedagogical Intervention?

The social and cognitive models of translation merged in Figure 5 complement one another. The integration of the three social contexts of situation with the cognitive model and the results of the case studies yield valuable insights for translation pedgogy. The relationship between source text input (and concomitant presentation and determination of the CS1) and long-term memory is a critical area for pedagogical development. As several protocols showed, the translator's apprehension of the CS1 appears to serve a framing and filtering functioncomponents of the

CS1 act as criteria conditioning the selection of knowledge elements from long-term memory and constraining translation processing in both the workspace and the controlled processing center. Translation pedagogy, could focus on finding out which factors have the greatest impact on processing efficiency and quality' of translation and on how to improve students' ability' to extract relevant processing criteria from the CS1.

The case studies suggested that no conscious strategies were associated with the CS1 and CS2. Maybe strategies for factoring contexts into processes cannot be acquired simply by translating (e.g., by repeated translation practice in the classroom) and are difficult to acquire even for professional translators. This raises the possibility' that the strategies that are required for high-quality, translation do not develop naturally over a course of repeated practice. This might explain why both the professional and nonprofessional protocols showed little evidence of conscious strategies for extracting information from the CS1 and CS2. This implies that a pedagogy of translation might develop methods for speeding up the acquisition of strategies for factoring contexts of situation into translation processing, or, if they cannot be naturally acquired, that a translation pedagogy develop translation problems that introduce and reinforce such strategies.

Translation processing is a mixture of controlled and relatively uncontrolled processes. Uncontrolled processes were the norms in the case studies, and conscious strategies were applied only when problems occurred. The case studies also indicated that there were apparently no patterned sequences of conscious strategies. These two patterns were true of both novice and professional subjects. There are serious pedagogical implications from this finding. First, if training does not substantially alter the order of operationsintuitive first, conscious only after intuitive failsthen pedagogy must focus on finding ways to improve translation speed and quality' through the development of intuitive faculties. Teachers must find ways of leading students to make interlingual, intertextual, and intercultural associations automatically; the role of conscious strategies will be to resolve problems that arise when intuitive processes fail. Some intuitive processes may begin as conscious ones, learned and taught in the classroom, but be converted to intuitive and automatic through teaching methods that reinforce association. If the order of cognitive operations is a "natural order," no amount of lecturing about conscious strategies will result in better translations. Only teaching methods emphasizing the relationship between learned strategies and translation intuitions will be effective. One of the research findings indicated that an intuitive process always preceded the final translation decision, lending credence to the hypothesis of a natural sequence.

Both intuition and strategy, are required for high-quality translation, but the speed and naturalness of translation appears to be dependent on the development of a sequence of skills: the ability to make intuitive associations, followed by the ability to apply conscious strategy to problems not solved by association, followed by the ability to monitor the results on the basis of a translator self-concept. This suggests a profile for a translator's learning sequencehis or her evolution from natural translator to professional translator with high-quality output.

A surprising result of the study was that there was no apparent difference between professional and novice translators in quality of product. A damning implication of this result is that many current training methods have no impact on translation quality. Reasons for this include, perhaps, the failure of translation pedagogy to account for the relationship between conscious translation strategies and uncontrolled processes. In addition, it might reflect an ignorance of the kinds of knowledge necessary to produce situationally adequate translations. Current translator training programs may not be providing students with the opportunity to acquire the knowledge (in addition to knowledge of translation itself) they need to translate more effectively. This includes cultural knowledge, domain knowledge, knowledge of texts, and linguistic knowledgeall the elements of translator competence. Further, given the central role long-term memory, the host of translator competence, plays in translation, an effective pedagogy needs to focus on how and what kinds of translation knowledge should be learned or acquired. This implies a better understanding of how professional translators use their experience and what aspects of that experience are most relevant to improving translation (e.g., familiarity with the target culture by living abroad, reading in both source and target language). Because the presumption of translator training is that students do not have the necessary experience to translate well, a translation pedagogy should focus on how best to simulate and provide translation-relevant experience in the translation classroom to develop competence. Studies of professional translators who have done high quality translations may serve to pinpoint the most effective modes and combinations of experience. A study in which discernible differences in translation quality are used to select subjects might shed more light on the process and competence differences between professional and nonprofessional than did the present study. Maybe it is not professional translation we should be studying but professionals who produce high-quality translations.

The psycholinguistic model of translation processes and the case studies suggest that translation involves a variety of processes and knowledge forms. The actual processes involved in the translation of texts for

communicative purposes involve both the translating of messages and the transcoding of linguistic elements. Depending on the translator's awareness of communicative factors present in the translation context of situation and the translator's translation-relevant knowledge and skills, the actual psycholinguistic processes occur on a continuum extending from the simple retrieval of spontaneous associations at the word level to a complex, multistage problem-solving process in which extralinguistic factors are taken into consideration.

In the integrated model translator competence is (a) a translator's awareness of the situational factors that may be involved in a given translation task (translation expectations constructed from contexts of situation); (b) the translation-relevant knowledge that the translator possesses, including, for example, linguistic knowledge of L1 and L2 (syntactic, lexicosemantic, sociolinguistic, and textual), cultural knowledge of the L1 and L2 cultures, and specialized knowledge of the topic under consideration; and (c) the translator's ability to initiate appropriate intuitive and controlled psycholinguistic processes to formulate the L2 text and monitor its adequacy as a translation of the source text (translation-relevant skills).

The social model of translation processes can serve as a general blueprint to guide the development of students' translation expectations. If, for example, translation students bring with them the traditional second-language education approach to translation, that it is a demonstration that one is aware of formally equivalent structures in two languages, then they will enter translation practice classes with the understanding that word-for-word transcoding is what they are supposed to do. Even if additional relevant information is available in trainees' long-term memory, it will not be tapped in the performance of a translation if trainees are not aware of its relevance. A research study that would further validate the notions of translator self-concept, translation monitor, and translation expectation and provide evidence of their role in producing high-quality translations would be a critical element in developing a translation pedagogy.

Translation-relevant knowledge and skills primarily involve some of the same types of native and second-language competencies described by the concept of communicative competence in the field of second-language education. The four subcompetencies identified by Canale and Swain (1980) intertwine in the translator's craft: (a) grammatical competence, (b) strategic competence, (c) sociolinguistic competence, and (d) discourse competence. It was clear from the case studies that much of the cognitive activity involved in the actualization of these shared competencies takes place at a subconscious, relatively uncontrolled level. The overt application of high-level translation strategies accounted for a very

small portion of the translation solutions produced. Apparently; because intuitive, uncontrolled processes cannot even be observed or reported on by subjects, it is unlikely that they will ever be able to be the direct focus of teaching techniques. Instead, these processes must be influenced indirectly. If the results of the case studies are any indication, translation pedagogy must more and more focus on ways to maximize intuitive processing. This will entail teaching methods that introduce new translation-relevant knowledge and then focus on its internalization and spontaneous application.

Translation pedagogy and translation process research must more closely examine the contents of translator competence and processes of automatization. Some components of translation competence are shared with bilinguals and students or speakers of foreign languages, and others, such as specialized knowledge of translation strategies, are not. Translation pedagogy does not yet have a clear understanding of which knowledge it should or can provide. Can translation schools teach a second language and provide specialized translation training simultaneously? Not all of the spontaneous associations that need to be made in the intuitive workspace are the associations all bilinguals can make. Translation researchers and translation teachers must examine how specialized knowledge of translation can be transmitted in classroom situations, how it links to existing second-language and second-culture knowledge, and how certain translation skills can be converted from controlled to intuitive. This last objective, determining how to foster the automatization of learned translation knowledge, may be the most important (and difficult) one if the preliminary results of the case studies are upheld.

Translation into the Foreign Language

Both the social and cognitive models of translation processes suggest that similar skills are necessary to produce an adequate translation into one's mother tongue and into one's second language. A cursory evaluation of the translations in the case studies showed that neither professionals nor nonprofessionals had the L2 communicative confidence and translator competence to translate adequately the text into English. Given the present pedagogical gap in translator training and the nature of traditional translation practice classes, this lack of competence is hardly surprising. Investigation should determine whether an adequate level of L2 communicative competence can be developed in translation students in order for them to translate as competently into L2 as trained native speakers of L2. One possible method for improving L2 communicative competence would be to focus on particular subcompetences, especially those most relevant

to translation (most likely to improve its quality), such as textual and discourse competence. A flaw in most translation programs is the lack of emphasis on reading and using parallel texts in the L2.

Another method would be to establish curricula to compensate for incompletely developed L2 communicative competence by emphasizing conscious strategy and the creation of a hypersensitive translation monitor. In the event that classroom research eventually proves that students' L2 communicative competence cannot reach a level that would allow them to translate competently into L2, despite teaching method or learning environment, then translation teachers should consider modifying the expected outcomes of the educational program and of individual translation skills courses. Students could learn to accept their L2 deficiencies and be taught ways to identify flaws in their rough drafts. They might be required to work cooperatively and efficiently with L2 native writers, perhaps as part of regular exchange programs with other translation schools in L2-speaking countries, to produce finished translations from L1 to L2.

What Initial Steps Can Help Fill the Pedagogical Gap in Translation Teaching?

Several principles for a translation pedagogy emerge from the findings of the case studies and from the model of translation derived from them. The general principles can guide the first steps in building a translation pedagogy.

1. Teaching should emphasize the acquisition of interlingual, intercultural, and intertextual associations. Most translation processing occurs in the intuitive workspace and emerges only when problems occur. To build intuitive processes, classroom practice should use forms of teaching that emphasize spontaneous association. The translation teacher has to create realistic simulations of translation tasks and use texts that are selected, even constructed, to target specific competencies.

Both professionals and novices exhibit high levels of automatic intuitive processing. The differences between professional and novice translators (not readily apparent in the present study) probably do not involve differences in levels of automaticity, but rather reflect differences in conscious processing when problems do occur (as confirmed by Hönig). The difference between novice and professional may revolve around (a) knowing how best to resolve a problem, (b) knowing when a problem exists, and (c) evaluating a tentative solution to a problem. These may be explicitly taught in the classroom. Recognition, resolution, and

evaluation techniques for translation solutions may be proper focus for learning in the translation classroom. To develop these techniques, however, we must study professional translators whose translations are clearly of high quality.

2. The relationship between the intuitive workspace and the conscious processing center suggests that error analysis might be a significant teaching resource. It should indicate the broad distribution of problems in a student population and identify the areas of competency that need to be strengthened. Second-language competence provides a basis for intuitive processing in the translator trainee, but translation competence and second-language competence are not coextensive. Error analysis should help translation teachers understand the problems (linguistic, cultural, textual, comprehension, production) that occur during the progress of a translator's training. An analysis of the kinds of errors made by translation students may outline the divergence of second-language competence from greater translation competence and should indicate the kinds of problem recognition, resolution, and evaluation strategies required.

3. Once they understand what kinds of errors are occurring and can isolate the affected competences, translation teachers can provide guided practice to improve the acquisition of intuitive skills and then teach conscious strategies as methods for problem resolution and the production of translation alternatives. As translator trainees move through their training, an analysis of their errors may yield information on whether competences and processing are evolving.

4. A major objective of translator training should be the fostering of a translator self-concept and a functioning translation monitor. The translation monitor is an analogue of the language monitor of the second-language learner but is responsible for finding and correcting errors in translation. The translation monitor judges the acceptability of translation results and controls the rejection of results, the acceptance of results, and the invocation of strategies to resolve problems. The native translator of Harris and Sherwood (1978) has interlingual competence but does not have the full range of translator competences required by the professional and does not have the specialized training to overcome and, more particularly, to recognize problems.

5. As the translation student moves further along the evolutionary path from native translator to high-quality professional translator, the skills that are required are (a) less likely to be acquired by repeated practice, (b) less likely to develop naturally without specific training and pedagogical intervention, and (c) more likely to involve translation quality at levels beyond that of mere semantic and syntactic correctness. The ability to factor contexts of situation into the translation, the ability to edit

and critically review a translation, and the ability to apply specific techniques for quality control (e.g., terminology management) are high-level skills that were not measured by the verbal protocols used in this study.

6. Translator education programs should reorganize around a theoretical framework that allows the identification of the cognitive resources that translation students should acquire and the pedagogical tools for teaching and testing the acquisition of those skills and knowledge. These resources appear to be sequenced; at the beginning of a translator's training they are closely aligned with the communicative skills of the bilingual; as training progresses the resources become translation-specific. At the beginning of the training sequence the pedagogy should emphasize the acquisition of competences that are intuitive and automatic; near the end of a student's program, conscious strategies and quality control skills should be taught. The empirical studies provide a mechanism for differentiating and sequencing the content of a translator training curriculum.

Final Remarks

This book has attempted to demonstrate how an empirical study can be integrated into theory building with the aim of establishing a solid basis for the systematic teaching of translation skills. More empirical studies are required; some of the questions those studies might ask are suggested in this chapter.

There is an urgent need for understanding the role of general L1 and L2 communicative competence within translator competence. Translation students cannot be presumed to have acquired this competence through foreign language classes in secondary school. Instruments to test translation-relevant communicative competence need to be developed and implemented at the beginning of a student's program of studies so that deficiencies can be identified for pedagogical intervention.

General L2 communicative competence skills are distinct from the particular skills a translation student needs to apply L2 knowledge to real translation tasks. Communicative competence is largely language-specific, whereas specific skills for establishing and monitoring translation expectations transcend individual languages and could be taught in generic courses involving students with different language combinations. Translation pedagogy has not always been able to distinguish general L2 competencies from translation-specific ones.

The case studies indicated that much of the mental activity involved in the comprehension and analysis of the source text and in producing the target text takes place at a subconscious and relatively uncontrolled level.

The overt conscious application of rules seems to account for only a small part of the mental processing involved. There is considerable evidence that relatively conscious and controlled plans or strategies do not resolve translation problems alone; instead, they alternate with unobservable intuitive processes to provide resolution. The mental pathway to a quality translation product is not clearly marked or very direct. Because intuitive and uncontrolled processes cannot be observed by researchers or reported on by subjects, they are not suitable for direct pedagogical intervention or description. The empirical description of the mental processes involved in translation, both strategic and intuitive, is still too incomplete to allow the elaboration of a complete pedagogy. It would perhaps be possible to identify and categorize many of the common translation strategies used by students or professionals. Strategies that are found to be efficient and effective could then be taught in a traditional, teacher-centered manner for memorization by translation students. Because we cannot predict how those strategies will interact with the unique wealth of acquired intuitive resources in the mind of an individual translator we cannot assume that strategies effective for one translator will be generally suitable for all translators.

This suggests that in addition to teaching specific strategies, it would be productive to emphasize consciousness-raisingmaking students aware of their own psycholinguistic processes so that they can reflect on the strategies they actually use, recognize which ones work in particular situations, and evaluate those that seem to be less effective. Students will be building a translator's self-concept and the ability to monitor translations. Talk-aloud activities could be used in translation practice classes to enhance students' awareness of their own mental processes while translating. Students could translate a passage individually or in small groups and record their thoughts on audiotape. The quality of the translation product could be assessed by the instructor (or the other students), and the group as a whole could then analyze the results, including the relative effectiveness of various strategies used. Such activities would encourage students to think of translation in terms of process as well as result. The social factors relevant to a particular translation situation could be drawn into the discussion, helping students to appreciate the communicative and personal interdependencies involved.

Translators, like professionals in any field, must have a clearly defined sense of their social role and professional duties and responsibilities. They must know what is expected of them when they begin each translation task; they must know whether they have the knowledge and skills to fulfill the task, and they must have criteria of quality to apply to their work. A translator self-concept is a personal mental construct; it cannot

derive from a pre-fabricated instructor's syllabus. We cannot hand our students a professional translator self-concept; we can only help them acquire one for themselves by putting them in situations that will raise their consciousness about what it means to translate professionally. We can provide them with real or realistic professional translation experiences and keep in focus throughout their course of studies that in becoming translators they are becoming autonomous intercultural and interlingual mediators.

A useful pedagogical tool for germinating a translator self-concept is an introductory course in translation studies such as the one proposed by Hönig (1988b). Students are introduced to contemporary translation theory in the context of real translation tasks. They consider topics such as culture and the translator, scenes-and-frames semantics, text analysis for translation purposes, the relationship between translation and linguistics, and text typologies. Rather than listening to the instructor inform them about these topics, students are required to read the literature on one of the topics and, working in a group, to present the topic to the rest of the class. The instructor places the literature and his experience at the students' disposal, but they must themselves critically assess the value of the contributions in the context of an assigned translation. Such a course is not primarily about how to translate but about what it means to translate and to be a translator.

The social model presented in Chapter 5 can be used as a springboard for discussion and as a point of reference throughout the course. Discussion of the model with reference to actual translation tasks allows students to abandon the traditional foreign language classroom understanding of translation as a scholastic demonstration that one is aware of formally equivalent structures in two languages.

If we acknowledge the importance of helping students develop a professional translator self-concept, we will have to abandon the performance magistrale as our primary teaching technique in translation practice classes. Instead, students must be actively engaged in real and realistic professional translation tasks in the classroom. To develop a professional self-concept, they must be confronted with the task specifications and other constraints that real translators constantly deal with. Instead of translating a text chosen arbitrarily by the instructor, with the bilingual instructor as the only intended reader, students can translate within specific task specifications for a real target language readership.

Even better than simulated translation tasks are real translation assignments. Instructors who translate professionally can pass on some of their own assignments to groups of students, who must then work under the same constraints that the professional would have. Students would

naturally feel much greater motivation and responsibility. The instructor can serve as the final editor for the group, ensuring professional quality. Instructors would have to justify changes in the students' texts by citing professional norms and the requirements of the actual communicative situation. What better way to encourage students to think and act like the professionals they are becoming!

An extensive elaboration of a systematic curriculum for translator education will require another volume. It is hoped that this study has demonstrated how a pathway can be found through the maze of hoary traditions and learning obstacles that clutter the hallways and classrooms of translator education programs. It need not and cannot be the only pathway. Each program and each student in a program is a unique bundle of experience, competencies, and goals. It is up to the individual student translator to become a competent professional, using all the resources at his or her disposal. It is the responsibility of the translator teacher to provide those resources in a manner that reflects the social and cognitive realities of translation and the evolution of translator competence.

Appendix
Translation from German to English

Willkommen, bienvenue, welcome!

Frankfurt freut sich auf Ihren Besuch.

Frankfurt. Großstadt im Herzen Deutschlands. City im Zentrum Europas. An dieser Stadt kommt niemand vorbei. Dafür sorgt schon die verkehrsgünstige Lage der dynamischen Main-Metropole. Mit dem größten Flughafen, dem wichtigsten Bahnhof und dem verkehrsreichsten Autobahnkreuz Mitteleuropas.

Frankfurt ist die kommerzielle Kapitale der Bundesrepublik. Die traditionsreiche Messestadt hat sich während der letzten Jahrzehnte zum wichtigsten Banken- und Börsenplatz des Kontinents entwickelt. Kein Wunder, daß hier Arbeit, Leben und Freizeit durch Internationalität und Weltoffenheit gekennzeichnet sind.

Verkehr und Wirtschaft sind jedoch nur die eine Hälfte dieser vitalen Metropole. Auf der anderen Seite findet sich in Frankfurt ein ausgeprägter Sinn für Tradition, Kunst und Kultur. Die Stadtgeschichte reicht bis ins frühe Mittelalter zurück. Hier wurden einst die deutschen Könige und Kaiser gekrönt. Hier erblickte Goethe das Licht der Welt. Und hier konstituierte sich das erste deutsche Parlament. Doch hat sich die alte freie Reichsstadt niemals auf ihren historischen Lorbeeren ausgeruht.

Gerade heute zeichnet sich Frankfurt durch eine bemerkenswert lebendige Kunst-und Kulturszene aus. Aber auch Unterhaltung, Erholung und Sport kommen nicht zu kurz. Wir laden Sie herzlich dazu ein, die urbane Vielfalt unserer Stadt zu entdecken. Sie werden sehen: Frankfurt ist nicht nur gut fürs Geschäft. Sondern eine Stadt mit vielen faszinierenden Aspekten, in der es sich zu leben lohnt. Verkehrsamt Frankfurt am Main.

Alice (Novice)

Willkommen, bienvenue, welcome!

Frankfurt is looking forward to your visit.

Frankfurt. Metropolis in Germany's heart. City in the center of Europe. Everybody gets captivated by this town. This is already provided for by the favorable location as regards transport facilities of the dynamic metropolis at the Main. As well as by the biggest airport, the most important railway station and Central Europe's busiest motorway crossing.

Frankfurt is Germany's commercial capital. During the last decades the fair town full of traditions developed to the most important place of banks and exchanges of the continent. No wonder that work, life and leisure time here are characterized by internationality and openness.

But traffic and business are only one side of this vital metropolis. On the other hand in Frankfurt you find a distinct sense for tradition, art and culture. The history of the town goes back to the early Middle Ages. Here in the days of old the German kings and emperors were crowned. Here Goethe saw the light. And here the first German parliament constituted. But the ancient free imperial city never rested on her laurels. Today more than ever a remarkably animated art and culture scene makes Frankfurt stand out. But even entertainment, recreation and sports are not placed at a disadvantage.

We invite you cordially to discover the urbane diversity of our town. You will see: Frankfurt is not only fit for business. But a town with many fascinating aspects where it's worth living.

Tourist Office Frankfurt am Main

Translation Units

Problem units	*Unit length*
(+)1. sich freuen auf	Word string
(+)2. Großstadt	Word
(-)3. im Herzen	Word string
(-)4. vorbeikommen	Word
(-)5. An dieser Stadt kommt niemand vorbei	Word string
(-)6. verkehrsgünstig	Word
(-)7. Dafür sorgt schon	Word string
(+)8. Lage	Word
(+)9. dynamisch	Word
(-)10. An dieser Stadt kommt niemand vorbei. Dafür sorgt schon die verkehrsgünstige Lage der dynamischen Main-Metropole	Suprasentential
(-)11. die verkehrsgünstige Lage	Word string
(+)12. City . . . Lage	Suprasentential
(+)13. Main	Word
(-)14. Bahnhof	Word

(+)15. Mit dem . . . Mitteleuropas	Suprasentential
(-)16. verkehrsreich	Word
(-)17. Autobahnkreuz	Word
(+)18. Mit dem . . . Autobahnkreuz	Suprasentential
(+)19. Mitteleuropas	Word
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome!	Word string
(+)B. Frankfurt freut sich auf Ihren Besuch.	Word string
(+)C. Frankfurt.	Word
(-)D. Deutschlands	Word
(+)E. city	Word
(+)F. im Zentrum Europas	Word string
(-)G. Mit dem größten Flughafen	Word string

Data Analysis Summary

Unit length

Word	12
Word string	11
Suprasentential	2
Text	0
Unit types	
Problem	18
Nonproblem	7
Quality assessment	
Global	1.75
Percentage acceptable units	52

Amy (Novice)

Welcome in Frankfurt,

Willkommen, bienvenue, welcome

Frankfurt: the city in the heart of Germany, the city in the center of Europe. You have to see this city! (whether you want or not!): the greatest airport, the most important railway station, the most frequented motorway junction in Central Europeeither way will bring you to the dynamic metropolis at the Main.

Frankfurt: the commercial capital of Germany. The traditional fair at Frankfurt is known all over the world. During the past few decades Frankfurt has become the center of Banking and Stock Exchange in Europe. Thus, it's a matter of fact that work, life, and leisure time have an international flair. This vital metropolis does not only stand out for it's favorable situation as regards transport facilities and it economic life, but also for its flair for tradition, art and culture. The history of the city is traced back to the early Middle Ages. Frankfurt, the city where once kings and emperors were crowned. Frankfurt, the city where Goethe was born. Frankfurt, the city where the first German Parliament was constituted. However, the free imperial city never rested on its oars.

Today, Frankfurt's artistic and cultural scene with it's remarkable sprightliness is one of the outstanding features of this city. But Frankfurt also offers you entertainment, recreation and sports. You are welcome to discover the urban variety of this great cityand you will find that Frankfurt is not only worthwhile seeing for business. This is a city that offers you so many fascinating aspects, a city worthwhile to live in.

Tourist Office Frankfurt/Main.

Translation Units

Problem units	*Unit length*
(-)1. CityGroßstadt	Word
(+)2. im Herzen	Word string
(-)3. An dieser Stadt kommt niemand vorbei.	Word string
(-)4. Dafür sorgt schon die verkehrsgünstige Lage	Word string
(-)5. die verkehrsgünstige Lage	Word string
(+)6. Metropole	Word
(-)7- Mit dem . . . Mitteleuropas.	Word string
(-)8. verkehrsreichsten	Word
(+)9. Autobahnkreuz	Word
(+)10. dynamischen	Word
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome! Frankfurt freut sich auf Ihren Besuch.	Suprasentential
(+)B. Frankfurt.	Word
(+)C. im Zentrum Europas	Word string
(-)D. Dafür sorgt schon	Word string
(-)E. Mit dem größten Flughafen	Word string
(+)F. dem wichtigsten Bahnhof	Word string
(+)G. Mitteleuropas	Word

Data Analysis Summary

Unit length	
Word	7
Word string	9
Suprasentential	1
Text	0
Unit types	
Problem	10
Nonproblem	7
Quality assessment	
Global	1.87
Percentage acceptable units	53

Andrea (Novice)

Frankfort. A great city in the heart of Germany A city in the center of Europe. Nobody can leave this city out. One main reason is that the metropolis at the river Maine is very favorably situated as regards transport facilities. Including the largest airport, the most important station and the busiest crossing of motorways of Central Europe. Frankfurtthat means the commercial center of the FRG. During the last decades this city with its great tradition of fairs has developed to the most important place for banking houses and stock market.

Wonder that here working, living and free time are characterized by internationality and openmindedness facing the world. Both transport and trade and industry however represent only one side of this vital metropolis. On the other side you can find in Frankfurt a distinct sense of tradition, art and culture. The town's history goes back to the early Middle Ages. Once the German kings and emperors were crowned here. In this place Goethe came into the world. And it was here where the first German parliament constituted itself. However, the old imperial city has never rested on the laurels of its history.

Even today Frankfort distinguishes itself by a remarkably vital art-and culture-scene. But also entertainment, relaxation and sports aren't neglected. You're very welcome to discover the urban variety of our city. You will find: Frankfort is not a mere trading center. But in addition to that a city with a lot of fascinating aspects, where it is worth living.

Tourist Office, Frankfort/Main

Translation Units

Problem units	*Unit length*
(-)1. Frankfurt freut sich auf Ihren Besuch	Word string
(-)2. Frankfurt. GroßBstadt im Herzen Deutschlands.	Word string
(-)3. Großstadt	Word
(-)4. vorbeikommen	Word
(-)5. Dafür sorgt schon	Word string
(-)6. verkehrsgünstig	Word
(+)7. Metropole	Word
(-)8. Dafür . . . Metropole	Word string
(-)9. Mit dem größten Flughafen	Word string
(-)10. verkehrsreich	Word
(-)11. Autobahnkreuz	Word
(-)12. verkehrsreichsten Autobahnkrez	Word string
Nonproblem units	
(-)A. Willkommen, bienvenue, welcome!	Word string
(+)B. City im Zentrum Europas.	Word string
(-)C. dem wichtigsten Bahnhof	Word string
(-)D. Mitteleuropas	Word

Data Analysis Summary

Unit length	
Word	7
Word string	9
Suprasentential	0
Text	0
Unit types	
Problem	12
Nonproblem	4
Quality assessment	
Global	1.75
Percentage acceptable units	13

Arnold (Professional)

Frankfurt is looking forward to seeing you!

Frankfurt: metropolis in the heart of Germany. City in the center of

Europe. This town is a "must" for everybody. One reason for that is traffic situation of this dynamic metropolis on the river Main; it has the biggest airport, the most important station and highways with the most traffic in Central Europe. Frankfurt is the commercial capital of West-Germany. With all its traditions, the town, known for its exhibitions, has during the last decades become the most important place for banks and stock exchange in Europe. Therefore it is small wonder that an international and cosmopolitan lifestyle influence the work, life and pastime of the people.

Traffic and economy, however, are only one side of this vital metropolis. On the other side the people here highly appreciate a sense of tradition, art, and culture. Its history dates back to the early Middle Ages. Once, German kings and emperors were crowned in this city and it is also the town where Goethe was born; and the first German parliament was constituted. And yet this old and free and imperial city never rest on its laurels.

Especially today art- and cultural life of Frankfurt is remarkably bustling. But also entertainment, recreation and sports are not missing. You are welcome to discover the urban diversity of this city. You'll find out: Frankfurt is not only good for your business. With all its fascinating aspects it is a city which makes life interesting.

Translation Units

Problem units	*Unit length*
(+)1. Großstadt	Word
(+)2. vorbeikommen	Word
(-)3. verkehrsgünstig	Word

Nonproblem units

(-)A. Willkommen, bienvenue, welcome!	Word string
(+)B. Frankfurt freut sich auf Ihren Besuch.	Word string
(-)C. FrankfurtGroßstadt im Herzen Deutschlands.	Word string
(+)D. City im Zentrum Europas.	Word string
(+)E. An dieser Stadtniemand.	Word string
(+)F. Dafür sorgt schon	Word string
(-)G. Lage	Word
(+)H. dynamische Main-Metropole	Word string
(+)I. . . . Metropole. Mit . . .	Suprasentential
(+)J. dem größten Flughafen	Word string
(-)K. dem wichtigsten Bahnhof	Word string
(-)L. dem verkehrsreichsten Autobahnkreuz Mitteleuropas.	Word string

Data Analysis Summary

Unit length	
Word	4
Word string	10
Suprasentential	1
Text	0
Unit types	
Problem	3
Nonproblem	12
Quality assessment	
Global	2.00
Percentage acceptable units	60

Bonnie (Professional)

Willkommen, bienvenue, welcome!

Frankfurt is looking forward to your visit!

Frankfurt: a city in the heart of Germany; a business centre in the middle of Europe. No one can just pass by this city. The fact that the dynamic metropolis on the Main river is very favourably situated as regards traffic takes care of that. It has got the biggest airport, the most important train station and the busiest motorway junction in the middle of Europe.

Frankfurt is the commercial capital of the Federal Republic. The city, with its long tradition of trade fairs, has, during the past few decades, developed into the most important banking and stock exchange centre of the continent. Small wonder that here, work, life and leisure activities are characterized by internationality and open-mindedness.

But traffic and economy only make up one half of this busy metropolis. On the other hand, you will find a pronounced sense of tradition, art and culture in Frankfurt. The city's history reaches back into the early Middle Ages. Here the German kings and emperors were crowned once. Here, Goethe first saw the light of day. And here, the first German parliament constituted itself. Still, the ancient imperial city has never rested on its historical laurels.

Especially today, Frankfurt is distinguished by a remarkably vivid art and cultural scene. But entertainment, leisure and sports are not being neglected, either. We cordially invite you to discover the urban multiplic-

ity of our city. You will see: Frankfurt is not only good for business, but a city with many fascinating aspects that is worth living in.

Tourist Office Frankfurt am Main

Translation Units

Problem units	*Unit length*
(-)1. Frankfurt . . . vorbei.	Suprasentential
(+)2. City	Word
(+)3. vorbeikommen	Word
(-)4. verkehrsgünstig	Word
(+)5. dynamisch	Word
(+)6. dynamischen Main-Metropole	Word string
(+)7. verkehrsreichsten Autobahnkreuz	Word string
(+)8. Autobahnkreuz	Word
(+)9. Kreuz	Word
(-)10. Mitteleuropas	Word
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome!	Word string
(+)B. Frankfurt freut sich auf Ihren Besuch.	Word string
(-)C. Frankfurt. Großstadt im Herzen Deutschlands	Word string
(+)D. im Zentrum Europas	Word string
(+)E. An dieser Stadt	Word string
(+)F. Dafür sorgt schon	Word string
(+)G. Lage	Word
(+)H. Mit dem größten Flughafen	Word string
(+)I. dem wichtigsten Bahnhof	Word string

Data Analysis Summary

Unit length

Word	8
Word string	10
Suprasentential	1
Text	0

Unit types

Problem	10
Nonproblem	9

Quality assessment

Global	3.00
Percentage acceptable units	79

Candace (Professional)

Willkommen, bienvenue, welcome!

Frankfurt is looking forward to seeing you.

Frankfurt: Metropolis in the heart of Germany, City in the center of Europe. Nobody can escape its attractivity. One reason for this is surely the favorable situation of the metropolis what traffic concerns. It in fact disposes of the biggest airport, the most important railway station and the busiest highways.

Frankfurt is the commercial capital of the Federal Republic of Germany. The city that is know for years for its traditional fairs, has grown during the past decades to the most important center of the continent for the banks and stock Exchange-makers.

So who wonders that work, life and spare-time is characterized by internationality openness (towards the world). But traffic and commerce are only one part of this dynamic metropolis. On the other hand, Frankfort shows a pronounced sense with regard to tradition, art and culture. The history of the city can be traced back to the early Middle Age. Once, German kings and emperor were crowned in Frankfurt. Here, Goethe was born and the first German Parlament was constituted. But nevertheless, the ancient imperial city has never rested on its historical laurels. Particularly today, Frankfurt disposes of a remarkable bustling scene what art and culture are concerned. But also entertainment, recreation and sports rank high. You are invited to discover the urban variety of our city. And you will soon remark: Frankfurt is not only a commercial center but much more a place with a wide range of fascinating aspects where life is worth living.

Translation Units

Problem units	*Unit length*
(+)1. im Herzen Deutschlands	Word string
(+)2. im Herzen	Word string
(+)3. Großstadt	Word
(-)4. Großstadt . . . Europas	Suprasentential
(+)5. Zentrum	Word

(-)6. An dieser Stadt kommt niemand vorbei.	Word string
(-)7. verkehrsgünstig'	Word
(-)8. Dafür sorgt schon die verkehrsgünstige Lage	Word string
(-)9. . . . vorbei. Dafü . . .	Suprasentential
(-)10. . . . Mit dem . . .	Suprasentential
(-)11. Autobahnkreuz	Word

Nonproblem units

(+)A. Willkommen, bienvenue, welcome!	Word string
(+)B. Frankfurt freut sich auf Ihren Besuch.	Word string
(+)C. Frankfurt.	Word
(+)D. Dafür sorgt schon	Word string
(-)E. Main-Metropole	Word
(+)F. Mit dem größten Flughafen	Word string
(+)G. dem wichtigsten Bahnhof	Word string
(+)H. verkehrsreich	Word

Data Analysis Summary

Unit length

Word	7
Word string	8
Suprasentential	3
Text	0

Unit types

Problem	10
Nonproblem	8

Quality assessment

Global	1.62
Percentage acceptable units	58

Connie (Professional)

Willkommen, bienvenue, welcome! Frankfurt looks forward to your visit.

Frankfurt is a metropolis in the heart of Germany, a city in the center of Europe. Nobody can pass by this city without stopping. This is due to the excellent geographic position of the dynamic metropolis on the Main river, which features the largest airport, the most important train station

and the Autobahn intersection with the heaviest traffic in the middle of Europe.

Frankfurt is the commercial center of the Federal Republic. During the last decades the fair town with lots of tradition has turned into one of the most important European bank and stock exchange centers. No wonder, that work and play is characterized by an international atmosphere and general openness.

However, traffic and transportation as well as the local economy are only one side of this vital metropolis. On the other side Frankfurt is characterized by a distinct sense for tradition, art and culture. The history of the town dates back to the early middle ages. In former times the German kings and emperors were crowned here. Goethe was born here. And the first German parliament was constituted in Frankfurt. Yet, the old free Reichsstadt has never rested on its historical laurels. Especially today Frankfurt is distinguished by its remarkably vivid art and cultural life, but also entertainment, recreation and sports don't come too short. We invite you to discover the urban diversity of our city. You will see that Frankfurt is not only a business town, but a city with many fascinating aspects, a city worthwhile to live in.

Tourist Information Frankfurt/Main

Translation Units

Problem units	*Unit length*
(+)1. Großstadt	Word
(+)2. im Herzen	Word string
(+)3. Frankfurt. Großstadt im Herzen Deutschlands.	Word string
(-)4. City . . . vorbei.	Suprasentential
(-)5. An dieser Stadt kommt niemand vorbei.	Word string
(+)6. Dafür sorgt schon	Word string
(-)7. verkehrsgünstig	Word
(-)8. Dafür sorgt schon die verkehrsgünstige Lage der dynamischen Main-Metropole.	Word string
(-)9. verkehrsreich	Word
(-)10. Autobahnkreuz	Word
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome!	Word string
(-)B. Frankfurt freut sich auf Ihren Besuch.	Word string
(+)C. Frankfurt.	Word
(-)D. City im Zentrum Europas.	Word string
(-)E. Mit dem größten Flughafen	Word string

(+)F. dem wichtigsten Bahnhof	Word string
(-)G. Mitteleuropas	Word

Translation Expectations

* global translation strategy (translate freely)

* global translation strategy (leave title until end)

* reader expectations

Data Analysis Summary

Unit length

Word	6
Word string	10
Suprasentential	1
Text	3

Unit types

Problem	10
Nonproblem	7

Quality assessment

Global	2.75
Percentage acceptable units	41

Donna (Novice)

Willkommen, bienvenue, welcome!

Frankfurt is looking forward to your visit.

Frankfurt: A metropolis right in the middle of Germans: City in the centre of Europe. You just must not miss it. Not only because it is favourably situated with the biggest airport, the most important station and most frequented motorway-junction in Middle Europe.

Frankfurt is the capital of trade in West-Germany. During the past decades this old city has become the most important centre of banking and stock exchange in Europe with a variety of fairs taking place there. Consequently the Frankfurt-people live and work in an international and open hearted atmosphere. But traffic and trade are only one single aspect of this metropolis full of vitality. Besides that there are also lots of interesting sights of tradition, art and culture. The history of the city of Frankfurt starts in the early Middle Ages. It is the place where the Ger-

man kings and emperors were crowned. It is the place where the poet Goethe was born. And it is also the place where the first German parliament was constituted in 1848 (?) But the former free (?) imperial city was never only satisfied with its great past. Especially today there is an incredible variety of artistic and cultural events in Frankfurt. But of course you can find entertainment and amusement, i.e. places of recreation, as well. Come and discover the urbane variety of this city! You will find out that Frankfurt is not only a good place for business but a city full of fascinating sides making live worthwhile there.

Tourist Information/Ffm

Translation Units

Problem units	*Unit length*
(+)1. Frankfurt freut sich auf Ihren Besuch.	Word string
(-)2. im Herzen Deutschlands	Word string
(+)3. Großstadt	Word
(+)4. City	Word
(+)5. Stadt	Word
(+)6. vorbeikommen	Word
(-)7. verkehrsgünstig	Word
(+)8. Dafür sorgt schon	Word string
(-)9. Main-Metropole	Word string
(+)10. dem wichtigsten Bahnhof	Word string
(-)11. Autobahnkreuz	Word
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome!	Word string
(+)B. im Zentrum Europas	Word string
(+)C. Stadt	Word
(+)D. Lage	Word
(+)E. Metropole	Word
(-)F. Mit dem größten Flughafen	Word string
(-)G. Mitteleuropas	Word

Data Analysis Summary

Unit length

Word	10
Word string	8
Suprasentential	0
Text	0

Unit types

Problem	11
Nonproblem	7

Quality assessment

Global	2.5
Percentage acceptable units	67

Dorothy (Novice)

Willkommen, bienvenue, welcome!

Frankfurt is looking forward to your visit.

Frankfurt. City in the heart of Germany. Metropolis in the centre of Europe. It is impossible to pass by this town. One reason therefore is its good position in regard to transport facilities. It has the biggest airport, the most important train station and the most busy autobahn junction in Middle Europe. Frankfurt is the commercial centre of Germany. The traditional city of the fair has during the last decades become the most important place for banking and stock exchange. No wonder that working, living and spending your free time here are marked by internationality and open-mindedness.

Still traffic and commerce represent only one side of this vigorous metropolis. You can also find a distinct sense for tradition, art and culture here. The history of the town goes down to the early Middle Ages. Here the former German kings and emperors were crowned. Here Goethe was born. Here the first German parliament was constituted. But the free imperial city has never rested on its historical laurel.

Frankfurt of today is known as a city with a vigorous scene of art and culture. But you can also find a variety of entertainment, recreation and sport activities. We would like to invite you to discover the multiplicity of our city. You will see that Frankfurt is not only good for making money. But it is also a city with many fascinating aspects. It is worth living in it. Frankfurt tourist office.

Translation Units

Problem units	*Unit length*
(+)1. Frankfurt freut sich auf Ihrem Besuch.	Word string
(-)2. Frankfurt Großstadt im Herzen Deutschlands.	Word string
(+)3. Großstadt	Word

(-)4. An dieser Stadt kommt niemand vorbei.	Word string
(+)5. vorbeikommen	Word
(-)6. Dafü . . . Main-Metropole.	Word string
(-)7. Dafür sorgt schon	Word string
(-)8. verkehrsgünstige Lage	Word string
(-)9. der dynamischen Main-Metropole.	Word string
(-)10. verkehrsreich	Word
(-)11. Autobahnkreuz	Word
(-)12. Mit dem . . . verkehrsreichsten Autobahnkreuz Mitteleuropas	Word string
(-)13. Mitteleuropas	Word
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome!	Word string
(+)B. City im Zentrum Europas.	Word string
(+)C. Mit dem größten Flughafen	Word string
(+)D. dem wichtigsten Bahnhof	Word string

Data Analysis Summary

Unit length	
Word	5
Word string	12
Suprasentential	0
Text	0
Unit types	
Problem	13
Nonproblem	4
Quality assessment	
Global	1.75
Percentage acceptable units	44

Edna (Novice)

Willkommen, bienvenue, welcome!

Frankfurt is looking forward to your visit.

Frankfurt: A metropole in the heart of Germany. City in the centre of Europe. Nobody can miss this city. The central position and good trans-

portation system of the dynamic metropole in the Main area already provided for that. It has the largest airport, the most frequented train station and the busiest highway in Middle Europe.

Frankfurt is the metropole of business in the Federal Republic. The city where traditionally fairs are held has become the most important centre of banking and stock exchange during the last decades. No wonder that work, life and freetime are marked by the international audience and open-mindedness towards the whole world. However, transportation and economy only make up half of this vivid metropole. You will further encounter in Frankfurt a great sense for tradition, art and culture. The city's history goes back to the early Middle Ages. Here the German Kings and emperors have once been crowned. It was here that the poet Goethe was born. And here the first German Parliament held it's sessions. But this old imperial city has never rested on its historical laurels. Especially today Frankfurt is well known for a remarkably inspiring art and cultural life. Entertainment, recreation and sport life play an important role as well. We heartily welcome you to discover our city's variety. You will find out: Frankfurt is not only interesting for business reason, but also a city of many fascinating aspects, very worthwhile to live in.

Tourist Office Frankfurt am Main

Translation Units

Problem units	*Unit length*
(+)1. Willkommen, bienvenue, welcome!	Word string
(+)2. sich freuen auf	Word string
(+)3. im Herzen Deutschlands	Word string
(+)4. im Zentrum	Word string
(-)5-vorbeikommen	Word
(-)6. An dieser Stadt kommt niemand vorbei.	Word string
(-)7. die verkehrsgünstige Lage der dynamischen Main-Metropole	Word string
(-)8. Autobahnkreuz	Word
Nonproblem units	
(+)A. Frankfurt.	Word
(+)B. auf Ihren Besuch	Word string
(-)C. Großstadt	Word
(+)D. City	Word
(-)E. Dafür sorgt schon	Word string
(+)F. Lage	Word
(-)G. verkehrsgünstig	Word

(+)H. Mit dem größten Flughafen	Word string
(-)I. Mit . . . dem wichtigsten Bahnhof	Word string
(+)J. verkehrsreich	Word

Translation Expectations

* style, author's intentions, text-type

Data Analysis Summary

Unit length

Word	9
Word string	9
Suprasentential	0
Text	1

Unit types

Problem	8
Nonproblem	10

Quality assessment

Global	1.87
Percentage acceptable units	56

Ina (Novice)

Willkommen, bienvenue, welcome!

Frankfurt is happy to have you here.

Frankfurt. City in the heart of Germany. City in the centre of Europe. Everybody is attracted by this city. One reason for this is the favourably position as regards transport facilities of the dynamic Metropolis upon Main. The biggest airport, most important station and the most busy motorway junction of Central Europe are all situated in Frankfurt. Frankfurt is the commercial capital of the FRG. This traditional city with its famous Fair has developped to the most important bank and Stock Exchange place during the last decades. So it is no wonder that work, life and leisure here are characterized by internationality and openness towards the world. But traffic and economy are only one side of this lively metropolis. On the other hand Frankfurt has a great sense for tradition, arts an culture. Its history goes as far back as to the Middle-Ages. The German kings and emperors were crowned in Frankfurt, Goethe was born

in Frankfurt and the first German parliament met in Frankfurt, but in spite of these facts the old free imperial city has never rested on its laurels. Especially in our days Frankfurt is famous as a remarkably lively artistical and cultural centre. But also entertainment, sports and leisure aren't neglected in Frankfurt. You're cordially invited to discover the urban variety of this town. Frankfurt is not only a good town for commerce, but a town worth living in with many fascinating aspects.

The tourist office of Frankfurt.

Translation Units

Problem units	*Unit length*
(+)1. Frankfurt freut sich auf Ihren Besuch	Word string
(+)2. An dieser Stadt kommt niemand vorbei.	World string
(+)3. Dafür sorgt	Word string
(-)4. Dafür sorgt . . . Main-Metropole.	Word string
(-)5. Lage	Word
(-)6. verkehrsgünstig	Word
(+)7. Metropole	Word
(-)8. Mit dem . . . Mitteleuropas.	Word string
(-)9. verkehrsreich	Word
(+)10. Autobahnkreuz	Word
(-)11. Mitteleuropa(s)	Word
Nonproblem units	
(+)A. Willkommen, Bienvenue, Welcome!	Word string
(+)B. Frankfurt.	Word
(-)C. Großstadt im Herzen Deutschlands.	Word string
(+)D. City im Zentrum Europas.	Word string
(+)E. Mit dem größten Flughafen	Word string
(-)F. Mit . . . dem wichtigsten Bahnhof	Word string

Translation Expectations

* author's intentions

Data Analysis Summary

Unit length

Word	7
Word string	10
Suprasentential	0
Text	1

Unit types	
Problem	11
Nonproblem	6
Quality assessment	
Global	2.25
Percentage acceptable units	47

Kate (Novice)

Welcome, bienvenue, willkommen! Frankfurt is waiting for you.

Frankfurt, a big city in the heart of Germany, city in the centre of Europe. Nobody can just pass this town because good traffic connections take you right to this active metropolis on the river Main. These connections are the biggest airport, the most important railway station and a motorway connection with the densest traffic of central Europe.

Frankfurt is the commercial capital of the Federal Republic. This town with a long tradition of special fairs has developed into the most important place for banking and stock exchange business on the continent over the last few decades. No wonder then, that work, life and leisure are marked by cosmopolitan features and wordly mindedness.

Anyway, traffic and business are just the one side of this metropolis full of life. On the other, you will find a strong sense of tradition, arts and culture in Frankfurt. The history of the town dates back to the early Middle Ages. The German kings and the German emperor used to be crowned there once. Goethe came into the world in this town. And the first German Parliament constituted itself here. The old free town of the Empire, however, never rested on its historical laurels.

Especially today Frankfurt is characterized by a remarkably animated scene of arts and culture. But entertainment, recreation and sports are not neglected anyway. You are very welcome to discover the urban diversity of our town. You will find that Frankfurt is not only good for business. It is, moreover, a town of many fascinating aspects which is worth to live in.

Tourists office F.A.M

Translation Units

Problem units	*Unit length*
(+)1. im Herzen	Word string
(+)2. Metropole	Word

(+)3. . . vorbei. Dafür sorgt schon . . .	Suprasentential
(+)4. Autobahnkreuz	Word
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome!	Word string
(-)B. Frankfurt freut sich auf Ihren Besuch.	Word string
(-)C. Frankfurt. Großstadt im Herzen Deutschlands.	Word string
(+)D. City im Zentrum Europas.	Word string
(-)E. An dieser Stadt kommt niemand vorbei.	Word string
(-)F. dynamisch	Word
(+)G. verkehrsgünstig	Word
(+)H. Mit dem größten Flughafen	Word string
(+)I. Mit . . . dem wichtigsten Bahnhof	Word string
(-)J. und dem verkehrsreichsten . . .	Word string
(-)K. Mitteleuropas	Word

Data Analysis Summary

Unit length	
Word	6
Word string	8
Suprasentential	1
Text	0
Unit types	
Problem	4
Nonproblem	11
Quality assessment	
Global	1.87
Percentage acceptable units	60

Kelly (Professional)

Welcome, bienvenue, willkommen!

Frankfurt is looking forward to your visit.

Frankfurt: metropolis in the very center of Germany, even in the center of Europe. Nobody can get round this city. The reason for that is the dynamic Main city's situation at the junction of most of the transportation systems. It has the biggest airport, the most important railway station and the most frequented motorway junction of Central Europe.

Frankfurt is the commercial capital of West Germany, Frankfurt with its traditional fair has developed into the most important place for the money market of the continent. No wonder that work, life and spare time activities are here characterized by an international and cosmopolitan feeling.

Traffic and economy however, constitute only one halve of the vital metropolis. On the other hand you have a very pronounced sense for tradition, art and culture. The history of the city goes back to the early Middle Ages. There was a time when here the German Kings and emperors were crowned. Here Goethe saw the light. Here also the first German parliament came into being. The old free town however, has never rested on its historical laurels.

Especially today Frankfurt stands out for a remarkable vividness in art and cultural life. But entertainment, recreation and sports don't go short either. We would like to invite you to discover the urban manifold of our city. You will see that Frankfurt is not only good for business. It is instead a city, which has many fascinating aspects and which is worthwhile to live in.

Tourist Office Frankfurt/Main

Translation Units

Problem units	*Unit length*
(-)1. im Herzen Deutschlands	Word string
(-)2. Großstadt	Word
(-)3. verkehrsgünstig	Word
(-)4. Mit dem . . . Mitteleuropas.	Word string
(-)5. größtenwichtigstenverkehrsreichsten	Word string
(-)6. verkehrsreich	Word
(-)7. An dieser Stadt kommt niemand vorbei.	Word string
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome!	Word string
(+)B. Frankfurt freut sich auf Ihren Besuch.	Word string
(+)C. Frankfurt.	Word
(-)D . . .. Deutschlands. City . . .	Suprasentential
(-)E. City im Zentrum Europas.	Word string
(-)F. Dafür sorgt schon	Word string
(+)G. dynamisch	Word
(-)H. Metropole	Word

Data Analysis Summary

Unit length	
Word	6
Word string	8
Suprasentential	1
Text	0
Unit types	
Problem	7
Nonproblem	8
Quality assessment	
Global	1.87
Percentage acceptable units	27

Laurence (Professional)

Welcome!

Frankfurt is looking forward to your visit.

Frankfurt: Big city in the heart of Germany and in the centre of Europe. Nobody can miss this town. A guarantee for this is the very convenient situation of the dynamic metropolis on the river Main which has the biggest airport, the most important railway station and the busiest motorway section in central Europe.

Frankfurt is the economic capital of West Germany. During the past few decades this exhibition centre which is rich in tradition has become the most important banking centre and stock market in Europe. There is no wonder that work, living, and leisure time in this town are characterized by an international flair and by cosmopolitan attitudes.

Traffic and economy, however, are only one side of this vigorous metropolis. On the other hand a well-developed sense of tradition, art and culture can be found in Frankfurt. The history of this town dates back as far as to the early Middle Ages. This is the place where German kings and emperors used to be crowned. This is the place where the famous German writer Goethe saw the light of the day. And last by not least this is the place where the first German parliament was constituted. However, this old and free city has never rested on its historical laurels.

What makes Frankfurt stand out especially nowadays is its remarkably lively arts and cultural scene, But there are also entertainment, relaxation and sports facilities in sufficient numbers. You are welcome to dis-

cover the urbane variety of our town. As you will see Frankfurt is not only a favorable place for business by also a town with many fascinating aspects where living is worth while.

Tourist Information Office Frankfurt.

Translation Units

Problem units	*Unit length*
(-)1. Willkommen, bienvenue, welcome!	Word string
(-)2. Frankfurt. Großstadt im Herzen Deutschlands	Word string
(+)3. Großstadt	Word
(+)4. im Herzen	Word string
(+)5. Gity im Zentrum Europas.	Word string
(-)6. vorbeikommen	Word
(-)7. An dieser Stadt kommt niemand vorbei.	Word string
(-)8. schon	Word
(-)9. für etwas sorgen	Word string
(-)10. Dafür sorgt schon die verkehrsgünstige Lage der dynamischen Main-Metropole.	Word string
(-)11. die verkehrsgünstige Lage	Word string
(+)12. . . . Metropole. Mit dem . . .	Suprasentential
(+)13. verkehrsreich	Word
(-)14. Autobahnkreuz	World
Nonproblem units	
(+)A. Frankfurt freut sich auf Ihren Besuch.	Word string
(+)B. Frankfurt	Word
(+)C. dem größten Flughafen	Word string
(+)D. dem wichtigsten Bahnhof	Word string
(+)E. Mitteleuropas	Word

Translation Expectations

* reader expectations
* expected effect of text on readership
* global translation strategy
* author's intentions
* function of text

Data Analysis Summary

Unit length

Word	7
Word string	11

Suprasentential	1
Text	5
Unit types	
Problem	14
Nonproblem	5
Quality assessment	
Global	3
Percentage acceptable units	53

Phil (Professional)

Willkommen, bienvenue, welcome!

We're waiting for you!

Frankfurt: A big city in the middle of Germany. A metropolis right in the heart of Europe. When you're coming to Europe, you will surely meet us. There's no way of EVADING us. We have the largest airport, the most important railway station and by far the most frequented network of highways in Central Europe. Frankfurt is the capital of West-German business. During the last few decades, the traditional city of fairs has developed into a very important FORUM for banking and stock exchange for the old world. No wonder work, life and leisure are so deeply influence by a multitude of languages, civilizations and relations.

But traffic and business are merely one side of this vital metropolis. On the other hand you will meet here a spirit of traditions, fine arts and civilization. The history of the old town dates back to the early medieval days. German kings and emperors were crowned in Frankfurt. And the first German Parliament came together in Frankfurt. And yet the old, independent town of the German Empire has never ceased to look for new challenges. The remarkable scene of culture and art has never been livelier, yet entertainment, recreation and sports, too, get their share. Let us invite you to discover and experience the urban VARIETY of our town. You will see: Frankfurt is not for business only! It is a city with many faces, a cry that is worth living in.

Tourist Office Frankfurt/Main

Translation Units

Problem units	*Unit length*
(+)1. Willkommen, bienvenue, welcome!	Word string
(-)2. Frankfurt freut sich auf Ihren Besuch.	Word string

(-)3. sich freuen auf	Word string
(+)4. Großstadt	Word
(+)5. GroßstadtCity	Word string
(+)6. im Zentrum Europas	Word string
(+)7. City im Zentrum Europas.	Word string
(-)8. An dieser Stadt kommt niemand vorbei.	Word string
(-)9. Dafür sorgt schon	Word string
(-)10. An dieser . . . Mitteleuropas.	Suprasentential
(Second time through the text)	
(-)11. An dieser Stadt kommt niemand vorbei.	Word string
(-)12. Autobahnkreuz	Word

Nonproblem units

(+)A. Frankfurt	Word
(+)B. Mit . . . dem wichtigsten Bahnhof	Word string
(Second time through the text)	
(+)[C]. Willkommen, bienvenue, welcome!	Word string
(-)[D]. Frankfurt freut sich auf Ihren Besuch.	Word string
(-)[E]. FrankfurtGroßstadt im Herzen Deutschlands.	Word string
(+)[F]. City im Zentrum Europas.	Word string
(-)[G]. . . . Europas. An dieser Stadt . . .	Suprasentential
(+)H. Mit dem größten Flughafen	Word string
(-)I. und dem verkehrsreichsten	Word string
(+)J. Mitteleuropas	Word

Translation Expectations

* readership characteristics

* author's intentions

Data Analysis Summary

Unit length

Word	4
Word string	12
Suprasentential	1
Text	2

Unit types

Problem	12
Nonproblem	5

Quality assessment

Global	1.87
Percentage acceptable units	53

Ralph (Novice)

Willkommen, bienvenue, welcome!

Frankfurt is looking forward to your visit.

Frankfurt: Big city in the middle of Germany. City in the centre of Europe. You just can't pass this city because its well situated. The biggest airport, the most important railway-station and the most frequented motorway intersection. Frankfurt is the centre of German money business. Within the last decades this traditional exhibition centre became the most important area for banks and stock market of Europe. That makes work, life and spare time really international and open Minded.

But traffic and economy are just one of the many faces of this vital metropolis. There is much more to explore in Frankfurt in the fields of history, art and culture. This history of the city last back into the early middle-age. The German Kings were crowned in Frankfurt and the first German parliament was formed here. But the old free city hasn't stocked in history. The Frankfurt of today is marked by a highly vivid scene of arts and culture. Even entertainment relaxing and sports are highly present in the city's programm. We kindly invite you to get to know all the facilities of our city.

You will see: Frankfurt isn't only good in business. It is a place with a collection of many fascinating aspects waiting to be explored by you.

Tourist Information Office [Verkehrsamt] Frankfurt on the Main

Translation Units

Problem units	*Unit length*
(+)1. im Herzen	Word string
(-)2. vorbeikommen	Word
(-)3. verkehrsgünstig	Word
(-)4. verkehrsreich	Word
(+)5. Autobahnkreuz	Word
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome!	Word string
(+)B. Frankfurt freut sich auf Ihren Besuch	Word string
(+)C. Frankfurt	Word

(+)D. Großstadt	Word
(+)E. City im Zentrum Europas	Word string
(-)F. An dieser Stadt . . . niemand	Word string
(+)G. . . vorbei. Dafür . . .	Suprasentential
(-)H. der dynamischen Main-Metropole.	Word string
(-)I. Mit dem größten Flughafen	Word string
(-)J. dem wichtigsten Bahnhof	Word string

Translation Expectations

* reader expectations

* identification of style and text-type

Data Analysis Summary

Unit length

Word	6
Word string	8
Suprasentential	1
Text	2

Unit types

Problem	5
Nonproblem	10

Quality assessment

Global	1.75
Percentage acceptable units	53

Sally (Professional)

Willkommen, bienvenue, welcome!

Frankfurt is looking forward to your visit.

Frankfurt: Big city in the heart of Germany. City in the center of Europe. Nobody can get past this town! And if it were only because of the desirable location of this dynamic metropolis on the Main. With the largest airport, the most important railway station and the most crowded express motor road crossing in Central Europe. Frankfurt is the commercial capital of Germany. This city of international fairs rich in tradition, has developed over the last decades into the most important banking and

stock exchange market of the continent. No wonder that work, life and leisure are characterized by an international and cosmopolitan flair. Traffic and business are but half of this vital metropolis. On the other side you will find in Frankfurt a marked sense of tradition, art and culture.

The city's history is going back into the early Middle Ages. Once here were crowned the German kings and emperors. Here Goethe was born. And here the first German Parlament was constituted. But the old, free imperial city has never rested on its historic laurels. Today more than ever Frankfurt stands out for its remarkably active artistic and cultural scene.

But entertainment, recreation and sports are playing an important part, too. We warmly invite you to discover the urban diversity of our city. You Mil see: Frankfurt is not only good for business. But a city with many fascinating aspects, where it is worth living.

Translation Units

Problem units	*Unit length*
(-)1. vorbeikommen	Word
(-)2. verkehrsgünstig	Word
(-)3. Autobahnkreuz	Word
(-)4. für etwas sorgen	Word string
(-)5. schon	Word
(+)6. dynamisch	Word

Nonproblem units

(+)A. Willkommen, bienvenue, welcome!	Word string
(+)B. Frankfurt freut sich auf Ihren Besuch.	Word string
(-)C. Frankfurt. Großstadt	Word string
(+)D. im Herzen Deutschlands	Word string
(+)E. City im Zentrum Europas.	Word string
(-)F. An dieser Stadt	Word string
(-)G. Mit dem größten Flughafen	Word string
(+)H. dem wichtigsten Bahnhof	Word string
(-)I. verkehrsreichsten	Word
(+)J. Mitteleuropas	Word

Data Analysis Summary

Unit length

Word	7
Word string	9

Suprasentential	0
Text	0
Unit types	
Problem	6
Nonproblem	10
Quality assessment	
Global	2.12
Percentage acceptable units	31

Tim (Novice)

Willkommen, bienvenue, welcome!

Frankfurt: Metropolis in the heart of the federal Republic of German),. City in the centre of Europe. Nobody should miss a visit to this city. The dynamic metropolis at the river Main is a center of traffic, with Middle Europe's biggest airport, most important railway station and the highly crowded Autobahn.

Frankfurt is the capital of money in Germany. The city of fairs with its old tradition has changed in the last years into the most important place for banks and stockmarkets on the continent.

International and cosmopolitan are work, life and leisure time. But traffic and economy are just one half of this vital city. On the other half one can find a high consciousness for tradition, art and culture. The history of the city starts in the early Middle Ages. Kings and emperors were crowned here. Goethe was born here. And here the first German parliament was formed. But there are also many new aspects in Frankfort. Right now Frankfort has a very lively scene of art and culture. Also entertainment, recreation and sports are offered. We would like to invite you to discover the urban multiplicity of our city. You'll see: Francfort is not only good for business but also a city with many fascinating aspects, in which life is worse living.

Translation Units

Problem units	*Unit length*
(+)1. Großstadt	Word
(-)2. An dieser Stadt kommt niemand vorbei.	Word string
(-)3. Dafür sorgt schon	Word string

(-)4. verkehrsgünstig	Word
(-)5. die verkehrsgüngstige Lage der dynamischen	Word string
(+)6. Metropole	Word
(-)7. verkehrsreich	Word
(-)8. Autobahnkreuz	Word
Nonproblem units	
(+)A. Willkommen, bienvenue, welcome!	Word string
(+)B. Frankfurt.	Word
(+)C. im Herzen Deutschlands	Word string
(+)D. City im Zentrum Europas	Word string
(+)E. An dieser Stadt	Word string
(+)F. Main	Word
(+)G. Mit dem größten Flughafen (Mitteleuropas)	Word string
(+)H. dem wichtigsten Bahnhof	Word string
(-)I. Mitteleuropas	Word

Data Analysis Summary

Unit length

Word	8
Word string	9
Suprasentential	0
Text	0

Unit types

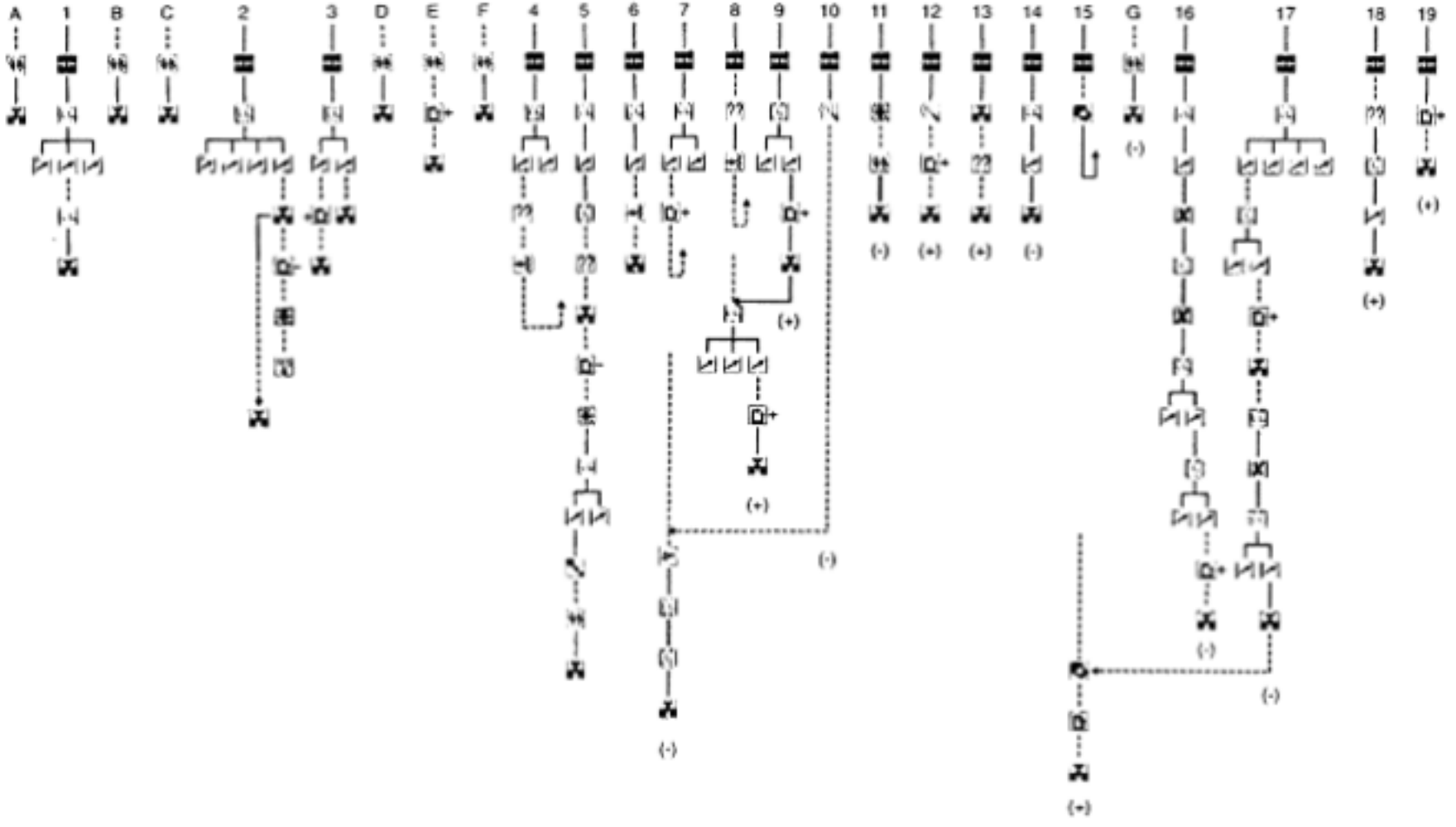
Problem Nonproblem	8
Nonproblem	9

Quality assessment

Global	2.12
Percentage acceptable units	59

Protocol Diagrams

Following on pages 147-61



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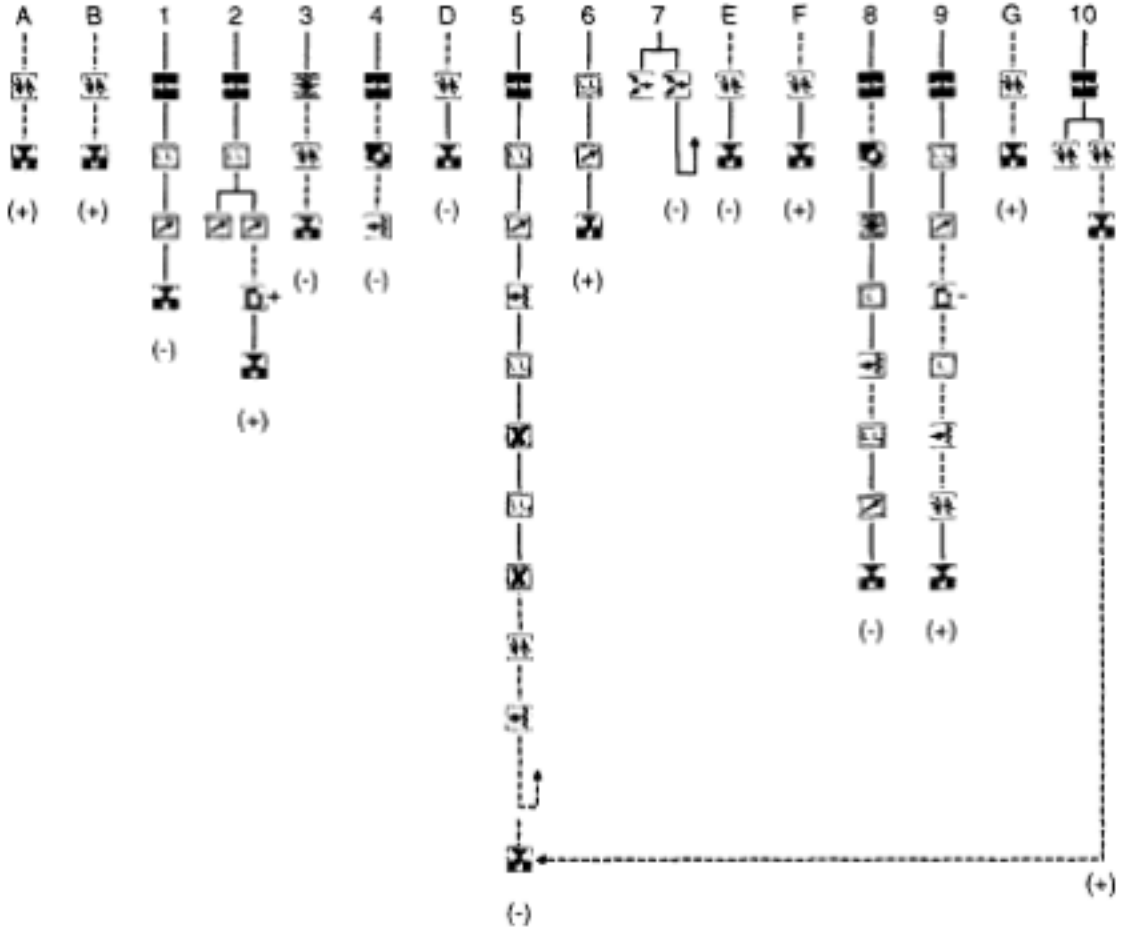

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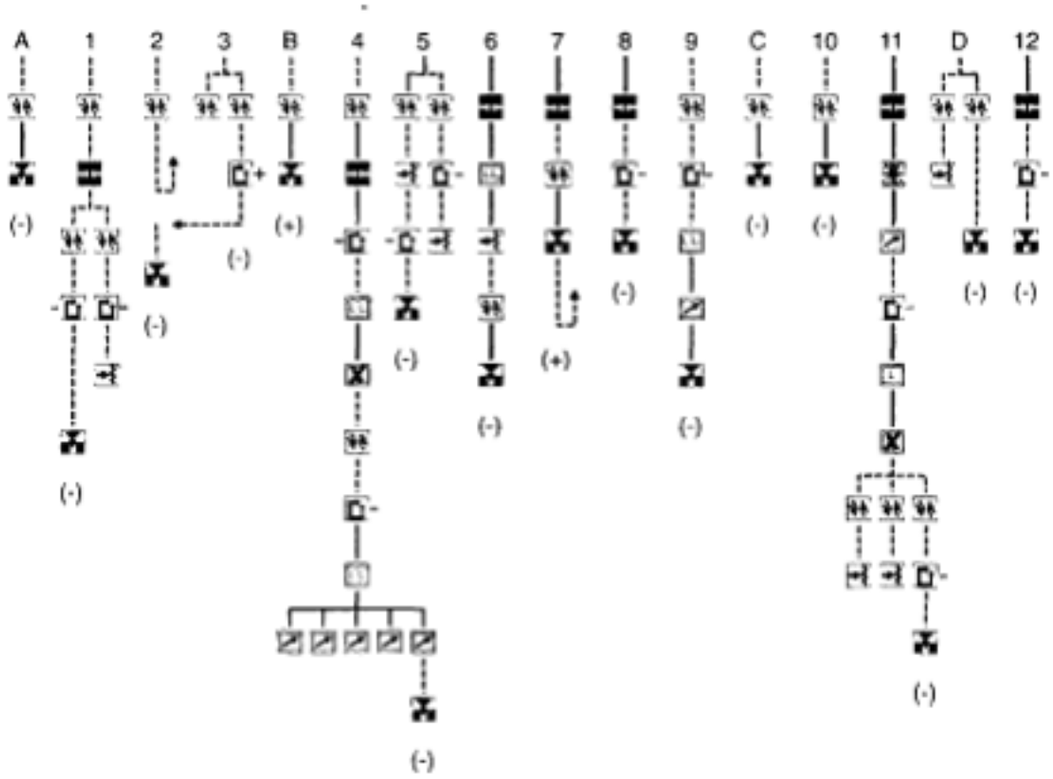

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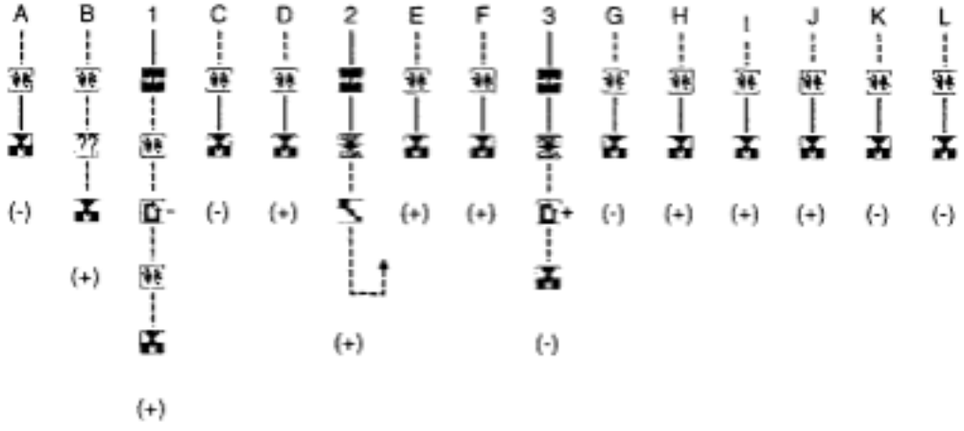

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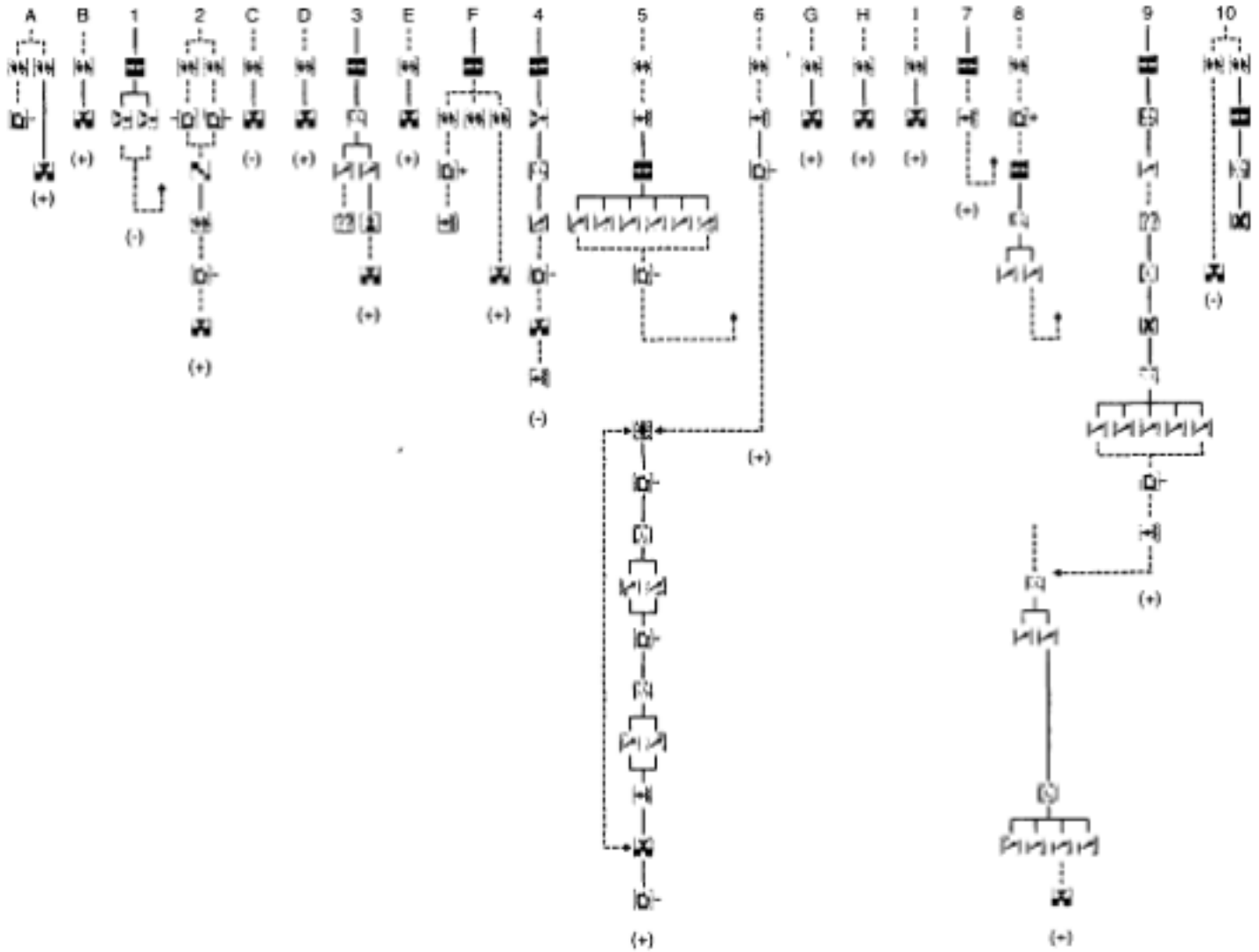

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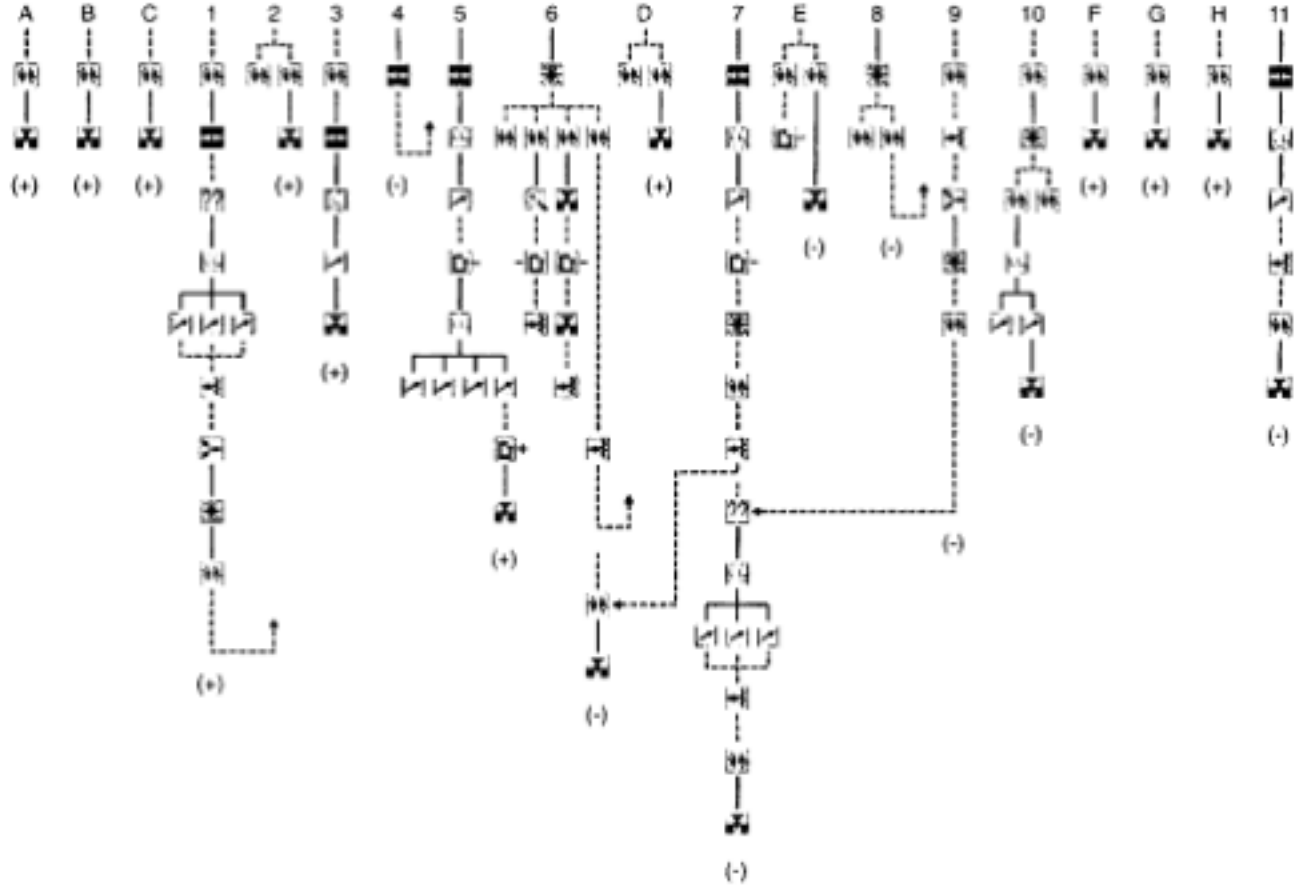
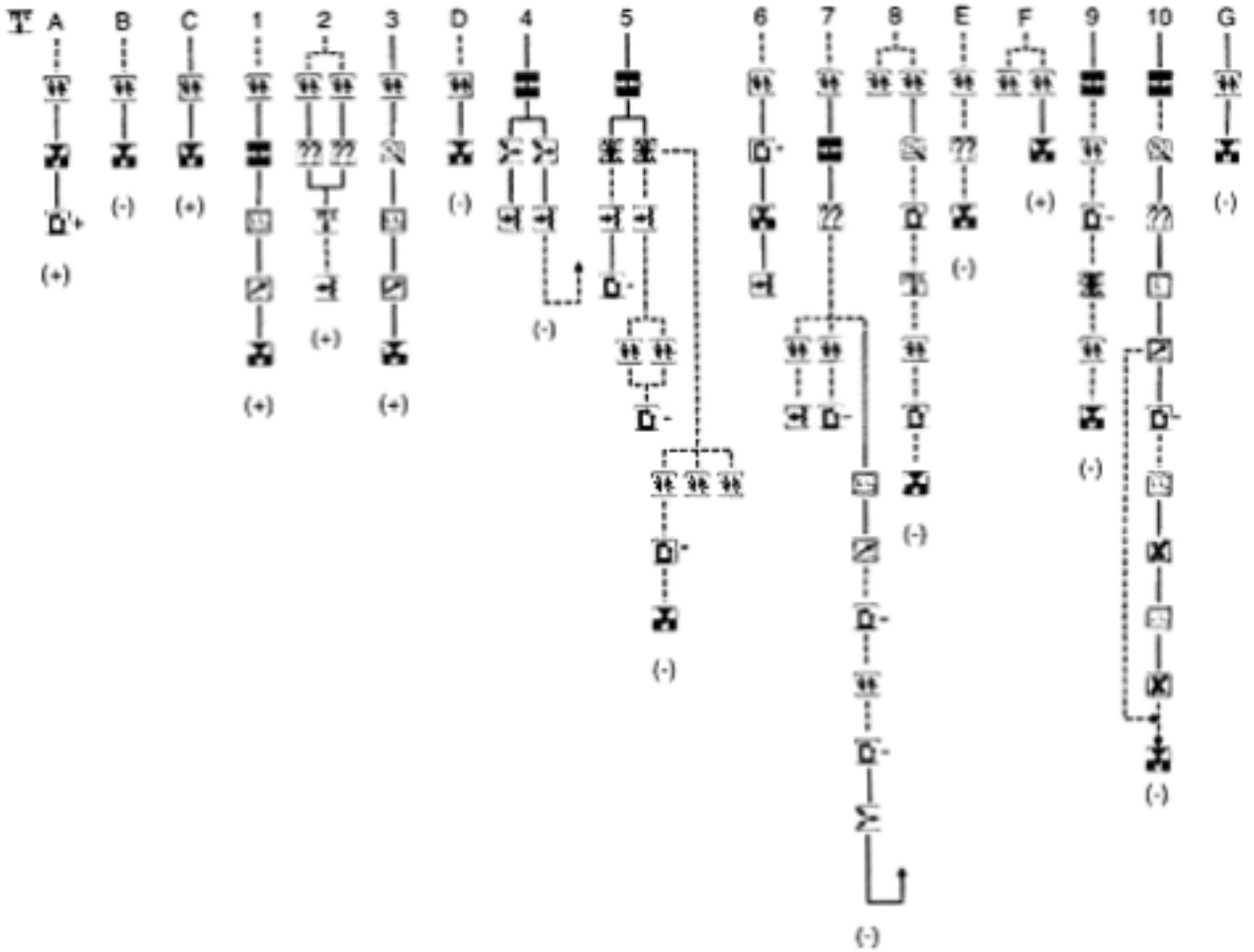


Candacee (Professional)



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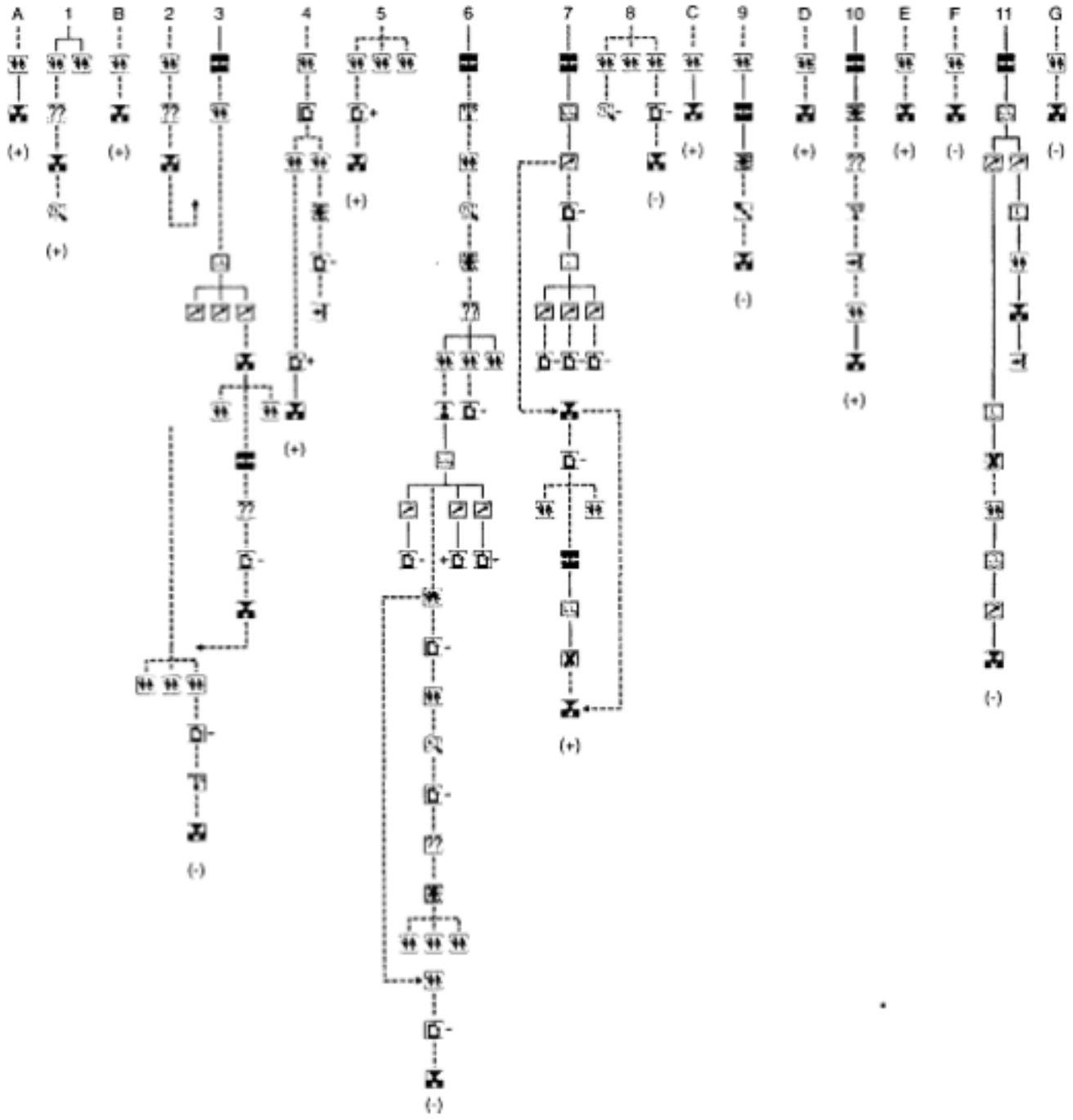

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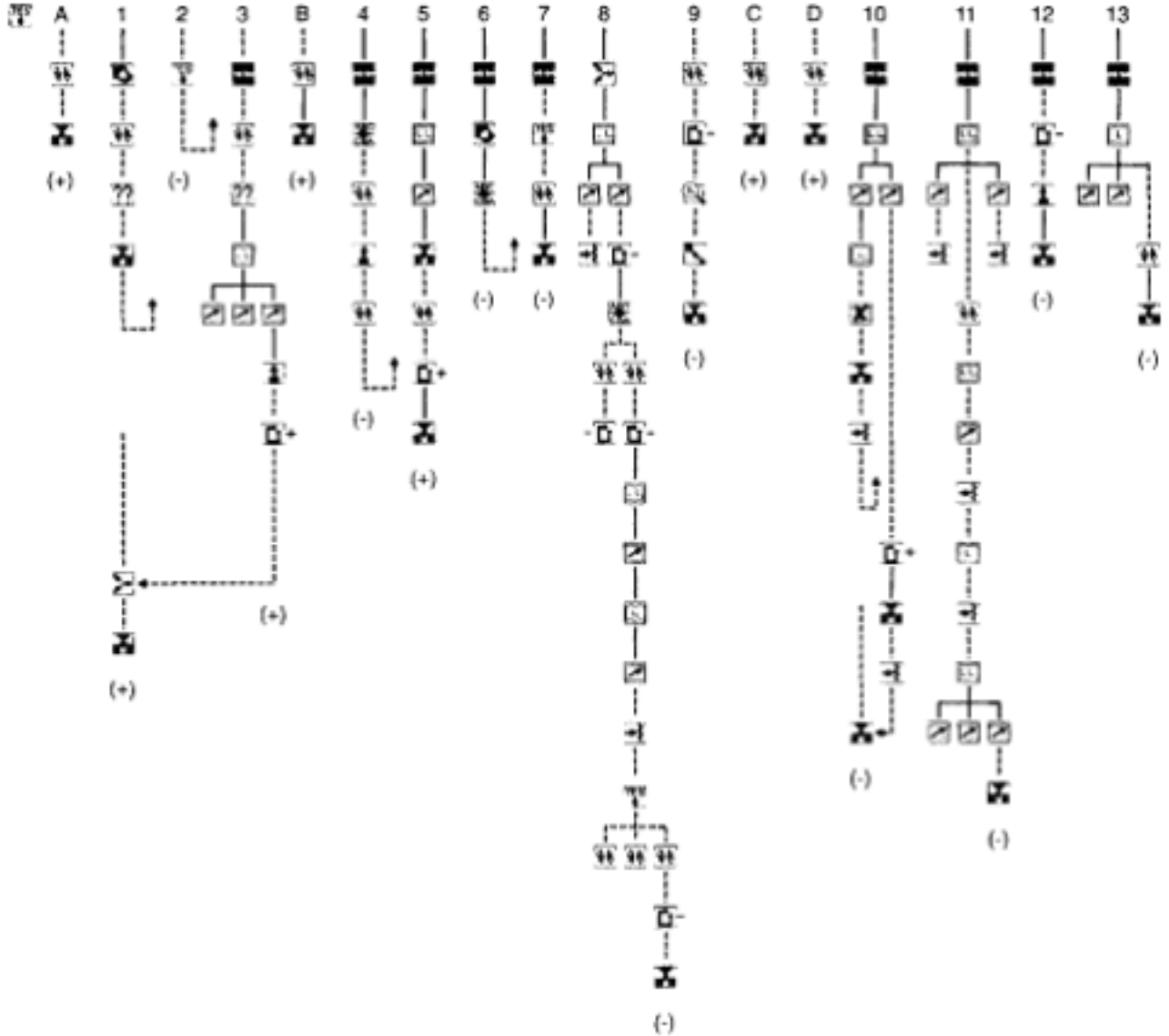

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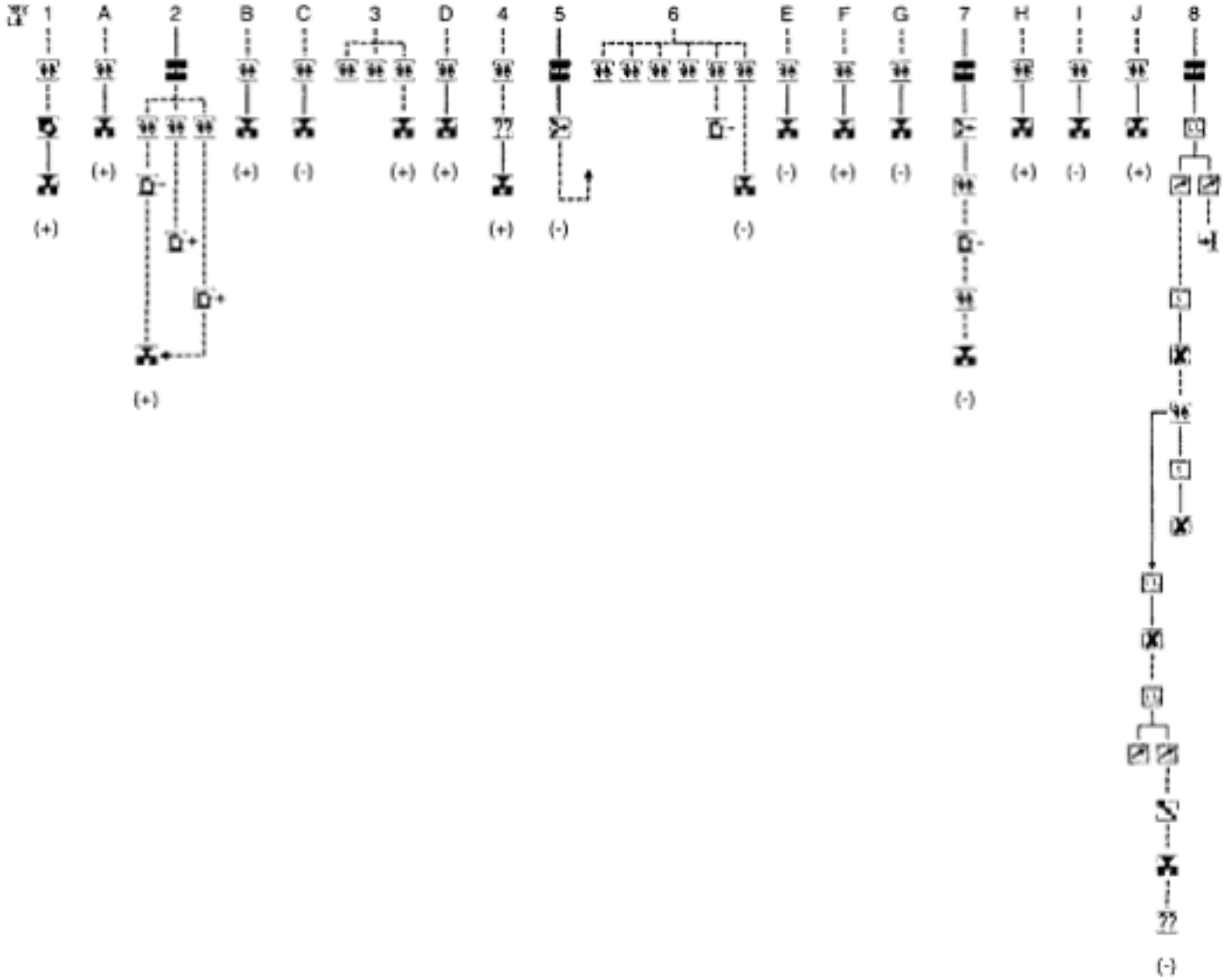

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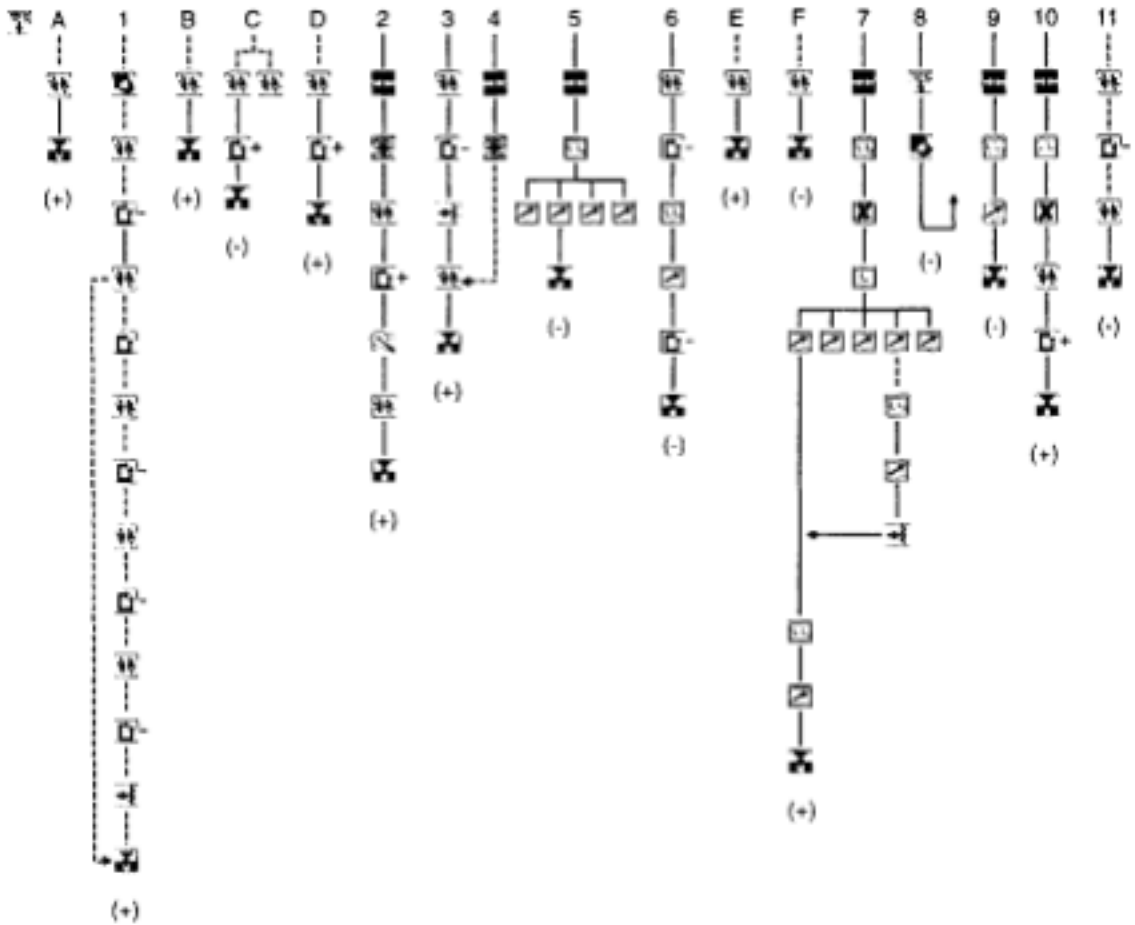
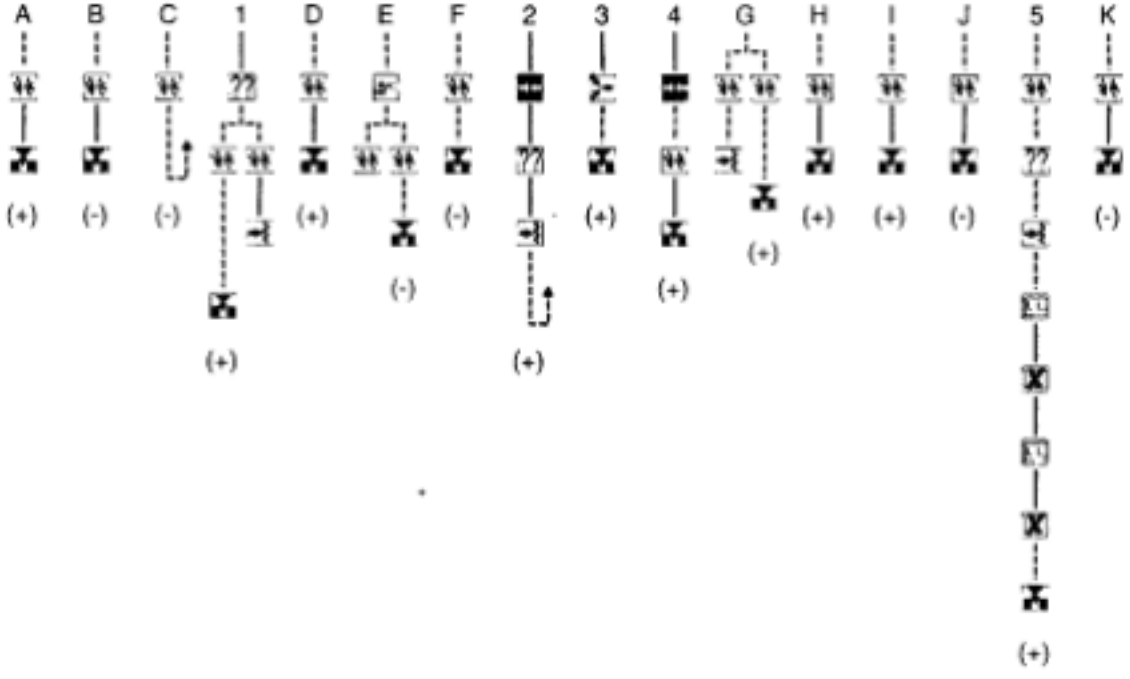


Ina (Novice)



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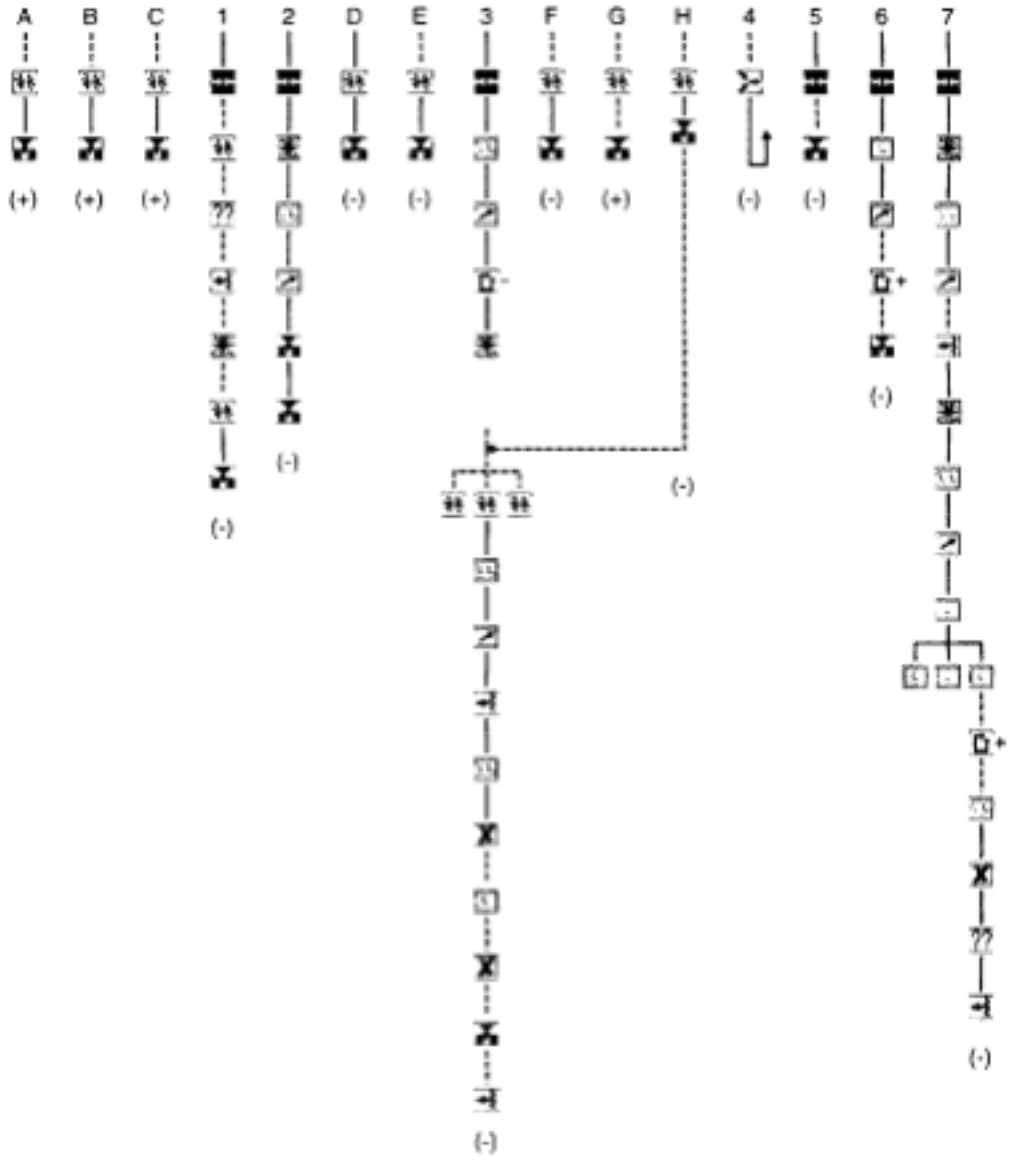
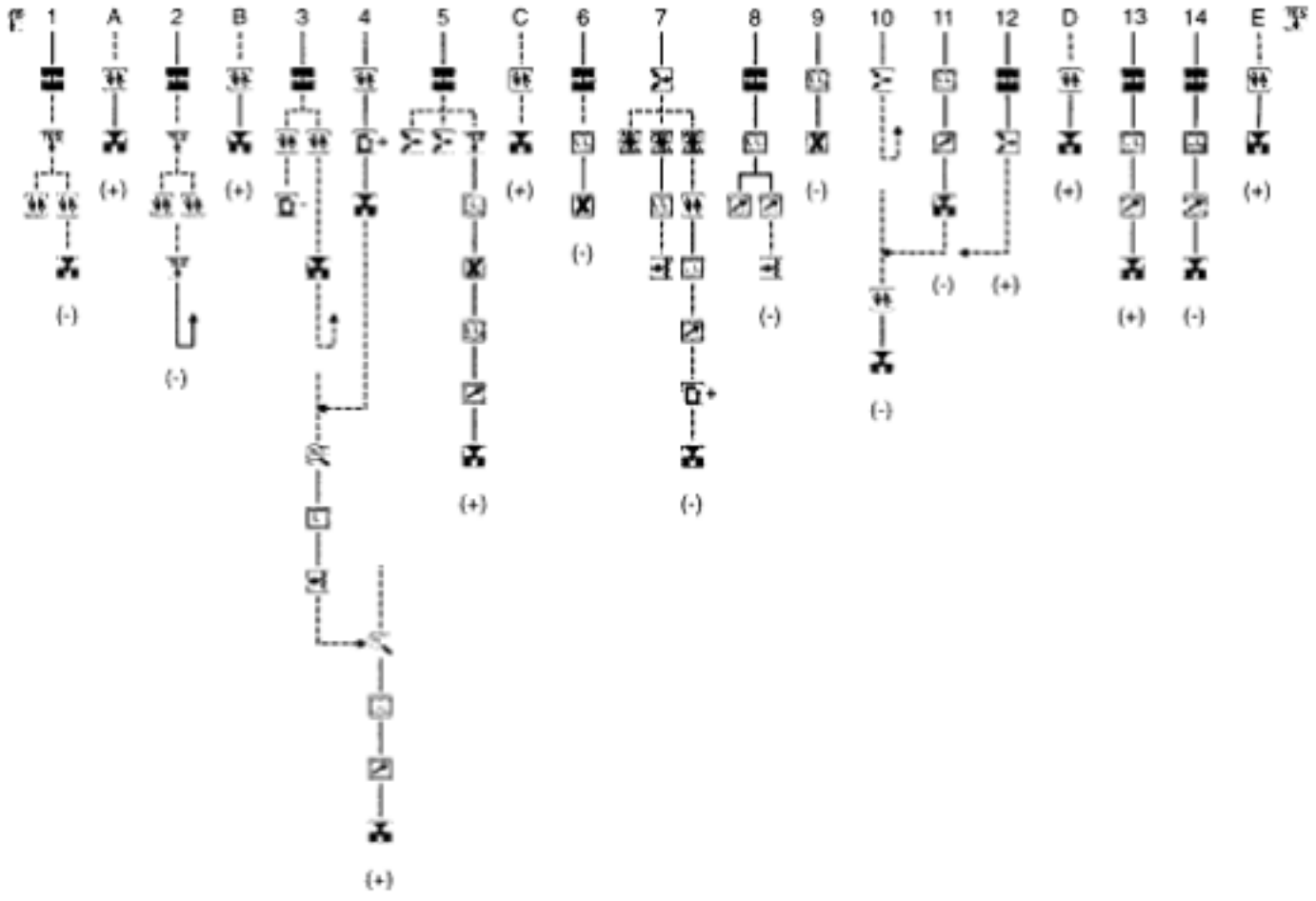
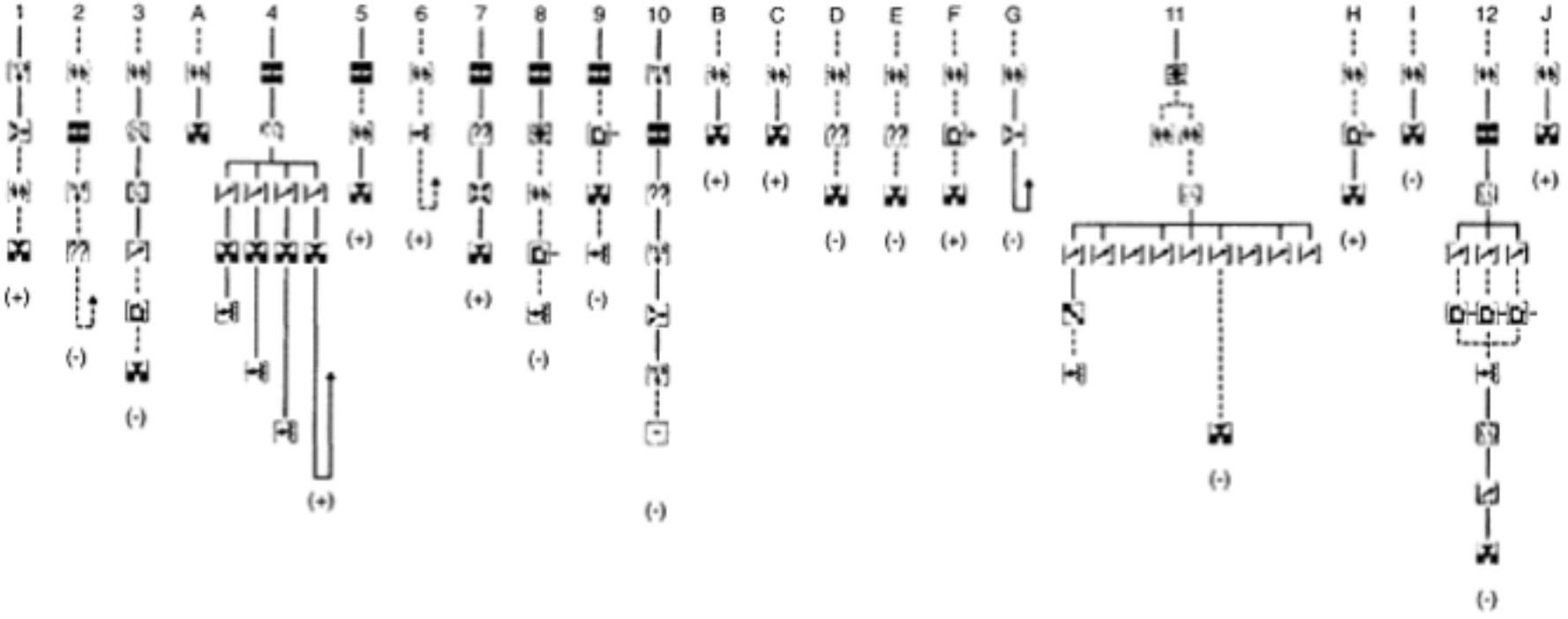


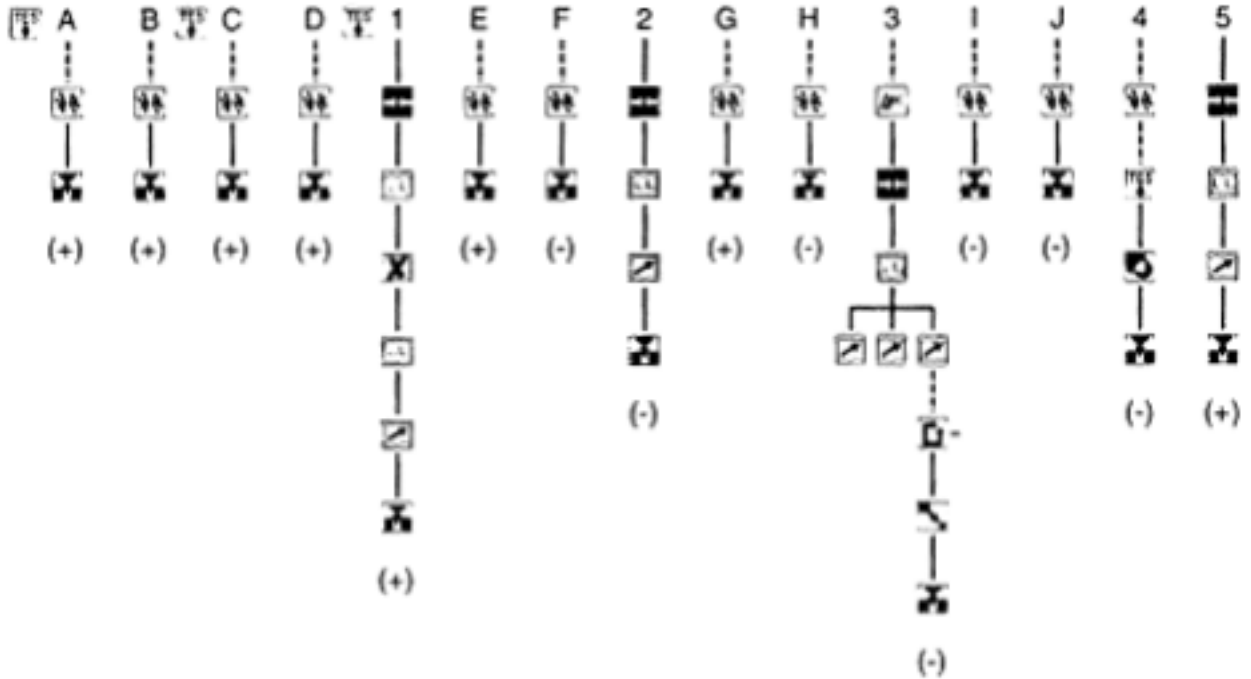
Kelly (Professional)



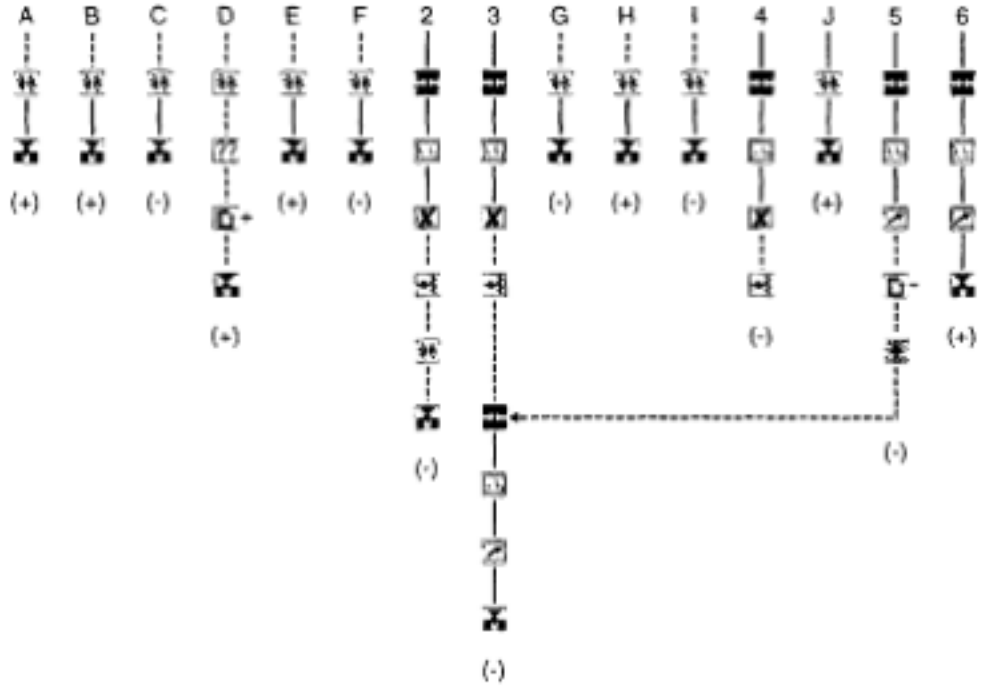
Laurence (Professional)



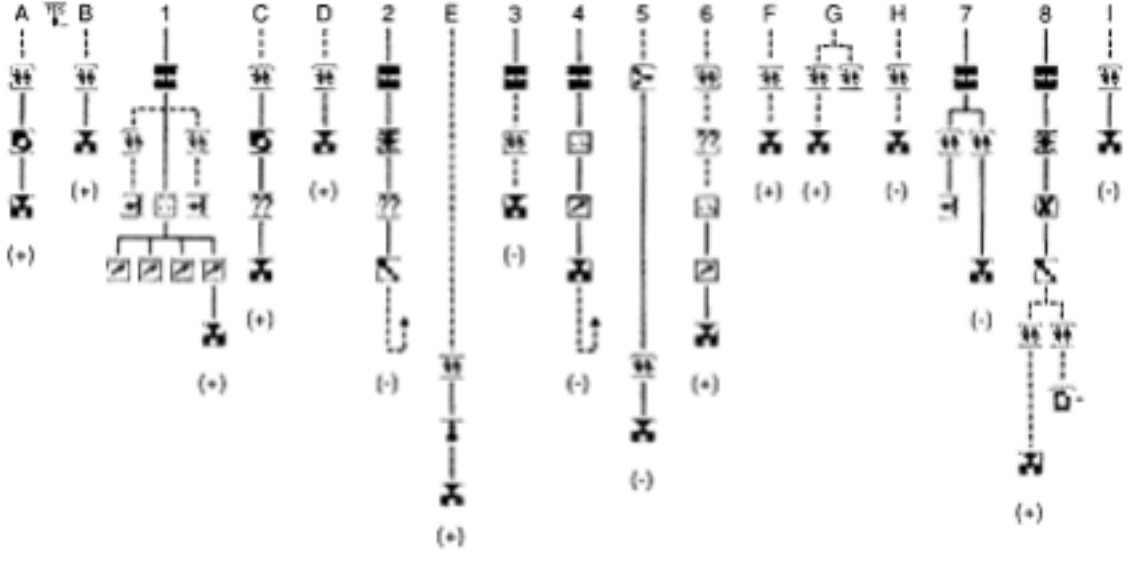
Phil (Professional)



Ralph (Novice)



Sally (Professional)



Tim (Novice)

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