Multi-Layer Neural Networks

BHI Youth Awards

King's College LONDON
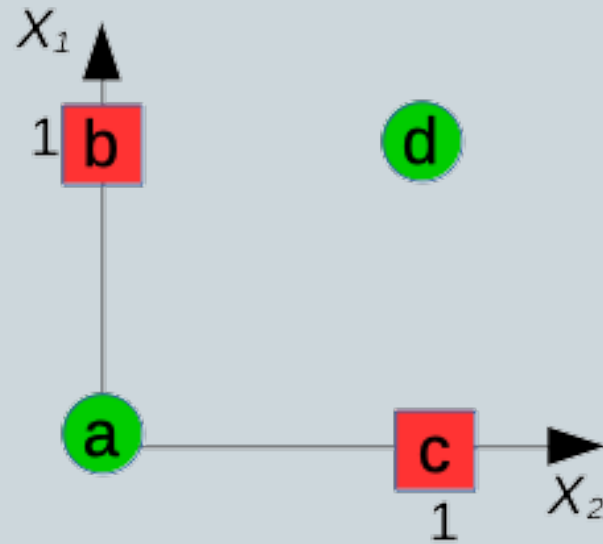
NIHR | Maudsley Biomedical Research Centre
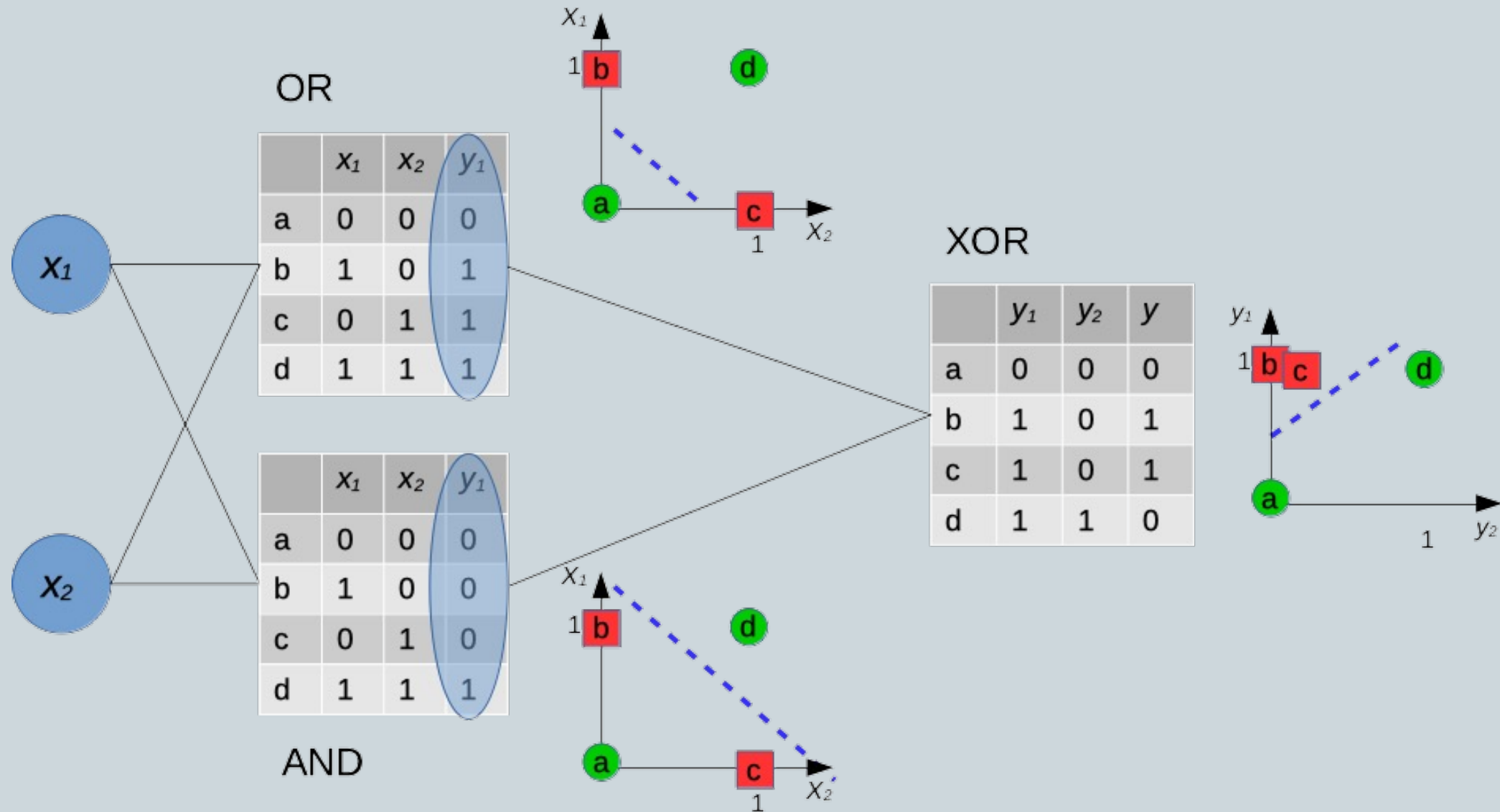
XOR is not linearly separable
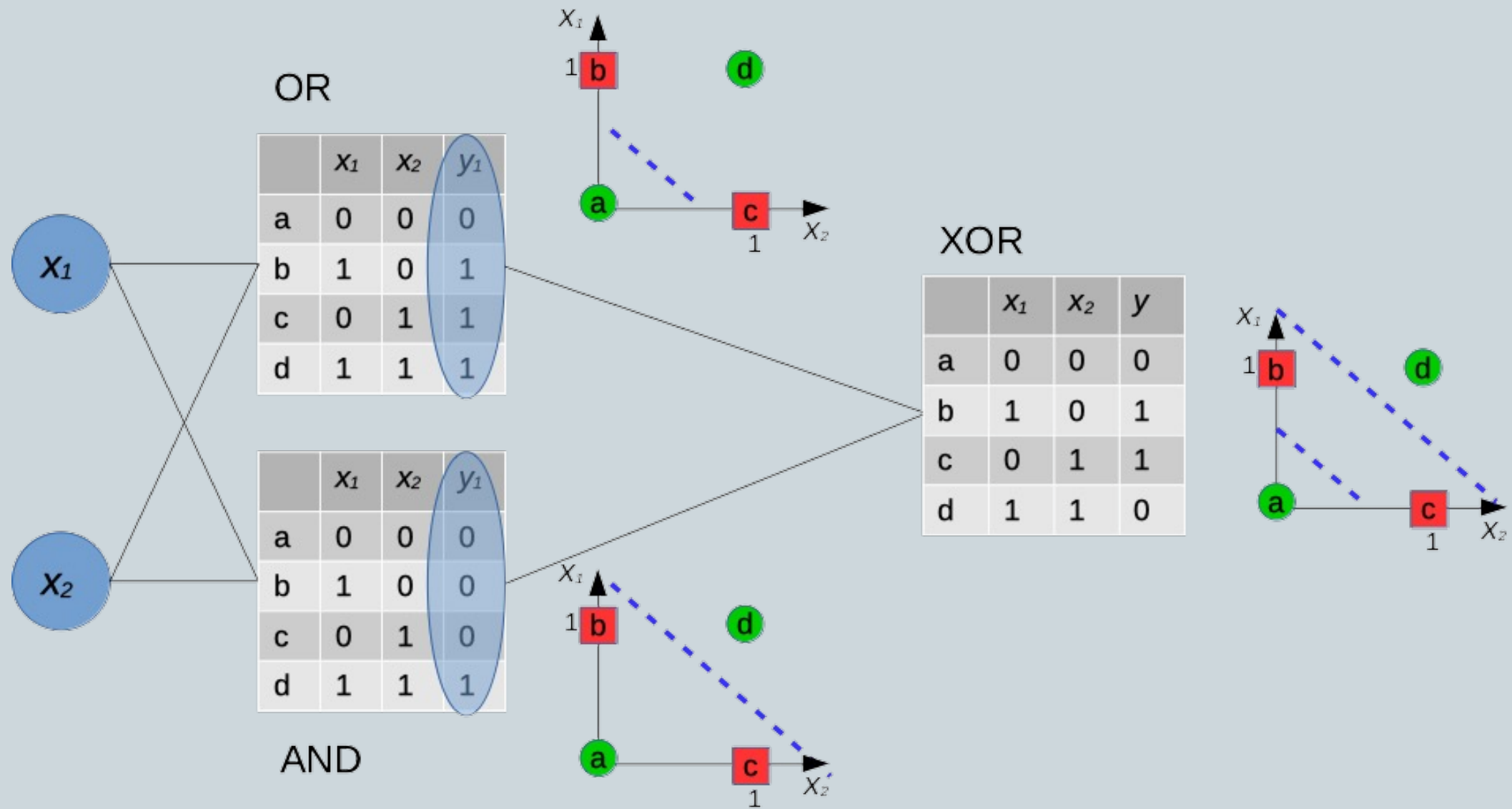
XOR

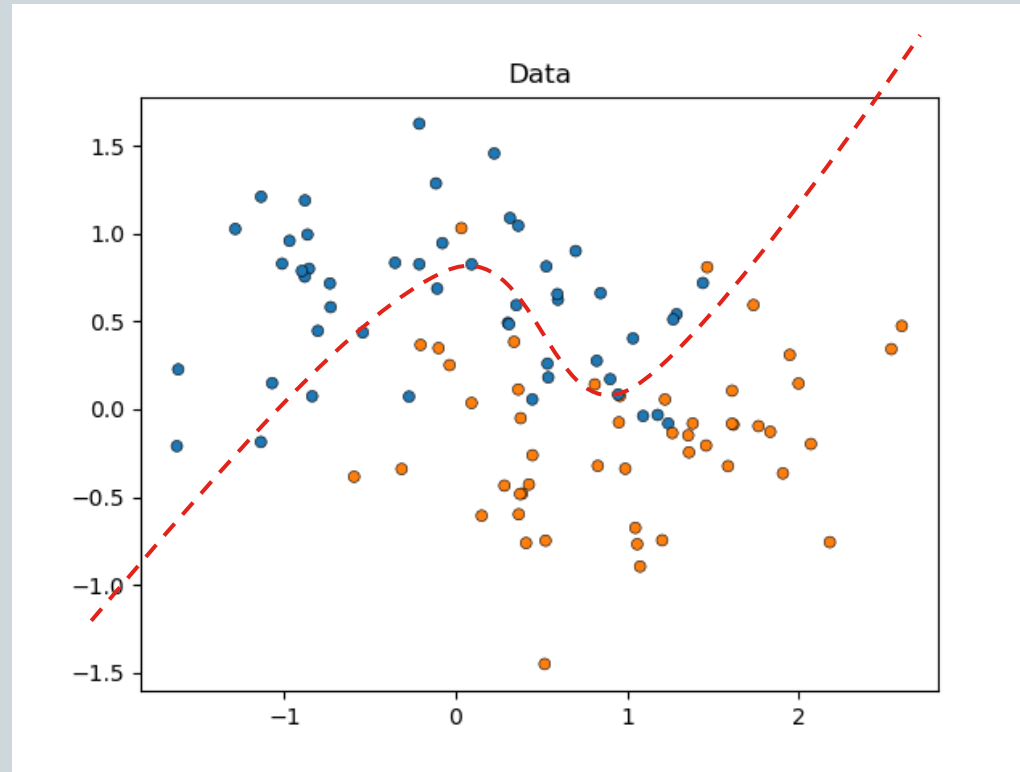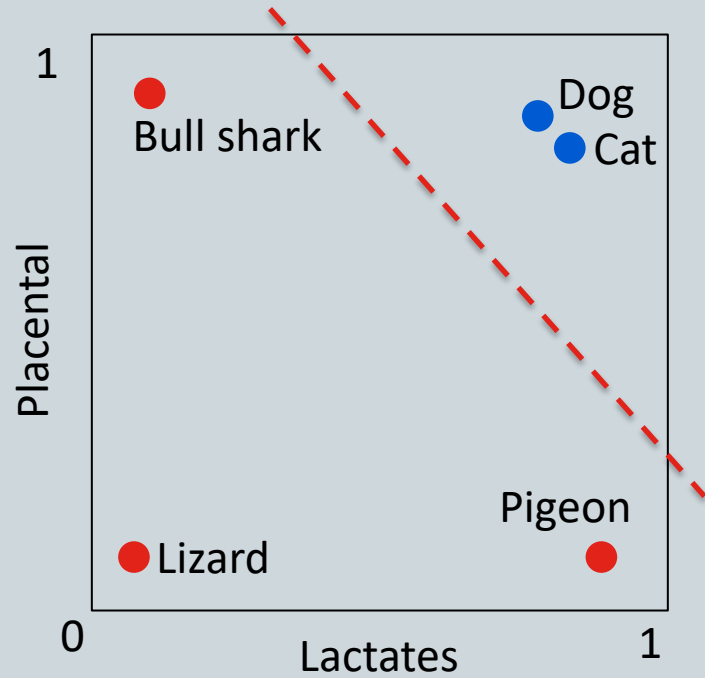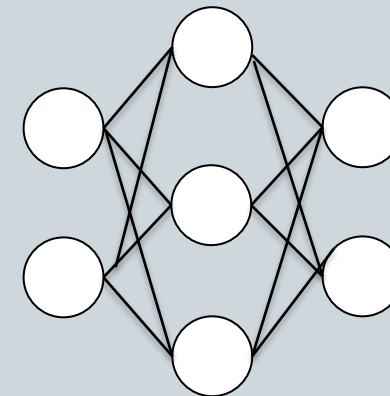|	x_1	x_2	y
a	0	0	0
b	1	0	1
c	0	1	1
d	1	1	0

Solving a non-linear problem

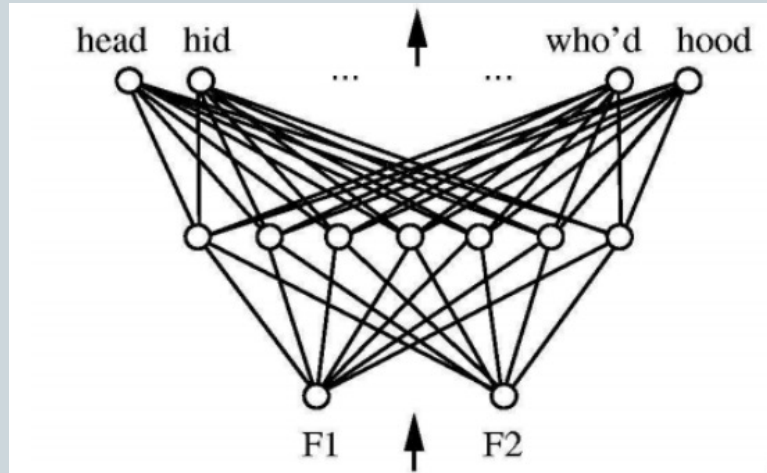# Solving a non-linear problem

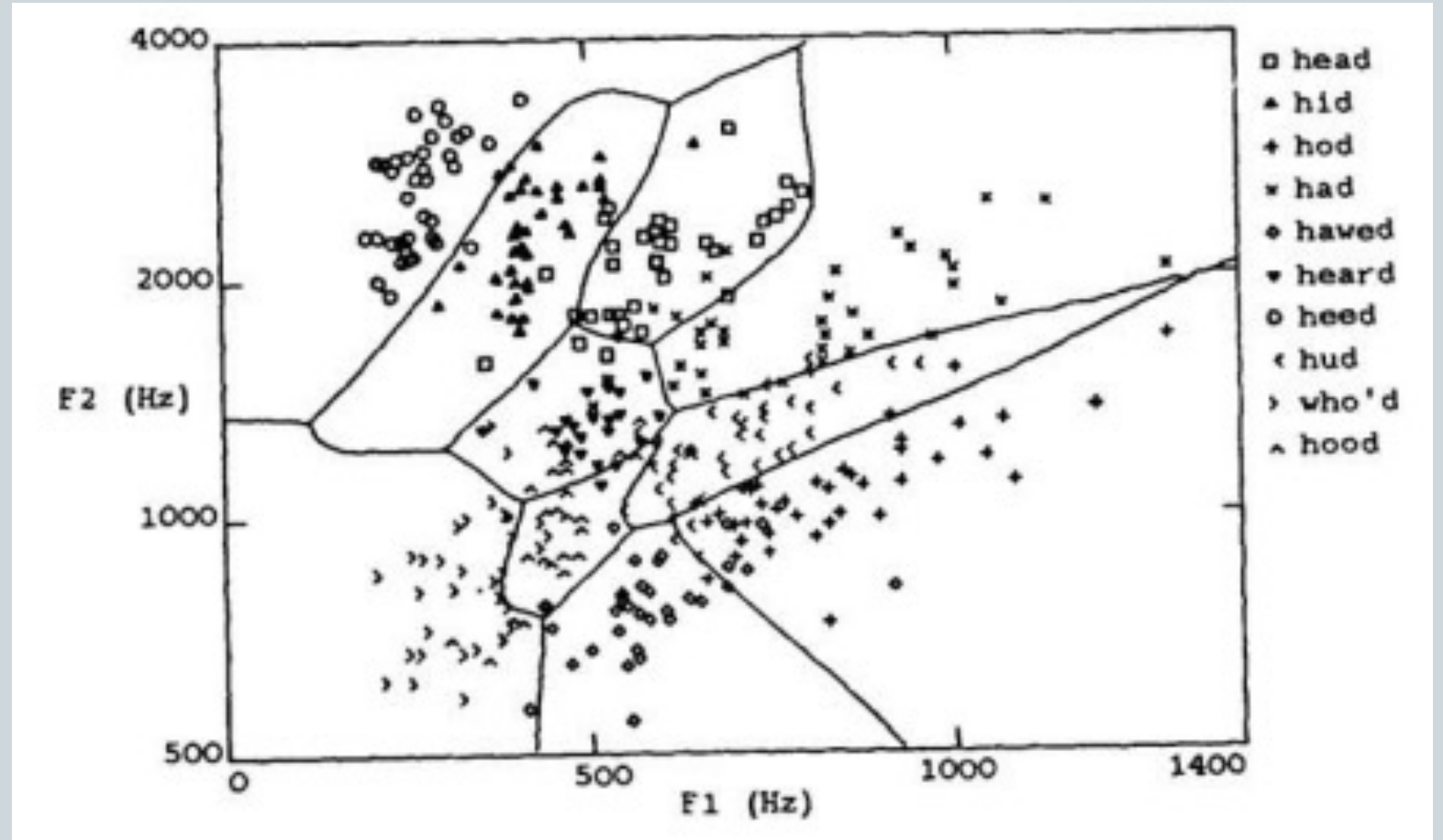# A single perceptron can only model linearly separable problems

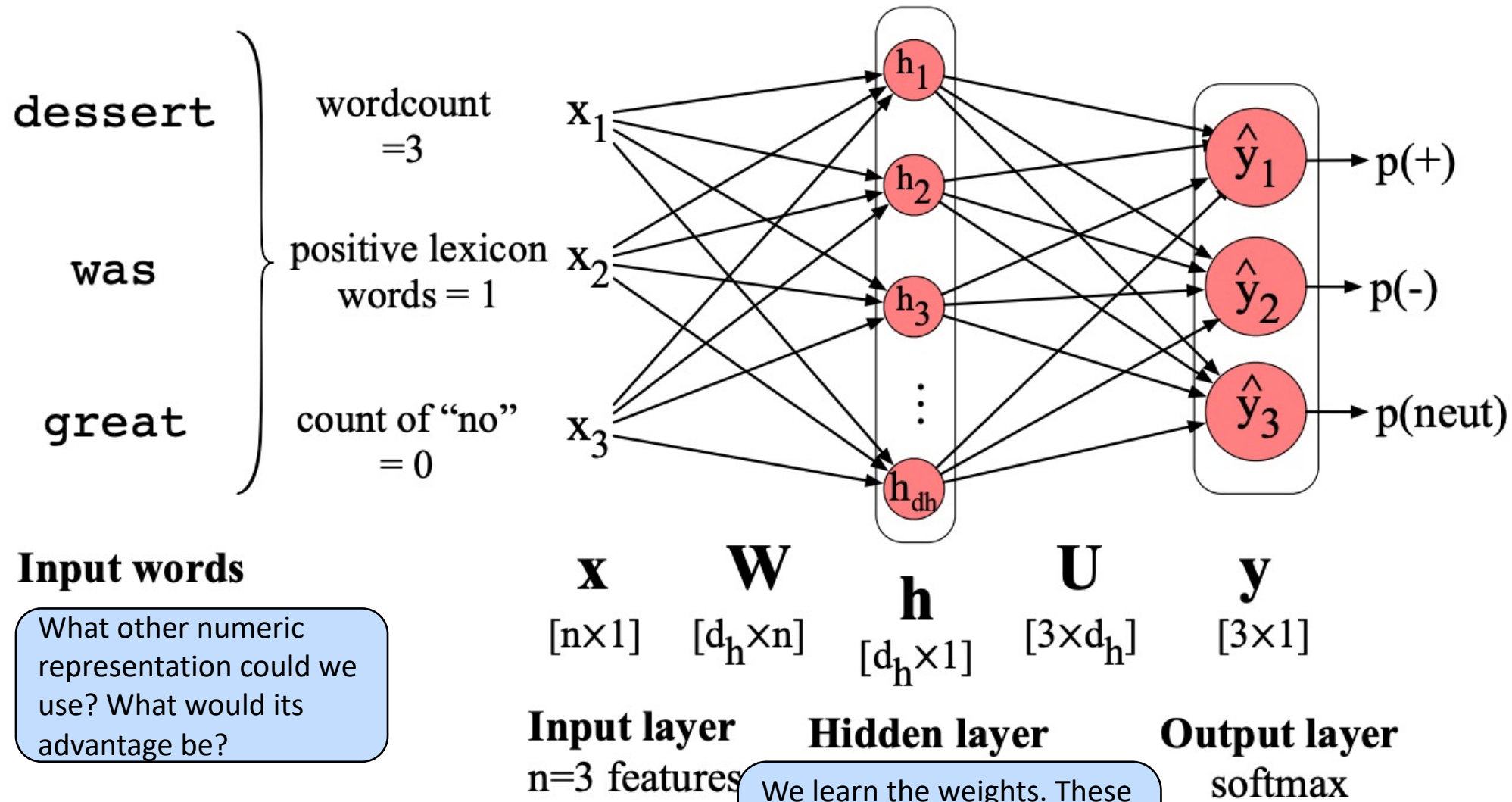Solvable with 12 parameters (weights)

More complex problems: hidden layers

- Two layers
- 100 nodes
- 1200 parameters (estimate)

Credit: Huang & Lippmann, NIPS 1988

How do we model language in a neural network?

What other numeric representation could we use? What would its advantage be?

We learn the weights. These provide a representation that will map input to output.

(Jurafsky and Martin, Fig. 7.10)

Thank you

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