



School of Applied Linguistics

Translation as a Situated Activity

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Zurich Universities of
Applied Sciences and Arts



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FONDS NATIONAL SUISSE
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SWISS NATIONAL SCIENCE FOUNDATION

Industry and institutional partners

Participants:

Commercial, institutional, and freelance translators

ZHAW teachers and students

Main collaborators:



Gary Massey

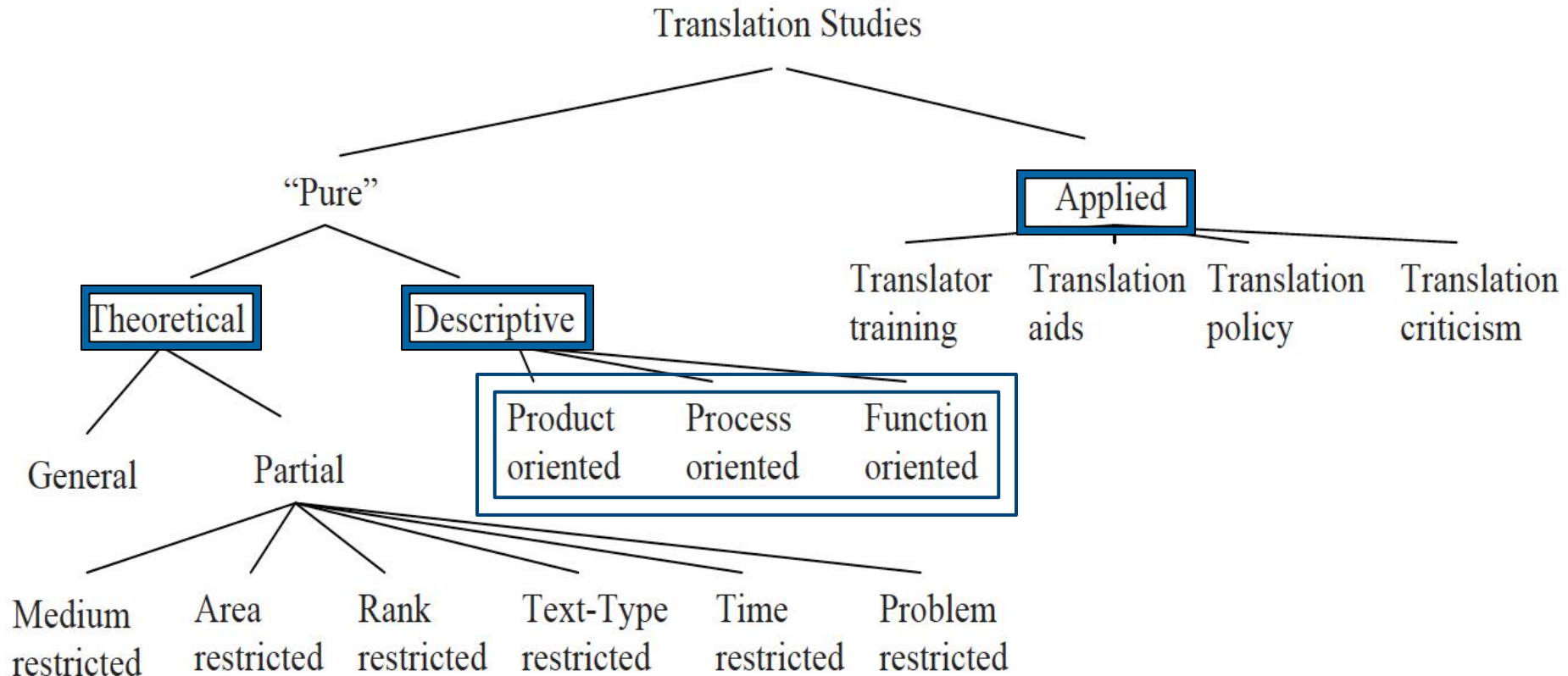


Andrea Hunziker Heeb

Outline of session

- Situated translation within Translation Studies (TS)
- Translation as a situated activity within TS
- Situated act of translation: actors and factors
- Ergonomics in translation theory and practice
 - environmental aspects
 - physical aspects
 - cognitive aspects
 - organizational aspects
 - social aspects
- Translation production as a situated activity
- Discussion / Q&A

Situated translation **within TS**



(Holmes 1988/2000; Chesterman 2009: 14)

Investigating situated translation

Descriptive TS

- translation as a product
- translation as a process
- translation as a function

Capturing Translation Processes

- indicators of translation competence
- BA + MA translation students + pros
- workplace + *lab*
- multi-method approach
 - version analyses
 - key logging
 - screen recording
 - eye tracking
 - cued retrospective commentaries
 - interviews

From texts ...

Form of ST title	English ST title			
Whales ₁ -at N ₂ -in NP ₃	Whales at risk in sonar sea exercises			
Form of German titles	Examples of German titles [English gloss]	BAG	MA	ProG
NP ₃ -V ₂ -Wale ₁	Sonarübungen im Meer gefährden Wale			
	[Sonar exercises in sea endanger whales]	4	-	4
Wale ₁ -durch NP ₃ -V ₂	Wale durch Schalltests gefährdet			
	[Whales by sound tests endangered]	2	1	1
Wale ₁ -in N ₂ -X ₃	Wale in Gefahr aufgrund von Sonartests im Meer			
	[Whales in danger because of sonar tests in sea]	2	2	-
NP ₃ -als N ₂ -für Wale ₁	Marine Sonartests als Gefahr für Wale			
	[Marine sonar tests as danger for whales]	-	1	1
	(other variants)	1	2	2
	(no title)	-	2	-

Note. The unit with information content matching that of the source text has been numbered in subscript for ease of comparison

From texts and processes...

Form of ST title	English ST title			
Whales ₁ -at N ₂ -in NP ₃	Whales at risk in sonar sea exercises			
Form of German titles	Examples of German titles [English gloss]	BAG	MA	ProG
NP ₃ -V ₂ -Wale ₁	Sonarübungen im Meer gefährden Wale			
	[Sonar exercises in sea endanger whales]	4	-	4
Wale ₁ -durch NP ₃ -V ₂	Wale durch Schalltests gefährdet			
	[Whales by sound tests endangered]	2	1	1
Wale ₁ -in N ₂ -X ₃	Wale in Gefahr aufgrund von Sonartests im Meer			

Process measure	BAG	MA	ProG
Time in process of 1st version of title (hh:mm:ss)	00:03:10	00:01:32	00:01:20
Consulted dictionary for title translation	89%	25%	50%
Consulted other resources for title translation	11%	38%	75%
Number of revisions to title during first 10 min.	3.8	4.0	4.8
Percentage of translators commented title in RVP	56%	50%	100%

... to commentaries about processes

Categories	Codes	Examples (participant code version)
Words & phrases	word-for-word ST structures literal	<i>I more or less translated it word for word</i> (BAE1_GE) <i>I sort of stayed stuck to the source text</i> (MA1_EG) <i>I tend to write a literal translation</i> (ProE5_GE)
Sentence structures	moving changing word order	<i>I also moved things around with respect to sentence structures</i> (BAE2_GE) <i>and then I had to adapt the sentence construction to English</i> (MA3_GE) <i>divide this up into two sentences in German</i> (ProG2_EG)
Text quality	esthetics naturalness style	<i>find something else instead of using the same word twice</i> (BAG8_EG) <i>whether it flows well</i> (MA6_GE) <i>how I could reword it to make it sound a bit nicer</i> (ProE5_GE)
Loyalty to ST	loyalty to text completeness	(none of the BA beginners referred to this) <i>you don't necessarily have to say 'Meer' [sea]</i> (MA6_EG) <i>check again to see whether everything's there</i> (ProG8_EG)
Readership	audience readability function	<i>I tried to make it a bit easier to understand</i> (BAE7_GE) <i>it is still readable and understandable</i> (MA1_EG) <i>it's for a newspaper it's not for a scientific journal</i> (ProE4_GE)

... to commentaries about processes

Categories	Codes	BA	MA	Pro
Words & phrases	word-for-word ST structures literal	44	50	25
Sentence structures	moving changing word order	33	25	75
Text quality	esthetics naturalness style	33	25	88
Loyalty to ST	loyalty to text completeness	0	50	50
Readership	audience readability function	78	63	88

% of group whose metalinguistic comments about translation were related to each category



(cf. Ehrensberger-Dow & Massey 2013)

Translation as a **situated** activity

Descriptive TS

- translation as a product
- translation as a process
- translation as a function

Capturing Translation Processes

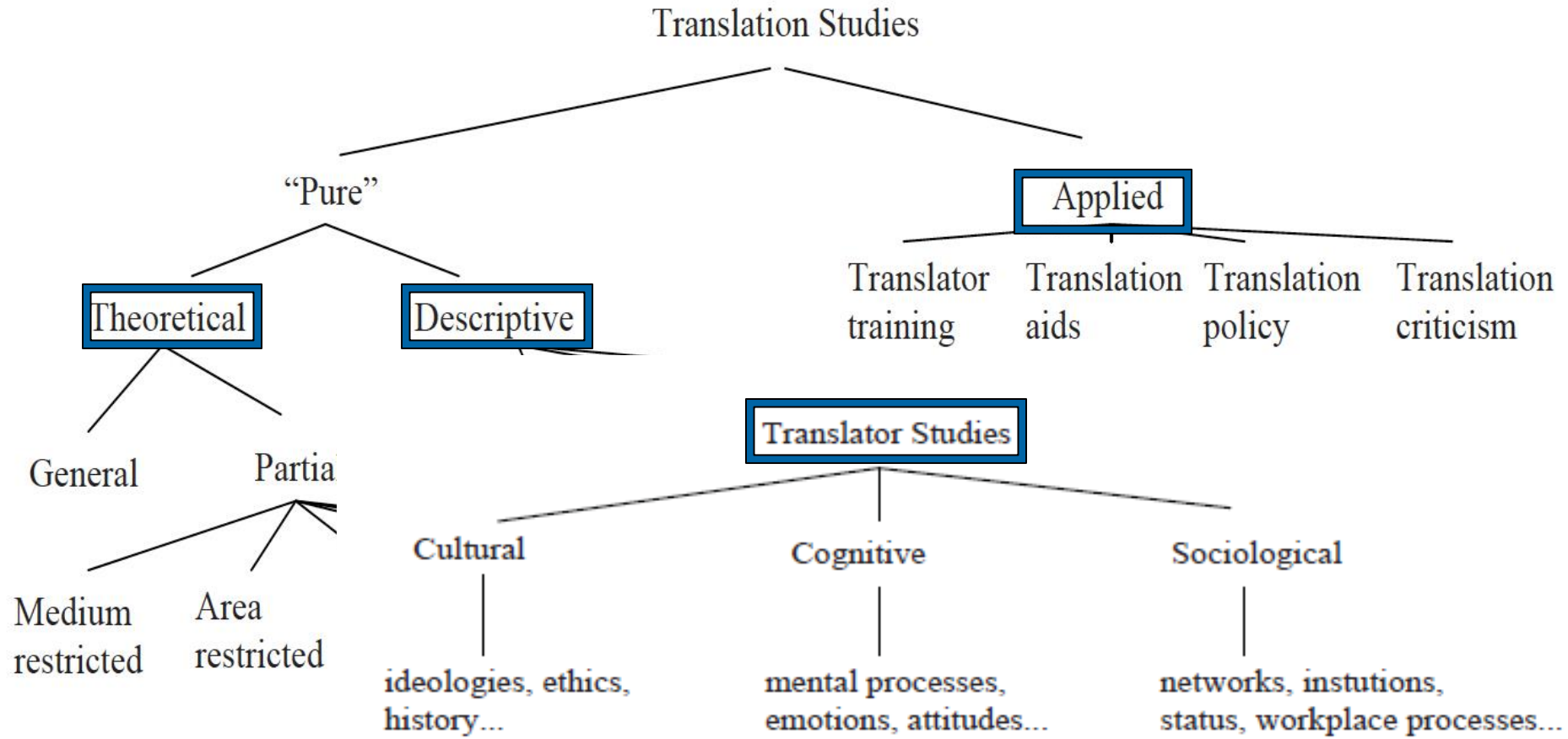
- indicators of translation competence
- BA + MA translation students + pros
- workplace + *lab*
- multi-method approach

Some findings:

- **phases** in the process
- **research** activities
- writing **bursts**
- **diagnostic** indicators
- didactic value of **process techniques**
- **impact of setting and disturbances**

(Ehrensberger-Dow & Massey 2013, 2014)

Translation as a situated activity within TS



(Holmes 1988/2000; Chesterman 2009: 14, 19)

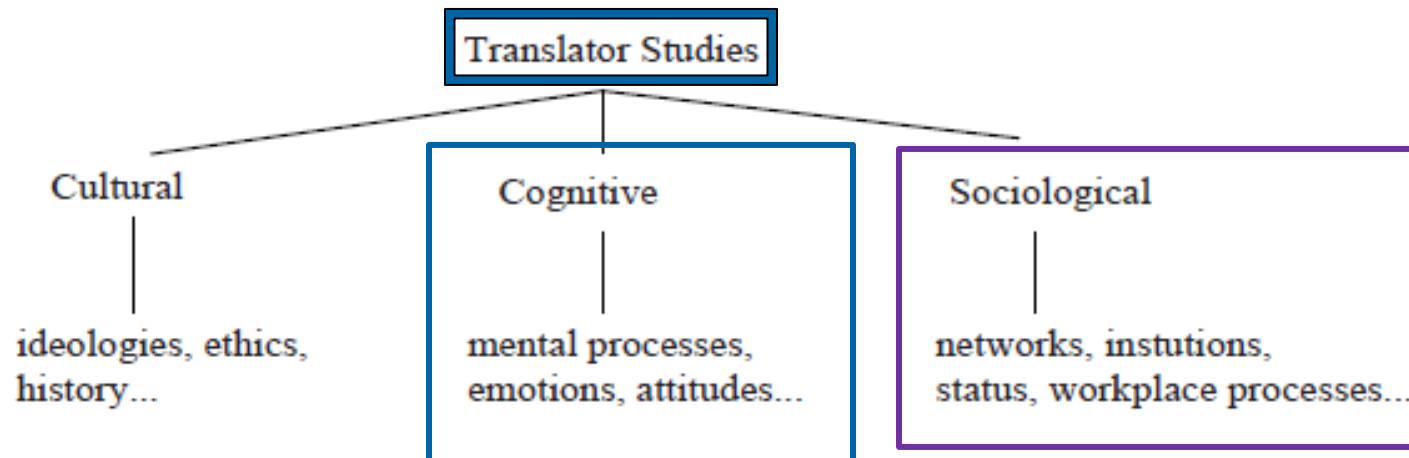
Translation as a situated activity within TS

Descriptive TS

- translation as a product
- translation as a process
- translation as a function

TranslatOR studies

- translation as a human activity
- act of translation
- event of translation



(Chesterman 2009: 19)

Translation as a complex cognitive activity

1997

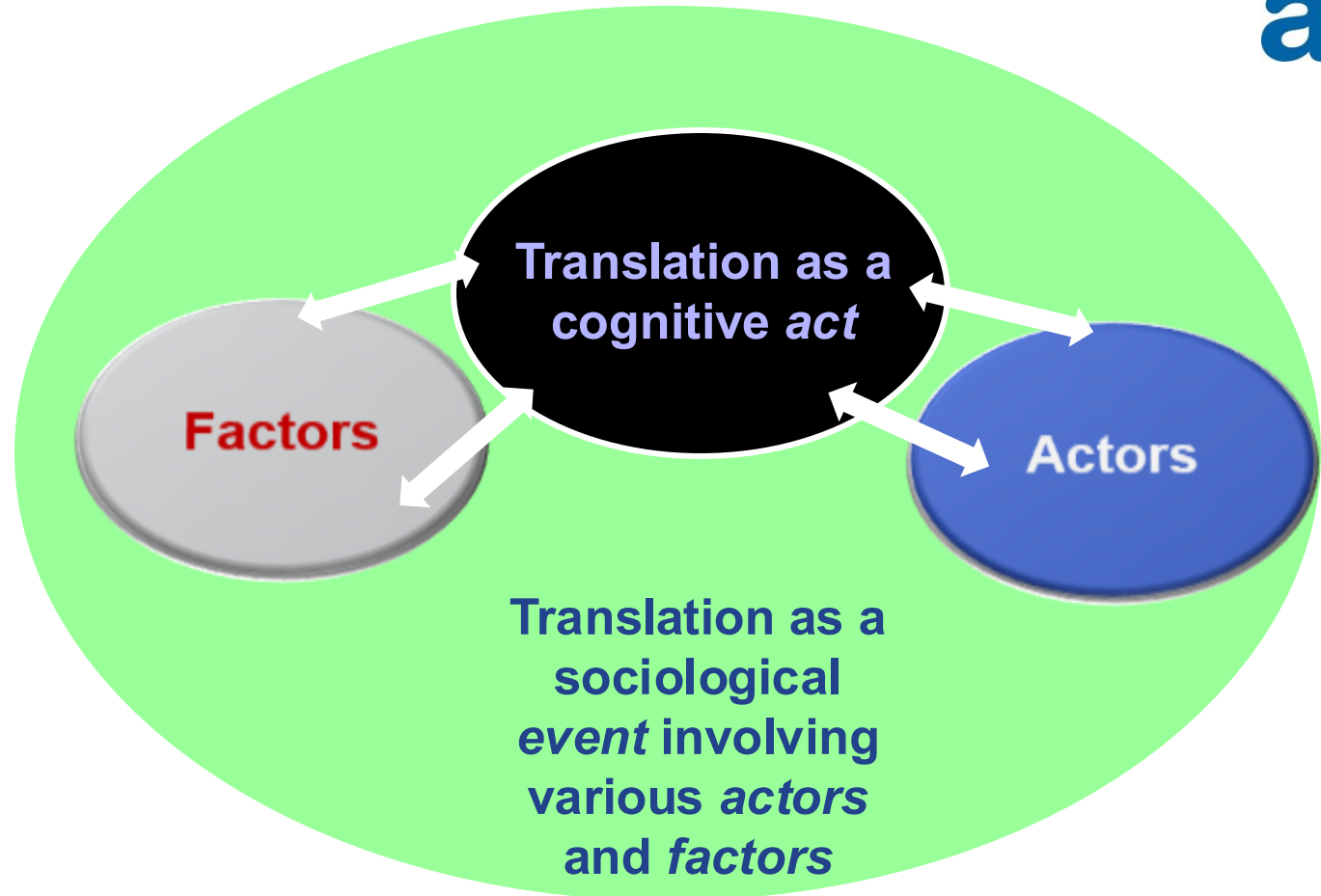
2025



Situated act of translation

- human cognition extends beyond internal processes to individuals' physical and social situation (cf. Hutchins 1995; Clark & Chalmers 1998/2010)
 - *Translation is done not only by the brain, but also by complex systems, systems which include people, their specific social and physical environments and all their cultural artefacts.* (Risku 2002: 529)
 - nature of translation task altered by language technology (Hansen-Schirra 2012; Jiménez-Crespo 2009; O'Brien 2012; Pym 2011)
 - constraints inherent to being part of a system affect translators' decision-making (e.g. Désilets et al. 2009; Koskinen 2008; Kuznik & Verd 2010; Risku 2010; 2014; Ehrensberger-Dow & Massey 2017)
- Implications of putting the translator in focus?
- Physical, cognitive, and organizational constraints on creativity?
- Effects of ergonomic issues on cognitive (over)load?

Situated act of translation



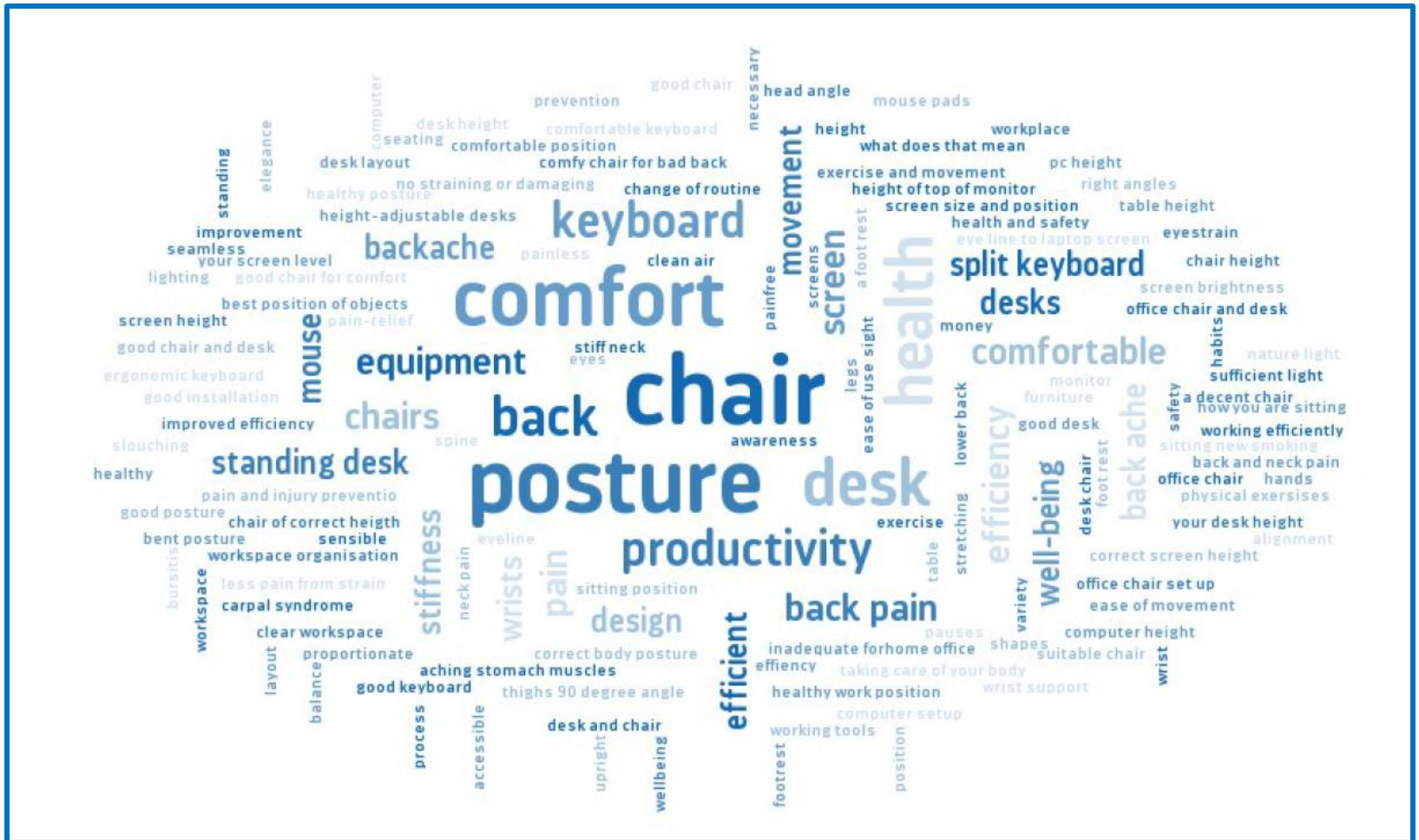
Ergonomics: some definitions

- Greek (ergon=work; nomos=laws) on analogy to *economics* (Jastrzebowski 1857/2006)
- synonymous with “human factors”
That field which is involved in conducting research regarding human psychological, social, physical, and biological characteristics, maintaining the information obtained from that research, and working to apply that information with respect to the design, operation, or use of products or systems for optimizing human performance, health, safety, and/or habitability. (Stramler 1993: 148)
- human side of usability, with a focus on the **user** rather than on machines or tools (ISO 9241-210 2010; Norros & Savioja 2007)
- new paradigm for translatology (Lavault-Olléon 2011)

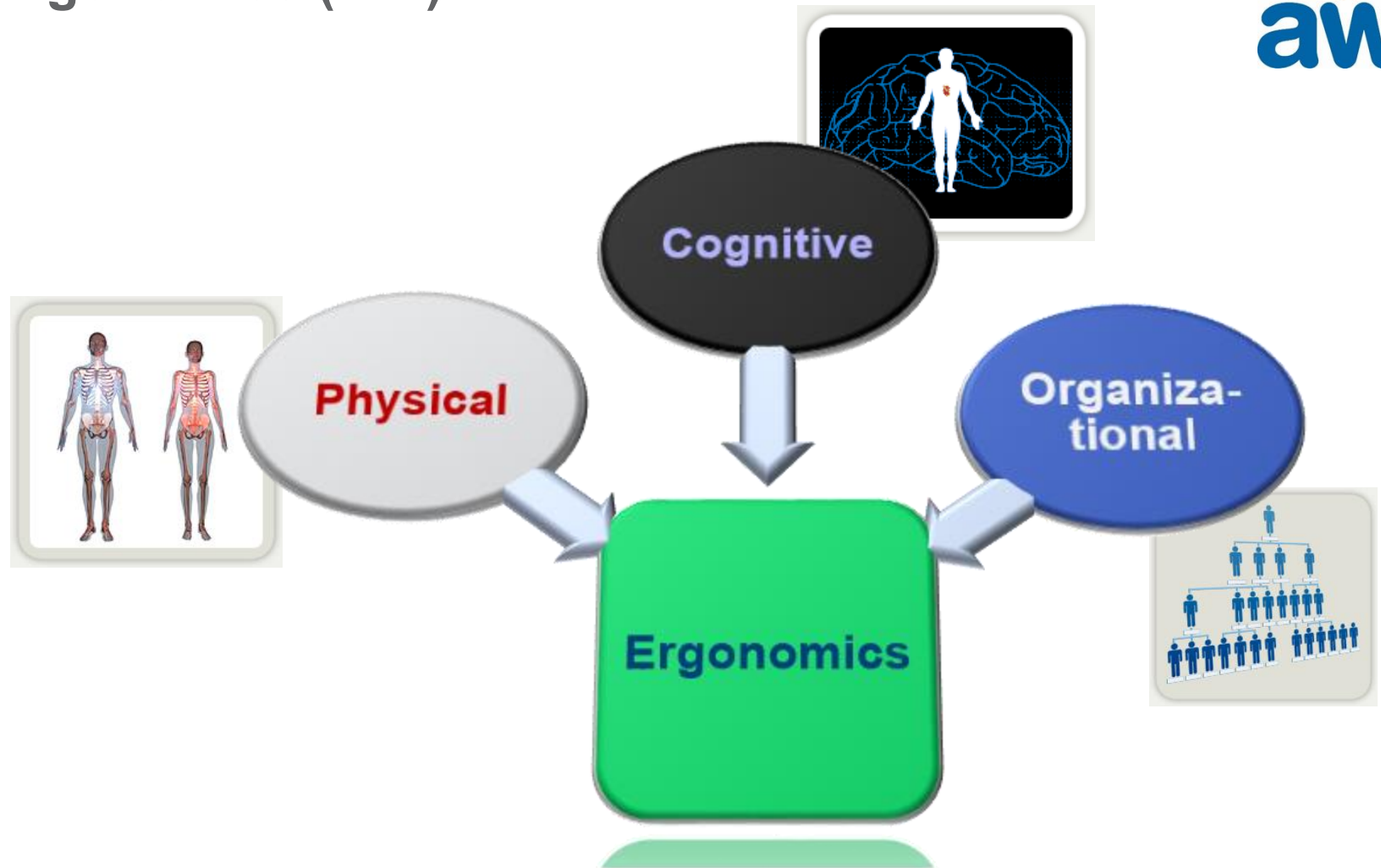
Ergonomics to optimize the use of tools



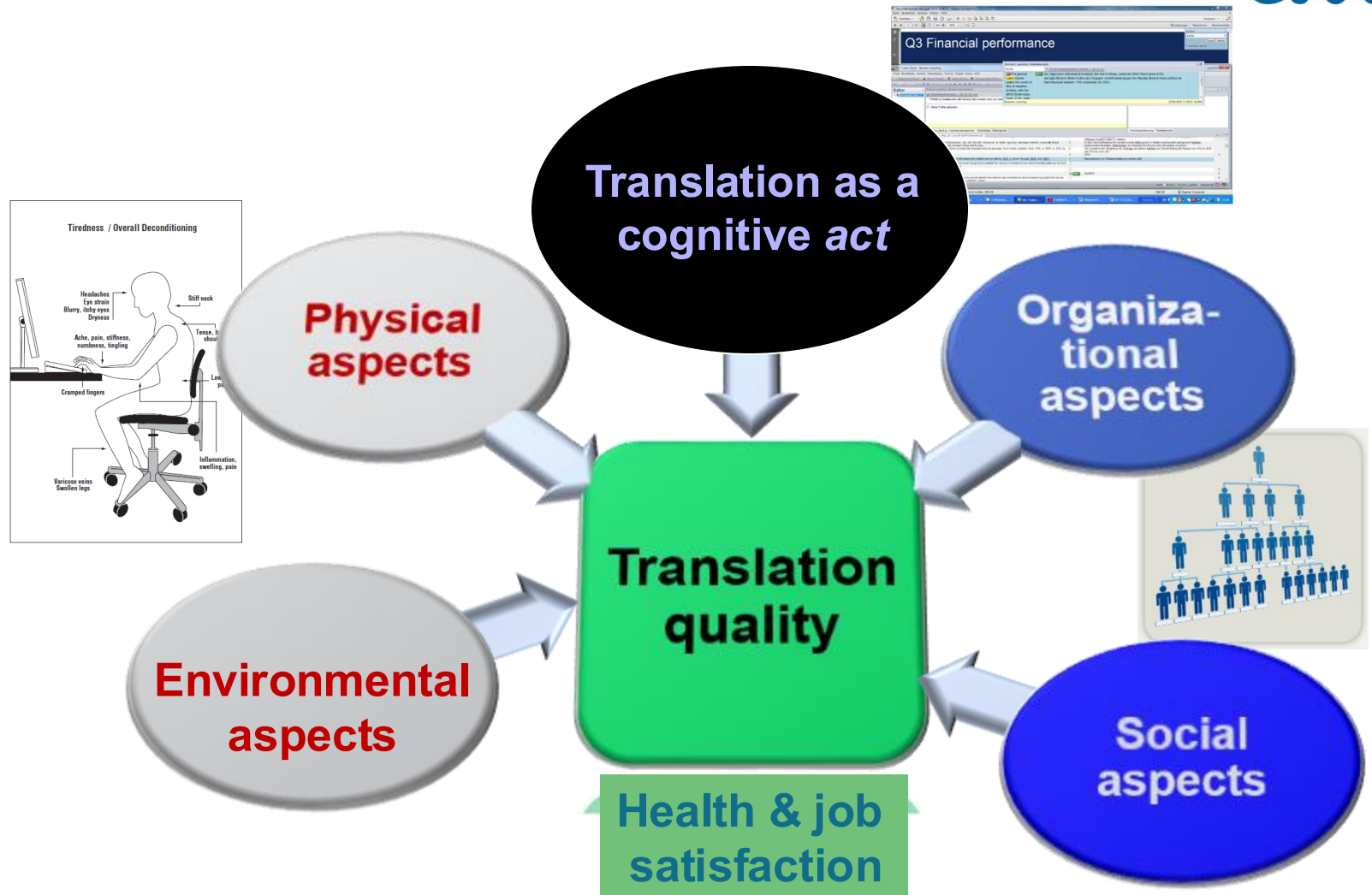
What comes to mind when you think of ergonomics at the workplace?



Ergonomics (IEA)



Ergonomics in translation theory and practice



ErgoTrans study: design

Cognitive and Physical Ergonomics of Translation (ErgoTrans)

Phase 1 (N=18)	Analysis of <i>Capturing Translation Processes</i> corpus → screen recording, eye tracking, keylogging
Phase 2 (N=31)	Workplace observations (commercial, institutional, freelance) → screen and video recording, ergonomic assessments, interviews
Phase 3 (N=18)	Hypothesis testing in usability lab → screen recording, eye tracking, keylogging, retrospective commentaries of processes, interviews
Phase 4 (N=1,850)	International comparison of workplace ergonomics → online survey of professional translators (de, en, es, fr, it, pt)
Phase 5 (N=19)	Validation of workplace findings → in-depth individual and group interviews

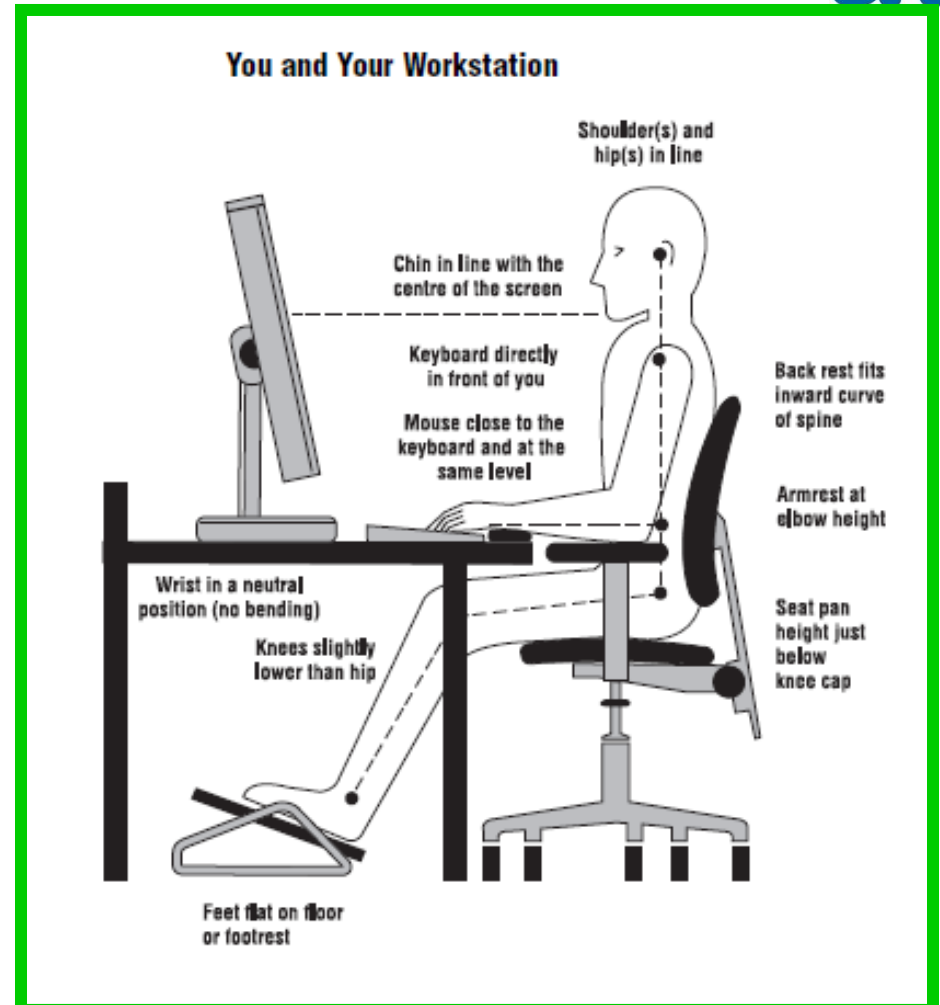
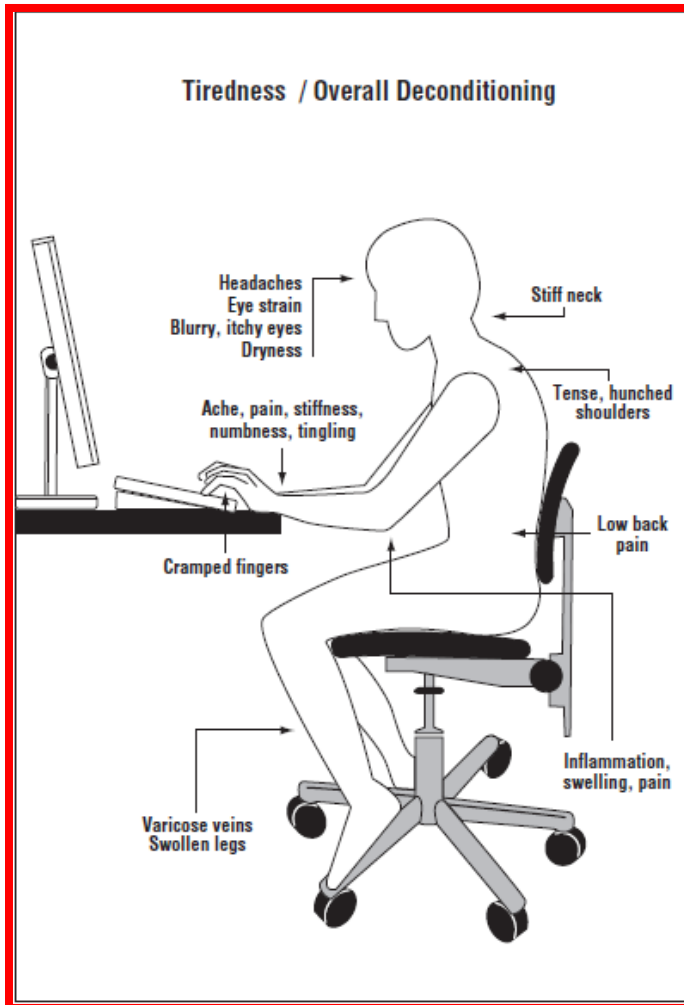
Original design of ErgoTrans project

Position	commercial staff translator			
Office size	3 or more people		1-2 people	
CAT tool use	high CAT use	low CAT use	high CAT use	low CAT use
Position	institutional staff translator			
Office size	3 or more people		1-2 people	
CAT use	high CAT use	low CAT use	high CAT use	low CAT use
Position	freelance translator			
Office size	3 or more people		1 person	
CAT tool use	high CAT use	low CAT use	high CAT use	low CAT use

Findings: Typical workplace profiles

Position	commercial staff translator			
Office size	3 or more people		1-2 people	
CAT tool use	high CAT use	low CAT use	high CAT use	low CAT use
Position	institutional staff translator			
Office size	3 or more people		1-2 people	
CAT use	high CAT use	low CAT use	high CAT use	low CAT use
Position	freelance translator			
Office size	3 or more people		1 person	
CAT tool use	high CAT use	low CAT use	high CAT use	low CAT use

Physical ergonomics in translation practice



(CCOHS 2011)

Physical aspects: assessments

Physical ergonomics is concerned with human anatomical, anthropometric, physiological and biomechanical characteristics as they relate to physical activity.

(International Ergonomics Association)

<i>Positive aspects</i>
dedicated workplace
desk size (min. 120 x 80 cm)
adjustable chair
leg room

(Meidert et al. 2016)

Physical aspects: assessments

Physical ergonomics is concerned with human anatomical, anthropometric, physiological and biomechanical characteristics as they relate to physical activity.

(International Ergonomics Association)

<i>Positive aspects</i>	<i>Negative aspects</i>
dedicated workplace	elbows not level with desk
desk size (min. 120 x 80 cm)	desk height not adjustable
adjustable chair	chair not adjusted properly
leg room	footrests rarely used
	no control over temperature
	colleagues moving around

Risks: accuracy; translation quality; absenteeism

(Meidert et al. 2016)

Physical aspects: international survey

Good physical ergonomics:

- desktop for most translation work
- keyboard flat on desk
- keyboard shortcuts used at least sometimes
- two screens used for translation work
- at least one screen directly in front
- screen about an arm's length away
- top of monitor slightly below eye level
- screen larger than A4 (>20x30 cm)
- magnification of screen adjusted

Physical aspects: survey results

ErgoTrans survey (Total=1850)

	<i>Total</i>
• desktop for most translation work	61%
• keyboard flat on desk	66%
• keyboard shortcuts used at least sometimes	90%
• two screens used for translation work	30%*
• at least one screen directly in front	92%
• screen about an arm's length away	68%
• top of monitor slightly below eye level	37%
• screen larger than A4 (>20x30 cm)	81%*
• magnification of screen adjusted	41%

* Significant difference between freelance, commercial, institutional translators

Environmental aspects: survey results

ErgoTrans survey (Total=1850)

Control over physical environment:

- room temperature
- fresh air
- airflow
- lighting
- view out of window from desk
- glare or reflection on screen rare or never

Total

74%

95%

84%

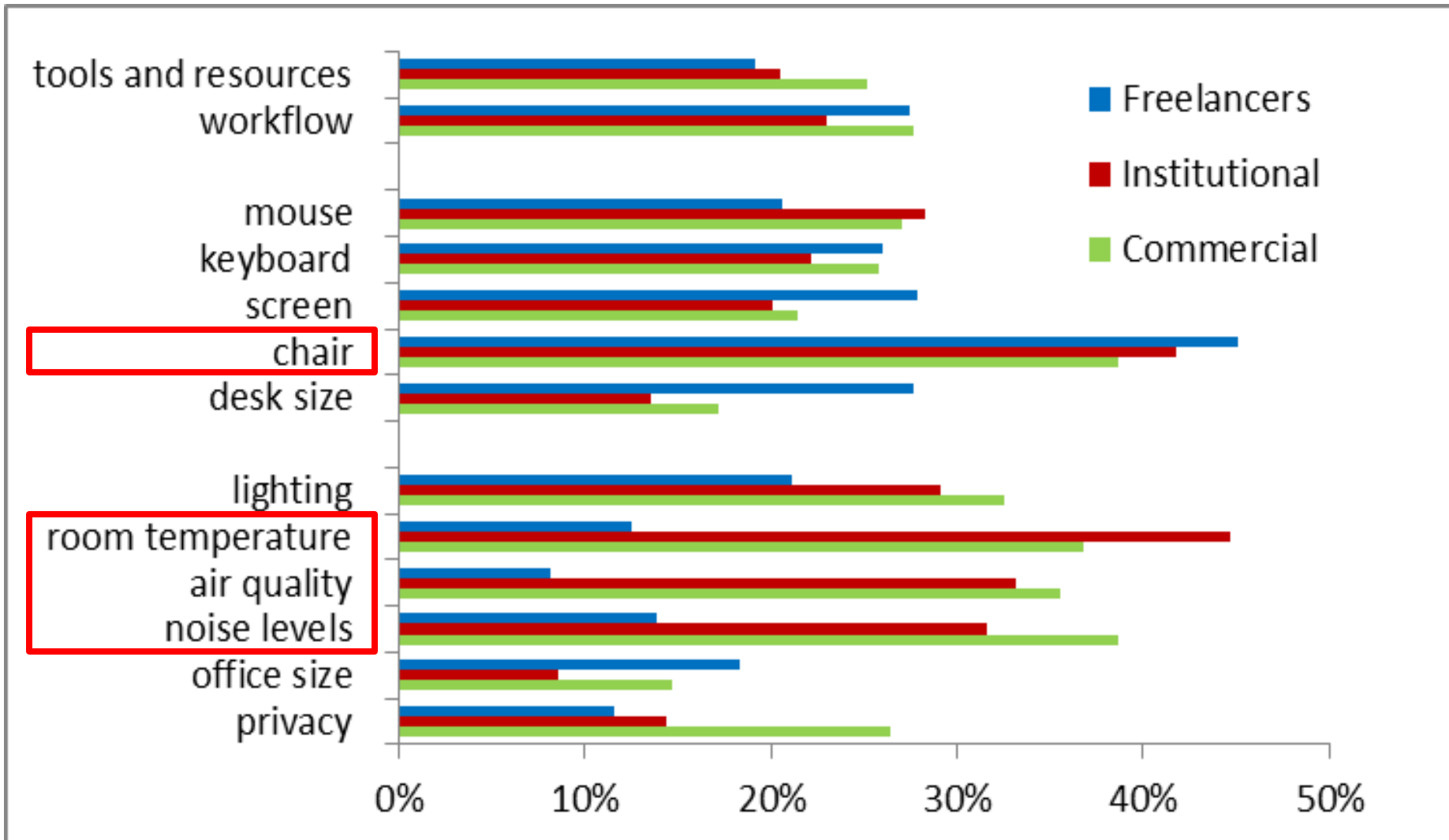
95%

87%

83%

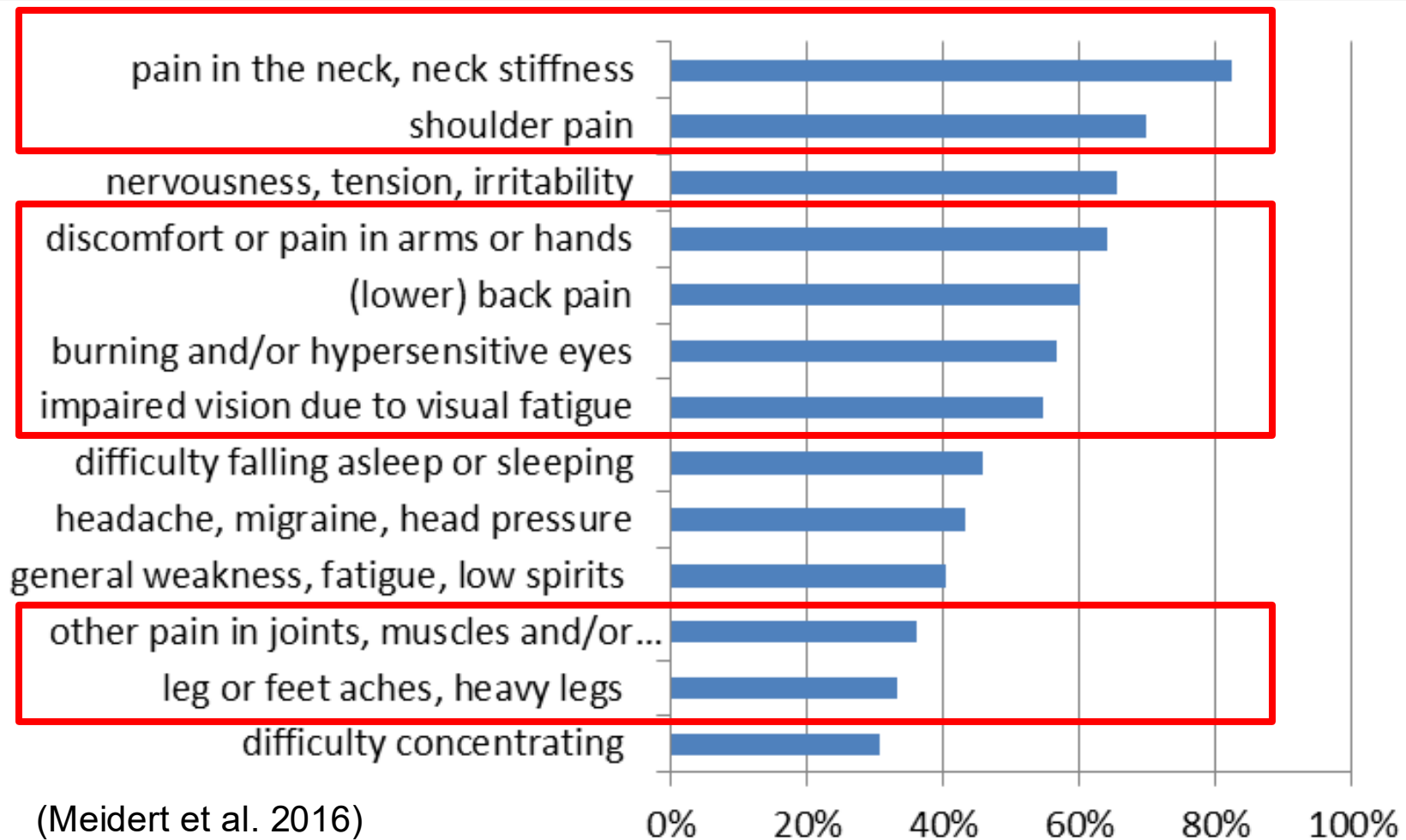
Physical + environmental aspects: survey results

At my workplace, I would like this to be more ergonomic:



Ergonomics + health: international survey results

Health issues in the last 12 months related to translation work?

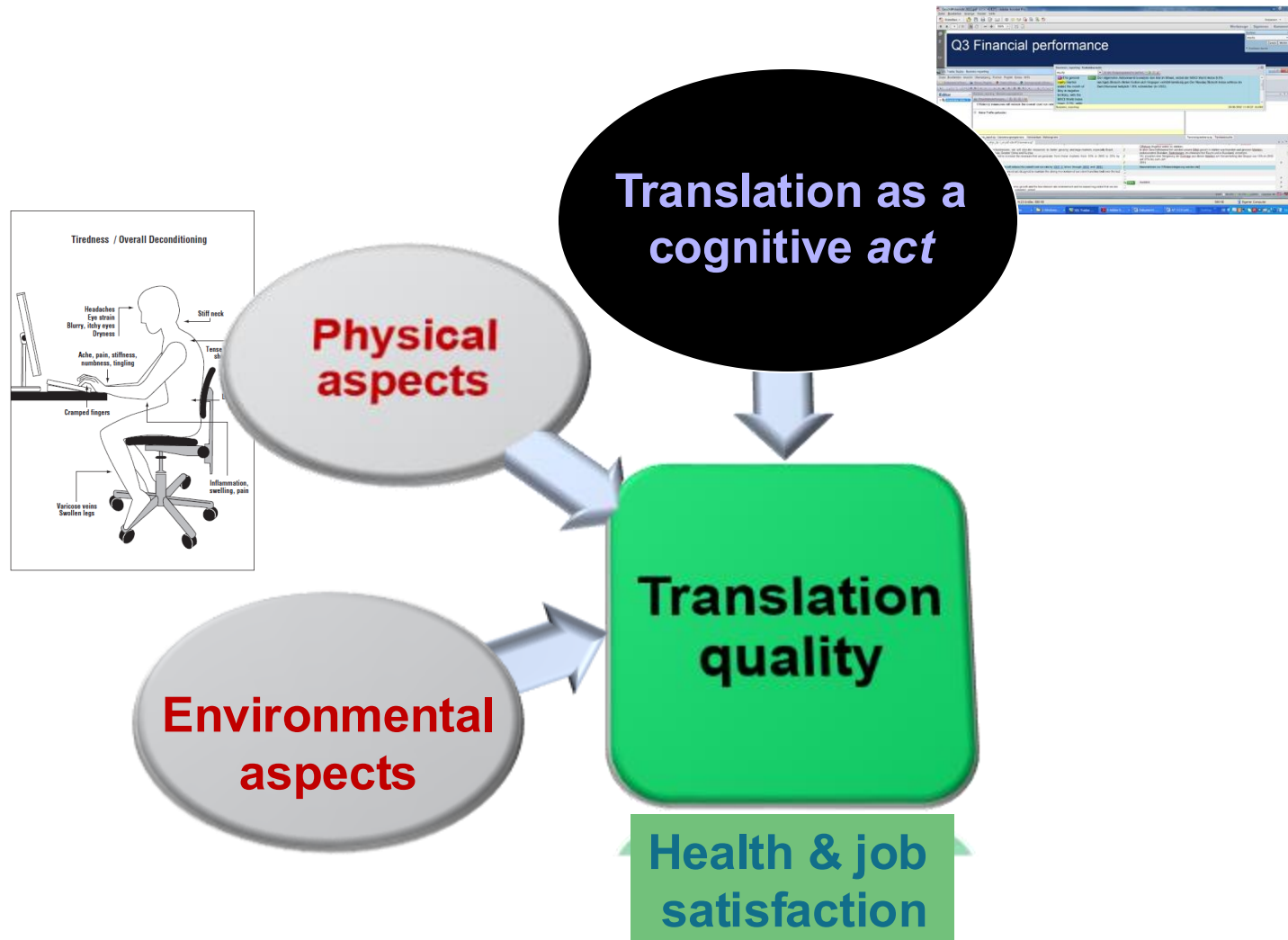


Good physical ergonomic practices



<https://youtu.be/ZLwIP8cBaWA?t=5>

Ergonomics in translation theory and practice



Cognitive act = cognitive load?

Three types of (additive) cognitive load assumed for learning or **translation** tasks (Paas et al. 2003; Sweller 1988)

- *intrinsic* load (e.g., inherent to translating a particular ST but depends on the level of expertise and background knowledge of each translator)
- *germane* (or *effective*) load (e.g., a clear translation brief, high-quality ST, useful corpora and online resources)
- *extraneous* (or *ineffective*) load (e.g. lack of a brief or resources, problems with tools, poor physical, organisational, or social conditions, negative emotions, stress, time pressure)

The lower the effort needed to process task instructions or documentation, the more capacity there is to allocate cognitive resources to the task itself. (Martin 2014)

(Hunziker Heeb et al. 2021)

Cognitive load in translation

- “mental load theory is so ubiquitous in the [...] literature and so ingrained in many [...] projects that it amounts to an implicit, partial theory of translation” (Muñoz 2012: 171)
- “concepts such as effort and mental load are used within one paradigm with consistently different yet often overlapping meanings” (Marín 2017: 34)
- cognitive effort is “simply the amount of cognitive resources required to complete a processing task” (Kruger 2016: 27)

Shared assumptions:

- cognitive resources are **limited**
- efficient allocation **enables** and **enhances** task **performance**

Cognitive load in empirical translation studies

- human-machine interaction (e.g. O'Brien 2006)
- process activities (e.g. Jakobsen & Jensen 2008; Hvelplund 2017)
- ST difficulty (e.g. Dragsted 2012)
- types of segmentations (e.g. Alves & Gonçalves 2013)
- levels of metaphoricity (e.g. Sjørup 2013)
- differences between tasks (e.g. Whyatt et al. 2016)
- impact on task performance (e.g. Korpai 2016)
- directionality (e.g. da Silva et al. 2017)
- translation competence (e.g. Förster Hegrenæs 2018)
- processing ELF texts (e.g., Albl-Mikasa et al. 2020)
- role of emotions (e.g., Hunziker Heeb et al. 2021)
- human-machine collaborative translation (e.g., Chen 2025)

Cognitive aspects: assessments

Cognitive ergonomics is concerned with mental processes, such as perception, memory, reasoning, and motor response, as they affect interactions among humans and other elements of a system.

(International Ergonomics Association)

<i>Positive aspects</i>	<i>Negative aspects</i>
linguistic challenges	poor quality source texts
domain knowledge challenges	monotony
interruptions by people	e-mail interruptions
CAT tools	irritating features of CAT tools
feedback	crowded screens
	time pressure



Risks: accuracy; creativity; translation quality; productivity

(Meidert et al. 2016)

Cognitive aspects: CAT tools

Good cognitive ergonomics:

- CAT tool(s) used for translation
- CAT tool(s) helpful at least sometimes
- rarely or never switch between CAT tools
- customize aspects of CAT tool(s)
- CAT tools not irritating
- no comments about CAT irritations
(user interface, specific CAT features,
technical performance, text appearance,
compatibility, organizational aspects)

Cognitive aspects: CAT tools

ErgoTrans survey (Total=1850)

	<i>Total</i>
• CAT tool(s) used for translation	73%*
• CAT tool(s) helpful at least sometimes	97%
• rarely or never switch between CAT tools	64%
• customise aspects of CAT tool(s)	46%
• CAT tools not irritating	41%*
• no comments about CAT irritations (user interface, specific CAT features, technical performance, text appearance, compatibility, organisational aspects)	8%

* Significant difference between freelance, commercial, institutional translators

Cognitive aspects: CAT tools

Ergonomic implications of various research findings:

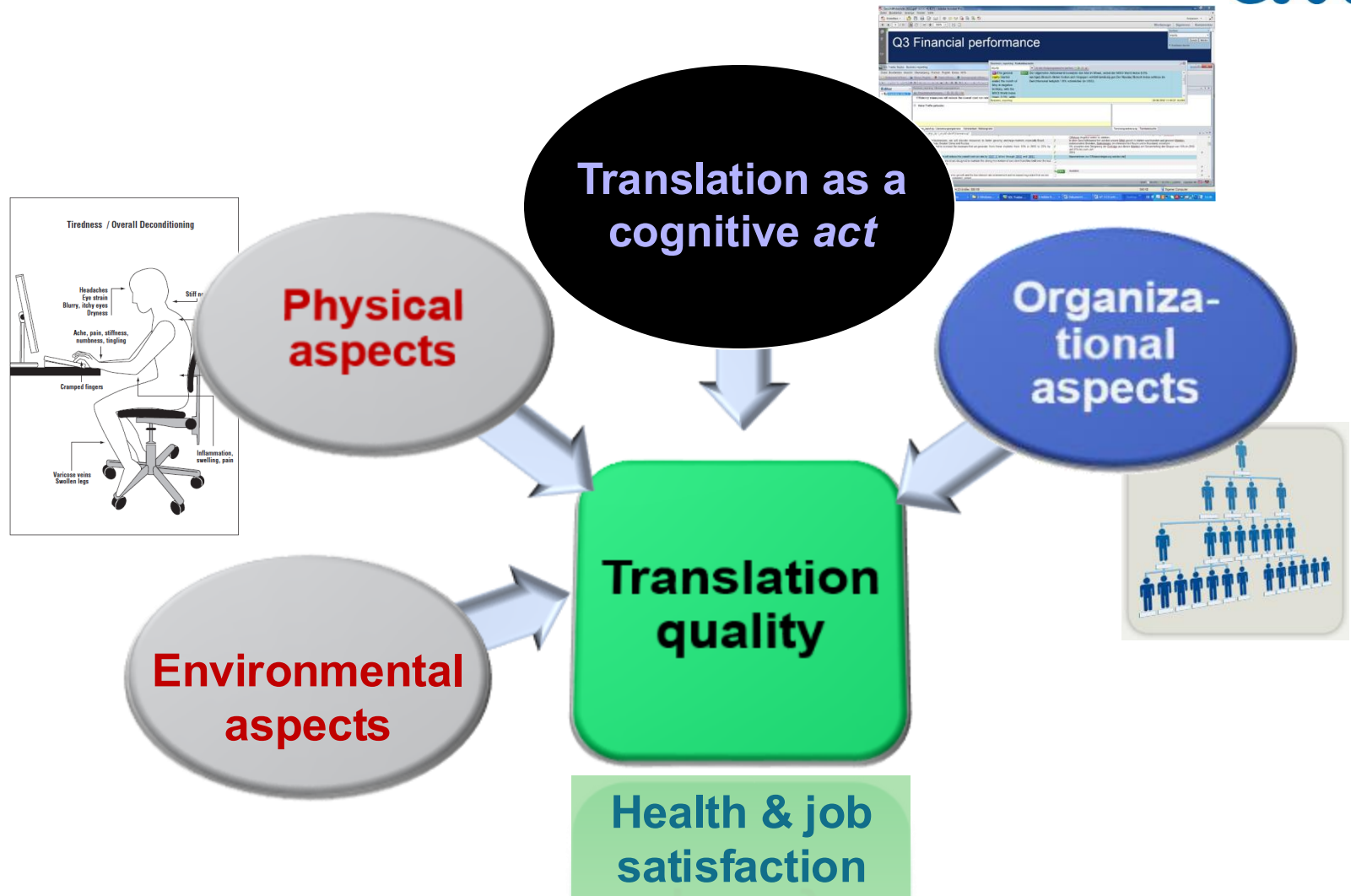
- lean interface → *less is more*, at least for learners of tools
- fewer options and less complicated interface
- linguistic resources close to target text segments
- facilitate individualization of software settings
- turn off defaults and choose suitable alternatives
- involve translators in the development and evaluation of tools
- incorporate feedback loops into the process

→ program machines to give humans the space to do what they do best

→ reduce cognitive load by increasing usability

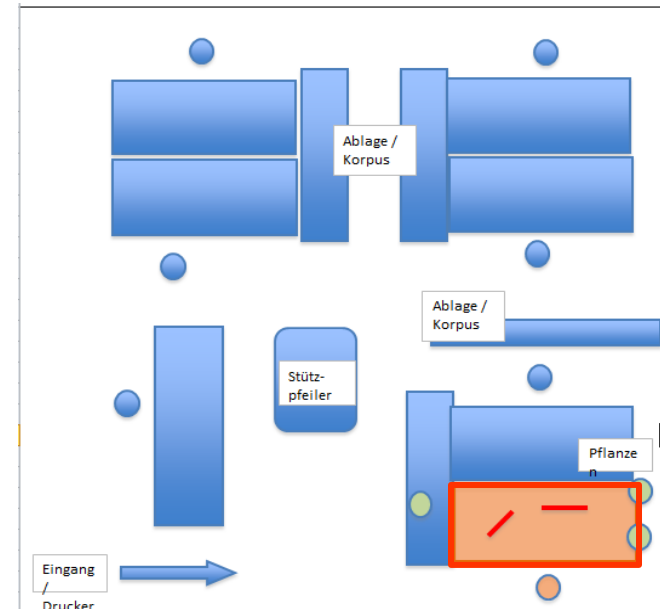
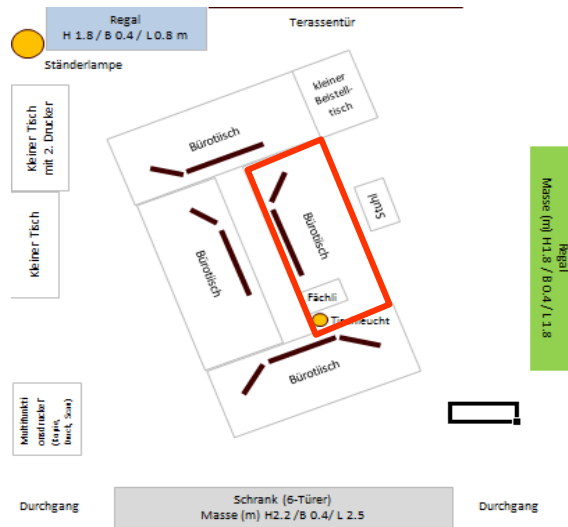
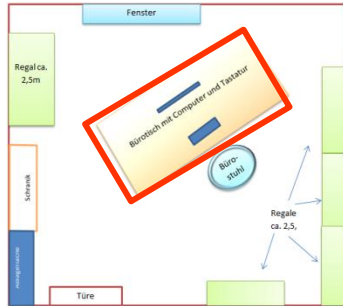
(O'Brien et al. 2017; Kappus & Ehrensberger-Dow 2020)

Ergonomics in translation theory and practice



(cf. Ehrensberger-Dow et al. 2016; Meidert et al. 2016; O'Brien et al. 2017)

Organizational aspects of translation practice



Organizational aspects: interviews

Organisational ergonomics is concerned with the optimisation of sociotechnical systems, including their organisational structures, policies and processes.

(International Ergonomics Association)

Positive aspects	Negative aspects
personal and remote contact	workflow design
institutionalised breaks	technical problems
job security	infrastructure procurement
flexible working-time	unrealistic deadlines
feedback	translation quality policies
	low appreciation



Risks: company loyalty; organisational development

(Meidert et al. 2016)

Organizational aspects: international survey

Good organizational ergonomics:

- internet connection mostly or always good
- communication mostly or always adequate
- workflow software used at least sometimes
- resources provided at least sometimes
- feedback about work at least sometimes
- deadlines for tasks mostly or always clear
- time pressure, but not mostly or always
- timing of breaks at least sometimes
- hourly breaks at least sometimes

Organizational aspects: survey results

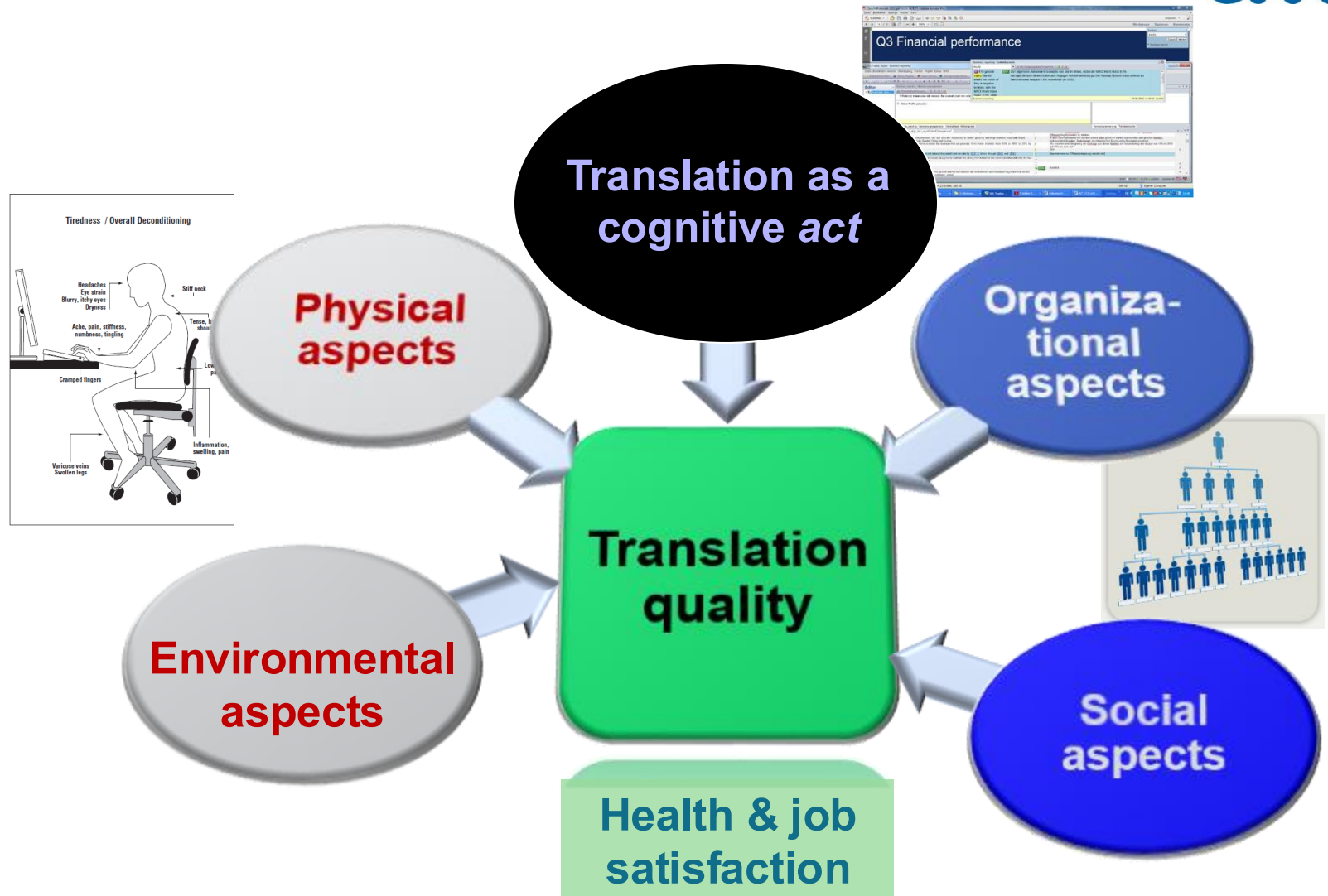
ErgoTrans survey (N=1,850)

	<i>Total</i>
• internet connection mostly or always good	96%
• communication mostly or always adequate	97%
• workflow software used at least sometimes	31%*
• resources provided at least sometimes	65%*
• feedback about work at least sometimes	74%
• deadlines for tasks mostly or always clear	95%
• time pressure, but not mostly or always	51%*
• timing of breaks at least sometimes	98%
• hourly breaks at least sometimes	68%*

* Significant difference between freelance, commercial, institutional translators

(Ehrensberger-Dow et al. 2016)

Ergonomics in translation theory and practice



(cf. Ehrensberger-Dow et al. 2016; Meidert et al. 2016; O'Brien et al. 2017)

Social aspects: international survey

Social contact:

- discuss work in person at least sometimes
- discuss work by phone at least sometimes
- discuss work on forums at least sometimes
- discuss work by email at least sometimes

Distractions from social environment:

- outside noise rarely or never disturbing
- inside noise rarely or never disturbing
- headphones rarely or never used
- people rarely or never moving around

Social aspects: survey results

ErgoTrans survey (N=1,850)

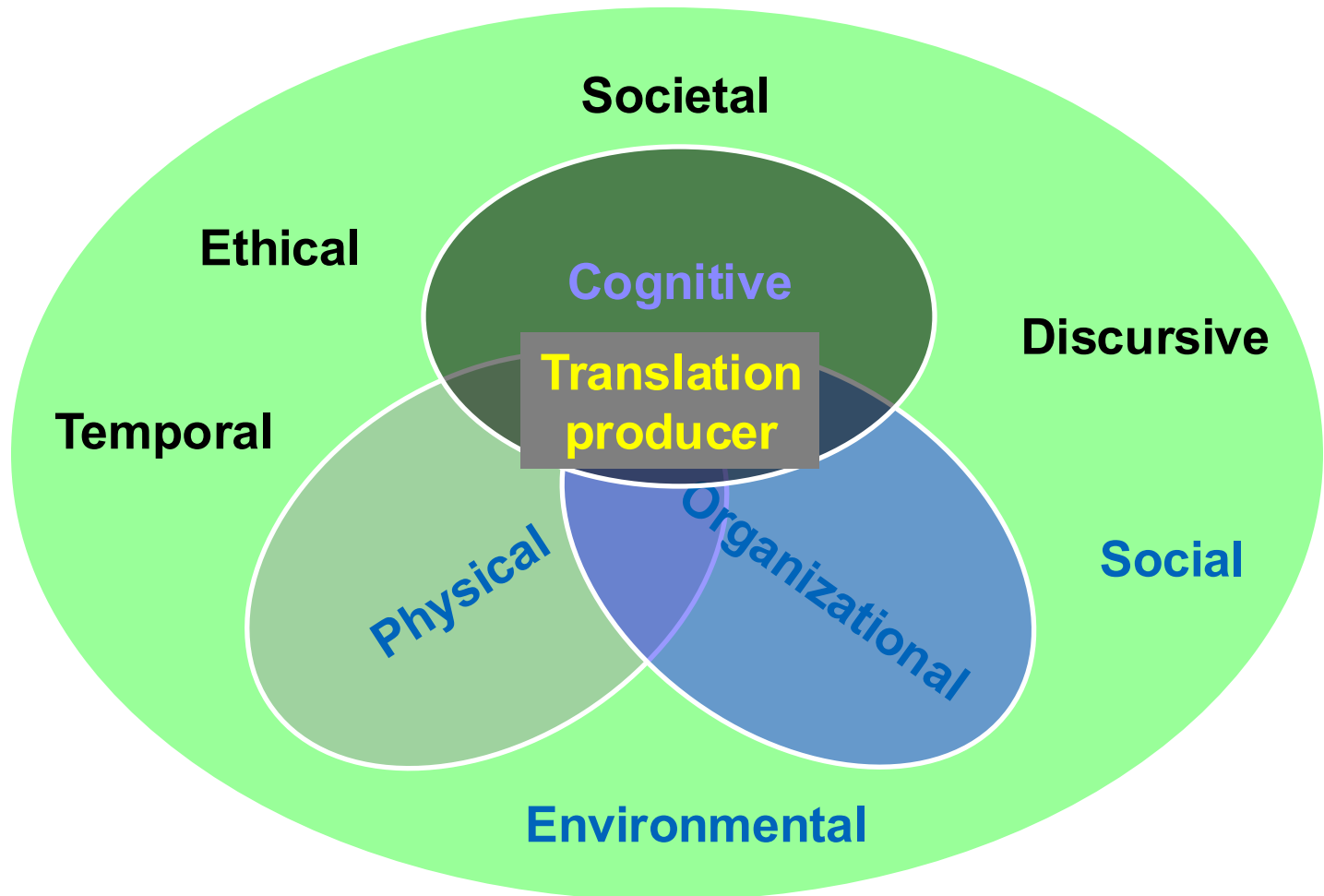
Social contact:

	<i>Total</i>
• discuss work in person at least sometimes	55%
• discuss work by phone at least sometimes	54%
• discuss work on forums at least sometimes	43%
• discuss work by email at least sometimes	78%

Distractions from social environment:

• outside noise rarely or never disturbing	72%
• inside noise rarely or never disturbing	85%
• headphones rarely or never used	85%
• people rarely or never moving around	62%

Translation production as a **situated** activity



Translation as a Situated Activity

Questions? Comments? Own experiences?

Maureen Ehrensberger-Dow

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Some useful links:

Office ergonomics (Chartered Institute of Ergonomics and Human Factors

https://www.ergonomics.org.uk/Public/Resources/Sectors/Office_Ergonomics.aspx

European Agency for Safety and Health at Work – Office work

<https://osha.europa.eu/en/tools-and-publications/publications/e-facts/efact13>

Swiss Federal Coordination Commission for Occupational Safety

<https://www.ekas-box.ch/en/#!/pe:pmi/home>

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