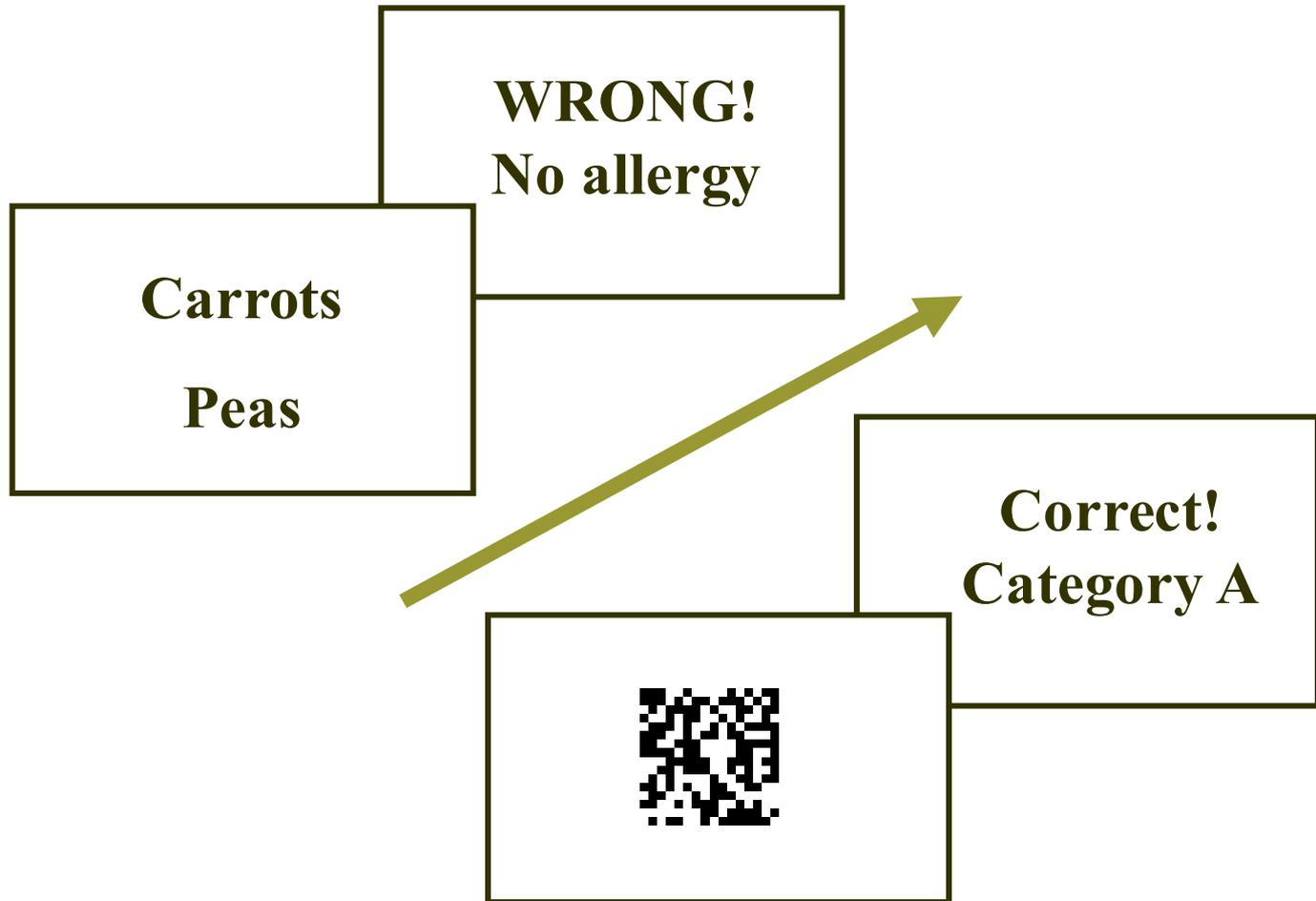


Can there be
error correction in the
absence of error?

Andy Wills (Exeter University)

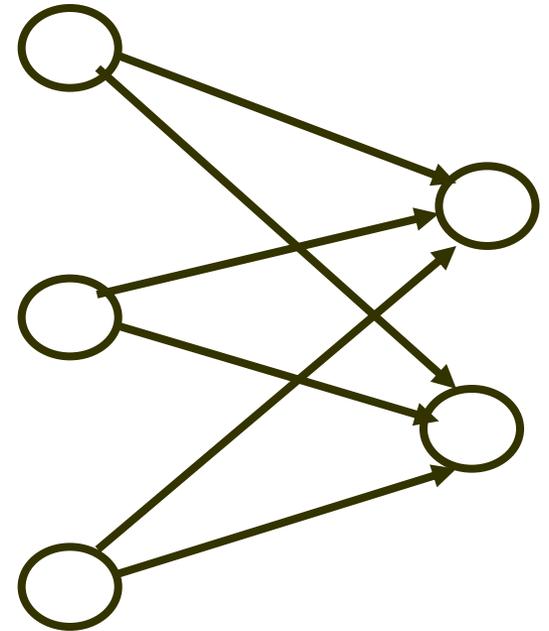
Jan Zwickel (Heidelberg University)

“Trial-and-error” procedures

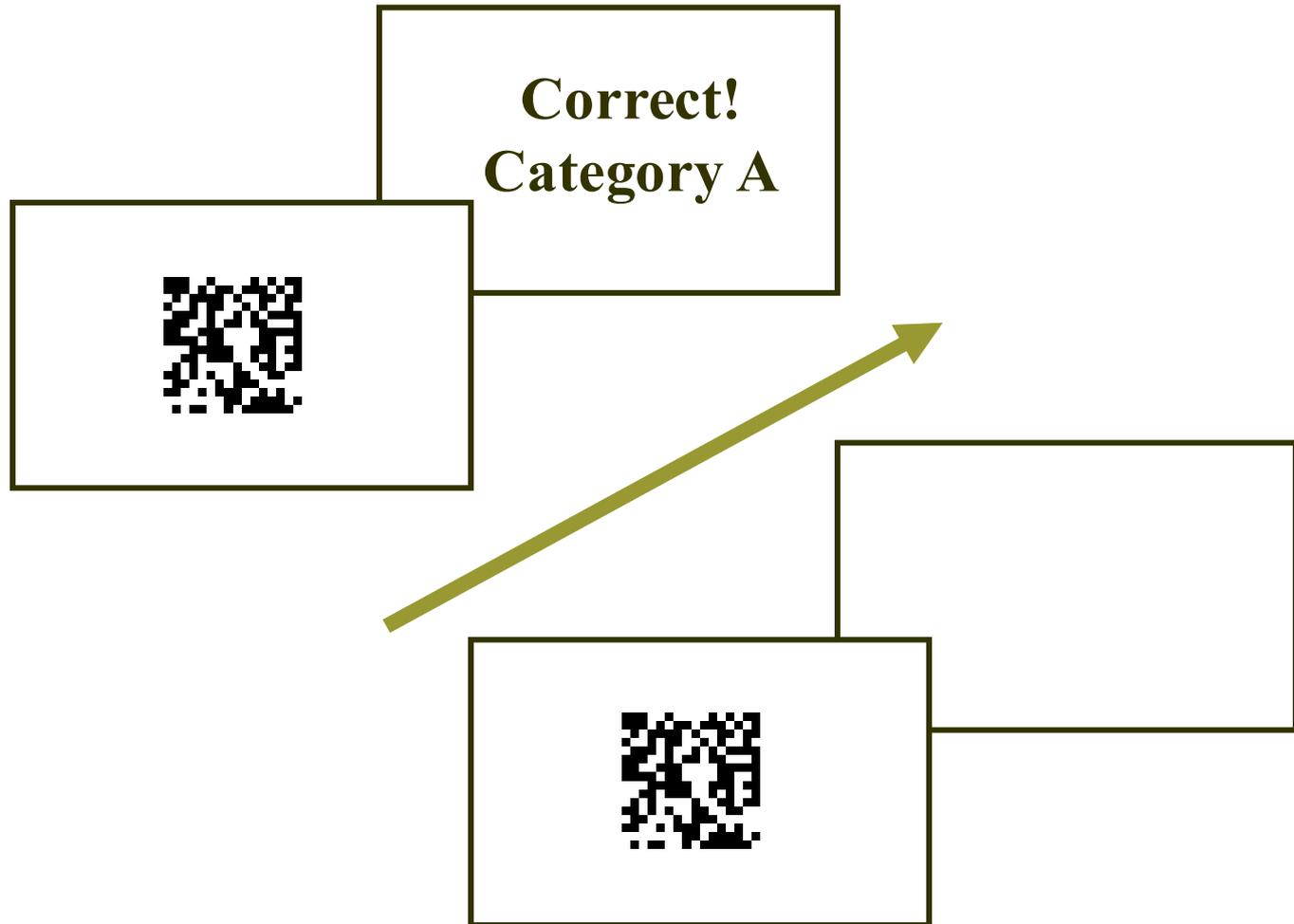


Error-correcting algorithms

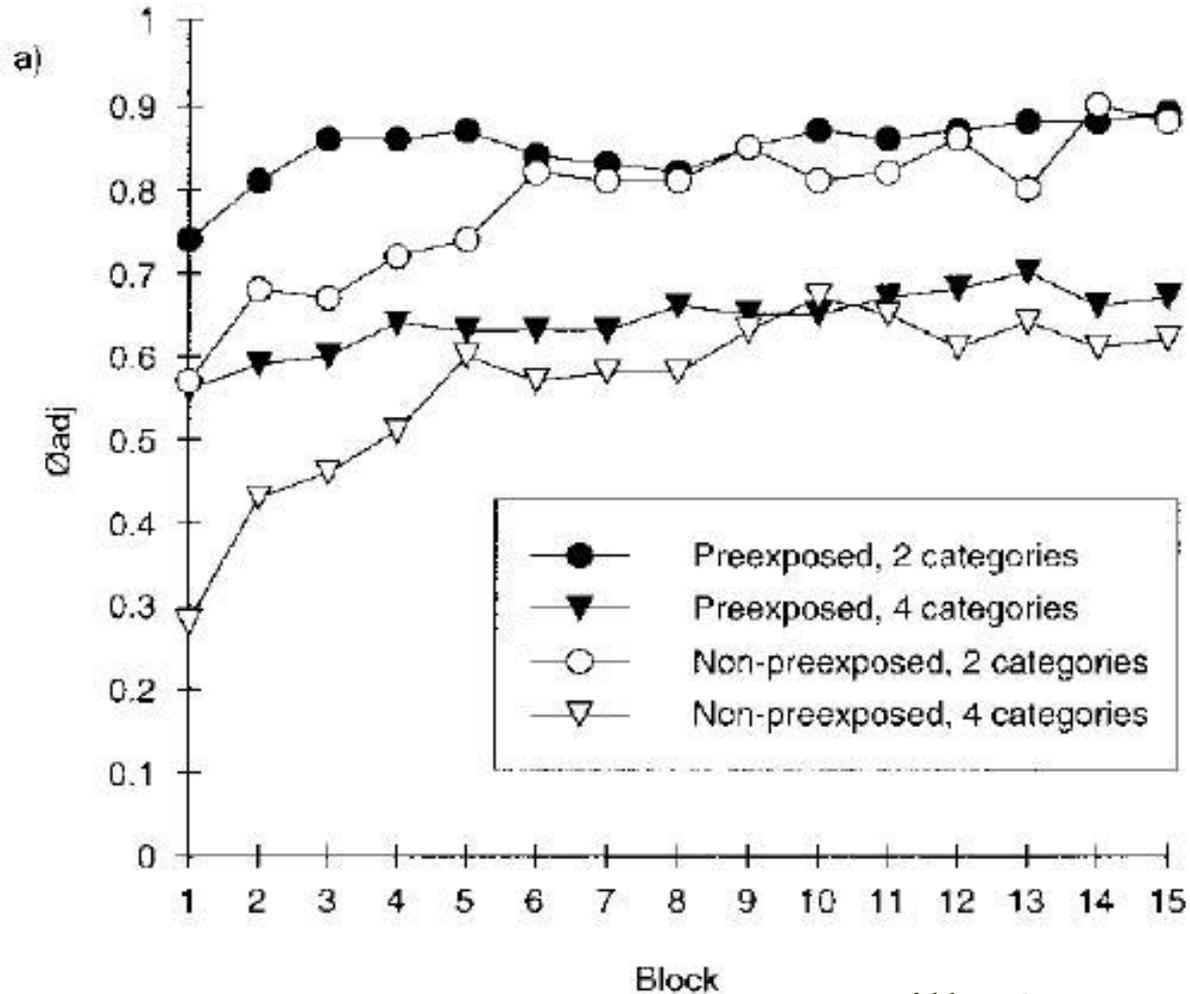
$$\Delta w = G(\lambda - \Sigma w)a$$



Free classification



Free classification performance



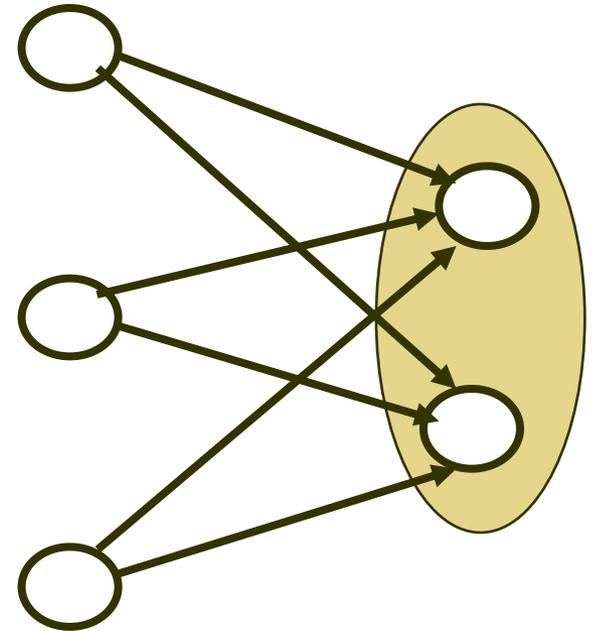
Wills & McLaren 1998

Rumelhart-Zipser model

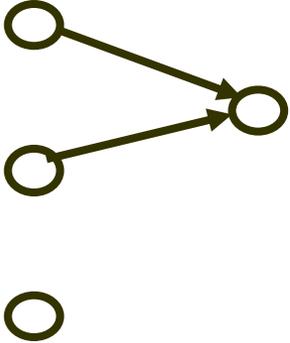
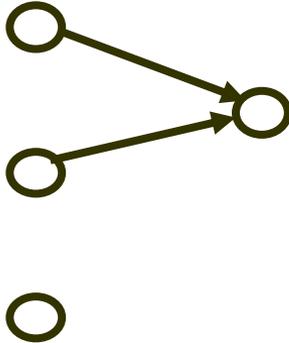
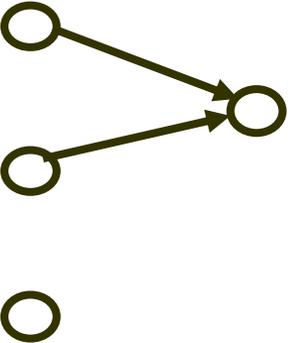
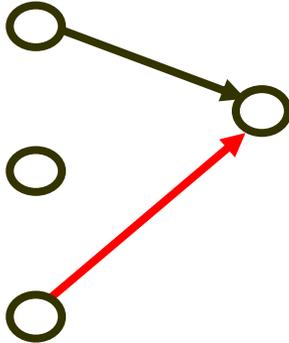
$$\Delta w = G(\lambda - \Sigma w)a$$



$$\Delta w = G\left(\frac{a}{n} - w\right)$$



Contrasting predictions

AB->1	AE->1	
		<p>Rescorla-Wagner</p> $\Delta w = G(\lambda - \Sigma w)a$
		<p>Rumelhart-Zipser</p> $\Delta w = G\left(\frac{a}{n} - w\right)$

Experiment

Phase 1

AB

CD

Phase 2

AE

GF

Test

EF

Method

- **Complex stimuli**
 - Each letter = 6 icons
 - Random position
 - Replacement ($p=0.1$)
- **Rapid presentation**
 - 800ms presentation
 - 2000ms ISI
- **Training to criterion (80%)**
 - 10 blocks of 24 trials per phase.



Results

<u>Design</u>		<u>(Passed)</u>	<u>(Failed)</u>
AB	AE	6	10
	EF		
CD	GF	12	4

Conclusions

- **Phenomenon analogous to forward blocking occurs in free classification.**
- **The Rumelhart- Zipser model does not predict such an effect.**