APPLYING THE SCIENTIFIC METHOD TO TRANSLATION STUDIES:
PROBLEMS AND SOLUTIONS IN
RESEARCH INTO TRANSLATION COMPETENCE

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I. INTRODUCTION
1. PACTE's research objectives.
2. Holistic translation competence model.

II. PROBLEMS RELATED TO EMPIRICAL RESEARCH IN TRANSLATION
1. Problems related to all kinds of empirical research.
2. Specific problems related to empirical-experimental research in translation.

III. PREPARING THE PACTE TRANSLATION COMPETENCE EXPERIMENT
1. Research design: Define the type of study. Formulate hypotheses. Design experimental tasks and instruments.
2. Preliminary tests: exploratory and pilot tests.
3. Methodological consequences of the exploratory and pilot tests.

IV. THE PACTE TRANSLATION COMPETENCE EXPERIMENT
1. Who is observed? Experimental universe. Independent variables. Selection of the sample.
2. What is observed? Dependent variables and indicators.
3. How is the data collected? Instruments. Examples of instruments developed: Knowledge of translation questionnaire. 'Rich Points'.
4. How is the data represented? Indicators and indexes.
5. How is the data analysed? Models of Analysis. Example: Knowledge of translation. Crossing data.

V. DESIGNING THE PACTE ACQUISITION OF TRANSLATION COMPETENCE EXPERIMENT
1. What type of study?
2. Who is observed?
3. What is observed?
4. How is the data collected?
5. How is the data represented?
6. How is the data analysed?

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TRANSLATION COMPETENCE MODEL (PACTE 2003)
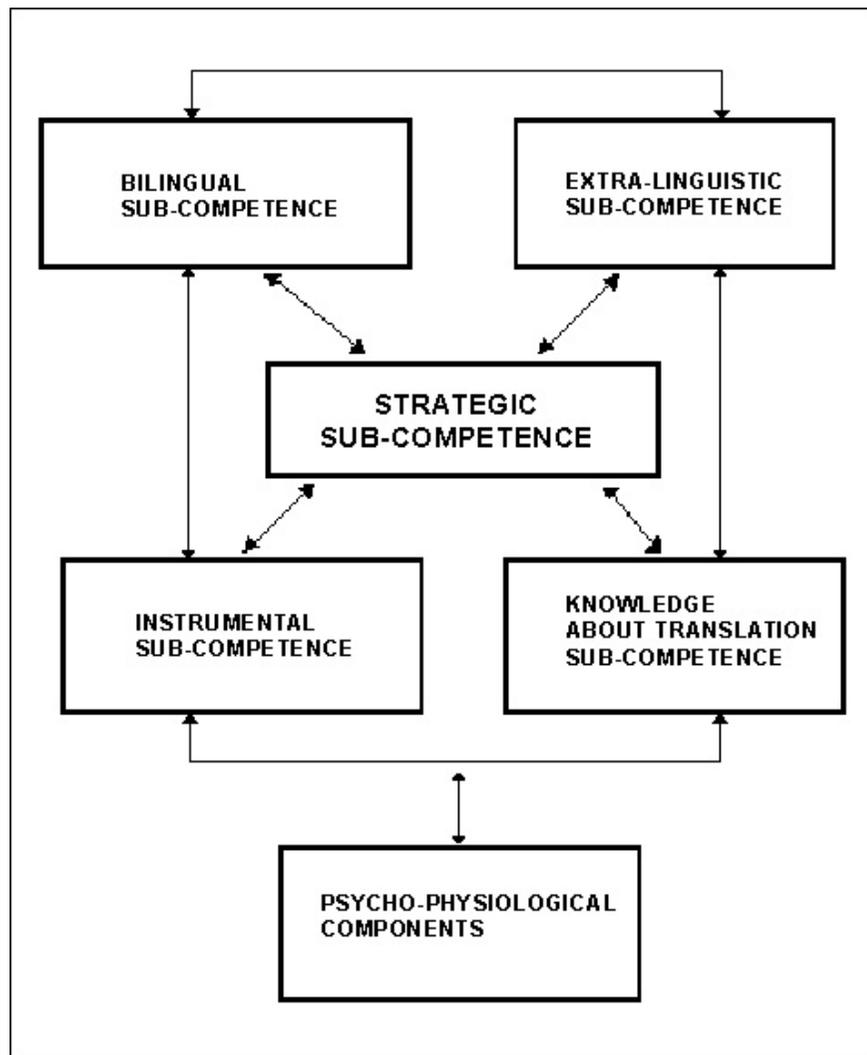
TRANSLATION COMPETENCE: Translation competence is the underlying system of declarative and predominantly procedural knowledge required to translate. It comprises a number of interrelated subcompetences.

Bilingual sub-competence. Predominantly procedural knowledge required to communicate in two languages. It comprises pragmatic, socio-linguistic, textual, grammatical and lexical knowledge.

Extra-linguistic sub-competence. Predominantly declarative knowledge, both implicit and explicit, about the world in general, and field-specific. It comprises bicultural, encyclopaedic, and subject-domain knowledge.

Knowledge about translation sub-competence. Predominantly declarative knowledge, both implicit and explicit, about translation and aspects of the profession. It comprises knowledge about how translation functions (translation units, processes required, methods and procedures used and types of problems); and knowledge about professional translation practice (the work market, types of translation briefs, target audiences, etc.)[1].

Instrumental sub-competence. Predominantly procedural knowledge related to the use of documentation resources and information and communication technologies applied to translation (dictionaries of all kinds, encyclopaedias, grammars, style books, parallel texts, electronic corpora, search engines, etc**.)**

Strategic sub-competence. Procedural knowledge to guarantee the efficiency of the translation process and solve problems encountered. This is an essential sub-competence that affects all the others since it creates links between the different subcompetences as it controls the translation process. Its function is to plan the process and carry out the translation project (selecting the most appropriate method); evaluate the process and the partial results obtained in relation to the final purpose; activate the different sub-competences and compensate for any shortcomings; identify translation problems and apply procedures to solve them.

Psycho-physiological components. Different types of cognitive and attitudinal components and psycho-motor mechanisms. They include: cognitive components such as memory, perception, attention and emotion; attitudinal aspects such as intellectual curiosity, perseverance, rigour, critical spirit, knowledge about and confidence in one's own abilities, the ability to measure one's own abilities, motivation, etc.; abilities such as creativity, logical reasoning, analysis and synthesis, etc.

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[1] Other aspects intervene, such as: knowledge about translation associations, tariffs, taxes, etc.

DEPENDENT VARIABLES

(adaptation of PACTE 2005a, 2005b)

KNOWLEDGE ABOUT TRANSLATION Related to the **knowledge about translation sub-competence**	
CONCEPTUAL DEFINITION	The subject's knowledge about what translation is and how it works and aspects of the translation profession
INDICATORS	Dynamic index and coherence coefficient
INSTRUMENTOS	Questionnaire on knowledge about translation
DATA SOURCE	Subjects' answers to the questionnaire
EFFICACY OF THE TRANSLATION PROCESS Related to the **strategic sub-competence**	
CONCEPTUAL DEFINITION	Optimum relationship between time taken to complete a translation task and the acceptability of the solution
INDICATORS	Total time taken; time taken at each stage of the translation process (orientation, development, revision; Jakobsen 2002); acceptability of results
INSTRUMENTS	Translations, direct observation chart, PROXY and Camtasia recordings.
DATA SOURCE	Total time taken and time taken at each stage of the translation process in relation to the acceptable and partially acceptable results obtained
DECISION-MAKING The most complex variable. Related to **strategic and instrumental sub-competences**, it provides data on subjects' procedural behaviour	
CONCEPTUAL DEFINITION	Process during which TC subcompetences are activated when carrying out a translation task. Both internal and external support is involved (Alves, 1995, 1997). Internal support: use of automatic and non-automatic cognitive resources. External support: use of any source of documentation
INDICATORS	Types and sequences of actions; acceptability of results
INSTRUMENTS	Translations, direct observation charts, PROXY and Camtasia recordings
DATA SOURCE	Sequences of actions leading to results that are acceptable, partially acceptable and unacceptable in relation to "rich points".
TRANSLATION PROJECT Related to the **strategic sub-competence**	
CONCEPTUAL DEFINITION	Mental representation or expectations of what the translation of a given text should be like.
INDICATORES	Dynamic index in the overall translation project and that of each Rich Point; coherence between the overall translation

	project and that of each Rich Point.
INSTRUMENTS	Translation problems questionnaire and retrospective interview
DATA SOURCE	Elements taken into account by the subject in relation to the translation brief
IDENTIFICATION AND SOLUTION OF TRANSLATION PROBLEMS Related to the **knowledge about translation sub-competence** and the **strategic sub-competence**	
CONCEPTUAL DEFINITON	Difficulties encountered by the subjects when carrying out a translation task
INDICATORS	Nature of problems identified, conceptualization of problems, solving procedure as explained by the subject (subcompetence activated), subject's degree of satisfaction with the solution found, degree of difficulty of the text
INSTRUMENTS	Translation problems questionnaire and retrospective interview
DATA SOURCE	Problems identified and subjects' comments
USE OF INSTRUMENTAL RESOURCES Related to the **instrumental competence**	
CONCEPTUAL DEFINITION	Process during which documentation strategies are activated using resources in electronic format (webs, dictionaries and encyclopaedias in CD-ROM)
INDICATORS	Variety of resources, number of searches, time spent on searches (total and for each phase)
INSTRUMENTOS	Proxy/Camtasia recordings, Catalogue of searches
DATA SOURCE	Phase(s) of the search/es; Time spent (initial/final); Categories of resources (type, sub-type); Number of resources (variety of searches); Number of searches (quantity of searches)

QUESTIONNAIRE ON KNOWLEDGE OF TRANSLATION (PACTE 2007b, 2008)

What is your opinion about the following statements?

1. As you are read the text you are going to translate, you are already thinking about how to translate it.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

2. Since words don't always have the same shade of meaning in different languages, something is always lost in translation.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

3. It is the client who decides how the translator has to translate a text.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

4. The aim of every translation is to produce a text as close in form to the original as possible.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

5. Most translation problems can be solved with the help of a good dictionary.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

6. The most important thing when translating is to think of the target reader.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

7. To be able to understand a text you must find out what the words mean.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

8. If the original text is very different from the same type of text in the target language (e.g. instruction manuals, commercial letters, etc.) you should adapt the translated text to the requirements of the target culture.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

9. Since you can't know the meaning of all the words in a text, a bilingual dictionary is the best solution
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

10. A text should be translated in different ways depending on who the target reader is.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

11. All translated texts should keep the same paragraphs and divisions in the target text as in the original text.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

12. The main difficulty when translating a text is to find typical expressions in the target language.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

13. To be able to translate well, you should concentrate on the vocabulary and the syntax of the original and reproduce them in the target text.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

14. When translating a specialised text, terminology is not the biggest problem.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

15. The best way to translate a text is to translate word-for-word except in the case of proverbs, set phrases and metaphors.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

16. As soon as you find a word or expression you don't know the meaning of , you should look it up straightaway in a bilingual dictionary
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

17. When translating a novel, one of the most difficult problems to solve is cultural references (e.g. institutions, traditional dishes, etc.).
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

18. When you translate, you translate first one sentence, then the next, and so on till you come to the end of the text.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

19. When you translate, you should be aware of the norms and conventions of the target text language.

☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

20. It is not enough to know two languages to be able to translate well
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

21. The most important thing when translating a text is to make sure that the target readers react in the same way to the target text as the readers of the original text.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

22. When you find a cultural reference in a text (e.g. a traditional dish) you should look for an equivalent in the target culture.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

23. If you begin to translate a text using certain criteria (e.g. respecting the format of the original text, adapting the text to target reader, etc.) these should be kept to throughout the text.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

24. When you translate a text, you should not be influenced by the target reader.
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

25. The best way to translate a text is sentence by sentence (line by line)
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

26. The problems you find when translating a text are the same no matter what kind of text you are translating
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

27. If you find a word in a text that you don't understand, you should try to work out its meaning from the context
☐ *I strongly disagree* ☐ *I disagree* ☐ *I agree* ☐ *I strongly agree*

DIRECT TRANSLATION TEXT

1Email virus strikes in new form

Computer users were warned last night to be on the lookout for an email virus that can steal confidential information and allow hackers to take control of infected machines. The virus, a new variant of the BugBear email worm that infected tens of thousands of computers around the world last October, began to spread rapidly from Australia to Europe and the USA at around 8am yesterday. According to MessageLabs, a **5Cheltenham-based virus filtering firm** which reported about 30,000 infected messages in 115 countries, the **3propagation rate** of BugBear.B almost **3doubled** every hour throughout the morning. There was also a huge **3surge** as US users came online. Like its predecessor, the variant spreads by sending itself as an attachment to every address in an infected machine's email address book. To disguise where it came from, it uses different subject headings. As well as searching for anti-virus software and disabling it, BugBear.B installs a **2keylogger** to record what the user types, which may allow hackers to record confidential information such as credit card details and passwords. It also installs a **4"Trojan horse" program which could allow a hacker to take remote control of infected machines**. [...]

The Guardian - Friday, June 6, 2003

RP1: The title (problem type: intentionality)
- *Wurm in der leitung*
- *Bugbear.b, le virus informatique qui lit par –dessus l'épaule de ses victimes*
RP2: A technical term (problem type: extralinguistic)
- *Download-Verzeichnis*
- *Édition de logiciels antivirus*
RP3: Reference (problem type: textual)
- *Schädling / E-Mail Würmer / Vorgängervariante*
- *Le ver / résurgence / ses congénères*
RP3: Elements in apposition (problem type: textual and intentionality)
- *Dateien-Tauchbörse Kazaa*
- *Soumissions, des communications du virus*
RP3: A particularly rich point (problem type: linguistic and intentionality)
- *Tastatureingaben von PC-Nutzern nach Kreditkartennummern und Ähnlichem überwacht*
- *Enregistrer les caractères tapés sur le clavier*

INVERSE TRANSLATION TEXT

La Plana Novella

La Plana Novella es una antigua heredad adquirida por el **1Indiano** Pere Domenech i Grau en 1885 que se encuentra en una pequeña planicie en el centro del Parc Natural del Garraf y pertenece al municipio de Olivella. La Finca fue declarada colonia agrícola 10 años más tarde por el **2gobierno alfonsino**, pero de aquella época perdura una leyenda de **3desenfreno y dilapidación** que hizo desaparecer la **1fortuna del americano**. El estilo arquitectónico del Palacete es ecléctico, es decir que mezcla diferentes estilos. **4La geografía comarcal de Cataluña** lo califica de "Castillo de Bambalinas" como si fuese un decorado de teatro. Sin ningún tipo de duda la construcción estilísticamente más original de Palau Novella es el lavadero gaudiniano, pero una de las piezas más características y llamativas del Palau es el **5común**, conocido como 5**"la trona"**.

http://www.laplananovella.

RP1: *El Indiano… la fortuna del americano* (problem type: extralinguistic and textual)
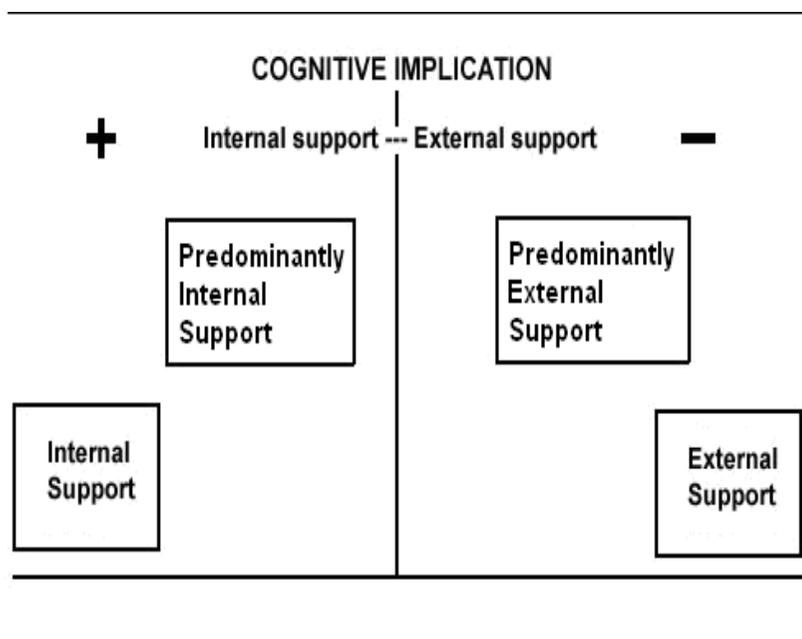
RP2: gobierno *alfonsino* (problem type: extralinguistic)

RP3: *desenfreno y dilapidación* (problem type: linguistic)

RP4: *la geografía comarcal de Cataluña* (problem type: intentionality)

RP5: *común … trona* (problem type: intentionality, textual and extralinguistic).

PACTE (2005a, 2005b, 2007a, 2007b, 2009)

COGNITIVE IMPLICATION

Internal support --- External support

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Predominantly Internal Support

Predominantly External Support

Internal Support

External Support

PACTE 2009

Internal Support (Simple Internal Support). The Definitive Solution is based on Internal Support, no consultation prior to Definitve Solution.

Predominantly Internal Support. The Definitive Solution is based essentially on Internal Support: any combination of consultations that does **not** contain consultation in bilingual dictionary, result copied.

Predominantly External Support. The Definitive Solution is based essentially on External Support: any combination of consultations that **contains** consultation in bilingual dictionary, result copied.

External Support (Simple External Support). The Definitive Solution is based exclusively on consultation in bilingual dictionary proposals that are accepted by the subject: only consultations in bilingual dictionary, result copied.