

CHARACTERISTICS OF TRANSLATION COMPETENCE: RESULTS OF THE PACTE GROUP'S EXPERIMENTAL RESEARCH

PACTE Group

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INTRODUCTION

I.- RESULTS OF DEPENDENT VARIABLES

II.- ANALYSIS OF THE TC CORPUS RESULTING FROM THE EXPERIMENT

III.- CONCLUSIONS



INTRODUCTION



Main objective:

Identify the distinguishing features of Translation Competence (TC)

Studies completed:

- Exploratory studies TC (2000-2001)
- ✓ Pilot test TC (2004)
- Experiment TC (2005-2006)



EXPERIMENTAL UNIVERSE

Professionals working with foreign languages

SAMPLE

- Expert translators (35)
- Teachers of foreign languages (24)

6 language combinations



Independent variable

Degree of expertise in translation

Dependent variables -18 indicators-

- Knowledge about translation
- Efficacy of the translation process
- Decision-making
- Translation project
- Identification and solution of translation problems
- Use of instrumental resources



EXPERIMENTAL TASKS

- Direct translation [direct observation + remote observation using Proxy + recording made using Camtasia]
- Completion of a questionnaire about the problems encountered in the translation
- Inverse translation [direct observation + remote observation using Proxy + recording made using Camtasia]
- Completion of a questionnaire about the problems encountered in the translation
- Completion of a questionnaire about translation knowledge
- Retrospective interview



I. RESULTS OF DEPENDENT VARIABLES



ACCEPTABILITY

(PACTE 2009)

Quality of the translation product Transversal indicator



RICH POINTS

EMAIL 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 Cheltenham**based virus filtering firm** which reported about 30,000 infected messages in 115 countries, the propagation rate of BugBear. B almost doubled every hour throughout the morning. There was also a huge surge 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 keylogger 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 "Trojan horse" program which could allow a hacker to take remote control of infected machines. [...]

The Guardian - Friday, June 6, 2003

- WURM IN DER LEITUNG - BUGBEAR.B, LE VIRUS INFORMATIQUE QUI LIT PAR – DESSUS L'ÉPAULE DE SES VICTIMES

-Tastatureingaben von PC-Nutzern nach Kreditkartennummern und Ähnlichem überwacht - Enregistrer les caractères tapés sur le clavier

Schädling / E-Mail Würmer / Vorgängervariante
Le ver / résurgence / ses congénères

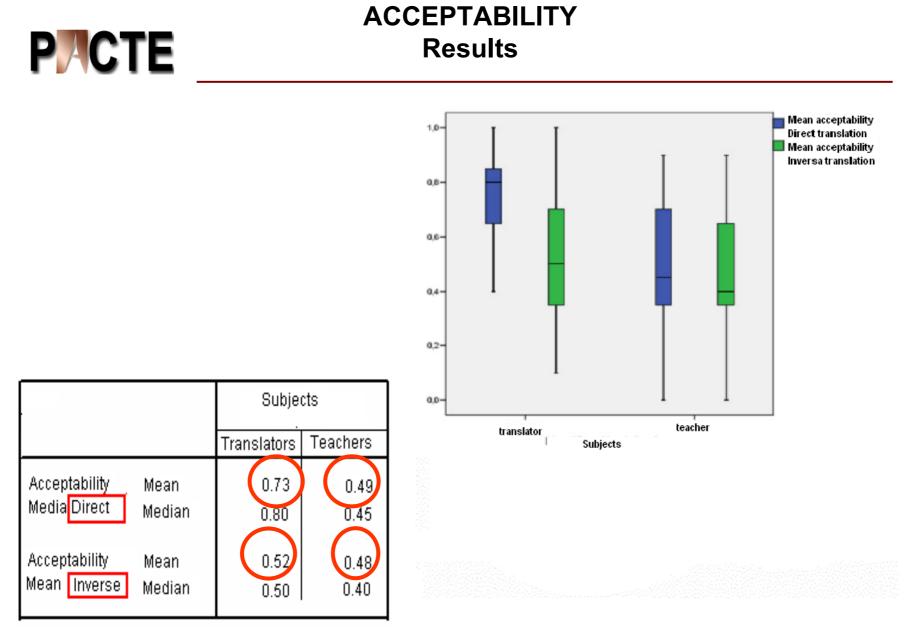
- Download-Verzeichnis

- Édition de logiciels antivirus

- Dateien-Tauchbörse Kazaa

- Soumissions, des

communications du virus 10





KNOWLEDGE ABOUT TRANSLATION (PACTE 2008)

Subjects' knowledge of the principles of translation and aspects of the translation profession

PICTE KNOWLEDGE ABOUT TRANSLATION

Instrument:

Questionnaire on knowledge about translation

Categories:

- Dynamic: textual, communicative and functionalist concept of translation
- ✓ Static: linguistic and literal concept of translation

Indicators:

- ✓ Dynamic index
- ✓ Coherence coefficient



Differences between the two groups of subjects

	Mean	Median	Max.	Min.
Translators	0.273	0.200	0.900	-0.200
Teachers	0.088	0.150	0.625	-0.400

The dynamic index of the translators is significantly higher than that of the teachers.



2. COHERENCE COEFFICIENT

	Mean	Median	Max.	Min.
Translators	0.37	0.50	1.00	0.00
Teachers	0.27	0.50	0.50	0.00

There is no significant difference between the two groups (translators and teachers) in terms of coherence.

 \rightarrow Both groups are coherent



TRANSLATION PROJECT

(PACTE 2011a)

The subject's approach to the translation of a specific text and of the units it comprises

PACTE TRANSLATION PROJECT (TP)

Instruments:

- Questionnaire on translation problems
- Retrospective interview

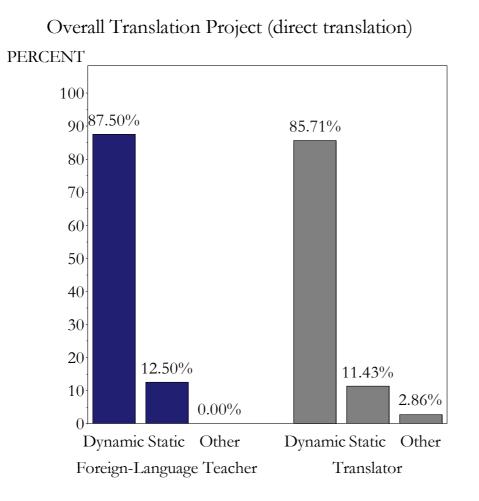
What were your priorities when translating the text? (overall TP) *What were your priorities when solving it?* (TP of each Rich Point)

Indicators:

- ✓ Dynamic index of overall TP
- ✓ Dynamic index of TP of each Rich Point
- Coherence coefficient of overall TP and of each Rich Point
- ✓ Acceptability



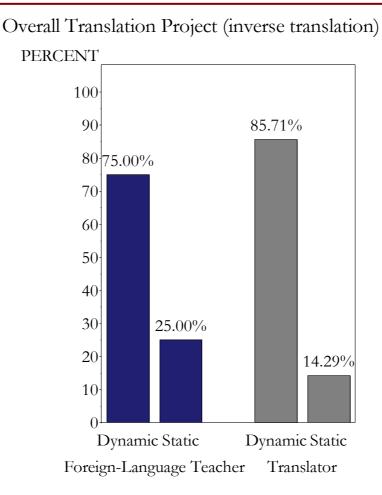
1. DYNAMIC INDEX OF OVERALL TP



No significant differences between translators and teachers in direct translation



1. DYNAMIC INDEX OF OVERALL TP



Differences between translators and teachers in inverse translation



	Table of id	by idin		
id	idin(Dynamic Index)			
	dynamis	dynamis	dynamism	
Frequency Percent Row Pct Col Pct	m: 25% or less	m: 26% - 74%	: 75% or more	Total
Foreign-Language Teacher	1 1.69 4.17 33.33	7 11.86 29.17 53.85	16 27.12 66.67 37.21	24 40.6 8
Translator	2 3.39 5.71 66.67	6 10.17 17.14 46.15	45.76 77.14 62.79	35 59.3 2
Total	3 5.08	13 22.03	43 72.88	59 100. 00

Both groups' approach to their translation was dynamic.

This may be attributed to the fact that both groups were language professionals and their aim, by default, was to communicate.



Table of id by idin					
id	idir				
	dynamis	dynamis	dynamism		
Frequency Percent Row Pct Col Pct	m: 25% or less	m: 26% - 74%	: 75% or more	Total	
Foreign-Language Teacher	1 1.69 4.17 33.33	7 11.86 29.17 53.85	16 27.12 66.67 37.21	24 40.6 8	
Translator	2 3.39 5.71 66.67	6 10.17 17.14 46.15	45.76 77.14 62.79	35 59.3 2	
Total	3 5.08	13 22.03	43 72.88	59 100. 00	

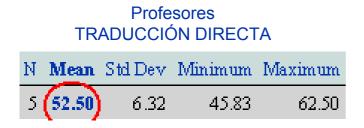
		Identifica suj	
		traductor	profesor
Aceptabilidad	Media	,73	,49
Media Directa	Mediana	,80	,45
Aceptabilidad	Media	,52	,48
Media <mark>Inversa</mark>	Mediana	,50	,40

Although the teachers' approach to translation overall was dynamic, their solutions to specific translation problems were not as acceptable as those of translators.

Explanation: teachers' lack of 21



If we consider the mean percentages obtained for the translation of all the Rich Points, the translators' approach to translation is more dynamic than that of the teachers



Profesores TRADUCCIÓN INVERSA			
N Mean Std Dev Minimum Maximum			
5 (51.67)	6.32	45.83	58.33

Traductores TRADUCCIÓN DIRECTA

N	Mean	$\operatorname{Std}\operatorname{Dev}$	Minimum	Maximum
5	71.43	11.43	54.29	85.71





3. COHERENCE COEFFICIENT

id=Foreign-Language Teacher

Label	Mean	Median	Minimum	Maximum	Std Dev
Coherence Coefficient (direct translation)	0.563	0.500	0.000	1.000	0.425
Coherence Coefficient (inverse translation)	0.688	0.750	0.000	1.000	0.355
	\bigcirc				
id=Tra	nslator				
Label	Meat	n Median	Minimum	Maximum	Std Dev
Coherence Coefficient (direct translation)	0.786	1.000	0.000	1.000	0.389
Coherence Coefficient (inverse translation)	0.814	1.000	0.000	1.000	0.345

1. Teachers are coherent in both direct and inverse translation.

2. The group of translators is, however, more coherent than the group of teachers in both direct and inverse translation.

3. Neither group behaves differently when translating into or out of the foreign language – they are equally coherent independent of directionality.

 \rightarrow The selection of subjects in the experimental groups was appropriate. ²³



'Dynamic Translation Index'

(PACTE 2011a)

Translation project & Knowledge about translation

PICTE TRANSLATION PROJECT & KNOWLEDGE ABOUT TRANSLATION

- Translation project (TP): Procedural knowledge
- Knowledge about translation: Declarative knowledge

'Dynamic translation index' (*DTI*) =

Dynamic index of TP overall + Dynamic index of TP for Rich Points + Dynamic index of knowledge about translation

(DTI is not the average of these three indices, but the sum of all three)



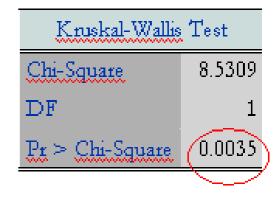
'DYNAMIC TRANSLATION INDEX'

Foreign-Language Teacher

_	Anab	<u>ysis</u> Varia	ble : <mark>idinsu</mark> r	na Suma de	Dinamism	<u></u>
	Mean	Median	Minimum	Maximum	Std Dev	N
(0.921	1.200	-1.300	2.250	0.968	24

Translator

<u>Analysis</u> Variable : <u>idinsuma</u> Suma de <u>Dinamismo</u>					
Mean	Median	Minimum	Maximum	Std Dev	N
1.559	2.100	-1.800	2.900	1.087	35

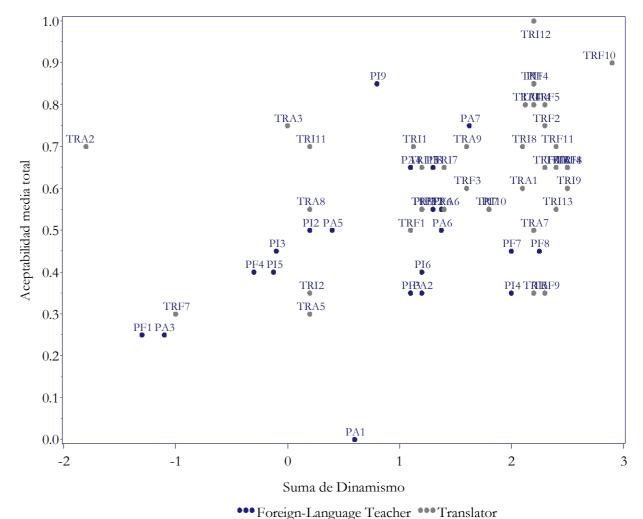


The group of translators is significantly more dynamic than the group of teachers.

PICTE 'DYNAMIC TRANSLATION INDEX' & ACCEPTABILITY

Scattered plot of DTI + acceptability:

Both the Dynamic Translation Index and acceptability move in the same direction; as one increased, so did the other.





IDENTIFICATION AND SOLUTION OF TRANSLATION PROBLEMS (PACTE 2011b)

Difficulties encountered by subjects when carrying out a translation task

PICTE IDENTIFICATION AND SOLUTION OF TRANSLATION PROBLEMS

□ Instruments:

- ✓ Questionnaire on translation problems
- ✓ Retrospective interview

How difficult do you think this text is to translate?

Name 5 of the main problems you found when translating this text and answer the following questions about each: Why was it a problem? Are you satisfied with the solution?

Indicators:

- ✓ Coefficient of perception of the overall difficulty of the translation of the text
- ✓ Identification of prototypical translation problems
- Characterisation of prototypical translation problems
- ✓ Coefficient of satisfaction
- ✓ Acceptability



1. COEFFICIENT OF PERCEPTION OF THE OVERALL DIFFICULTY OF THE TRANSLATION

	DIRECT TRANSLATION	INVERSE TRANSLATION
TEACHERS	0.43	0.70
TRANSLATORS	0.28	0.63

Between groups: teachers perceived direct and inverse translation to be more difficult than translators
 Directionality: both groups perceived inverse translation to be more difficult than direct translation



No relation exists between subjects' perception of the overall difficulty of the translation and the acceptability of the results obtained

	Pearson (r) coefficient of correlation	Degree of freedom	Significance
Translators (direct)	0.13	32	Not significant
Teachers (direct)	0.01	22	Not significant
Translators (inverse)	0.04	32	Not significant
Teachers (inverse)	0.19	22	Not significant



2. SUBJECTS' IDENTIFICATION OF PROTOTYPICAL TRANSLATION PROBLEMS

Direct translation

DIRECT	RP 1 Title	RP 2 Technical term	RP3 Reference	RP 4 Apposition	RP 5 Comprehension and reformulation
Translators	62.9%	51.4%	54.3%	40.0%	22.9%
Teachers	33.3%	45.8%	62.5%	50.0%	33.3%

Inverse translation

INVERSE	RP1 <i>indiano</i> fortuna	RP 2 gobierno alfonsino	RP 3 desenfreno y dilapidación	RP 4 geografía comarcal	RP 5 comúntrona
Translators	71.4%	65.7%	57.1%	68.6%	68.6%
Teachers	66.7%	66,7%	70.8 %	62.5%	75.0 %



- Between groups: subjects in both groups found difficulty in translating the Rich Points
- Directionality: the percentage of Rich Points identified was greater in inverse translation than in direct translation
- The Rich Points identified varied according to each individual



No notable difference was found between the way translators and teachers characterised the translation problems they identified

This was because:

- (i) the number of subjects was small
- (ii) subjects' descriptions were often confusing and therefore difficult to classify



- There was a greater tendency for teachers to describe problems as linguistic, either in terms of re-expression or of comprehension
- Problems of intentionality: most teachers described them as linguistic whilst most translators assigned them to a wider range of categories (textual, function, intentionality)

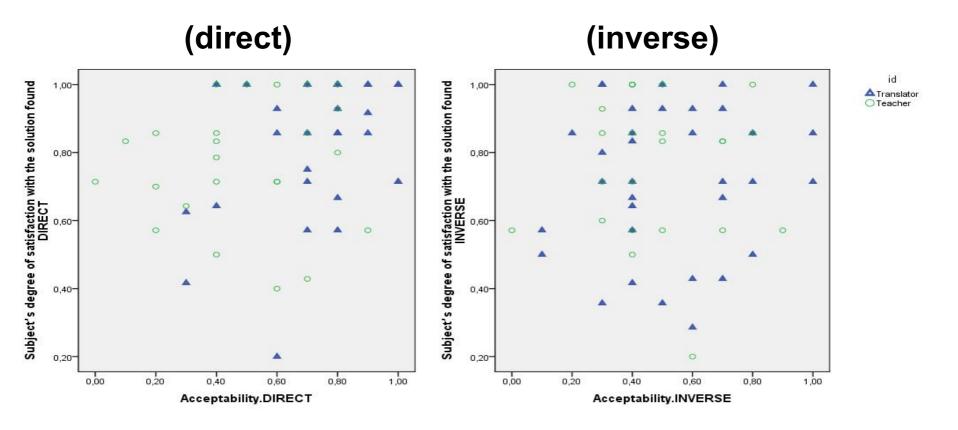


Coefficient of satisfaction for each Rich Point

	DIRECT TRA	ANSLATION	INVERSE TRANSLATION		
	Translators	Teachers	Translators	Teachers	
RP1	.78	.76	.78	.79	
RP2	.76	.61	.82	.74	
RP3	.89	.90	.74	.70	
RP4	.83	.64	.61	.85	
RP5	.89	.76	.69	.76	

Subjects' coefficient of satisfaction is similar for each Rich Point

PICTE 4. COEFFICIENT OF SATISFACTION & ACCEPTABILITY



No relation was found between subjects' satisfaction with their solutions to translation problems and real acceptability



DECISION-MAKING

(PACTE 2009)

Decisions made during the translation process which involve the use of automatic and non-automatic cognitive resources (internal support) and the use of different documentation resources (external support)



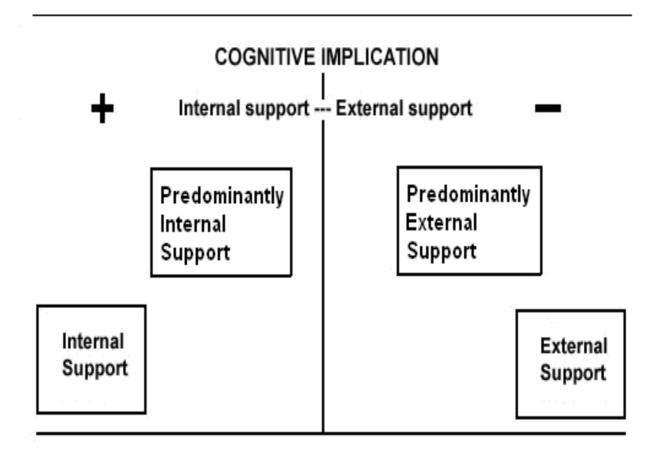
Instruments:

- Translations
- ✓ Direct observation
- Translation protocols (Proxy / Camtasia)

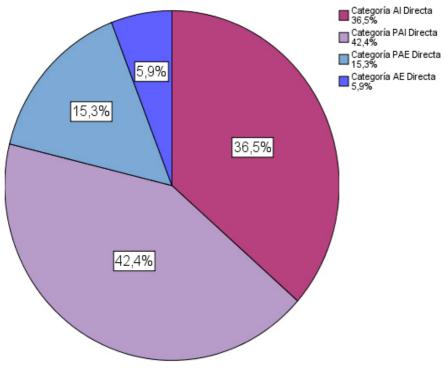
□ Indicators:

- ✓ Sequences of actions
- ✓ Type of internal support
- ✓ Acceptability

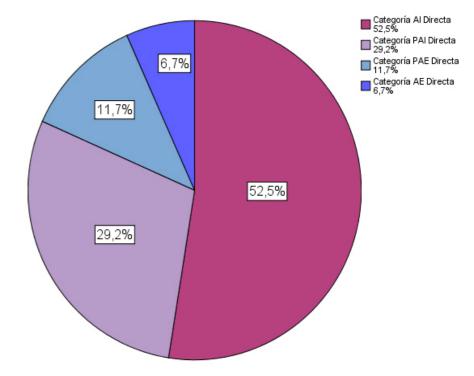






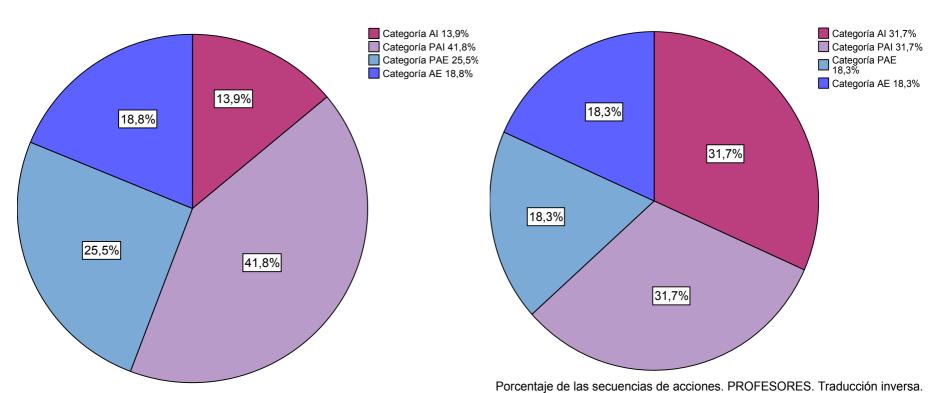


Porcentaje de las secuencias de acciones. TRADUCTORES. Traducción directa



Porcentaje de las secuencias de acciones. PROFESORES. Traducción directa





Porcentaje de las secuencias de acciones. TRADUCTORES. Traducción inversa.

42



- Internal Support is more characteristic of teachers
- Predominantly Internal Support is more characteristic of translators
- Predominantly External Support is used a little more often in inverse translation than in direct translation by both groups
- External Support is used much more often in inverse translation than in direct translation by both groups



In general, Predominantly Internal Support leads to more acceptable solutions.

DIRECT TRANSLATION

In the case of translators, Predominantly Internal Support leads to more acceptable solutions (47.3%).

In the case of teachers, Internal Support leads to more acceptable solutions (63.7%).

INVERSE TRANSLATION

In both groups, Predominantly Internal Support leads to more acceptable solutions (translators 51.9%; teachers 38.6%).



Internal support: Automatized and Non-automatized

- Automatized internal support: use of internal support and Rich Point is not identified as a problem
- Non-automatized internal support: use of internal support and Rich Point is identified as a problem (*thinking*).



Automatized internal support (AIS)

DIRECT Automatized	% Automatized	Index of acceptability Automatized	Overall acceptability	INVERSA Automatizado	% Automatized	Index of acceptability Automatized	Overall acceptability
Tranlators	25.0%	0.66	0.73	Tranlators	7.0%	0.60	0.52
Teachers	37.5%	0.54	0.49	Teachers	12.0%	0.37	0.48

- Both groups use more AIS in direct translation
- Teachers used AIS more often than translators (in both direct and inverse translation), with less acceptable results
- Fewer translators used AIS but with more acceptable results than teachers (especially in inverse translation)



Non-automatized internal support (NAIS): thinking

DIRECT Not automatized	% (thinking)	Index of acceptability Not automatized	Overall acceptability	INVERSE Not automatized	% (thinking)	Index of acceptability Not automatized	Overall acceptability
Tranlators	11.0%	0.89	0.73	Tranlators	9.0%	0.50	0.52
Teachers	17.0%	0.45	0.49	Teachers	19.0%	0.50	0.48

- Fewer translators than teachers used NAIS
- The index of acceptability of translators in direct translation is particularly high (even exceding overall acceptability)
- The index of acceptability of teachers is much lower than that of translators' in direct translation

PICTE 2. TYPE OF INTERNAL SUPPORT USED (PACTE 2010)

CONCLUSION

Translation competence involves the use of both automatized and non-automatized internal support:

Translators obtain acceptable solutions thanks to their internalisation of acceptable solutions as a result of their experience in translation (AIS) and knowledge of translation (NAIS)



EFFICACY OF THE TRANSLATION PROCESS

(PACTE 2008)

Relationship between time taken to complete a translation task and the acceptability of the solution

PICTE EFFICACY OF THE TRANSLATION PROCESS

Instruments:

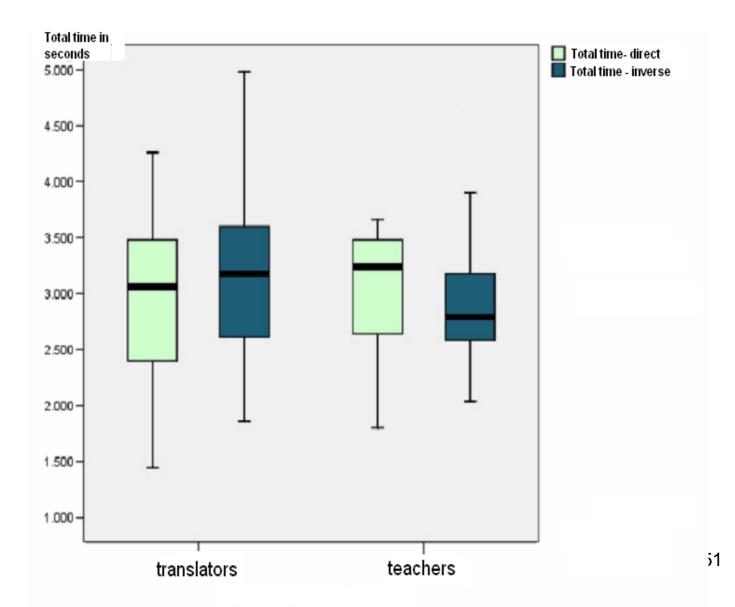
- Translations
- ✓ Direct observation
- Translation protocols (Proxy / Camtasia)

□ Indicators:

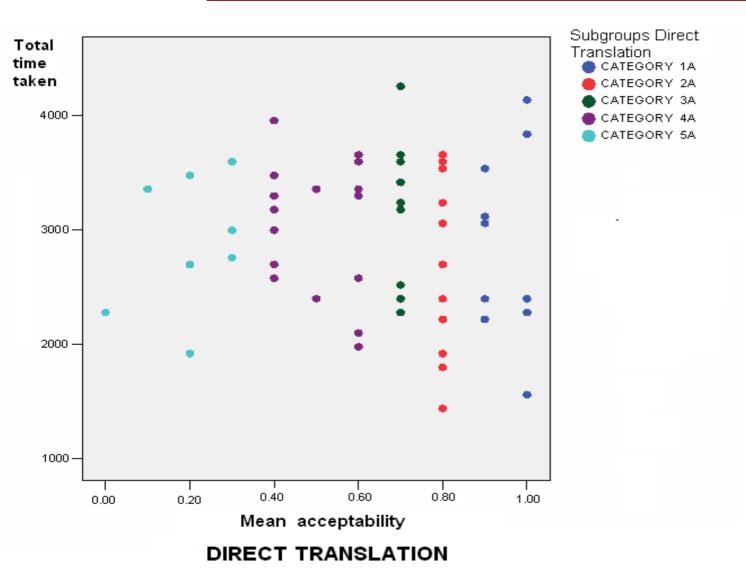
- ✓ Total time taken
- ✓ Time taken at each stage
- ✓ Acceptability



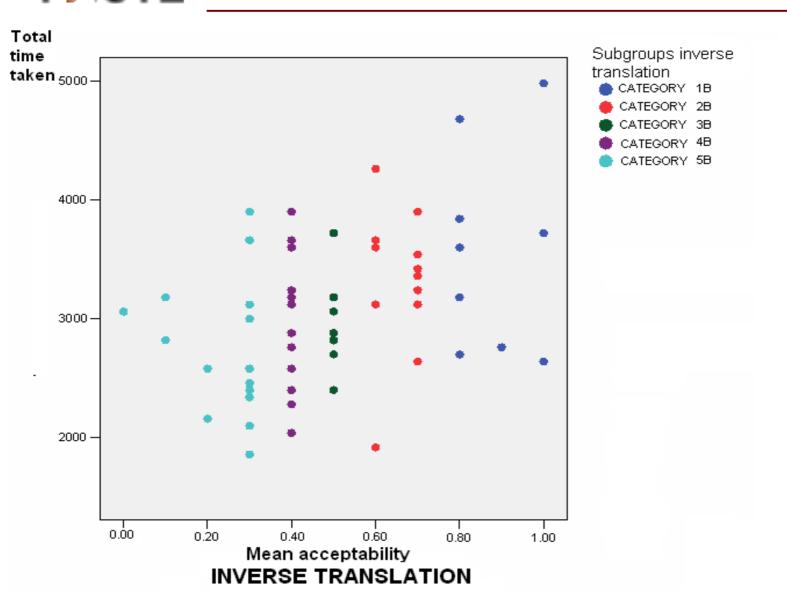
1. TOTAL TIME TAKEN



1. TOTAL TIME TAKEN & ACCEPTABILITY Direct translation

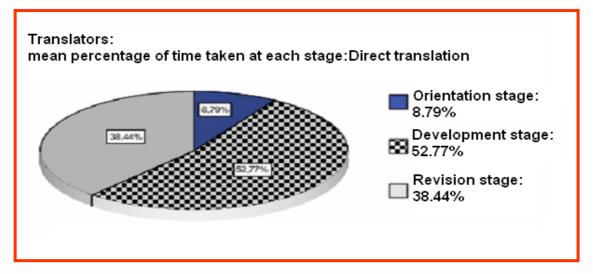


1. TOTAL TIME TAKEN & ACCEPTABILITY Inverse translation



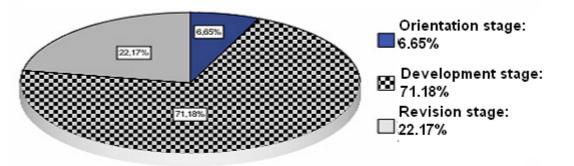


2. TIME TAKEN AT EACH STAGE Direct translation



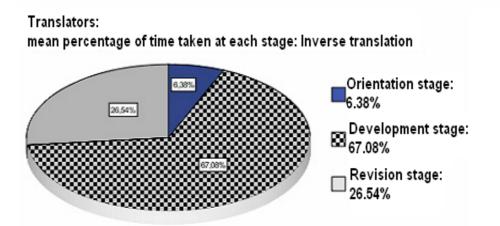
Teachers:

mean percentage of time taken at each stage: Direct translation



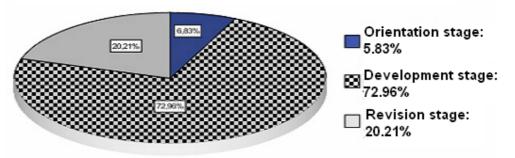


2. TIME TAKEN AT EACH STAGE Inverse translation



Teachers:

mean percentage of time taken at each stage: Inverse translation



TOTAL TIME TAKEN: no differences between the two groups

- Greater heterogeneity among the group of translators
- Most time taken: translators performing inverse translation

TOTAL TIME TAKEN & ACCEPTABILITY:

- Direct translation: no significant relationship (in either group)
- Inverse translation: significant relationship in translators

TIME TAKEN AT EACH STAGE (orientation, development, revision):

- Development stage is shorter in translators (especially in direct translation)
- Revision stage is longer in translators (especially in direct translation)

 \rightarrow Characteristics inherent to translators



USE OF INSTRUMENTAL RESOURCES

(Fernández Rodríguez, in progress; PACTE, in progress)

Strategies used when consulting documentary resources in electronic format (websites, dictionaries and encyclopaedias on CD-ROM)

PICTE USE OF INSTRUMENTAL RESOURCES

Instruments:

Camtasia recordings, Catalogue of searches

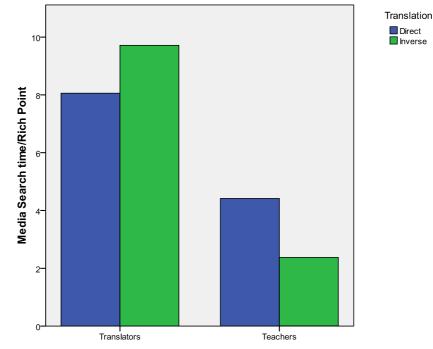
- Indicators (Rich Points only):
 - ✓ Time spent on searches
 - ✓ Number of searches
 - ✓ Number of resources
 - ✓ Variety of searches
 - ✓ Acceptability



1. TIME SPENT ON SEARCHES (TOTAL)

Statistically greater amount of time in the case of translators in direct and inverse translation

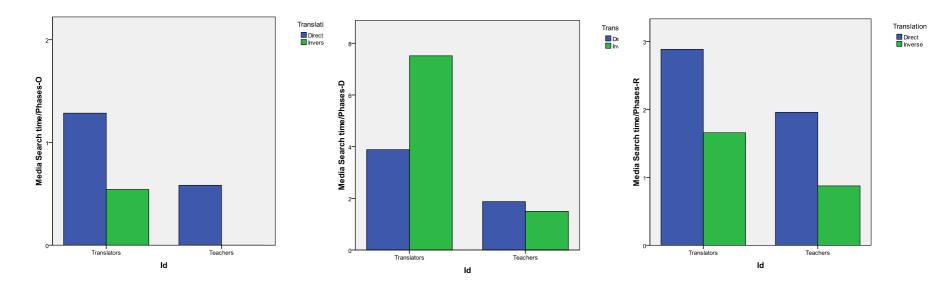
- Translators: more time in inverse translation
- Teachers: more time in direct translation





Differences in the development and revision stages: more time in the case of translators

- Direct translation: more in revision
- Inverse translation: more in development



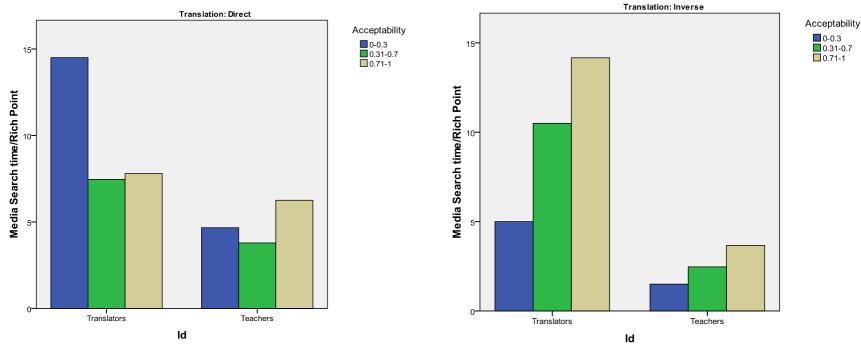
PICTE 1.TIME SPENT ON SEARCHES (TOTAL) & ACCEPTABILITY

DIVISION INTO THREE GROUPS: A: 0 - 0.3 B: 0.31 - 0.7 C: 0.71 - 1

Differences (translators: more time)

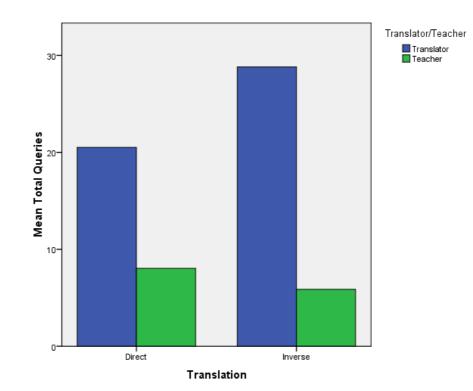
- Direct translation: group B
- Inverse translation: groups A and B

No differences over 0.7 in terms of acceptability



PICTE 2. NUMBER OF SEARCHES

Translators perform more searches in direct and inverse translation



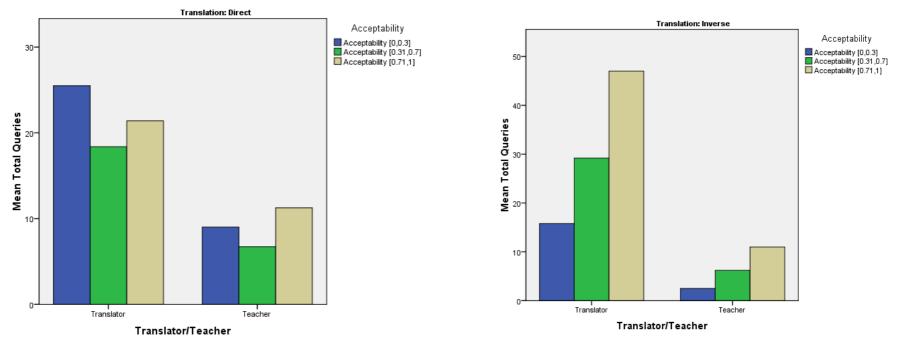


B: 0.31 - 0.7

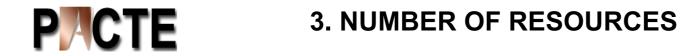
DIVISION INTO THREE GROUPS: A: 0 - 0.3

Differences (translators: more searches)

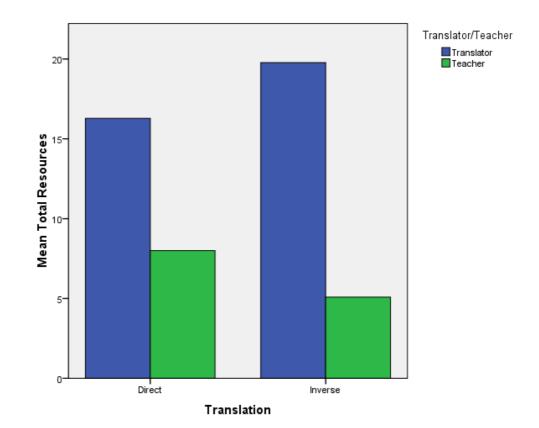
- Direct translation: group B
- Inverse translation: all groups



C: 0.71 - 1



Translators use more resources in direct and inverse translation



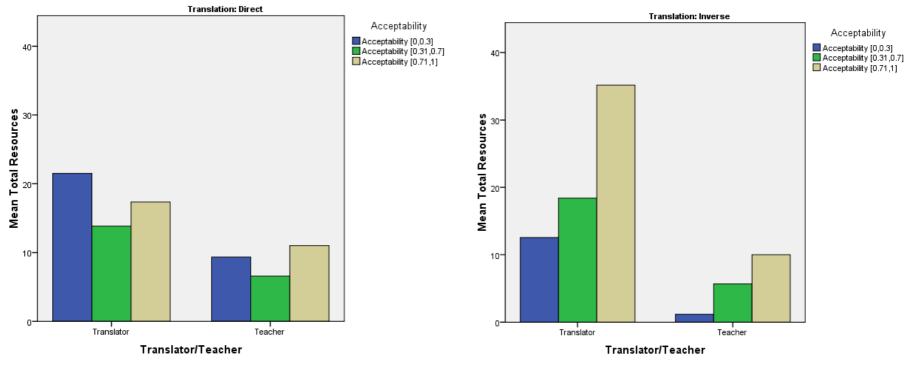


B: 0.31 - 0.7

DIVISION INTO THREE GROUPS: A: 0 - 0.3

Differences (translators: more resources)

- Direct translation: groups A and B
- Inverse translation: groups A and B



C: 0.71 - 1

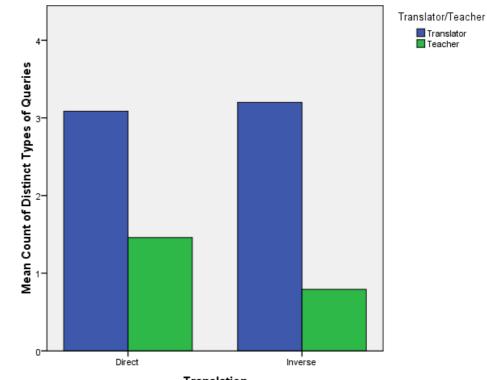


Catalogue

- Search in a search engine.
- Bilingual/equivalent-oriented search.
- Monolingual/definition-oriented search.
- Exact search (using inverted commas).
- Search for a synonym/antonym.
- Search in an electronic corpus.
- Search in an encyclopedia.
- Search within results.
- Cache search.
- Search within specified domain.
- Search in specified language.
- Search between specified dates.
- Search with correction (Did you mean:).



Translators perform a greater variety of searches in direct and inverse translation



Translation

PICTE 4. VARIETY OF SEARCHES & ACCEPTABILITY

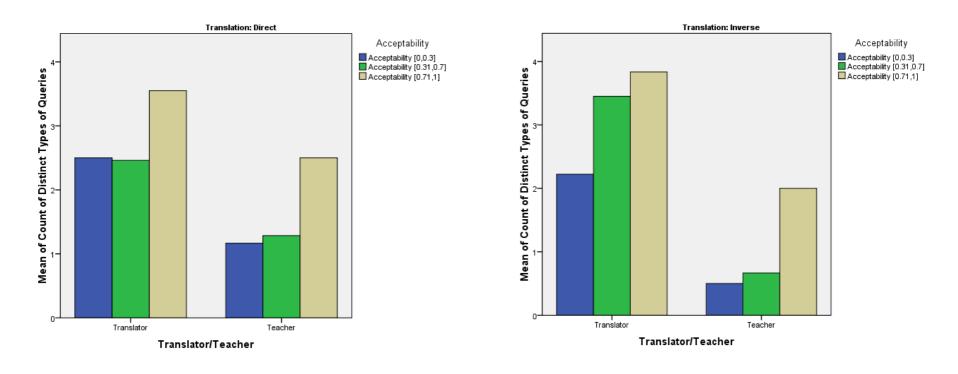
B: 0.31 - 0.7

C: 0.71 - 1

DIVISION INTO THREE GROUPS: A: 0 - 0.3

Differences (translators: greater variety)

- Direct translation: groups A and B
- Inverse translation: groups A and B





Categories

None (N): no search of any kind is performed.
Simple (S): only one type of search is performed.
Double (D): 2 types of search are performed.
Combined (C): between 3 and 5 types of search are performed.
Multiple (M): more than 5 types of search are performed.

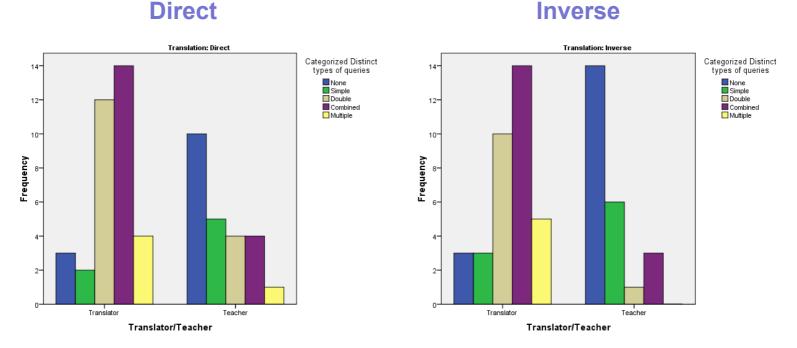
Examples

Simple: bus | eq | def | etc. → 14
Double: bus+def | bus+eq | bus+exa | etc.
Combined: bus+exa+eq | bus+geo+corpus+ctrlf
Multiple: combinations of more than 5 types.



CATEGORIES: None, Simple, Double, Combined, Multiple

Translators mainly use double and combined searches and teachers mainly use simple searches.





'TOP 9 TRANSLATORS'

(PACTE, in progress)



- To observe and describe the translation process in the professional translators with the highest acceptability scores (0.9 - 1)
- 2. To verify the characteristics identified in the comparison between translators and teachers
- → Sub-group comprising the top 9 translators (in terms of acceptability in direct translation) observed
- \rightarrow Sub-group compared to full translator group (35)

PCTE

 Why acceptability as the selection criterion?
 Transversal indicator: it does not correspond to just one variable and is not specific to a given sub-competence

- Why direct translation?
- Significant differences between translators and teachers
- Highest levels of acceptability
- Why the top 9 translators?
- There are no NA, just A and SA
- 1st quartile (25%) of sample group
- Homogeneous scores: 0.9 1



Selected indicators only: those that have produced noteworthy data in comparison between translators and teachers

 \rightarrow Compared to full translator group (35)

The data obtained corroborate and even accentuate the results of the comparison between translators and teachers





- Mean for all translators (35): 0.73
- Mean for top 9: 0.96

PCTE

EXAMPLES

DYNAMIC INDEX (KNOWLEDGE ABOUT TRANSLATION)

- All translators (35): 0.27

- Top 9: 0.36

DYNAMIC INDEX OF OVERALL TRANSLATION PROJECT (TP) 🛧

- All translators (35): 0.71
- Top 9: 0.89

DYNAMIC INDEX OF TP OF EACH RICH POINT 🛧

- All translators (35): 0.57
- Top 9: 0.89

DYNAMIC TRANSLATION INDEX (KT + TP)

- All translators (35): 1.56
- Top 9: 2.13

COHERENCE COEFFICIENT (KT) 🛧

- All translators (35): 0.37
- Top 9: 0.50



IDENTIFICATION OF PROTOTYPICAL TRANSLATION PROBLEMS =

- All translators (35): 46.3% of RPs identified as a problem; 53.6% of RPs not identified as a problem
- Top 9: 40% of RPs identified as problematic; 60% of RPs not identified as a problem
- CHARACTERISATION OF PROTOTYPICAL TRANSLATION PROBLEMS =
- No evidence of any change
- SEQUENCES OF ACTIONS
- Same sequence distribution pattern: + PIS, IS, PES, ES =
- Prevalence of PIS (Predominantly Internal Support) 🛧
- All translators (35): 42.4%
- Top 9: 51.1%



ANALYSIS OF THE TOP 9 TRANSLATORS CONFIRMS THE CHARACTERISTICS OF TRANSLATION COMPETENCE IDENTIFIED IN THE EXPERIMENT



II.- ANALYSIS OF THE TRANSLATION COMPETENCE CORPUS RESULTING FROM THE EXPERIMENT

(Rodríguez-Inés, 2011; PACTE, in progress)



- PRODUCT
 - Differences between groups?
 - Similarities among translations?



- 4 Source Texts: 1 SP; 1 EN; 1 FR; 1 GE (approx. 150 words each)
- = 113 Translations

	Translations
Translators	68
Teachers	45
	Translations
Direct (EN/FR/GE > SP)	Translations 54



- Words liable to be translated as calques
- Words liable to be translated as loan words
- Translator's notes
- Inverted commas
- Brackets
- Type/token ratio
- Sentence length
- Similarity
- Odd frequencies



WORDS LIABLE TO BE TRANSLATED AS
 CALQUES

"Trojan Horse"	troyano	caballo de Troya / caballo troyano
Translators	57.1 %	35.7 %
Teachers	12.5 % (1)	75 %

"troyano" site:www.pandasecurity.com/spain \rightarrow 29,700 results "caballo de troya" site:www.pandasecurity.com/spain \rightarrow 40 "caballo troyano" site:www.pandasecurity.com/spain \rightarrow 0



TEACHERS

GE direct (within the 6 files) **1**: 0.66; **2**: 0.35; **3**: 0.15; **4**: 0.09 GE inverse (within the 7 files) 1: 0.54; 2: 0.23; 3: 0.10; 4: 0.05 EN direct (within the 8 files) 1: 0.73; 2: 0.44; 3: 0.22; 4: 0.14 EN inverse (within the 9 files) 1: 0.56; 2: 0.36; 3: 0.17; 4: 0.10 FR direct (within the 7 files) 1: 0.74; 2: 0.57; 3: 0.37; 4: 0.28 FR inverse (within the 8 files) 1: 0.63; 2: 0.41; 3: 0.27; 4: 0.17

TRANSLATORS

GE direct (within the 9 files) 1: 0.72; 2: 0.42; 3: 0.20; 4: 0.12 GE inverse (within the 9 files) 1: 0.52; 2: 0.24; 3: 0.11; 4: 0.05 EN direct (within the 14 files) 1: 0.74; 2: 0.48; 3: 0.25; 4: 0.16 EN inverse (within the 15 files) 1: 0.57; 2: 0.36; 3: 0.15; 4: 0.08 FR direct (within the 10 files) 1: 0.70; 2: 0.48; 3: 0.26; 4: 0.18 FR inverse (within the 11 files) 1: 0.66; 2: 0.40; 3: 0.25; 4: 0.15



TEACHERS

GE direct (within the 6 files) 1: **0.66**; 2: **0.35**; 3: **0.15**; 4: **0.09** GE inverse (within the 7 files) 1: 0.54; 2: 0.23; 3: 0.10; 4: 0.05 EN direct (within the 8 files) 1: 0.73; 2: 0.44; 3: 0.22; 4: 0.14 EN inverse (within the 9 files) 1: 0.56; 2: 0.36; 3: 0.17; 4: 0.10 FR direct (within the 7 files) 1: 0.74; 2: 0.57; 3: 0.37; 4: 0.28 FR inverse (within the 8 files) 1: 0.63; 2: 0.41; 3: 0.27; 4: 0.17

TRANSLATORS

GE direct (within the 9 files) 1: 0.72; 2: 0.42; 3: 0.20; 4: 0.12 GE inverse (within the 9 files) 1: 0.52; 2: 0.24; 3: 0.11; 4: 0.05 EN direct (within the 14 files) 1: 0.74; 2: 0.48; 3: 0.25; 4: 0.16 EN inverse (within the 15 files) 1: 0.57; 2: 0.36; 3: 0.15; 4: 0.08 FR direct (within the 10 files) 1: 0.70; 2: 0.48; 3: 0.26; 4: 0.18 FR inverse (within the 11 files) 1: 0.66; 2: 0.40; 3: 0.25; 4: 0.15



SIMILARITY AMONG TRANSLATIONS

TEACHERS			
GE direct (with a line that the			
1: 0.66; 2: Specifically, the highest degree of			
GE inverse similarity was			
1: 0.54; 2: found among teachers'			
EN direct (translations from			
1: 0.73; 2: French into Spanish			
EN inverse (
1: 0.56; 2: 0.36; 3: 0.17; 4: 0			
FR direct (within the 7 files)			
1: 0.74; 2: 0.57; 3: 0.37; 4: 0.23			
FR inverse (within the 8 files)			
1: 0.63; 2: 0.41; 3: 0.27; 4: 0.17			

TRANSLATORS

```
GE direct (within the 9 files)
1: 0.72; 2: 0.42; 3: 0.20; 4: 0.12
GE inverse (within the 9 files)
                         0.05
   In general, the
 highest degree of
                         es)
   similarity was
                         0.16
    found among
 translations from
                         iles)
  and into French
                         0.08
                  e 10 files)
       t (with
     0; 2: 0.4
               3: 0.26; 4: 0.18
FR inverse (within the 11 files)
1: 0.66; 2: 0.40; 3: 0.25; 4: 0.15
```



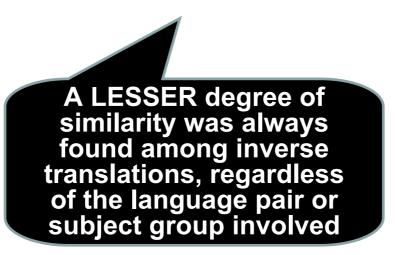
- Proximity of French and Spanish
 - Subjects adhere to ST
 - Subjects do not fully explore the possibilities of the TL

 \rightarrow therefore smaller range of possible translations



SIMILARITY AMONG TRANSLATIONS (Translators + Teachers)

TEACHERS		TRANSLATORS
GE direct	1: 0.69; 2: 0.38; 3: 0.18; 4: 0.10	GE direct
GE inverse	1: 0.52; 2: 0.23; 3: 0.10; 4: 0.05	GE inverse
EN direct	1: 0.73; 2: 0.46; 3: 0.23; 4: 0.15	EN direct
EN inverse	1: 0.57; 2: 0.36; 3: 0.15: 4: 0.09	EN inverse
FR direct	1: 0.69; 2: 0.50; 3: 0.29; 4: 0.20	FR direct
FR inverse	1: 0.64; 2: 0.40; 3: 0.25; 4: 0.16	FR inverse





- Individual levels of linguistic competence

 Expression within one's limits
- Acceptability: much lower in inverse translation than in direct translation
 - Range of 'correct' + 'incorrect' possible equivalents



- Differences in the way translators translate
 - Some tendencies
 - YES: calques; brackets; odd frequencies
 - NO: loan words; translator's notes; type/token ratio; sentence length
- Similarity among translations
 - FR<>SP translations: most similar
 - FR>SP teachers' translations: highest degree of similarity
 - Inverse translations: lesser degree of similarity



III.- CONCLUSIONS



Observations made:

- Differences in the translations carried out:
 - Translators produce higher quality translations
 - Tendencies in the use of certain linguistic elements
 - Degree of similarity among translations



Observations made:

- TC can be acquired through experience
- Relevance of the strategic, instrumental and knowledge about translation sub-competences
- Interrelation between sub-competences and relevance of strategic sub-competence: translators combine cognitive and external resources in an efficient manner
- Relevance of instrumental sub-competence: translators spend more time on searches, perform more, more varied and more complex searches and use more and more varied resources
- Relevance of the dynamic concept of and approach to translation



Observations made:

- Lesser degree of automatization than in other kinds of procedural expert knowledge : ↔ use of instrumental and knowledge about translation sub-competences
- Presence of subjectivity: ↔ psychophysiological components
- Differences between direct and inverse translation



CONCLUSIONS

Distinguishing features of TC:

- To solve translation problems with acceptable solutions **STRATEGIC**
- To have a dynamic and coherent concept of translation (declarative knowledge) *KNOWLEDGE ABOUT TRANSLATION*
- To have a dynamic approach to translation (procedural knowledge) STRATEGIC
- To combine cognitive resources (internal) and documentary resources (external) in an efficient manner *STRATEGIC* + *INSTRUMENTAL*
- To use automatized (due to experience) and non-automatized cognitive resources in an efficient manner *STRATEGIC* + *KNOWLEDGE ABOUT TRANSLATION*
- To use instrumental resources in an efficient manner INSTRUMENTAL



Gracias... Thank you... Merci... Obrigado... Danke... Tack... Tak...

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