Supporting Materials S1

Types of errors the graphemic parser made. The number in brackets represents the number of times the error occurred.

(552) Correct: i (onset); Error: i (vowel), e.g., *briosi* /brjɔzi/ [lively]

(243) Correct: i (vowel); Error: i (onset), e.g., *diurni* /diurni/[daytimes]

(61) Correct: s (onset); Error sc (onset), e.g., riscrivo /riskrivɔ/ [write back]

(51) Correct: consonant grapheme; Error: consonant grapheme in different category, e.g., *sinistr* /sinister/, where the second –s was a coda rather than an onset (these were generally loan words that would be unknown to most Italians)

 (22) Correct: u (vowel); Error: u (onset), e.g., *langua* /laɲgua/ [languish]

 (19) Correct: grapheme with two letters starting with i(e.g., -iù); Error: -i grapheme selected, e.g., giù‎ /gu/ [below]

(19) Correct: u (onset); Error u (vowel), e.g., *santuari* /santwari/ [sanctuary] (these tended to be obscure words)

(12) Correct: gl (onset); Error g (onset), e.g., gliela /ʎela/ [a pronoun for double objects]

(11) Correct: i (vowel); Error: grapheme with more than one letter selected e.g., *magia* /maʤia/[magic]

 (9) Correct: sc (coda); Error: s selected, e.g., *kovatsch /*kovaʃ/ (these were obscure loan words with no obvious Italian-like parsings)

 (2) Correct: iu (onset); Error: iu (vowel), e.g., *caciuola* /kaʃwɔla/ (these were generally obscure low frequency words)

Supporting Materials S2

Parameters used in the model.

Lexical Route

 Features

 Feature to letter excitation: .005

 Feature to letter inhibition: -.8

 Letters

 Letter to letter inhibition: -.3

 Letter to orthography excitation: .047

 Letter to orthography inhibition: -1.0

 Orthographic lexicon

 Orthography to orthography inhibition: -.1

 Orthography to letter inhibition: 0

 Orthography to phonology excitation: 1.9

 Orthography to letter excitation: 0

 Phonological lexicon

 Phonology to phonology inhibition: -.12

 Phonology to phoneme excitation: .135

 Phonology to phoneme inhibition: -.135

 Phonology to orthography excitation: 1.5

 Phoneme Output Buffer

 Phoneme to phoneme inhibition: -.002

 Phoneme to phonology excitation: .07

 Phoneme to phonology inhibition: -.16

Sublexical Route

 Graphemic parsing cycles per letter: 10

 Sublexical network to phoneme output buffer/stress output node activation: .08

 Level of activation which a letter must be over before graphemic parsing begins: .2

 Temperature (s) in the sublexical network: 3

 Learning rate (e) in the sublexical network: .05

 Dead node level: 0

Word stress parameters

 Stress node naming criterion: .65

Phonological lexicon to stress output node excitation: .08

Phonological lexicon to stress output node inhibition: -.055

 Stress output node to stress output node lateral inhibition: -.038

Overall parameters

 Overall activation rate: .25

 Lexicon frequency scaling: .5 \* (log (word frequency + 2)/log (maximum word frequency + 2))

 Phoneme naming activation criterion: .7

 Cycle-to-cycle stopping criterion: 0.0023