



HAL
open science

Spelling words at the end of first grade: Is it easier to spell after hearing the word than after seeing its picture?

Cynthia Boggio, Maryse Bianco, Céline Pobel-Burtin, Marie-Line Bosse

► To cite this version:

Cynthia Boggio, Maryse Bianco, Céline Pobel-Burtin, Marie-Line Bosse. Spelling words at the end of first grade: Is it easier to spell after hearing the word than after seeing its picture?. BCCCD20, Jan 2020, Budapest, Hungary. hal-02900846

HAL Id: hal-02900846

<https://hal.science/hal-02900846v1>

Submitted on 16 Jul 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

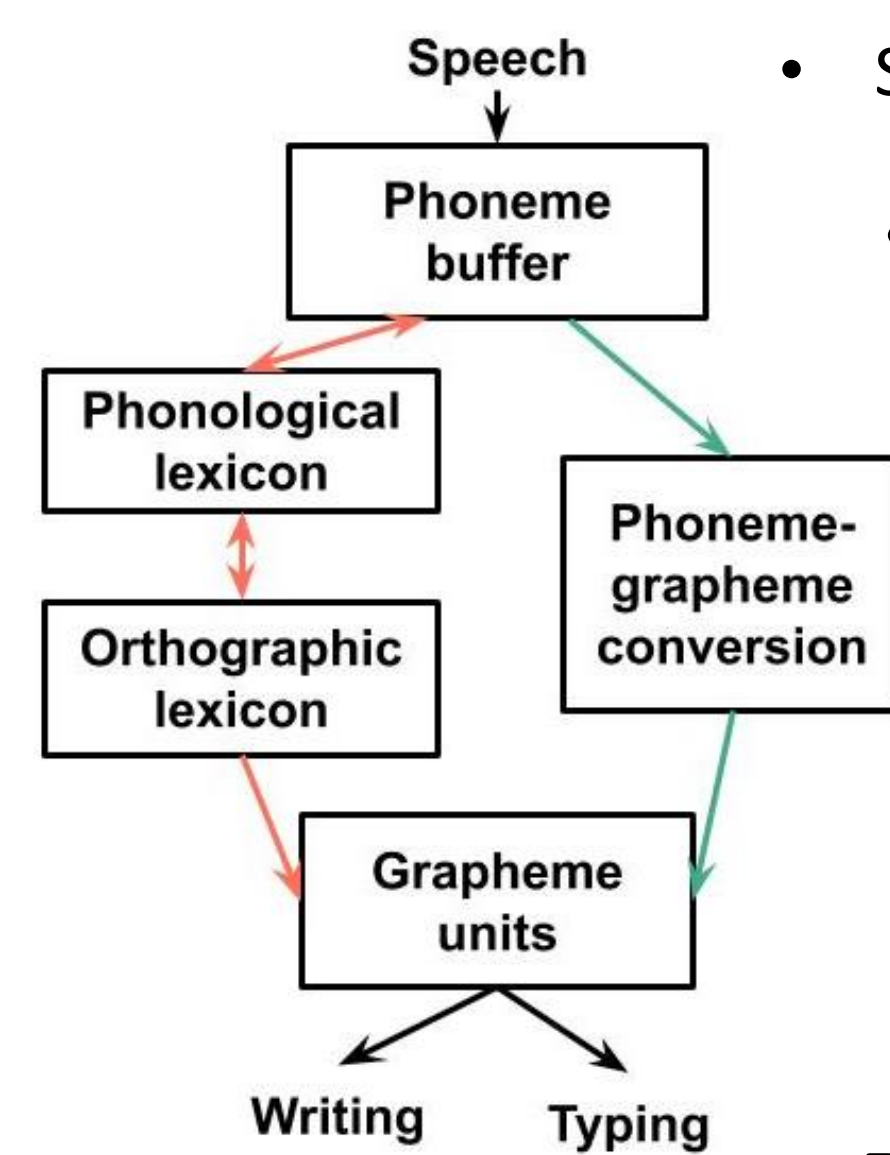
Spelling words at the end of first grade: Is it easier to spell after hearing the word than after seeing its picture?

Cynthia Boggio^{1,3}, Maryse Bianco², Céline Pobel-Burtin² & Marie-Line Bosse¹

¹ Univ. Grenoble Alpes, CNRS, LPNC, 38000 Grenoble, France; ² Univ. Grenoble Alpes, LaRAC, 38000 Grenoble, France; ³ Editions Hatier, Paris, France.

1 Introduction

- Learning to read and spell: encoding tasks seem highly beneficial (Henbest & Apel, 2017)



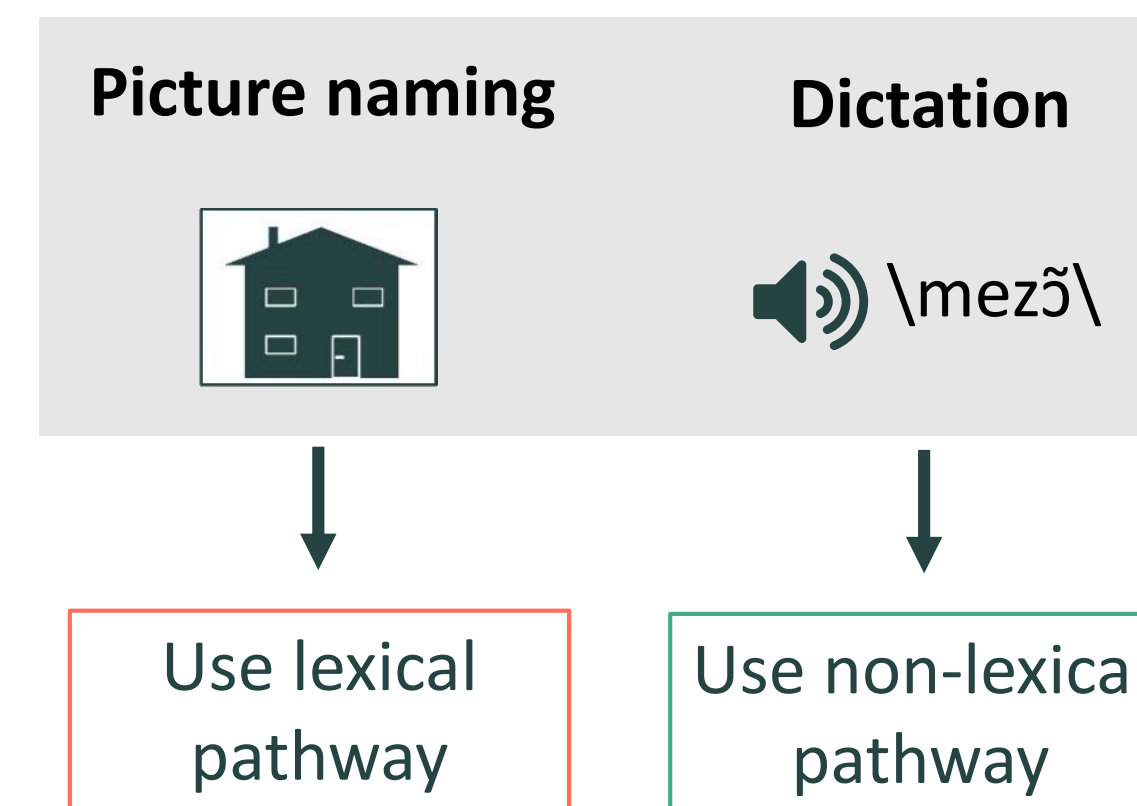
- Spelling a word involves 2 pathways: **lexical** or **non-lexical** (Bates and al., 2007).

- Different tasks to practice spelling words:

- Spelling performance of adults is modulated by the type of task (Bonin, Méot, Lagarrigue, & Roux, 2015).

- In France, teachers are advised by institution to use one task rather than another (Bosse, Boggio, & Pobel-Burtin, 2019)

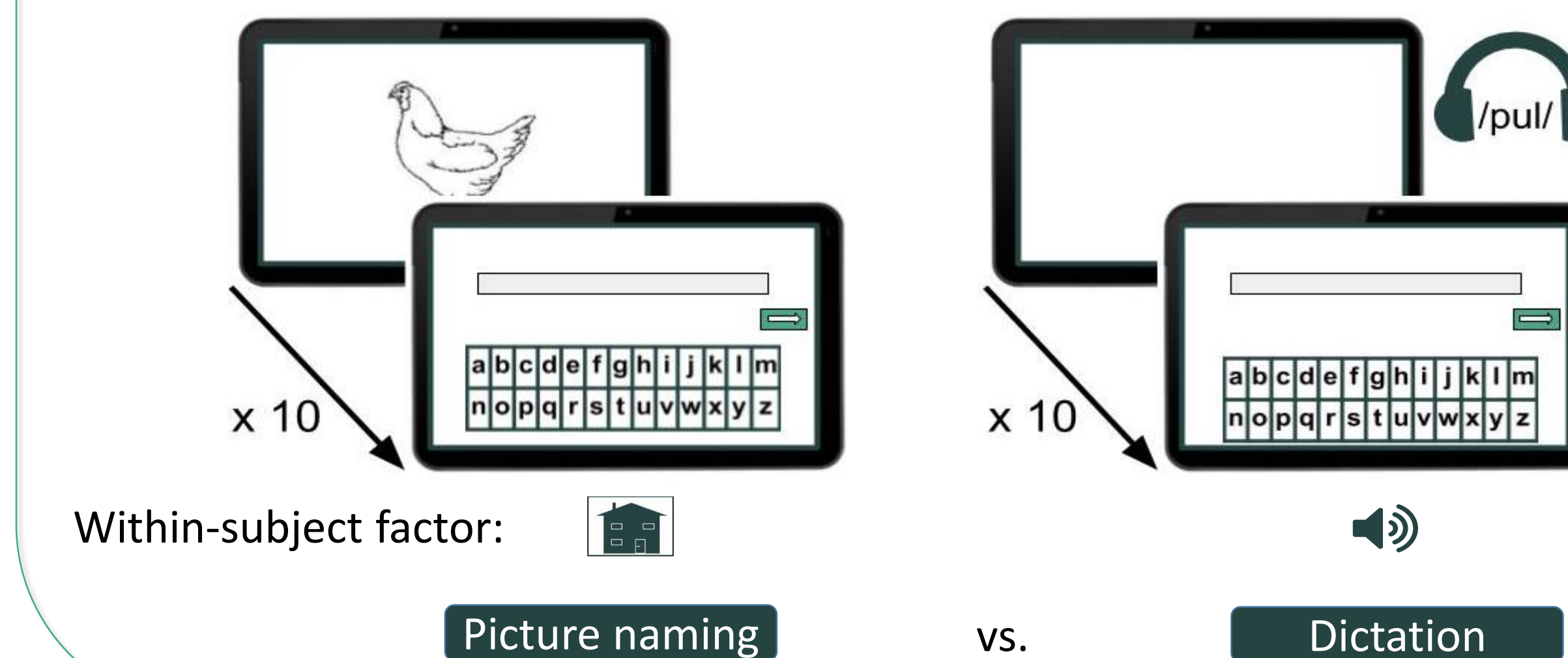
Does the type of task influence children performance ?



2 Method

- 70 French children (32 girls; mean age = 7 years) were tested at the end of their 1st grade.

- Procedure:



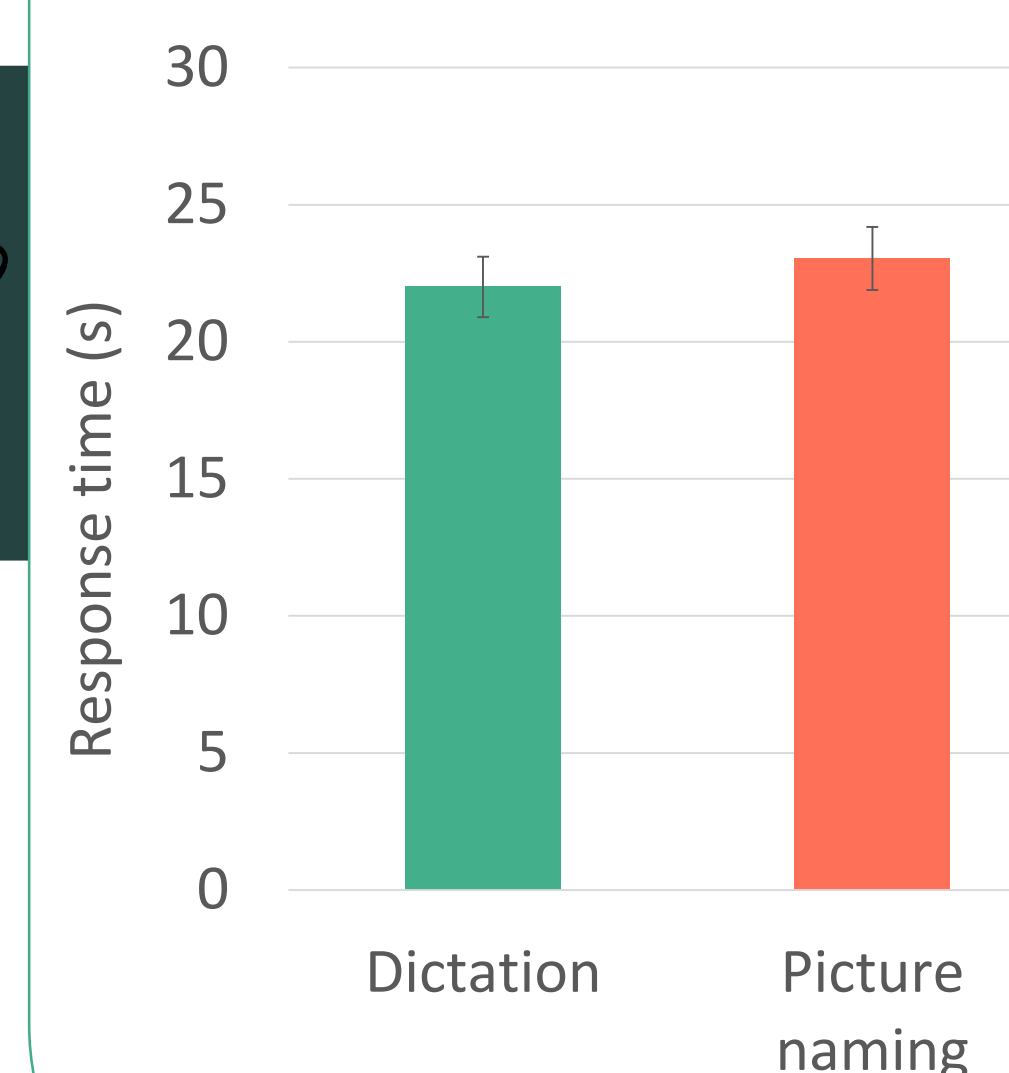
- Measures:
 - The number of correctly spelled items
 - The response time
- Material: 2 sets of 10 items paired in frequency and phoneme-grapheme consistency (Manulex, Lété, Sprenger-Charolles, & Colé, 2004), counterbalanced between students.

Items	singe	poire	balai	baguette	vache	avion	robot	arbre	table	porte	Means
Pictures											249
Frequency	64	71	108	131	176	235	282	398	480	545	249
Consistency	59	82	92	67	84	88	73	92	94	97	82,8
Items	crabe	piano	zèbre	niche	poule	fleur	pluie	lapin	route	livre	Means
Pictures											247,2
Frequency	54	63	120	132	184	205	294	387	424	609	247,2
Consistency	75	81	81	84	77	90	81	81	81	98	82,9

Provided by Cannard, Bonthoux, Blaye, Scheuner, Trinquart (2006) Registered by ourselves

3 Results

Response time



- Mixed model analysis

$$t(52,23) = 0.88, p = .38$$

$$d = 0.08$$

MRT <- lmer(logRT ~ Condc + (1 | Sujet) + (0 + Condc | Sujet) + (1 | Item), data = dfRT_encodage)

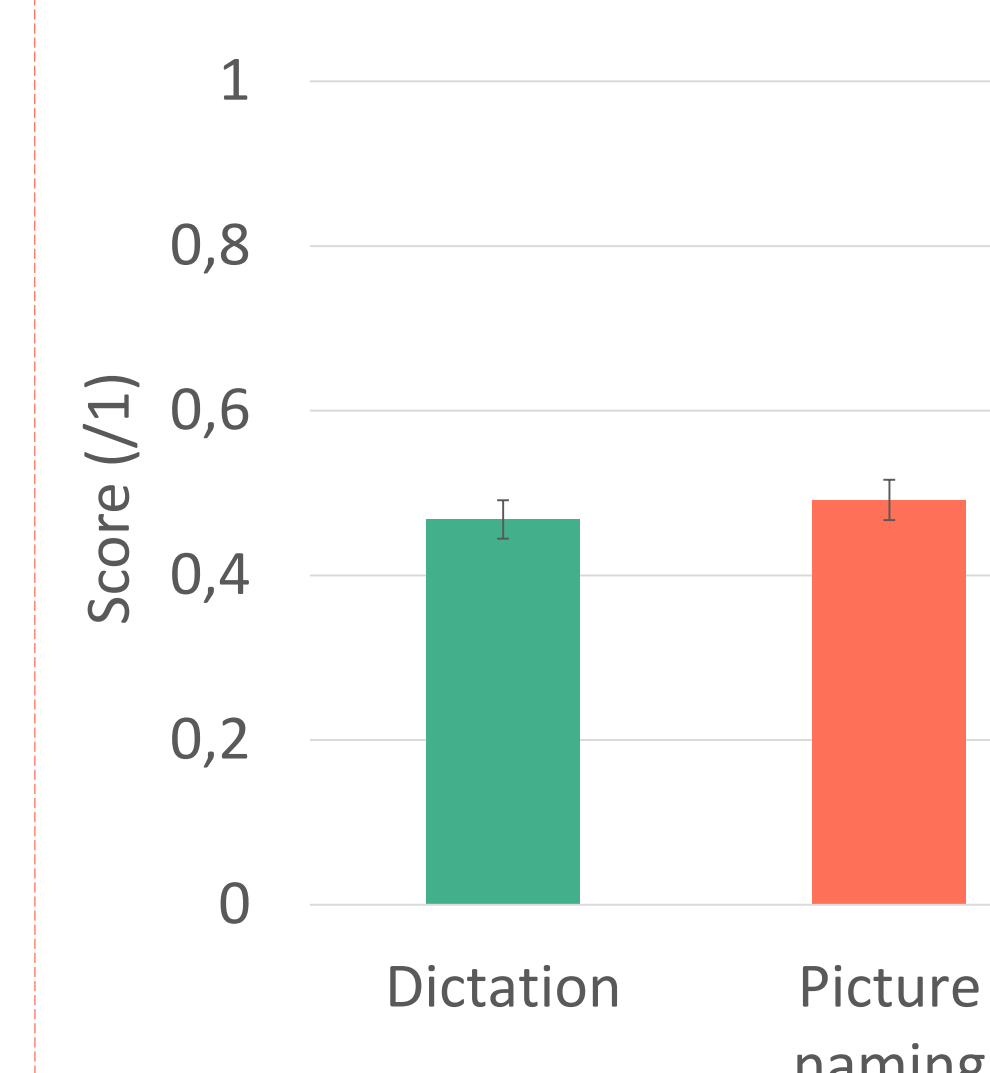
→ No significant difference

- Bayesian model comparison

Null hypothesis: $BF_{01} = 5.69$
Alternative hypothesis: $BF_{10} = 0.18$

→ Moderate evidence of the absence of difference

Score



- Mixed model analysis

$$estimate = 0.16, z = 1.06, p = .29$$

$$d = 0.08$$

MScore <- glmer(Score ~ Condc + (1 | Sujet) + (1 | Item), data = dfSc_encodage, family = "binomial")

→ No significant difference

- Bayesian model comparison

Null hypothesis: $BF_{01} = 13.86$
Alternative hypothesis: $BF_{10} = 0.07$

→ Strong evidence of the absence of difference

4 Discussion

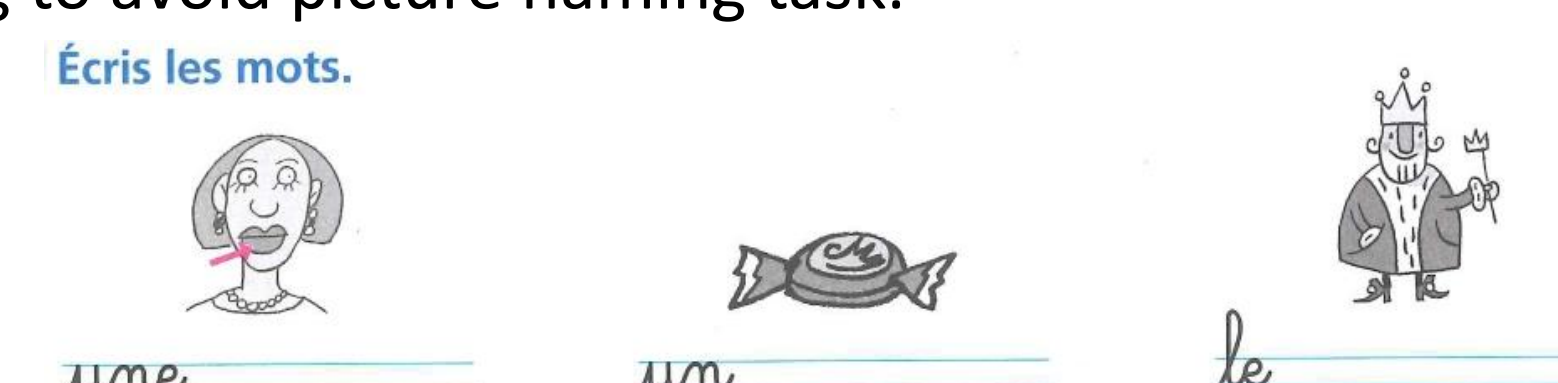
Picture naming or dictation in 1st grade?

- The same time to write a 5-letter word
- The same number of errors

As opposed to adult experts (Bonin and al., 2015), the type of task does not influence students' spelling performance at the end of grade one.

- Children's global spelling performance seems equivalent in the two tasks.
- No evidence suggesting to avoid picture naming task.

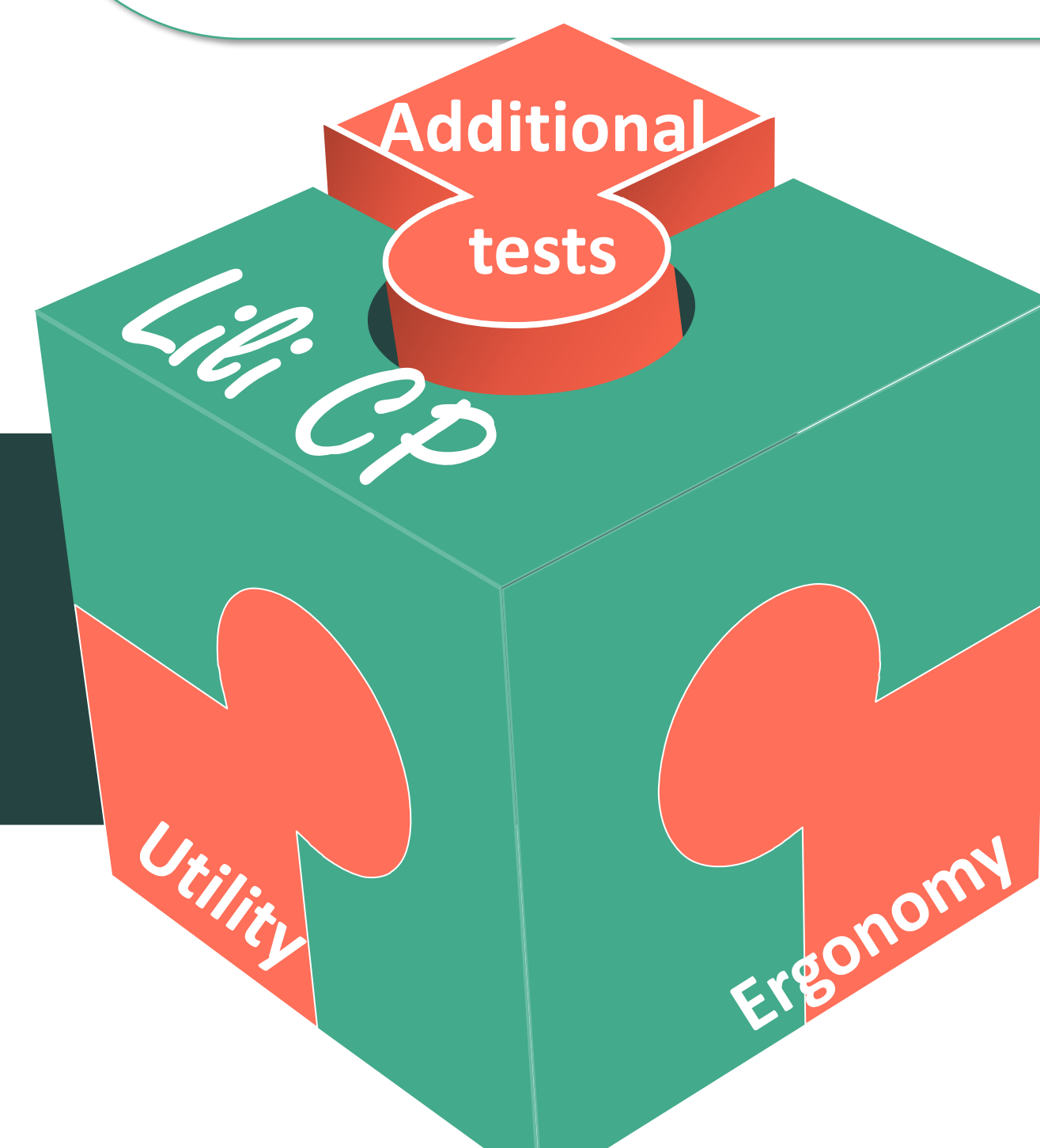
A classical spelling exercise in 1st grade (Hatier, 2016):



Unlike adult spellers (Bonin et al., 2015), 1st graders seem to use the same processes in these two spelling tasks. We hypothesis that the lexical pathway is poorly used by beginning spellers.

To go further

- Investigate more : various tasks (e.g., typing vs. handwriting (Longcamp, Zerbato-Poudou, & Velay, 2005)), more subtle measures (e.g., latency, type of errors (Bonin et al., 2015)), control variables (e.g., word frequency and consistency).
- Develop evidence-based learning tools and teaching methods.



Developing a reading method and evaluating it



Acknowledgment:

Funding for this project was provided by Les Editions Hatier. We thank V. Perthu  and M. Hurtrel for their expertise and assistance. Access to the facility of the MSH-Alpes SCREEN platform for conducting the research is gratefully acknowledged, as well as the technical assistance of M. Burnel and N. Borel. We sincerely thank E. Mianowski for data collection. Finally, we are very grateful to all the teachers and students who agreed to participate in this study. We would also like to thank the Academy of Grenoble for agreeing to support us in this project.

Bibliography:

- Bates, T. C., Castles, A., Luciano, M., Wright, M. J., Coltheart, M., & Martin, N. G. (2007). Genetic and environmental bases of reading and spelling: A unified genetic dual route model. *Reading and Writing, 20*(1-2), 147-171.
- Bonin, P., M ot, A., Lagarrigue, A., & Roux, S. (2015). Written object naming, spelling to dictation, and immediate copying: Different tasks, different pathways?. *The Quarterly Journal of Experimental Psychology, 68*(7), 1268-1294.
- Bosse, M. L., Boggio, C., & Pobel-Burtin, C. (2019). Enseigner le code alphab tique au CP: quelles donn es scientifiques pour quelles recommandations p dagogiques? *ANAE Approche Neuropsychologique des Apprentissages chez l'Enfant, 160*, 415-421.
- Cannard, C., Bonthoux, F., Blaye, A., Scheuner, N., Schreiber, A. C., & Trinquart, J. (2006). BD21: Normes sur l'identification de 274 images d'objets et leur mise en relation chez l'enfant fran ais de 3   8 ans.
- Henbest, V. S., & Apel, K. (2017). Effective word reading instruction: What does the evidence tell us?. *Communication Disorders Quarterly, 39*(1), 303-311.
- L t , B., Sprenger-Charolles, L., & Col , P. (2004). Manulex: A grade-level lexical database from French elementary-school readers. *Behavior Research Methods, Instruments, & Computers, 36*, 156-166.
- Longcamp, M., Zerbato-Poudou, M. T., & Velay, J. L. (2005). The influence of writing practice on letter recognition in preschool children: A comparison between handwriting and typing. *Acta psychologica, 119*(1), 67-79.
- Wagenmakers, E. J., Wetzels, R., Borsboom, D., & Van Der Maas, H. L. (2011). Why psychologists must change the way they analyze their data: the case of psi: comment on Bem (2011).

cynthia.boggio@univ-grenoble-alpes.fr

