The Interaction of Task Condition and Task Complexity in the Oral Performance of Turkish and Moroccan Learners of Dutch

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COGNITIVE APPROACHES TO TBLT

COGNITIVE DEMANDS that a task puts forward.

How changes in these demands influence TASK PERFORMANCE.

COMPLEXITY

→ cognitively simple or complex tasks = task complexity

Input = tasks of different cognitive complexity

→ syntactically or lexically simple or complex speech = linguistic complexity

Output = speech performance that is coded for measures of accuracy, linguistic complexity & fluency

Framework: Cognition Hypothesis of TBLT by Peter Robinson (2001, 2005)

COGNITION HYPOTHESIS Robinson (2005)

TASK COMPLEXITY cognitive factors	TASK CONDITION interactive factors	TASK DIFFICULTY learner factors
resource directing +/- few elements +/- no reasoning demands +/- here & now	participation variables open/closed convergent/divergent one-way/two-way flow	affective variables motivation confidence anxiety
resource dispersing +/- planning +/- single task +/- prior knowledge	participant variables same/different gender familiar/unfamiliar person power/solidarity	ability variables working memory aptitude proficiency

COGNITION HYPOTHESIS Robinson (2005)

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RESEARCH QUESTIONS

1. What are the effects of increased task complexity on the performance of L2-learners?

2. What are the effects of interactivity on the performance of L2-learners?

3. Are there any combined effects of task complexity & interactivity on the performance of L2-learners?

HYPOTHESES

H1 Cognitively complex tasks will push learners to more accurate and more complex though less fluent speech.

H2 Interactive tasks will push learners to more accurate speech, but linguistic complexity and fluency will decrease.

H3 Interactive complex tasks will lead to more accurate speech, fluency will decrease. Linguistic complexity will decrease even more compared to complex monologic or simple dialogic tasks.

PRESENT STUDY

PARTICIPANTS

44 learners of Dutch L2
29 Moroccan, 15 Turkish
27 female, 17 male

age 27.7 years (SD 6.4)

intermediate level of Dutch L2
score on cloze task 21/50 (SD 9.3)

students with higher educational background
from 4 different language institutes in Amsterdam

DESIGN OF THE STUDY

		TASK CONDITION/INTERACTIVITY (interactive factors) between participants	
		monologue	dialogue
TASK COMPLEXITY (cognitive factors) within participants	simple	+ few elements + monologue	+ few elements – monologue
	complex	– few elements + monologue	– few elements – monologue

Every student did a simple and a complex task,
either both in a monologic or both in a dialogic situation.

TASK - SIMPLE

A friend asks for advice: what mobile phone / mp3-player should I buy?

naam	I-Mate
prijs	349 €
kleur	wit
grootte (H x B x D)	10,4 x 6,1 x 1,6 cm
gewicht	167 gram
scherm	2 inch
capaciteit	64 MB
max. stand-by tijd	300 uur

naam	Siemens
prijs	257 €
kleur	grijs
grootte (H x B x D)	8,6 x 5,4 x 1,6 cm
gewicht	87 gram
scherm	1,5 inch
capaciteit	12 MB
max. stand-by tijd	340 uur

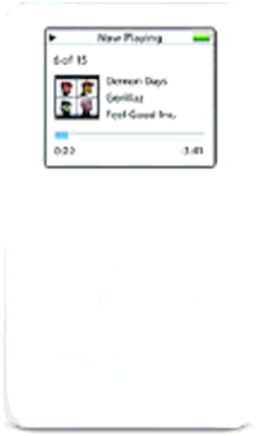
MONOLOGUE leave your message on the answering machine

DIALOGUE discuss with each other on the phone

TASK - COMPLEX

naam	Creative Zen
prijs	212 €
kleur	oranje of blauw
grootte (H x B x D)	8,3 x 5,1 x 1,7 cm
gewicht	115 gram
scherm	1,5 inch
capaciteit	8 GB
max. speeltijd	15 uur

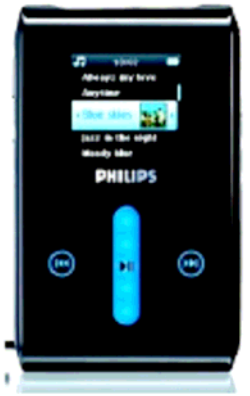
naam	Apple iPod
prijs	249 €
kleur	wit
grootte (H x B x D)	10,4 x 6,1 x 1,6 cm
gewicht	167 gram
scherm	2 inch
capaciteit	20 GB
max. speeltijd	15 uur



naam	Packard Bell
prijs	196 €
kleur	zilver of zwart
grootte (H x B x D)	8,8 x 5 x 1,5 cm
gewicht	95 gram
scherm	1,8 inch
capaciteit	6 GB
max. speeltijd	10 uur

naam	I River
prijs	195 €
kleur	rood
grootte (H x B x D)	9,5 x 5,5 x 1,5 cm
gewicht	96,2 gram
scherm	1,5 inch
capaciteit	5 GB
max. speeltijd	12 uur

naam	Philips
prijs	157 €
kleur	zwart
grootte (H x B x D)	8,6 x 5,4 x 1,6 cm
gewicht	87 gram
scherm	1,5 inch
capaciteit	4 GB
max. speeltijd	17 uur



naam	Kenwood
prijs	230 €
kleur	wit of zwart
grootte (H x B x D)	10,4 x 6,1 x 1,7 cm
gewicht	140 gram
scherm	2,2 inch
capaciteit	20 GB
max. speeltijd	16 uur

MEASURES OF ACCURACY, COMPLEXITY & FLUENCY

ACCURACY	LING. COMPLEXITY	FLUENCY
total number of errors per AS unit	total number of clauses per AS unit	SRA syllables per minute in unpruned speech
number of lexical errors per AS unit	subordinate clauses per total number of clauses	SRB syllables per minute in pruned speech
number of omissions per AS unit	percentage of lexical words	number of filled pauses per 100 words
ratio of self-repairs to errors	Guiraud's index (types/√ tokens)	
percentage of self-repairs		

AS unit = Analysis of Speech unit (Foster, P., A. Tonkyn, &G. Wigglesworth, 2000)

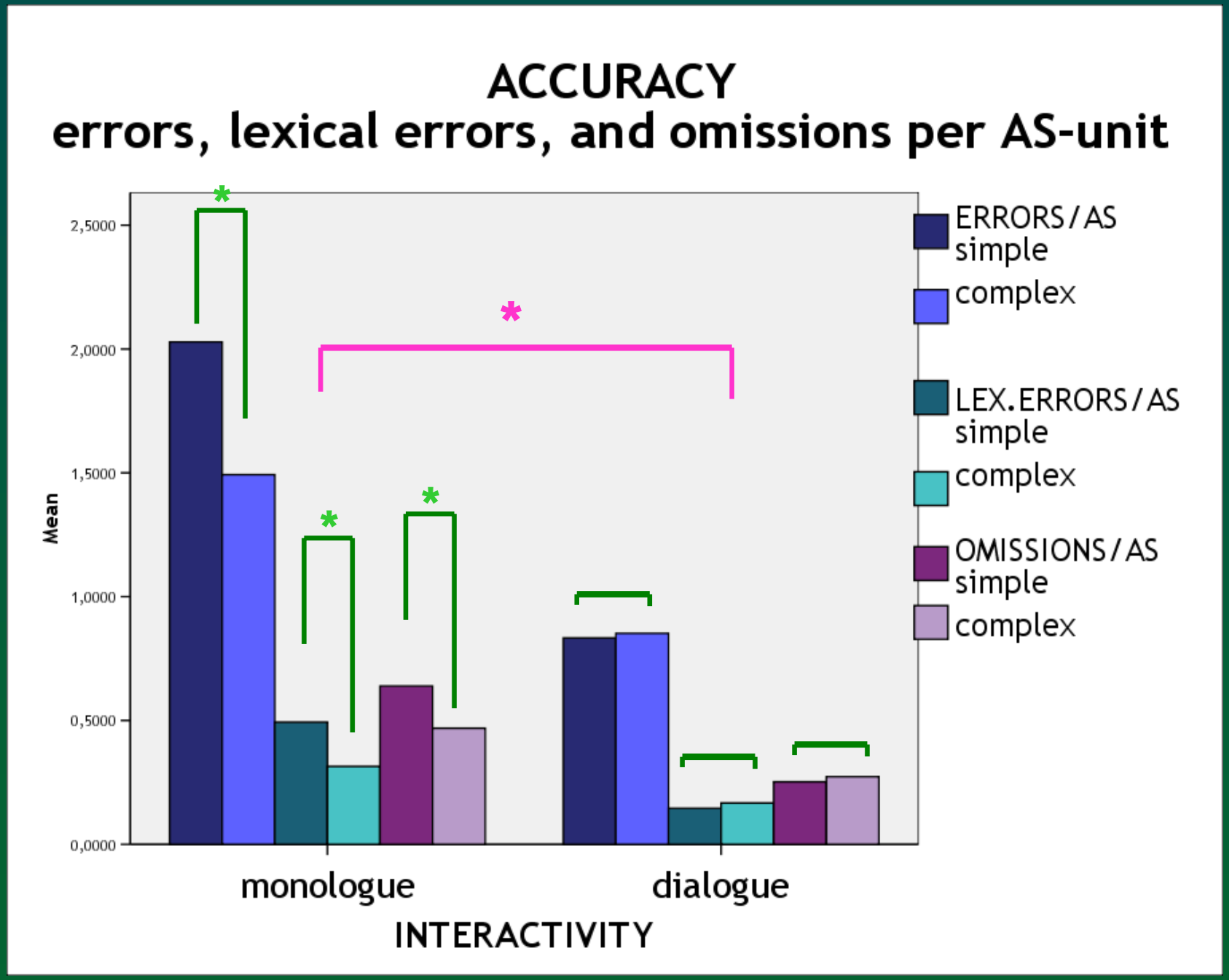
RESULTS: TASK COMPLEXITY

ACCURACY			LINGUISTIC COMPLEXITY			FLUENCY		
MEASURE	SIMPLE	COMPLEX	MEASURE	SIMPLE	COMPLEX	MEASURE	SIMPLE	COMPLEX
errors /AS	**1.43** (0.87)	1.17 (0.60)	clauses / AS	**1.39** (0.24)	1.34 (0.17)	Speech Rate A	**152.78** **(37.42)**	145.14 (34.09)
lex. errors / AS	**0.32** (0.31)	0.24 (0.20)	Subordination Index	**0.11** (0.10)	0.09 (0.06)	Speech Rate B	**121.86** (34.40)	117.95 (32.57)
omissions / AS	**0.45** (0.37)	0.37 (0.28)	% lexical words	53.56 (6.50)	**55.61** (6.63)	filled pauses / 100 words	20.34 (9.44)	**20.58** (10.30)
% repairs	3.18 (2.46)	**3.34** (2.69)	Guiraud's Index	6.04 (0.77)	**6.19** (0.75)			
repairs / errors	**24.08** (28.79)	22.65 (18.88)						

RESULTS: INTERACTIVITY

ACCURACY			LINGUISTIC COMPLEXITY			FLUENCY		
MEASURE	MONO-LOGUE	DIA-LOGUE	MEASURE	MONO-LOGUE	DIA-LOGUE	MEASURE	MONO-LOGUE	DIA-LOGUE
errors /AS	**3.52** (1.18)	1.69 (0.61)	clauses / AS	**2.94** (0.28)	2.53 (0.21)	Speech Rate A	267.16 (61.54)	**328.67** (63.12)
lex. errors / AS	**0.81** (0.46)	0.31 (0.22)	Subordination Index	**0.25** (0.15)	0.15 (0.08)	Speech Rate B	208.31 (57.07)	**271.29** (55.98)
omissions / AS	**1.11** (0.66)	0.53 (0.26)	% lexical words	**109.63** (12.61)	108.71 (10.35)	filled pauses / 100 words	**56.45** (29.54)	50.36 (24.43)
% repairs	**7.38** (4.43)	5.66 (2.45)	Guiraud's Index	12.00 (0.75)	**12.46** (1.65)			
repairs / errors	38.33 (26.38)	**55.12** (42.39)						

RESULTS: TASK COMPLEXITY **x** INTERACTIVITY



CONCLUSIONS: TASK COMPLEXITY

H1 Cognitively complex tasks will push learners to more accurate and more complex though less fluent speech.

significant positive effects of increased task complexity

→ on accuracy

→ on lexical complexity

significant decrease of

→ fluency

H1 = confirmed

but evidence not very strong

replicates earlier work, c.f. Kuiken, Mos, & Vedder (2005)

CONCLUSIONS: INTERACTIVITY

H2 Interactive tasks will push learners to more accurate speech, but linguistic complexity and fluency will decrease.

significant positive effects of interactivity

→ on accuracy

→ on fluency

significant decrease of

→ linguistic complexity (syntactic measures)

H2 = confirmed for accuracy and syntactic complexity

unexpected beneficial effect on fluency

CONCLUSIONS: TASK COMPLEXITY & INTERACTIVITY

H3 Interactive complex tasks will lead to more accurate speech, fluency will decrease. Linguistic complexity will decrease even more compared to complex monologic or simple dialogic tasks.

significant combined effect

→ on accuracy beneficial effect of task complexity disappears in dialogues

no combined effect

→ on linguistic complexity or fluency

H3 = not confirmed for accuracy, linguistic complexity or fluency

only combined effect (on accuracy)
contradicts predictions of Cognition Hypothesis
& challenges Robinson (2005)

DISCUSSION: INCREASED TASK COMPLEXITY

→ more accurate performance and slight increase of linguistic complexity, but effects are weak

WHY? → +/- few elements strong enough effect?
→ exact number of elements 2 vs. 6 enough?

POSSIBLE ANSWERS

- → number of elements is not separable from increasing reasoning demands
- → make reasoning tasks focusing on interrelationships, c.f. Halford et al. (2007), e.g. combine into pairs

→ individual differences in WM may play a role

DISCUSSION: INTERACTIVITY

→ enhances accuracy & fluency but decreases complexity

WHY? → pair work pushes L2-performance?
→ interactivity = more interruptions, clarification work?

POSSIBLE ANSWERS
→ interactivity leads to heightened attention to language
try to understand & be clear & people help each other
→ less complex ≠ less native-like

→ see how natives act on interactive tasks

DISCUSSION: INTERACTIVITY & TASK COMPLEXITY

→ positive effects of increased task complexity disappear in dialogues
→ complexity in interactive tasks does not seem to make a difference

WHY? → Interactivity “stronger” than task complexity?
→ global measures not appropriate?

POSSIBLE ANSWERS
→ enlarge difference in cognitive task complexity
→ try to qualitatively grasp the nature of the L2 performance rather than focus on global measures

THANK YOU!

Thanks to 

Research Group CASLA (Cognitive Approaches to SLA)

Michel, M.C., F. Kuiken, and I. Vedder (in press)
The Influence of complexity in monologic versus dialogic tasks in Dutch L2.
International Review of Applied Linguistics.

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