05 - Morphological representation and processing

Nick Riches

Newcastle University

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05 - Morphological representation and processing

Nick Riches

Introduction

Dual sys. model

Evidence for a

- Productive usage
- Morph error
- 3. Morpho-phon. parsin

4. Phonocactic evidence

hole-wd. stora

1. Non-word roots

2. Multiple meanings

3. Psycholinguistic evide

hybrid view

Strong evidence for two systems

Gradient phenon

Dual Route Mode

The model

The model

riticism of the o

I) Pseudo-regula

(2) The role of frequency

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minute exercise

05 - Morphological representation and processing Nick Riches Introduction Introduction 1 Non-word roots

(2) The role of frequency

05 - Morphological representation and processing

Nick Riches

Introduction

- 1 Non-word roots

(2) The role of frequency

Look at these examples. What does the suffix 'mouth' mean? How do you pronounce it in each word?

- 1. Portsmouth
- 2. Plymouth
- 3. Tynemouth
- 4. Grangemouth
- Cockermouth

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Dual sys. model

1 Non-word roots

(2) The role of frequency

Dual systems models of morphology

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Dual sys. model

- 1 Non-word roots

- (2) The role of frequency

1. A **computational** system Words are generated by taking a root and adding a stem (combinatoric symbolic rule)

2. A **lexical** system

Morphologically complex words are stored / processed as wholes in the lexicon

1. Productive usage

3. There are two wugs

4. Look! The dog is meeking 5. The dog was unmeekable

1. He merengued his way onto the dance floor

2. She was so angry that she crutched her boyfriend

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1. Productive usage

1 Non-word roots

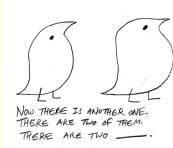
(2) The role of frequency

1. Productive usage

Berko-Gleason's 'Wug test'



THIS IS



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1. Productive usage

- 1 Non-word roots

(1) Pseudo-regularity

5-minute exercise

Morphological movement, stranding and substitution errors

3. We have a lot of churches in our minister

She wash upped the dishes.
 I'd forgot abouten that

4. She always packs a keep

5. He gave me some good **de**vice

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Dual sys. model

computational system

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2. Morph errors

Morpho-phon. parsir

Phonotactic evidence

Non-word roots

2. Multiple meani

3. Psycholinguistic

nybrid view

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stems

Gradient phenome

ual Route Mod

Proc. vs. Decl.

The model

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) Pseudo-regu

(2) The role of frequency

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Bib 6 / 24

Туре	Example	RT
Real infl. Pseudo infl. Novel infl.	Fill ed -fill Mil d -mile Nill ed -nill Bel t -bell	
	Deit-beii	

05 - Morphological representation and processing

Nick Riches

- 3. Morpho-phon. parsing

Proc. vs. Decl. The model

Evidence

- (1) Pseudo-regularity

5-minute exercise

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-	Туре	Example	RT
i	Real infl. Pseudo infl.	Fill ed -fill Mil d -mile	949
	Novel infl. No infl.	Nill ed -nill Bel t -bell	

05 - Morphological representation and processing

Nick Riches

Introduction

Dual sys model

Evidence for a

1. Productive usage

2. Morph erro

3. Morpho-phon. parsing

I. Phonotactic evidence

/hole-wd. stora

Non-word roots

3. Psycholinguistic

hybrid view

trong evidence for two

ual Route Model

Proc. vs. Decl. The model

The model Evidence

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(1) Pseudo-regularity

(2) The role of frequency

5-minute exercise

Туре	Example	RT
Real infl. Pseudo infl. Novel infl.	Fill ed -fill Mil d -mile Nill ed -nill Belt-bell	949 932
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05 - Morphological representation and processing

Nick Riches

3. Morpho-phon. parsing

Proc. vs. Decl.

The model Evidence

(1) Pseudo-regularity

5-minute exercise

Туре	Example	RT
Real infl.	Fill ed -fill	949
Pseudo infl.	Mil d -mile	932
Novel infl.	Nill ed -nill	908
No infl.	Bel t -bell	

05 - Morphological representation and processing

Nick Riches

3. Morpho-phon. parsing

Proc. vs. Decl. The model

Evidence

(1) Pseudo-regularity

5-minute exercise

Туре	Example	RT
Real infl.	Fill ed -fill	949
Pseudo infl.	Mil d -mile	932
Novel infl.	Nill ed -nill	908
No infl.	Bel t -bell	806

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Nick Riches

3. Morpho-phon. parsing

Proc. vs. Decl. The model

Evidence

(1) Pseudo-regularity

5-minute exercise

4. Phonotactic evidence

lost \rightarrow frost, accost, riposte

turn**ed** \rightarrow spurn**ed**, learn**ed**, earn**ed**

swam \rightarrow dam, tram, ham

05 - Morphological representation and processing

Nick Riches

ntroduction

Dual eve model

Evidence for a

1. Productive u

2. Morph error

Morpho-phon. parsing

4. Phonotactic evidence

1 Non-word roots

Multiple meanings

Psycholinguistic

hybrid viev

trong evidence for ystems

adient phenomena

ual Route Model

he model

Evidence Criticism of 1

Pseudo-regular

(2) The role of frequency

ninute exercis

Bib 8 / 24

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Whole-wd. storage

1 Non-word roots

(2) The role of frequency

Evidence of the whole-word storage of morphologically-complex words

1. Non-word roots

1. Un-**remitt**-ing-ly It's in-evit-able

3. The food supplies were de-**plet**-ed

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1. Non-word roots

(2) The role of frequency

2. Multiple meanings

Agent / instrument ambiguity

Stripp**er** Garden**er**

Cooker

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2. Multiple meanings

(2) The role of frequency

5-minute exercise

3. Psycholinguistic evidence

Loscewicz (1995)

 $laps \longrightarrow lapse \rightarrow$

 $hovered \longrightarrow covered \rightarrow$

 $nee ded \longrightarrow knea ded \rightarrow$

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1 Non-word roots

3. Psycholinguistic evidence

(2) The role of frequency

representation and processing Nick Riches A hybrid view 1 Non-word roots

05 - Morphological

A hybrid view

(2) The role of frequency

Strong evidence for two systems

Novel inflected forms, e.g. meeked

Non-word roots, e.g. *un-remitt-ing-ly*

05 - Morphological representation and processing

Nick Riches

Introduction

Dual sys model

Evidence for a

Productive u

2. Morph errors

3. Morpho-phon. parsi

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noie-wa. stora

Multiple meanings

Psycholinguistic e

brid view

Strong evidence for two systems

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Proc. vs. Decl. The model

The model Evidence

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(2) The role of frequency

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Strong evidence for two systems

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05 - Morphological representation and processing

Nick Riches

ntroduction

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Evidence for a

1. Productive

2. Morph erro

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3. Psycholinguist

hybrid view

Strong evidence for two systems

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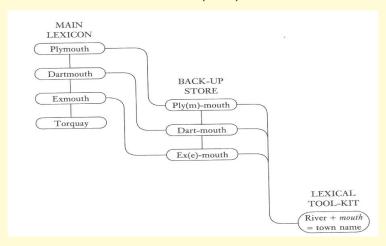
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Gradient phenomena

Aitchison, 'Words in the Mind' (2002)



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- 1 Non-word roots

Gradient phenomena

Gradient phenomena

Chickenless nuggets \Rightarrow A careless person \Rightarrow A gormless/ruthless person



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Nick Riches

ntroduction

Dual sys. mode

Evidence for a

- Productive
 - 2 Mornh erro
 - 3. Morpho-phon. parsir
 - 4. Phonotactic evidence

hole-wd. stor

- 1. Non-word roots
- 2. Multiple meanings
- 5. Esycholinguistic eviden

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Strong evidence for to systems

Gradient phenomena

Dual Route Model

The model

The model

Evidence

Criticism of the model

- (1) Pseudo-r
- (2) The role of fn

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representation and processing Nick Riches

05 - Morphological

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Phonotactic ouidones

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Non-word roots
 Multiple meanings.

Psycholinguistic

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Dual Route Model

Proc. vs. Decl

he model

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(2) The role of frequency

Introduction

Dual systems models of morphology

Evidence of the whole-word storage of morphologically-complex words

A hybrid view

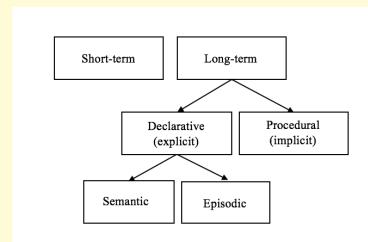
Morphology in language impairments - Ullman and Pinker's Dual Route model

5-minute exercise

Bibliograph

Procedural versus Declarative memory

Tulving's Memory model



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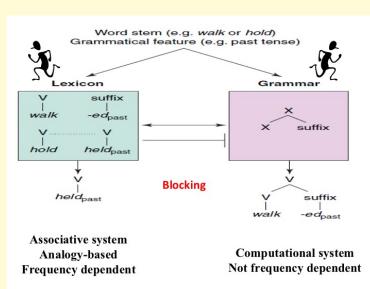
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1 Non-word roots

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(2) The role of frequency

The model



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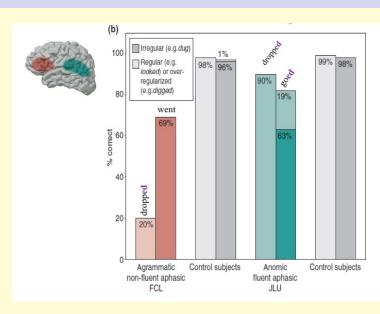
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- 1 Non-word roots

The model

- (2) The role of frequency

The model



05 - Morphological representation and processing

Nick Riches

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- 1. Productive usag
- 2. Morph error
- 3. Morpho-phon. parsir
- 4. Phonotactic evidence

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- 1. Non-word roots
 - 2. Multiple meanings
- Δ hybrid view

Strong evidence for two

Gradient phenome

Qual Route Mod

The model

The mode

Criticism of t

- (1) Pseudo-regularity
- (2) The role of fre

minute

Evidence

05 - Morphological representation and processing

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1 Non-word roots

Evidence

(2) The role of frequency

Pinker & Ullman (2002) - Frequency effects are only found in the irregular system only

- 1. Children's overregularisation errors, e.g. she swammed are determined by the density of the irregular neighbourhood
- 2. Adult generation of inflected form is affected by input frequency only in the irregular system.

Evidence

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1 Non-word roots

Evidence

- (2) The role of frequency

IRREG. >better than	>REG
Dev. Lang. Disorder	
Parkinsons	

Procedural memory affected

Broca's type aphasia

Declarative memory affected

Wernicke's type aphasia

Criticism of the dual route model

Irregular system shows characteristics of regular system

 $meet \rightarrow met$, $let \rightarrow let$, $put \rightarrow put$, $shut \rightarrow shut$

goose
ightarrow geese, mouse
ightarrow mice, moose
ightarrow moose.

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Nick Riches

Introduction

Dual sys. model

Evidence for a

- 1. Productive
 - 2. Morph erro
 - 3. Morpho-phon. parsir

4. Phonotactic evidence

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- 1. Non-word roots
- 3. Psycholinguistic evidence

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Strong evidence for two systems

ual Route Mode

Proc. vs. Decl.

The model

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(1) Pseudo-regularity

(2) The role of frequency

-minute exercise

Bib 21 / 24

Criticism of the dual route model

Frequency **does** play a role in regular morphology.

e.g. Losiewicz and Alegre & Gordon studies cited above

05 - Morphological representation and processing

Nick Riches

ntroduction

Dual eve mode

Evidence for a

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2. Morph errors

Morpho-phon. pars

Phonotactic evidenc

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1. Non-word roots

Psycholinguistic

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ual Route Model

Proc. vs. Decl. The model

The model Evidence

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(2) The role of frequency

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5-minute exercise

Nick Riches

05 - Morphological representation and processing

1 Non-word roots

(1) Pseudo-regularity

(2) The role of frequency

5-minute exercise

05 - Morphological representation and processing

Nick Riches

ntroduction

ual sys. model

dence for a

- 1. Productive usage
- 2. Morph error
- 3. Morpho-phon. parsin

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hole-wd. stora

- 1. Non-word roots
- 2. Multiple meanings

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Strong evidence for t

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The model

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- (2) The role of frequency

5-minute exercise

Which one of these sentences did Yoda say in the Star Wars trilogy? Can you explain the reasons behind your choice?

- 1. Have become powerful you. You the dark side I sense in.
- 2. Powerful you have become. The dark side I sense in you.
- 3. Become powerful you have. The dark I sense in you side.

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05 - Morphological representation and processing

Nick Riches

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Dual sys. model

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- 1. Productive usage
 - Morph errors
- 3. Morpho-phon. parsing

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Non-word roots

2. Multiple meanings

brid view

trong evidence for two stems

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Dual Route Mode

Proc. vs. Deci The model

The model

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- (2) The role of frequency

-minute exercise