

Anke Radinger

Researching Subtitling Processes

Methodological considerations for the investigation
of AI-assisted subtitling workflows

Contents

List of Figures	11
List of Tables	19
Abbreviations	23
Acknowledgements	27
1 Subtitling in Audiovisual Translation Studies	29
1.1 Defining AVT and subtitling	34
1.1.1 Intralingual vs. interlingual subtitles and target audiences	41
1.1.2 Technical and temporal classification of subtitles	48
1.2 The COMPASS project	51
2 State of the art in subtitling	55
2.1 Product-oriented subtitling research	60
2.1.1 Subtitle corpora	61
2.1.2 Subtitle style guides	65
2.1.3 Subtitle quality and shortcomings	74
2.2 Subtitling process research (SPR)	80
2.2.1 Subtitle processing and reception	82
2.2.2 Translation and subtitle production processes	92
2.3 Subtitling procedures:	
Transcription, template, pivot and respeaking	99
2.3.1 Transcription for AVT	100
2.3.2 Template and pivot subtitling	104
2.3.3 Respeaking and editing live subtitles	112

2.4	AI-assistance in subtitling	118
2.4.1	ASR in subtitling	121
2.4.2	MT and PE in subtitling	126
2.4.3	Subtitling tools and cloud platforms	129
2.5	Subtitling competences and profiles	131
2.6	Summary	140
3	A workflow model for intra- and interlingual subtitling	143
3.1	Definitions of process and workflow	144
3.2	Translation and post-editing workflows	149
3.3	Developing a model of subtitling workflows	154
3.3.1	Intralingual subtitling workflows	162
3.3.2	Interlingual subtitling workflows	163
3.3.3	Combined subtitling workflows	165
3.4	Model discussion and research avenues	168
3.5	Summary of workflow model	170
4	Methodology: From TPR to SPR	171
4.1	Eye Tracking: Gaze data analysis	173
4.1.1	Eye tracking devices and software	175
4.1.2	Metrics of gaze data	183
4.2	Keylogging: Typing and pause analysis	187
4.3	Eye tracking and keylogging combined in Translog-II	192
4.3.1	The Translog-II tool and its components	193
4.3.2	Data logged by Translog-II	196
4.3.3	TPR analyses relevant for SPR	199
4.4	Annotating translation quality	206
4.5	Summary and placing the methods into AVT	209

6 Study II: AI-assistance in transcript creation and translation 327

6.1 Research questions	330
6.2 Study design	333
6.2.1 Participants	335
6.2.2 Material	337
6.2.3 Screen setup	342
6.2.4 Procedure	345
6.3 Data analysis	348
6.4 Results	353
6.4.1 Questionnaire	354
6.4.2 Intralingual transcription (I)	360
6.4.2.1 Temporal effort: Session duration	361
6.4.2.2 Technical effort: Keystrokes for modifications	363
6.4.2.3 Cognitive effort and visual attention: Gaze data	368
6.4.3 Interlingual transcription: Translation (T)	373
6.4.3.1 Temporal effort: Session duration	373
6.4.3.2 Technical effort: Keystrokes for modifications	376
6.4.3.3 Cognitive effort and visual attention: Gaze data	379
6.4.4 Indirect post-editing (PE)	385
6.4.4.1 Temporal effort: Session duration	385
6.4.4.2 Technical effort: Keystrokes for modifications	387
6.4.4.3 Cognitive effort and visual attention: Gaze data	392
6.5 Error annotation in video transcription	398
6.5.1 Intralingual	402
6.5.2 Translation	404
6.5.3 Post-Editing	405

6.6 Discussion of results and limitations	407
6.6.1 Discussion of intralingual transcription	410
6.6.2 Discussion of transcript translation	417
6.6.3 Discussion of indirect post-editing	420
6.6.4 Summary and implications for further research	425
7 Conclusion and outlook	429
7.1 Limitations and desiderata for future studies	431
7.1.1 Participant sampling	431
7.1.2 Material selection	435
7.1.3 Tools and AI-assistance	438
7.1.4 Methodology and theoretical framework	440
7.2 Mapping SPR in the workflow model	447
7.2.1 Studies on intralingual workflows (model 1.1)	451
7.2.2 Studies on interlingual workflows (model 1.2)	456
7.2.3 Studies on combined workflows (model 1.3)	461
7.3 Closing remarks	467
Bibliography	471