

Experimental Approaches to Translation

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Outline

- What is (not) an experiment
- When to be used



• How to be carried out – Practice session

• Translation, Psycholinguistics & Bilingualism

• Applicability

Scientists trying to answer questions

E.g.

- Is this translation considered closer to the original text than another one?
- Is this translation more emotional than that one?
- Does it convey the same sense of ... as the other one?
- Does reading a book on experimental design help you to design experiments? ⁽ⁱ⁾

Scientific approach (to translation)

Fundamental premise of science \rightarrow absolute truths (facts)

(i) Observe what naturally happens without interfering (observational or correlational approaches)

Examples?

Unelicited data: Comparisons _____ "tendency" Elicited data: Questionnaires & Interviews ____ "preferences"

(ii) Manipulate some aspect of the environment & observe effect (experimental approach)

What we do & **Observing** (rules) (tech) & Measuring in an objective way (that can be replicated by others)

Why we do it **Relationships** between measured variables

Draw certain conclusions

Scientific method = finding truth by using empirical evidence

Experimental approach (to translation)

 Behaviour not random → By identifying conditions leading to behaviour change → <u>cause-effect</u> relationship → explain specific behaviour & PREDICT occurrence

Theory (hypothetical explanation of phenomenon) Test Hypothesis (falsifiable prediction made by theory) If hypothesis supported → models of translator behaviour language processing

When to be used

- Have a theory to test (deduction; ... exploratory)
- Prediction → ... if theory is true: Experimental Hypothesis
- <u>Predicts</u> relationship between variables

To:

- 1. Test competing theories (different interpretations same phenomenon)
- 2. Test effect of one factor on another
- **3. Replicate results**

The translation process

Interest in unlocking the 'black box' (Holmes, 1972; Toury, 1982) Cognitive framework (Krings, 1987; Lörscher, 1991b; Wilss, 1994)

- → translation ≠ product (Vinay & Darbelnet, 1958; Jakobson, 1959; Catford, 1965)
 - process (Seleskovitch, 1976; Seleskovitch & Lederer, 1984; Lederer, 2003; Bell, 1991; Kiraly, 1995, 1997; Wilss 1996; Gutt, 1991, 2005)

Translation process from a cognitive perspective:

Decoding – Analysis – Encoding

Decoding

Breaking down translation units for further elaboration

• Analysis

ST at all necessary levels of language representation Info? Linguistic & non-linguistic (Hatim & Mason, 1990)

Encoding

Functionally accurate, stylistically appropriate,

Target Language conventions/Target Culture habits

Revising monitoring, Verification, Post-editing

All types of translation

(Delisle, 1980; Bell, 1998)

Digging into the cognitive aspects of translation

Same cognitive aspects...:

visual word recognition, lexical search, syntactic parsing , semantic & pragmatic processing ← working memory (WM) long-term memory (LTM)

retrieval of linguistic info (...) & world knowledge,

use of resources for integrating into discourse representation (Just & Carpenter, 1980)

Reading comprehension for translation

Digging into the cognitive aspects of translation

maintain in WM rhetorical purpose of ST & semantic representation of unit of focus, retrieve from LTM equivalent, stylistic conventions of genre, TL norms, expectations of readers

 \rightarrow planning of writing & selection of relevant info

evaluation (written vs. planned to be written)

→ revision (coherence, structure-related problems, spelling) (Hayes & Flower, 1980; Hayes 2012a)

Writing in translation

Digging into the cognitive aspects of translation
 ST/TT elements processing demanding
 Attention

Linguistic/socio-cultural constraints

Problem solving \rightarrow trial-error (analysis of previous trans)

 \rightarrow analysis & generation of solutions

(linguistic/culture-specific info from LTM, external resources) (Matlin, 1994)

Decision making \rightarrow evaluation of prospective outcomes of ch.

(Vermeer's Skopos 1989, 2004; Lehr, 2012, 2013; Pym, 2015)

Digging into the cognitive aspects of translation
 Challenges of translation task → allocation of resources

contextual situation, translator skills, presumed knowledge, experience



Why experimental approach ideal?

Complexity of translation process (and sub-processes): Independent (conscious effort)/interactive (highly practiced) Not observable

Involving concurrent modalities \rightarrow constraints

(Gile, 2015; Hatzidaki, 2019, 2021)

Why experimental approach ideal?

 It allows the combination of methods for identifying type of mental processes & timing of these processes; processing effort; attention priority; behavioural reading patterns

(Martínez et al., 2014; Hvelplund, 2017)

Eye-Tracking



Eye-Tracking



Figure 3: Evel ink II Camera Setun Screen



Eye-Tracking



DANS, KÖNOCH JAGPROJEKT

På jakt efter ungdomars kroppsspråk och den "synkretiska dansen", en sammansmältning av olika kulturers dans hat jag i mitt fältarbete under hösten fört plig på olika arenor inom skolans vårld. Nordiska, afrikanska, syd- och östeuropeiska ungdomar gör sina röstet hörda genom sång, musik, skrik skratt och gestaltat känslor och uttryck med hjälp av kroppsspråk och dans.

Den individuella estetiken franträder i klåder, frisyrer och synboliska tecken som förstårker ungdomarnas "jagptojekt" där också den egna stilen i kroppsrörelserna spelar en betydande roll i identifetsprövningen. Uppehållsrummet fungerar som offentlig arena där ungdomarna spelar upp sina performanceliknande kroppss**B**ower

Other Behavioural Measures

Eye-tracking + keystroke logging (number, duration & distribution of pauses between keystrokes, type, amount & location of revision)

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- \rightarrow cognitive effort, translation difficulty, creativity, writing strategies \rightarrow typing fluency
 - e.g. increased length of translation units; polysemy mismatch between translator goals & solutions

(Jakobsen & Lasse Schou, 1999; Jakobsen, 2006; Leijten & Van Waes, 2013; Saldanha & O'Brien, 2014)



Event-Related Potentials (ERPs)



Important findings:

Cross-linguistic activation during lexical access

(e.g., Spivey & Marian, 1999; Colomé, 2001; Costa et al., 2000; Van Hell & Dijkstra, 2002; Costa & Santesteban, 2004)

& syntactic processing

(e.g., Dijkstra, 2005; Hartsuiker et al., 2004; Macizo & Bajo, 2006; Van Assche et al., 2009; Hatzidaki et al., 2011; 2018)

both in comprehension & production

 \checkmark

Implications

facilitation effects

inhibitory effects

cognitive effort; performance

strategic control \rightarrow Translation Models

Important findings:

cognates; concrete, high frequency words

translated faster & more accurately

(De Groot, 1992, Duyck & Brysbaert, 2008)

Existence of 2 types of representation: lexical & conceptual (Kroll & Stewart, 1994)

Implications

Activation of relevant info trans dir (proficiency; language learning)

Important findings:

concreteness effect modulated by number of translations

translation of abstract words affected more

(Tokowicz & Kroll, 2007)

Cognitive load during trans not only a matter of ling. features

+ bilingual memory organization

(Kroll & Stewart, 1994; Ferreira & Schwieter, 2017)

• Important findings:

concreteness effect modulated by context

reduced with context

(Tokowicz & Kroll, 2007)

 \checkmark

Implications

Search for & activation of trans facilitated in context

Encourage relying on intuition

Important findings:

ST segmentation for comprehension

higher amount of visual/ling info in WM of translators word trans slower than word reading more repetitions of reading occurrences in trans syntactic complexity; different WO affecting trans (Kroll & Stewart, 1994; Garcia et al., 2014)

Translating act not 'bottleneck'

Reading for translation different from mere reading

How to be carried out

<u>Conditions</u> responsible for observed phenomenon
 Possible for effects to occur or not to occur
 (2 possible outcomes)
 so, tested against a null hypothesis
 Levels of Significance (prob.)
 to reject the null hypothesis:
 p < 0.01 or p < 0.05 = "The prob. of a result occurring by chance is less than..."

- How to show there is a predicted relationship?
 manipulation of variables → provoke effect (if there is)
 AND control of unrelated ones
- Experimental design: people → conditions

Experimental Approach

 How to show there is a predicted relationship? manipulation of variables and control

Manipulate IV: condition (levels)
 Control (hold constant) extraneous variables:

 most relevant for design
 from literature

Effect (of the reason we think) on DV; NOT RANDOM (reoccur)

IV-DP, statistical tests for each kind of expt.

Why can we not control everything?

Drawing conclusions

 Expt. internal validity → allowing to establish causal relationships external validity → variables defined in realistic way (representative of the world)

(Internal validity) \rightarrow any difference caused by <u>IV</u>

(Construct validity) \rightarrow research question \rightarrow expt. design (simple)

(External validity) \rightarrow generalizing results to people & situations (Questions that matter; possible to test)

(Statistical validity) \rightarrow supporting conclusions made

When one is not ready to run an Expt.

- When no hypothesis
- When hypothesis not informed by (...) literature
- When hypothesis does not inform (...) theory
- When not enough knowledge about processes & experimentation

A Word on statistics

Descriptive Statistics

Descriptions of central **tendency** → Mean, Mode, Median, Standard Deviation

INFERENTIAL STATISTICS

help us generalize from the sample to the whole population (crucial in research!)

in other words...

This kind of statistics makes inferences about populations using data drawn from a sample or samples

We need to ensure any samples used are truly representative of the target population!

Ethics of science

- Code of ethics (conduct):
 Show respect for people (and animals)
- Show respect for truth (honor system)
 Science = community enterprise
 Data ethically analyzed & reported : what done & found
 (not fabricating/fudging results/mislead by omission)
 Share credit
 Share data

Designing an Expt.

- Precedes all other stages of expt.; if wrong... 🛞
- Clear identification of conditions (IV, DV)
 Manipulate (test)
 Control (stable)
- Choice of paradigm
- Choice of statistical test

Drawing conclusions

Expt. internal validity \rightarrow allowing to establish causal relationships **external validity** \rightarrow variables defined in realistic way (representative of the world) Theory Hypothesis (what can/must/will happen) under partic. circumstances (Expts. creating circumst.) **Test Hypothesis** \mathbf{V} **Generate evidence for/against hypothesis**

Discussion

Cross-talk → translation act → continuum

(Muñoz, 2014; Halverson, 2016) language representation & processing different translation contexts different demands perspectives

• Same higher order processes as those investigated in Psyholinguistics tuned to the requirements of translation

Continue moving forward in expt translation interaction with, input to & feedback from behavioural sciences should be sought

Applicability

- Inform related disciplines:
 - raise awareness of textual, contextual & translatorspecific characteristics bear on translation underpinnings of translation interplay of L1 & L2 (psycho)linguistic factors \rightarrow language processing timing of translation relevant mental processes & localization in the brain
- Pedagogical value

development & learning of translation skills → training



Thank you ⁽²⁾