Distribution of mid vowels in Norwegian learners of French

The impact of transfer

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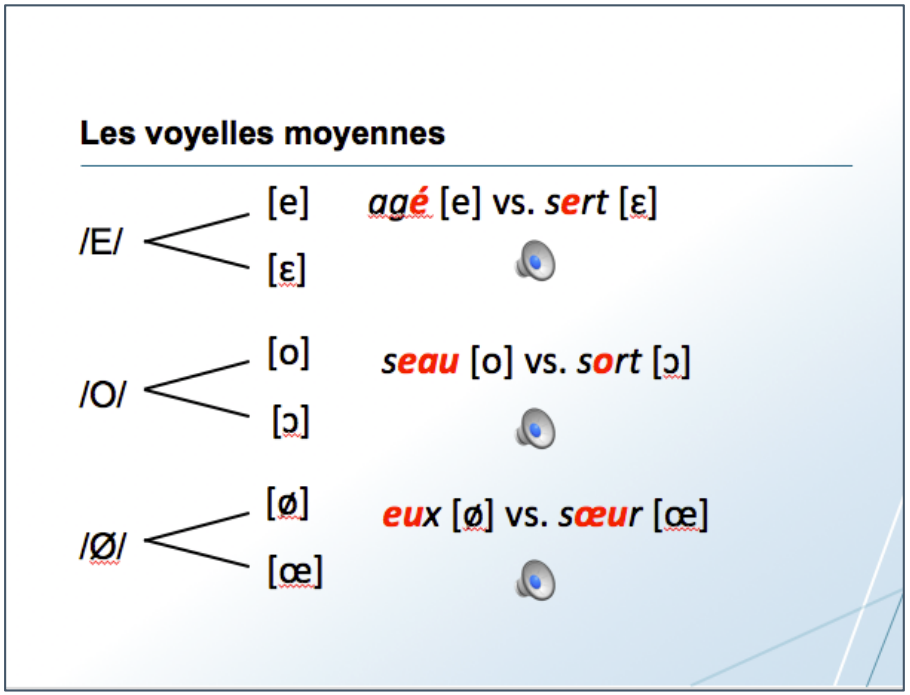
UiT / THE ARCTIC UNIVERSITY OF NORWAY

Heard in the phonology classroom …



Perception

"I don't hear the difference"

Norwegian students having lived in France three years

Illustrating with the Norwegian corresponding vowels: no success

Production

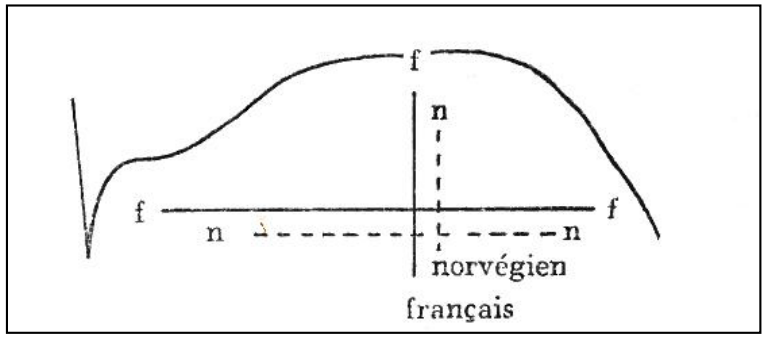
No difference when asked to repeat

Articulatory guiding and suggestion to exaggerate: we are getting somewhere (but for how long?)

Using the oral cavity

“There is a large difference between French vowels, even in unstressed syllables.”

“While the French uses the entire depth and height of the oral cavity, the Norwegian, in general, uses only parts of it”



“Pronunciation of French requires a considerable articulatory effort: mouth fatigue is therefore a touchstone for the Norwegian who speaks French”

(Kloster-Jensen, 1955, p. 17, our translation)

Outline

- Norwegian vs. French mid vowel systems
- Learning strategies in L2/L3: hypotheses
- IPFC: methods and corpus
- Results
- Discussion
- Future perspectives

Mid vowels in Norwegian

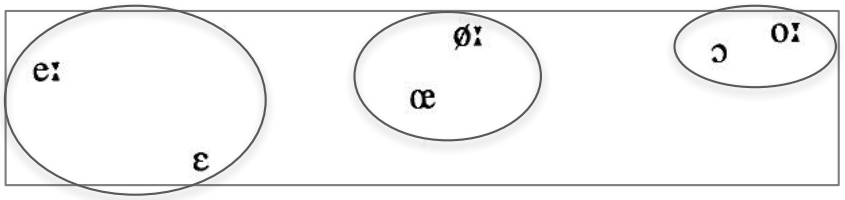
Length contrast and quality

- Long vowels are close-mid
  te [tʰeː] 'tea'
  ser [seːr] 'see$_{pre}$'

- Short vowels are open-mid
  fett [fɛtʰ] 'fat'
  tverr [tvær] 'difficult'

Extended use of [æ] for [ɛ] in Northern Norwegian (Kristoffersen, p.c.)

Restricted acoustic dispersion of mid rounded vowels



(Kristoffersen, 2000:17)

Mid vowels in French

Loi de Position

- close-mid vowels in open syllables
- open-mid vowels in closed syllables

/E/	[e]	*âgé*	[aʒe]	‘old’
	[ɛ]	*sert*	[sɛ(ː)ʁ]	‘serve$_{\text{-3sg-pre}}$’
/Ø/	[ø]	*peu*	[pø]	‘little’
	[œ]	*sœur*	[sœ(ː)ʁ]	‘sister’
/O/	[o]	*peau*	[po]	‘skin’
	[ɔ]	*sort*	[sɔ(ː)ʁ]	‘exit$_{\text{-3sg-pre}}$’

Wide range of exceptions across varieties (more or less systematic, cf. Detey et al., 2010, 2016; Féry, 2003), but tendency to strengthen the general rule (Lyche, 2010).

/ʁ/ tends to open the vowel even more (Tubach, 1989).

Comparing the two systems

	Norwegian	French I	French II	Distance
	F1 1 speaker [l_n]	F1 mean, isolated	F1 mean, reading	
e	376	405	417	N: 89 FI: 209 FII: 243
ɛ	465	614	660	
ø	337	409	469	N: 67 FI: 190 FII: 178
œ	404	599	647	
o	341	415	461	N: 19 FI: 180 FII: 173
ɔ	360	595	634	

–General larger dispersion in French than in Norwegian
–Both languages have less dispersion for the rounded vowels
–In Norwegian, /O/ stands out as particularly little dispersed

Norwegian data: Kristoffersen (2000)
French data I: Georgeton et al. (2012); French data II: Tubach (1989). (French data III: Østby (2015) observe less dispersion for /Ø/, but with a open-mid more open than Norwegian [œ])

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Learning strategies

Dealing with differences

Contrastive analysis (e.g. Hammerly, 1982)

– Transfer of the L1 system onto the L2 system

– Similarities: positive transfer, differences: negative transfer

– In Norwegian, length regulates the distribution of close-mid vs. open-mid vowels, whereas in French, it's the syllable.

Hypothesis 1: The learner maintains the Norwegian length contrast.

Predictions

Lengthening of close-mid vowels in open syllables: *[aʒeː]

Close-mid vowels before /ʁ/, trigger of phonetic length in French: *[meːʁ]

Learning strategies

Dealing with similarities

Speech learning model (Flege 1995)

L2 phonetic category formation may be blocked by a mismatch in the features used to signal contrast in the L1 and L2. […] ***L2 features not used to signal contrast in L1 will be difficult to perceive for the L2 learner*** *and this difficulty will be reflected in the learner's production of the contrast based on this feature.* (McAllister, Flege & Piske, 2002, p. 230)

Hypothesis 2: The learner maintains the Norwegian acoustic system

Learning strategies

Dealing with similarities

Predictions

The acoustic distance between the two vowels in Norwegian directly impacts the realisation of the French mid vowels.

/E/ important distance between [e] and [ɛ] (and [æ]) in Norwegian
→ differentiation in French is easy

/Ø/ less distance between [ø] and [œ] in Norwegian than in French
→ differentiation in French is possible

/O/ very little distance between [o] and [ɔ] in Norwegian
→ differentiation in French is difficult

Mid vowels & Norwegian FFL textbooks

/E/

[e, ɛ] are distinguished with reference to orthography

<é>	*do not make it too long*
<è, ai>	*almost [æ], don't be afraid to exaggerate*

(comments on details in pronunciation only found in Christensen & Wulff, 2007, for lower secondary school)

/Ø, O/

Number of vowels and presentation vary across textbooks

1. From orthography to sound: "**eu** is pronounced as Norwegian *ø*: [œ], **o** as Norwegian *å*: [o]"
(Christensen & Wulff, 2007)

2. From sound to orthography: [ø] *mieux* [œ] *heure* [ɔ] *note* [o] *bateau*
(Warendorph et al. 2007)

3. No clear link: [o] and [ɔ] <o/au/eau>, *école, Guillaume, eau*
(Hønsi et al. 2006, 2007)

Mid vowels & Norwegian FFL textbooks

Why is the mid vowel system – and its distribution – not presented in more detail in the textbooks?

→ Other phenomena considered more susceptible of hindering communication, e.g. nasal vowels, voiced fricatives, liaison

→ Seemingly not problematic to learn

Høst (1962)

"Many French are not aware of the different vowel pairs, and the differences are not always very clear. […] But we must know the difference […] Thereafter we do not have to think that much about it – it is rather intuitive which one we should use."

Other comments by Høst

1. [ɔ, œ] are more open in French compared to Norwegian
2. While [ø] comes naturally, [œ] requires much attention

Research questions

Description

Given the absence of explicit instruction, what do the students do?

Theory

Can production be explained with reference to Norwegian L1?

Which stages in the acquisition path?

Didactics

How should we proceed in the teaching situation?

Textbook, in-class material, etc.

IPFC

Interphonologie du français contemporain

International research programme

- Coordinated by Sylvain Detey (Waseda University), Isabelle Racine (University of Geneva), Yuji Kawaguchi (Tokyo University of Foreign Studies)

Objective

- Study of phonetic/phonological systems of non-native speakers of French, for theoretical and didactic purposes

Data

- Database under construction at the University of Geneva
- Open samples, main corpora – when entered – subject to log-in

Activity

- Currently about 15 active research groups around the world, e.g. Canada, Greece, Russia, Japan
- Annual meeting each December in Paris
- Collaborative publication: *La prononciation du français dans le monde: du natif à l'apprenant* (Detey et al., 2016)

IPFC-norvégien

the people

Helene N. Andreassen, UiT (responsible)

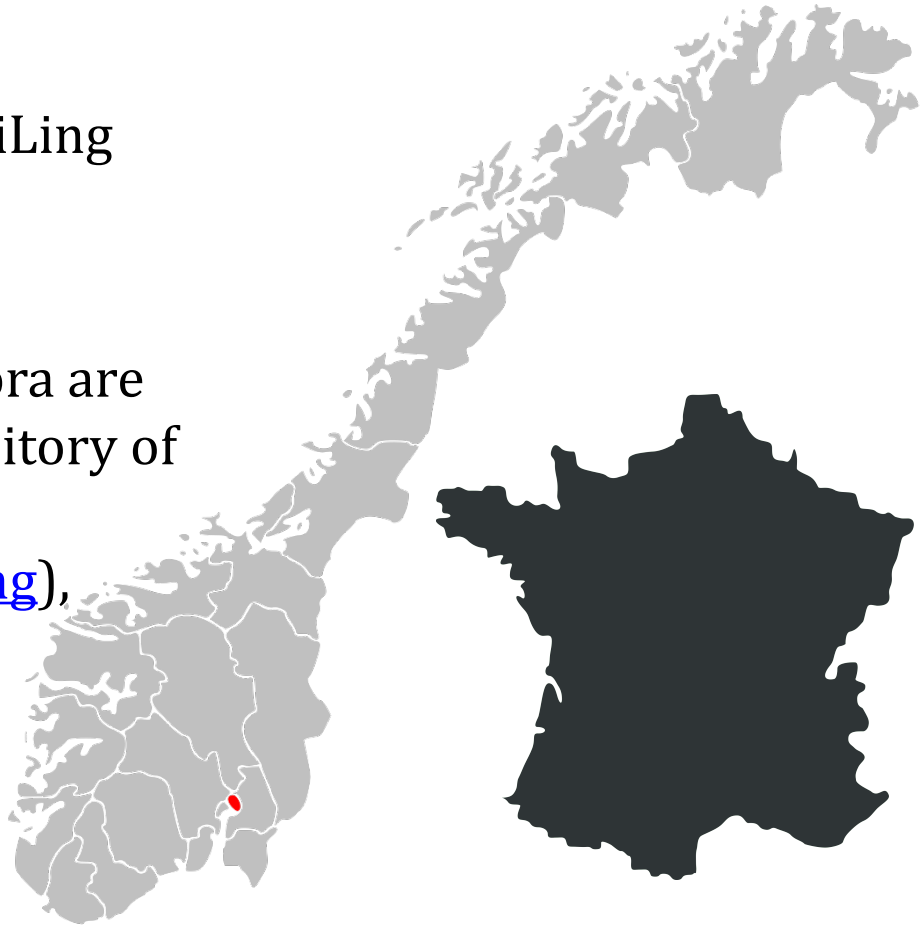
Chantal Lyche, UiO

Nelly Foucher Stenkløv, NTNU & OFNEC, U. of Caen

Håvard Astrup Bakke, OFNEC, U. of Caen

Guri Bordal Steien, INN University & MultiLing

Datasets created on the basis of our corpora are registered with a doi in the Tromsø Repository of Language and Linguistics (TROLLing, https://opendata.uit.no/dataverse/trolling), with link to the IPFC database.



IPFC-norvégien

the corpus

The Oslo corpus (collected 2013)

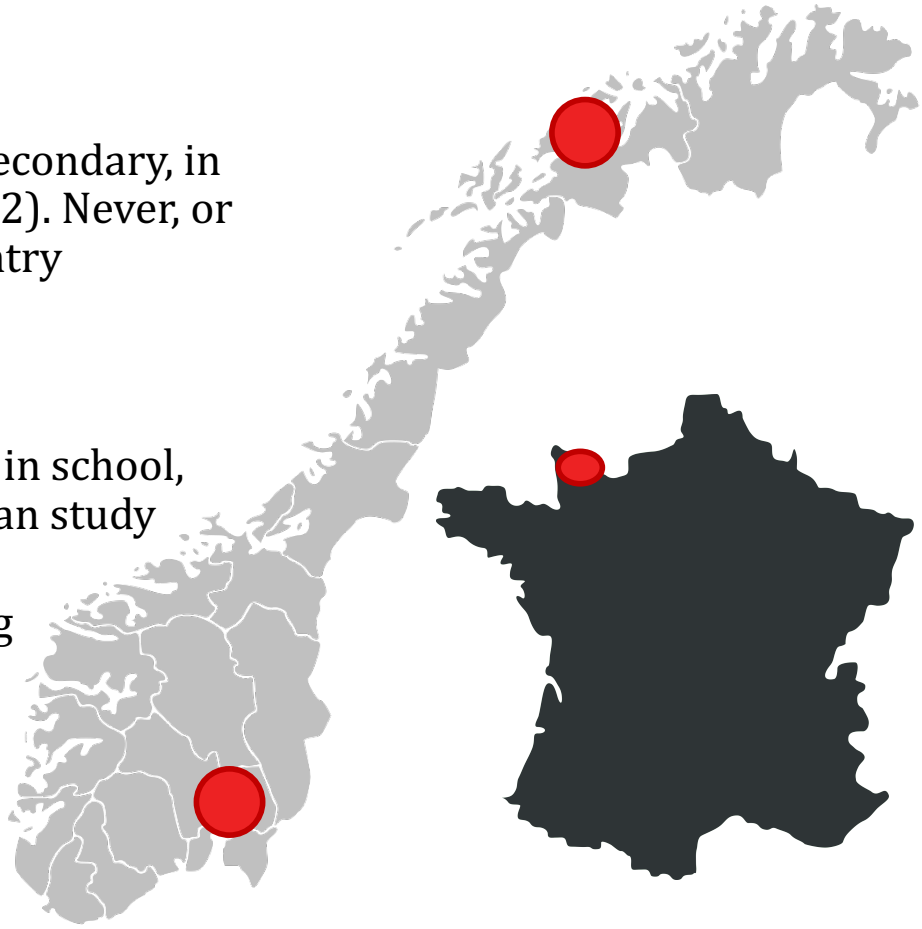
- 8 (16) speakers in their first year of French university studies (level B1/B2). The majority has lived in France/Switzerland for a certain period of time.

The Tromsø corpus (collected 2014)

- 16 speakers in their second year of upper secondary, in their fourth year of learning French (level A2). Never, or only shortly, visited a French-speaking country

The Caen corpus (collected 2015-16)

- 12 speakers, with minimum 3 years French in school, immersion students at the French-Norwegian study centre OFNEC
- Recorded at three different moments during the school year
- Data currently under treatment



IPFC

Protocol

IPFC word list: repetition and reading

- 34 items common for all investigation points
- About 30 items specific to language groups, e.g. Germanic, Norwegian
- (phenomenon-specific Norwegian word list containing about 10 items)

PFC word list and text: reading

- Word list: 94 items, text: 1 page “newspaper article”
- Possible comparison with native speakers (www.projet-pfc.net)

Semi-formal conversation

- Interview conducted by a native francophone speaker
- Short, fixed list of questions followed by questions decided by the interviewer

Free conversation

- Discussion between two learners
- Thematically open, but a short list of possible themes proposed by the investigator

(Detey & Kawaguchi, 2008; Racine, Detey, Zay & Kawaguchi, 2012)

IPFC-norvégien

Additions to the protocol

IPFC word list

Target: open-mid, short

sel	[sɛl]	‘salt’
seul	[sœl]	‘alone’
sol	[sɔl]	’floor’

Target: open mid, long

sert	[sɛːʁ]	‘serve$_{\text{3sg-pre}}$’
sœur	[sœːʁ]	’sister’
sort	[sɔːʁ]	‘exit$_{\text{3sg-pre}}$’

Norwegian word list

Target: open-mid, short

stett	[stɛtʰ]	‘stem’
støtt	[stœtʰ]	‘offended’
stått	[stɔtʰ]	‘stand$_{\text{3sg-pre}}$’

Target: close-mid, long

ter	[teːɾ]	’behave$_{\text{3sg-pre}}$’
stør	[støːɾ]	‘support$_{\text{3sg-pre}}$’
står	[stoːɾ]	‘stand$_{\text{3sg-pre}}$’
te	[tʰeː]	‘tea’
stø	[støː]	‘solid’
tå	[tʰoː]	‘toe’

The mid vowels study V3

Informants

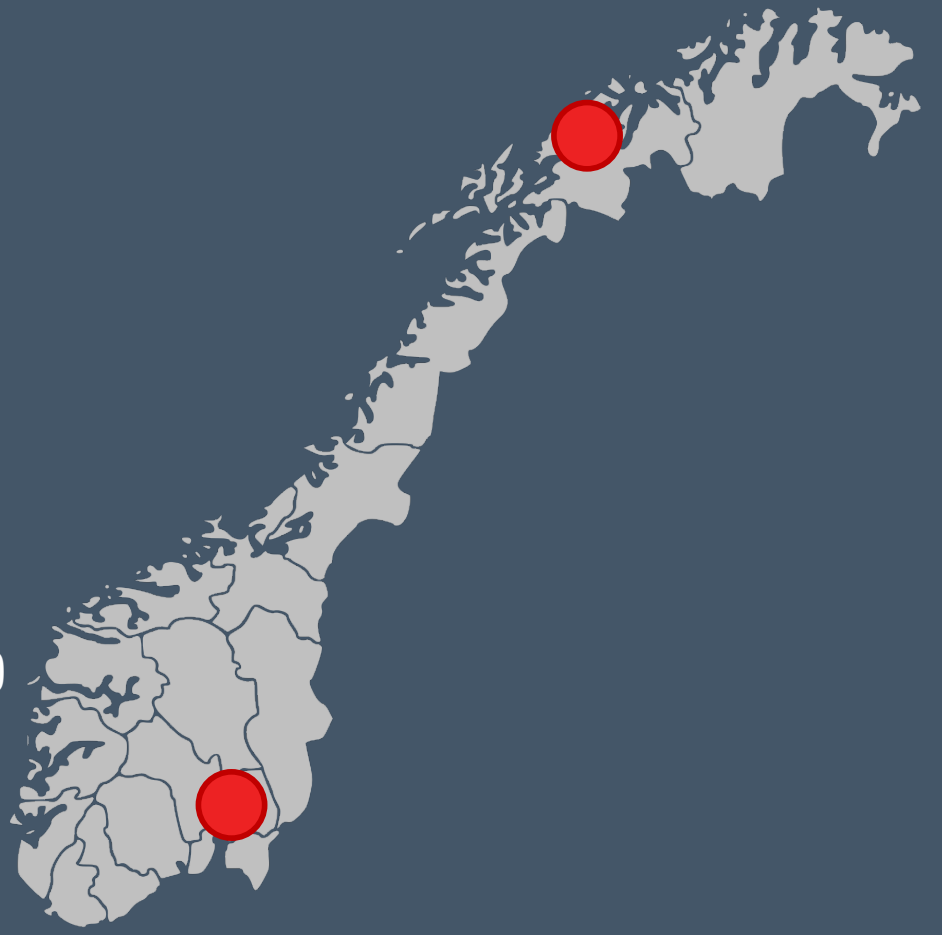
- Oslo: 6 speakers (Andreassen & Lyche, 2014, see also Andreassen & Lyche, 2013)
- Tromsø: 8 speakers

Tasks

- IPFC word list, repetition and reading
- Norwegian word list, reading

Methods

- Transcription in Praat
- Measurement of F1 (and F2) at 1/3
- Measurement of vowel length
- (to do: augment dataset, include F3, normalise formants, calculate relative length)



Results

The Norwegian mid vowel system in Tromsø and Oslo students

Target	Reading task (F1, mean values)		
	Tromsø	Oslo	
eː	621	542	– Close-mid [eː] more open in Tromsø – Good dispersion in Oslo – [ɛ] opens less in Tromsø: effect of the frequent allophone [æ]?
eːr	625	549	
ɛt	667	632	

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øː	572	508	– Close-mid [øː] and open-mid [œ] more open in Tromsø – Less dispersion than with /E/
øːr	573	522	
œt	620	562	

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øːr	573	522	
œt	620	562	
oː	503	533	– No inter-dialectal difference – Dispersion similar with /Ø/ – Close–mid [oː] subject to more variation than [eː, øː]
oːr	539	487	
ɔt	593	582	

Compared with Kristoffersen (2000), two more open systems. Tromsø even more open for /E, Ø/
The reduced dispersion for /Ø, O/ confirmed, but for /O/ not the expected extreme

Results

The French mid vowel system: Tromsø

Target	Reading task (F1, mean values)	
e	475	Good dispersion /r/ opens more than /l/
ɛ(ː)r	613	
ɛl	525	
ø	500	Less dispersion than /E/ /l/ opens slightly more than /r/
œ(ː)r	528	
œl	550	
o	494	Dispersion even smaller than with /Ø/ /l/ does not open
ɔ(ː)r	521	
ɔl	490	

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Results

The French mid vowel system: Tromsø

Target	Reading task (F1, mean values)	Repetition task (F1, mean values)	
e	475	431	Good dispersion /r/ opens more than /l/ /r, l/ open more in repetition, and /l/ even more
ɛ(ː)r	613	641	
ɛl	525	683	
ø	500	479	Less dispersion than /E/ /l/ opens slightly more than /r/ /r, l/ open more in repetition, and /l/ even more
œ(ː)r	528	575 (539/611)*	
œl	550	649	
o	494	478 (450/505)**	Dispersion even smaller than with /Ø/. /l/ does not open /r, l/ open more in repetition, and /l/ even more
ɔ(ː)r	521	601	
ɔl	490	630	

**peur/sœur*
***peau/seau*

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ɔ(ː)r	521	601	
ɔl	490	630	

Phonetic effects: /r/ opens [ɛ] in reading. /l/ systematically opens the vowel in repetition
Task effect: open-mid more open in repetition; stronger effect for /l/

**peur/sœur*
***peau/seau*

Results

The French mid vowel system: Oslo

Target	Reading task (F1, mean values)	
e	419	Good dispersion /r/ opens more than /l/
ɛ(ː)r	594	
ɛl	541	
ø	460	Good dispersion No difference /r, l/
œ(ː)r	556	
œl	550	
o	477	Less good dispersion /l/ opens slightly more than /r/
ɔ(ː)r	526	
ɔl	563	

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Target	Reading task (F1, mean values)	Repetition task (F1, mean values)	
e	419	443	Good dispersion /r/ opens more than /l/ /r, l/ open more in repetition
ɛ(ː)r	594	656	
ɛl	541	662	
ø	460	501	Good dispersion No difference /r, l/ /r, l/ open more in repetition
œ(ː)r	556	624	
œl	550	639	
o	477	504	Less good dispersion /l/ opens slightly more than /r/ /r, l/ open more in repetition
ɔ(ː)r	526	648	
ɔl	563	626	

Phonetic effect: /r/ opens [ɛ] in reading
Task effect: open-mid more open in repetition

Results

Vowel length in Norwegian vs. French: Tromsø

Reading task-NO (length in *ms*, mean values)	Target	Reading task-FR (length in *ms*, mean values)	Repetition task-FR (length in *ms*, mean values)	
169	e	144	136	[e] not longer than [ɛ] in front of /l/
155	ɛ(ː)r	250	353	
74	ɛl	177	127	
167	ø	181	181	[ø] not longer than [œ] in front of /l/
212	œ(ː)r	288	351/323*	
71	œl	198	158	
165	o	199	169/192**	[o] not longer than [ɔ] in front of /l/
187	ɔ(ː)r	215	288	
78	ɔl	173	163	

**peur*/sœur*
***peau*/seau*

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155	ɛ(ː)r	250	353	
74	ɛl	177	127	
167	ø	181	181	[ø] not longer than [œ] in front of /l/ /r/ lengthens
212	œ(ː)r	288	351/323*	
71	œl	198	158	
165	o	199	169/192**	[o] not longer than [ɔ] in front of /l/ /r/ lengthens only slightly
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Phonetic effect: /r/ lengthens the vowel
Task effect: /r/ lengthens the vowel even more in repetition

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Vowel length in Norwegian vs. French: Oslo

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179	ɛ(ː)r	296	364	
72	ɛl	160	145	
197	ø	160	173	[ø] not longer than [œ] in front of /l/
241	œ(ː)r	336	393	
77	œl	148	156	
186	o	160	177	[o] not longer than [ɔ] in front of /l/
228	ɔ(ː)r	274	307	
65	ɔl	177	176	

Results

Vowel length in Norwegian vs. French: Oslo

Reading task-NO (length in *ms*, mean values)	Target	Reading task-FR (length in *ms*, mean values)	Repetition task-FR (length in *ms*, mean values)	
201	e	139	137	[e] not longer than [ɛ] in front of /l/ /r/ lengthens (stronger lengthening effect than in Tromsø)
179	ɛ(ː)r	296	364	
72	ɛl	160	145	
197	ø	160	173	[ø] not longer than [œ] in front of /l/ /r/ lengthens (stronger lengthening effect than in Tromsø)
241	œ(ː)r	336	393	
77	œl	148	156	
186	o	160	177	[o] not longer than [ɔ] in front of /l/ /r/ lengthens (stronger lengthening effect than in Tromsø)
228	ɔ(ː)r	274	307	
65	ɔl	177	176	

Results

Vowel length in Norwegian vs. French: Oslo

Reading task-NO (length in *ms*, mean values)	Target	Reading task-FR (length in *ms*, mean values)	Repetition task-FR (length in *ms*, mean values)	
201	e	139	137	[e] not longer than [ɛ] in front of /l/ /r/ lengthens even more in repetition
179	ɛ(ː)r	296	364	
72	ɛl	160	145	
197	ø	160	173	[ø] not longer than [œ] in front of /l/ /r/ lengthens even more in repetition
241	œ(ː)r	336	393	
77	œl	148	156	
186	o	160	177	[o] not longer than [ɔ] in front of /l/ /r/ lengthens even more in repetition
228	ɔ(ː)r	274	307	
65	ɔl	177	176	

Phonetic effect: /r/ strongly lengthens the vowel
Task effect: /r/ lengthens the vowel even more in repetition

Results

Summary

Tromsø

Quality: Phonetic effect
/r/ opens [ɛ] in reading
In repetition, /l/ opens more than /r/

Quality: Task effect
Open-mid more open in repetition

Length: Phonetic effect
/r/ lengthens the vowel

Length: Task effect
/r/ lengthens even more in repetition

Oslo

Quality: Phonetic effect
/r/ opens [ɛ] in reading
Elsewhere, no difference

Quality: Task effect
Open-mid more open in repetition

Length: Phonetic effect
/r/ lengthens the vowel even more

Length task effect
/r/ lengthens even more in repetition

Results

Acquisition path

Quality

- Tromsø
  - /Ø/ and /O/ little dispersion in French
  - More systematic, slightly better dispersion for /Ø/ than for /O/, as expected

- Oslo
  - /Ø/ good dispersion in French, /O/ slightly less
  - Strong expected difference between /Ø/ and /O/ not observed. Target system near-acquired

Path: E > Ø > O

Results

Acquisition path

Length

- Tromsø
  - Lengthening of close-mid vowels in open syllables not observed
  - Less opening effect in front of /r/, but in repetition only

- Oslo
  - Lengthening of close-mid vowels in open syllables not observed
  - Length no influence on opening effect of /r/

Path: short close-mid > lengthened open-mid

Discussion

Hypotheses

- **Hypothesis 1:** The learner maintains the Norwegian length contrast.

  PARTIAL, but only in repetition of speech. In other contexts, and across the board for more advanced learners, length has no negative effect on the L2 vowel and thus seems phonetic

- The Contrastive Analysis Hypothesis too simplistic
  - Emergence of the unmarked
  - Short vowels are unmarked and emerge readily in the learner's interlanguage (Eckman 2004, Monou & Kawahara 2013)

Discussion

Hypotheses

- **Hypothesis 2:** The learner maintains the Norwegian acoustic system

  YES, but the French acoustic system is acquired by more advanced learners

- The Speech Learning Model promising
  - Not only a question about contrast in L1
  - Phonetic properties in L1 affect perception and production of phonetic properties in L2

Future perspectives

didactics

Reminder: mid vowels are seemingly not a problem

- Perception studies
  - Is it a feature revealing our non-nativeness? Also much variation in the French-speaking world

- Didactics
  - Variation good for abstraction (Valdman, 1989)
  - Training of the acoustic system by using repetition (and evaluation) as in-class activity

… to avoid mouth fatigue

Thank you for your attention

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References

Andreassen, H. N., & Lyche, C. (2013). *Les voyelles moyennes chez les apprenants norvégiens.* Paper presented at the Journées IPFC: Corpus oraux en L2 et évaluation, Paris, 9-10 December.

Andreassen, H. N., & Lyche, C. (2014). *Transfert combiné dans l'acquisition des voyelles moyennes par des apprenants norvégophones*. Paper presented at the Journées FLOraL: atelier interphonologie et corpus oraux, Paris, 4-9 December.

Christensen, H., & Wulff, T. (2007). *Ouverture 9. Fransk for ungdomstrinnet.* Oslo: Fag og kultur.

Detey, S., Durand, J., Laks, B., & Lyche, C. (Eds.). (2010). *Les variétés du français parlé dans l'espace francophone: Ressources pour l'enseignement*. Paris: Ophrys.

Detey, S., Durand, J., Laks, B., & Lyche, C. (Eds.). (2016). *Varieties of spoken French*. Oxford: Oxford University Press.

Detey, S., & Kawaguchi, Y. (2008). *Interphonologie du Français Contemporain (IPFC): récolte automatisée des données et apprenants japonais*. Paper presented at the Journées PFC: Phonologie du français contemporain: variation, interfaces, cognition, Paris, 11-13 December.

Detey, S., Racine, I., Kawaguchi, Y., & Eychenne, J. (Eds.). (2016). *La prononciation du français dans le monde: du natif à l'apprenant*. Paris: CLE International.

References

Eckman, F. R. (2004). From phonemic differences to constraint rankings. *Studies in Second Language Acquisition, 26*, 513-549.

Féry, C. (2003). Markedness, faithfulness, vowel quality and syllable structure in French. *French Language Studies, 13*(2), 247-280.

Flege, J. E. (1995). Second language speech learning: Theory, findings and problems. In W. Wrang (Ed.), *Speech Perception and Linguistic Experience: Issues in cross-language research* (pp. 233-277). Timonium, MD: York Press.

Georgeton, L., Paillereau, N., Landron, S., Gao, J., & Kamiyama, T. (2012). Analyse formantique des voyelles orales du français en contexte isolé: à la recherche d'une référence pour les apprenants de FLE. *Actes de la conférence conjointe JEP-TALN-RECITAL 2012*, vol. 1, p. 145-152.

Hammerly, H. (1982). Contrastive analysis and error analysis. *IRAL, 20*(1), 17-32.

Hønsi, H., Kjetland, C. M., & Liautaud, S. (2006). *Rendez-vous*. Oslo: Cappelen.

Hønsi, H., Kjetland, C. M., & Liautaud, S. (2007). *Enchanté 2.* Oslo: Cappelen.

Høst, G. (1962). *Fransk for begynnere, utgave C.* Oslo: Aschehoug.

Kloster-Jensen, M. (1955). *Précis de prononciation française*. Oslo: Aschehoug.

Kristoffersen, G. (2000). *The phonology of Norwegian*. Oxford: Oxford University Press.

References

Lyche, C. (2010). Le francais de référence: éléments de synthèse. In S. Detey, J. Durand, B. Laks, & C. Lyche (Eds.), *Les variétés du français parlé dans l'espace francophone: Ressources pour l'enseignement* (pp. 143-165). Paris: Ophrys.

McAllister, R., Flege, J. E., & Piske, T. (2002). The influence of L1 on the acquisition of Swedish quantity by native speakers of Spanish, English and Estonian. *Journal of Phonetics, 30*, 228-258.

Monou, T., & Kawahara, S. (2013). The emergence of the unmarked in L2 acquisition: Interpreting null subjects. In Y. Otsu (Ed.), *Proceedings of the 14th Tokyo Conference on Psycholinguistics,* Tokyo: Hituzi Publishing Company.

Racine, I., Detey, S., Zay, F., & Kawaguchi, Y. (2012). Des atouts d'un corpus multitâches pour l'étude de la phonologie en L2: l'exemple du projet "Interphonologie du français contemporain" (IPFC). In A. Kamber & C. Skupien Dekens (Eds.), *Recherches récentes en FLE* (pp. 1-19). Bern: Peter Lang.

Warendorph, T. W., Winblad, M., & Österberg, E. (2007). *Allez hop! 2: Tekstbok*. Oslo: Cappelen

Tubach, J. P. (Ed.) (1989). *La parole et son traitement automatique*. Paris: Masson.

Valdman, A. (1989). The elaboration of pedagogical norms for second language learners in a conflictual diglossia situation. In S. Gass, C. Madden, D. Preston, & L. Selinker (Eds.), *Variation in Second Language Acquisition Vol. 1: Discourse and Pragmatics* (pp. 15-34). Clevedon: Multilingual Matters.

Østby, K. A. (2015). *Les voyelles orales à double timbre dans le parler de la haute bourgeoisie parisienne : analyse acoustique et diachronique.* (PhD), Universitetet i Oslo.