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Equation 1

$$p(\text{ID}) = \frac{p(\text{S})}{p(\text{S}) + \sum_{j=1}^n p(\text{N}_j)}$$

Recognizing Spoken Words: The Neighborhood Activation Model.
Luce, Paul; Pisoni, David
Ear & Hearing. 19(1):1-36, February 1998.

Equation 1

Equation 2

$$SWP = \prod_{i=1}^n p(PS_i | PS_i)$$

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Equation 2

Equation 3

$$SWP(d \circ g) = p(d|d) * p(\circ|\circ) * p(g|g)$$

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Equation 3

Equation 4

$$NWP = \prod_{i=1}^n p(PN_i | PS_i)$$

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Equation 4

Equation 5

$$NWP(tæg) = p(t|d) * p(æ|ɔ) * p(g|g)$$

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Equation 5

Equation 6

$$\prod_{i=1}^n p(PS_i|PS_s) * Freq_s$$

$$\left\{ \prod_{i=1}^n p(PS_i|PS_i) * Freq_s \right\} + \sum_{j=1}^{nn} \left\{ \prod_{i=1}^n p(PN_{ij}|PS_i) * Freq_{N_j} \right\}$$

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Equation 6

TABLE 1

SN Ratio	FWNPR	Word Frequency (log ₁₀)
+15	0.4043*	0.2082*
+5	0.4687*	0.2329*
-5	0.2276*	0.2470*

* p < 0.05.

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TABLE 1. Correlations between the frequency-weighted neighborhood probability rule (FWNPR), word frequency, and identification scores for each signal to noise (SN) ratio.

Equation 7

$$\sum_{j=1}^n NWP_j * Freq_{N_j}$$

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Equation 7

TABLE 2

FWNP	FWSWP	
	High	Low
High	Intermediate	Low
Low	High	Intermediate

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TABLE 2. Predicted identification performance as a function of frequency-weighted stimulus word probability (FWSWP) and frequency-weighted neighborhood probability (FWNP).

TABLE 3

FWNP	FWSWP	
	High	Low
High	50.56 (Intermediate)	37.76 (Low)
Low	64.03 (High)	54.73 (Intermediate)

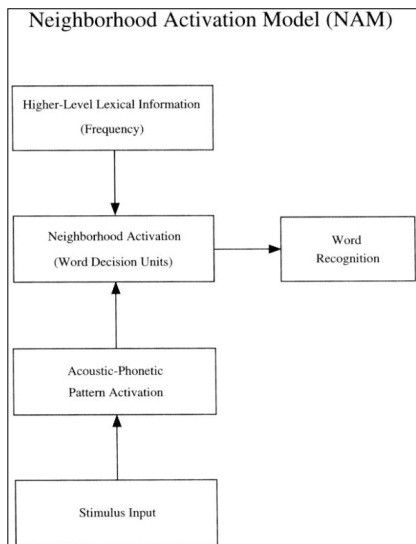
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TABLE 3 . Obtained identification performance (percent correct) as a function of frequency-weighted stimulus word probability(FWSWP) and frequency-weighted neighborhood probability (FWNP). Qualitative predictions are in parentheses.

Figure 1



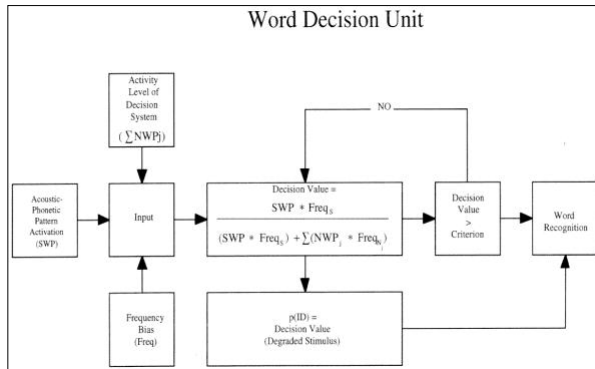
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Figure 1. Flow chart for the neighborhood activation model.

Figure 2



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Figure 2. Diagram of a single word decision unit.

TABLE 4

High-Frequency Words		
Neighborhood Frequency	Neighborhood Density	
	High	Low
High	92.59 (4.29)	92.58 (5.20)
Low	94.73 (4.83)	93.82 (5.80)
Low-Frequency Words		
Neighborhood Frequency	Neighborhood Density	
	High	Low
High	88.80 (7.75)	82.19 (9.21)
Low	89.57 (7.24)	83.59 (8.05)

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TABLE 4. Means and standard deviations for the accuracy data for words for Experiment 2.

TABLE 5

High-Frequency Words		
Neighborhood Frequency	Neighborhood Density	
	High	Low
High	409 (74)	382 (75)
Low	392 (113)	377 (104)

Low-Frequency Words		
Neighborhood Frequency	Neighborhood Density	
	High	Low
High	451 (105)	463 (126)
Low	445 (111)	421 (105)

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TABLE 5. Means and standard deviations for the reaction time data for words for Experiment 2.

TABLE 6

Neighborhood Frequency	Neighborhood Density	
	High	Low
High	84.08 (6.85)	89.61 (4.96)
Low	89.03 (6.74)	90.44 (4.56)

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TABLE 6. Means and standard deviations for the accuracy data for nonwords for Experiment 2.

TABLE 7

Neighborhood Frequency	Neighborhood Density	
	High	Low
High	455 (118)	419 (116)
Low	447 (115)	404 (99)

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TABLE 7 . Means and standard deviations for the reaction time data for nonwords for Experiment 2.

TABLE 8

High-Frequency Words		
Neighborhood Frequency	Neighborhood Density	
	High	Low
High	97.67 (2.30)	98.56 (1.79)
Low	98.78 (1.70)	98.56 (1.92)
Low-Frequency Words		
Neighborhood Frequency	Neighborhood Density	
	High	Low
High	96.78 (2.76)	97.11 (3.01)
Low	98.00 (2.38)	98.11 (2.11)

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TABLE 8 . Means and standard deviations for the accuracy data for Experiment 3.

TABLE 9

High-Frequency Words		
Neighborhood Frequency	Neighborhood Density	
	High	Low
High	840 (183)	744 (175)
Low	852 (168)	716 (171)

Low-Frequency Words		
Neighborhood Frequency	Neighborhood Density	
	High	Low
High	731 (179)	736 (192)
Low	867 (178)	685 (174)

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TABLE 9. Means and standard deviations for the reaction time data for Experiment 3.