

LANGUAGE MACHINES

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A or **a** (a), *n.*, *pl.* **A**'s or **a**'s the first letter of the English alphabet.

a² (ə; stressed ā), *adj.* or *indefinite article*. 1 some single; any: *Call a doctor*. 2 one: *a million dollars*. 3 each; every: *once a year*. 4 the same: *two at a time*. 5 one kind of: *Chemistry is a science*. 6 to or for each: *ten dollars a day*. [Old English *ān* one]

➤ **a, an.** **A** is used before words pronounced with an initial consonant sound, as in *a man, a year, a union*. Before words pronounced with an initial vowel sound, *an* is used, as in *an apple, an iceberg, an upset*. Before words beginning with *h* in an unaccented syllable, as *historic, historian*, usage is divided; formerly, in these words, the *h-* was not pronounced, and *an* was used before them; now, the *h-* is pronounced, and most people use *a*, although *an* remains in use.

A² (ā), *n.*, *pl.* **A**'s. 1 the sixth tone of the musical scale of C major. 2 a grade given to student work of excellent quality.

a⁻¹, *prefix*. 1 in; on; to: *Abed = in bed*. 2 in the act of ____ing: *Aflutter = in the act of fluttering*. 3 in a ____ condition: *Aweary = in a weary condition*. [Old English *an, on* on]

a⁻², *prefix*. form of **ab**⁻¹ before *m, p, v*, as in *avert*.

a⁻³, *prefix*. form of **ad**⁻ before *sc, sp, st*, as in *ascribe, aspire, astringent*.

a⁻⁴, *prefix*. form of **an**⁻¹ before consonants except *h*, as in *atonal*.

A, 1 former symbol for argon. 2 one of the four main blood groups.

Å, angstrom or angstroms.

a. or **a**, 1 acre or acres. 2 ampere or amperes. 3 are (100 square meters).

A1, *adj.* INFORMAL. A one.

aa (ä/ä), *n.* solidified lava which has a rough, jagged texture. [*<* Hawaiian *a-a*]

AA, 1 Alcoholics Anonymous. 2 anti-aircraft.

A.A., Associate in Arts.

AAA or **A.A.A.**, American Automobile Association.

AAAS, American Association for the Advancement of Science.

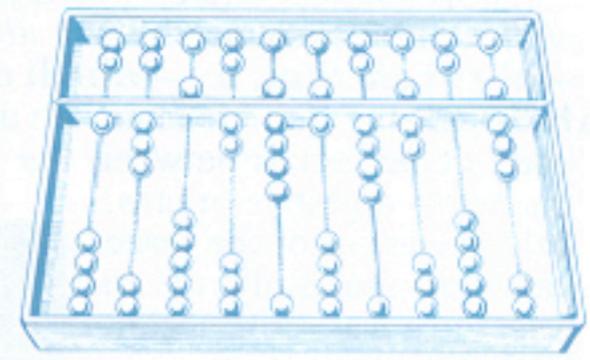
Aachen (ä/kən), *n.* city in W Germany. 232,000. Also, FRENCH **Aix-la-Chapelle**.

aardvark (ärd/värk), *n.* a burrowing African mammal with a piglike snout, a long, sticky tongue, and very strong claws; ant bear. It feeds on ants and termites. [*<* Afrikaans *<* *aarde* earth + *varken* pig]

aardwolf (ärd/wülf'), *n.*, *pl.* **-wolves**. a carnivorous mammal of southern and eastern Africa that resembles and is related to the hyena. It lives in a burrow and feeds



of beads that slide back and forth, used especially in Asian countries. In the picture, beads above the middle bar count five each when lowered toward the bar, and beads below the middle bar count one each when raised toward the bar. Beads above and below the middle bar are totaled in each row. Numbers are shown below each wire for the setting of 1,352,964,708. 2 slab forming the top of the capital of a column. See **column** for picture. [*<* Latin *<* Greek *abax, abakos*]



1 3 5 2 9 6 4 7 0 8

abacus (def. 1)

Abadan (ä/bä dän'), *n.* city in SW Iran, known for its oil industry. 294,000.

a baft (ə baft'), *adv.* at or toward the stern; aft. —*prep.* back of; behind. [*<* *a*⁻¹ on + Middle English *baft* behind]

abalone (ab/ə lō/nē), *n.* an edible saltwater mollusk with a large, rather flat shell lined with mother-of-pearl, found along the Pacific coast of North America. [*<* Mexican Spanish *abulón* *<* Costanoan (an Amerind language of California) *aulun*]

abandon (ə ban/dən), *v.t.* 1 give up entirely; renounce or relinquish: *abandon a career*. 2 leave without intending to return to: *Abandon ship!* See **desert**² for synonym study. 3 give (oneself) up completely (to a feeling, impulse, etc.); surrender: *abandon oneself to despair*. —*n.* a yielding to natural impulses; freedom from restraint: *cheer with abandon*. [*<* Old French *abandoner* *<* *a bandon* in the power (of)] —**a ban'don er**, *n.* —**a ban'don ment**, *n.*

abandoned (ə ban/dənd), *adj.* 1 deserted. 2 shamelessly wicked; immoral. 3 unrestrained. —**a ban'doned ly**, *adv.*

a base (ə bās'), *v.t.*, **a based**, **a bas ing**. make lower in rank, condition, or character; degrade: *A traitor abases himself*. [*<* Old French *abaissier* *<* *a-* to + *baissier* lower] —**a base'ment**, *n.*

a bash (ə bash'), *v.t.* embarrass and confuse; make uneasy and somewhat ashamed; disconcert: *I was not abashed by the laughter of my classmates*. [*<* Old French *esbaiss-*, a form of *esbaïr* astonish] —**a bash'ment**, *n.*

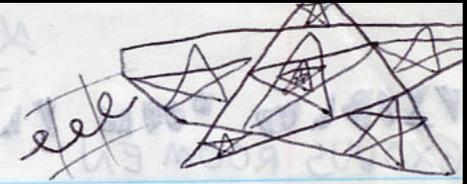
a bate (ə bāt'), *v.*, **a bat ed**, **a bat ing**. —*v.t.* 1 lessen in force or intensity; reduce or decrease: *Soft words did not abate her fury*. 2 put an end to; stop: *abate a nuisance*. —*v.i.* become less in force or intensity; diminish: *The storm has abated*. [*<* Old French *abatre* beat down *<* *a-* to + *batre* to beat] —**a bat'a ble**, *adj.*

a bate ment (ə bāt/mənt), *n.* 1 a decrease; lessening. 2 amount abated; reduction. 3 a putting an end to.

abatis (ab/ə tis), *n.*, *pl.* **-tis** (-tēz'). barricade of trees cut down and placed with their sharpened branches directed toward the enemy. [*<* French]

VE-
MAEL

EXODUS



SUBJECTS

(AD) VERBS

~~VE~~
~~ATE~~
KETT

I-NAD (ME)(MY)

YOU, YOU'RE - ANAH

THEY, THEM - ILLA

HE - CAM

SHE - MEC

IT - DLL

THAT - LIAH (THOSE)

WE - MYER

US - HEOT LET'S - LOOTE

DAD - HAR

MOM - BRAN

BROTHER - HUXLY

SIS. - OHR

~~MAEL~~

~~COUSIN~~
COUSIN - NAREZ

SON - ESTAEL

DAUGHTER - EZE

THIS - RUM (ROOM)

STATE - COMOM

CAPITL - OMMDONT

~~VE~~
~~ATE~~
~~MAEL~~
~~MAEL~~
~~MAEL~~

WANT - ENG

GIVE - GLY

ARE - TER

SAY - NEPH

GOING - SER

COMING - MECH

MIGHT - ROYC

EAT - SOIA

~~LET~~
LET - LOYS

GO - SEI

TO - OHT

SEE - DRAE

SPY - ADNER

DUMP - HTE

LIKE - OHVE

LOVE - ~~MAEL~~ MAEL

NOT, DON'T - HAM

CRUSH - PIKE

MOVE - RANIL

DOING - ERT

BRAKE - CACK

WALK - LOTLAN

TROT - ORSY

RUN - RATLA

SAW - NE RA

LIVE - TIS

MADE - BENET

SEE - DRIA

DO - ER

SORRY - LILCAN

READ - BOAR

PLEASE - REANE

HONOR - THAK'H

USE - DAN

KEIE



NAD

LESSON II
MORE WORDS, BASIC SENTENCES

WORDS: Japeth, Nad, Anak, Nera, Sanel,
~~ser~~ ^{SAW} ~~today~~

CAM (HE) SER (GOING)

MEC (SHE) SOIA (EAT)

DLL (IT) SEI (GO)

exercises: write each answer. (TRY NOT TO LOOK AT WORDS.) LOOK

1. NERA _____

7. MEC _____

2. NAD _____

8. ANAH _____

3. SOIA _____

9. DLL _____

4. CAM _____

10. SANEL _____

5. SER _____

11. SEI _____

6. JAPETH _____

≡ PRACTICE ≡

Say the ~~ser~~ English.

1. Nad, ser soia anak.

2. Japeth, anak ser soia dll?

3. Cam nera nad!

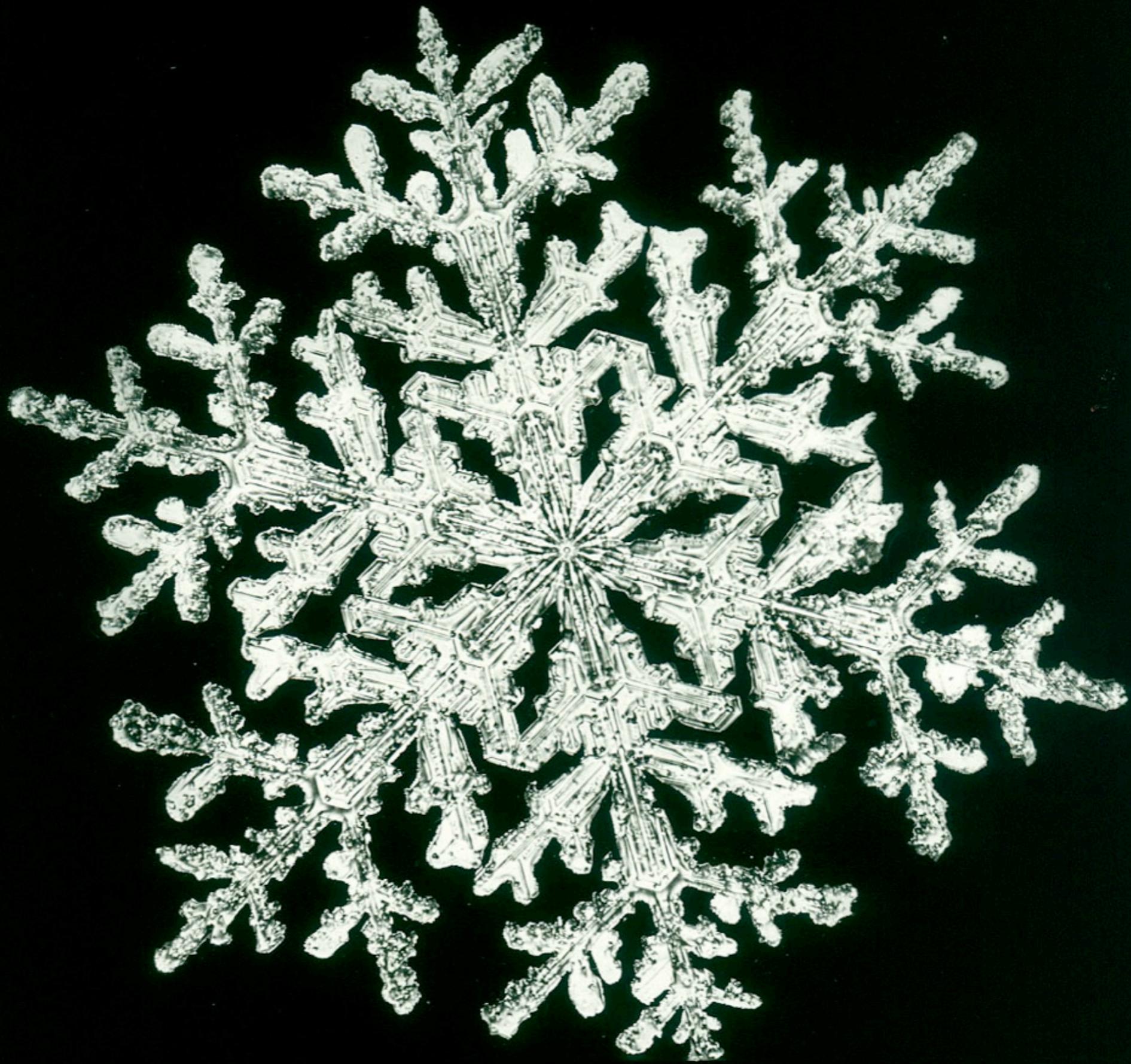
4. Mec ser soia dll sanel.

-CHECK UP- check your work!





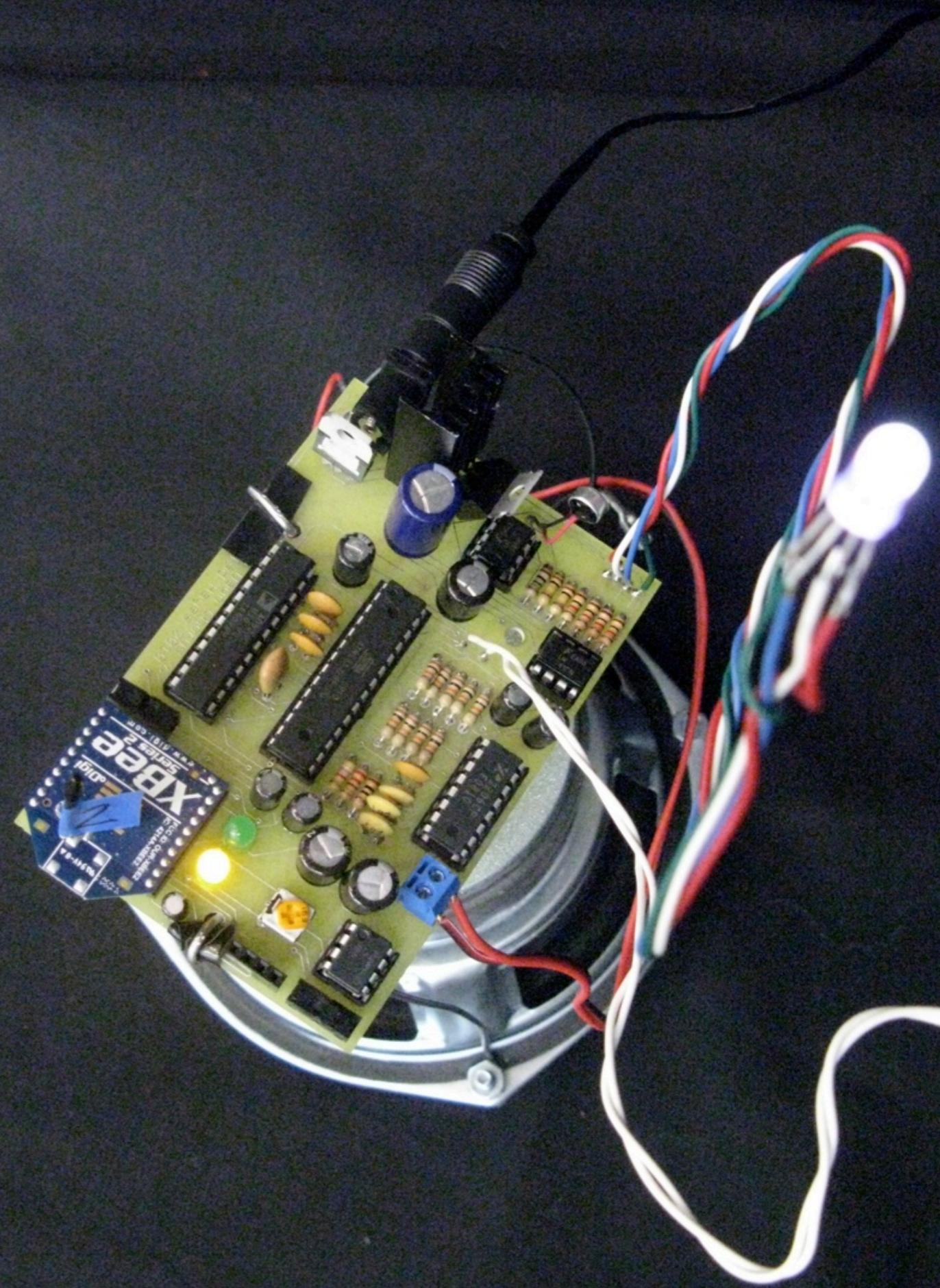
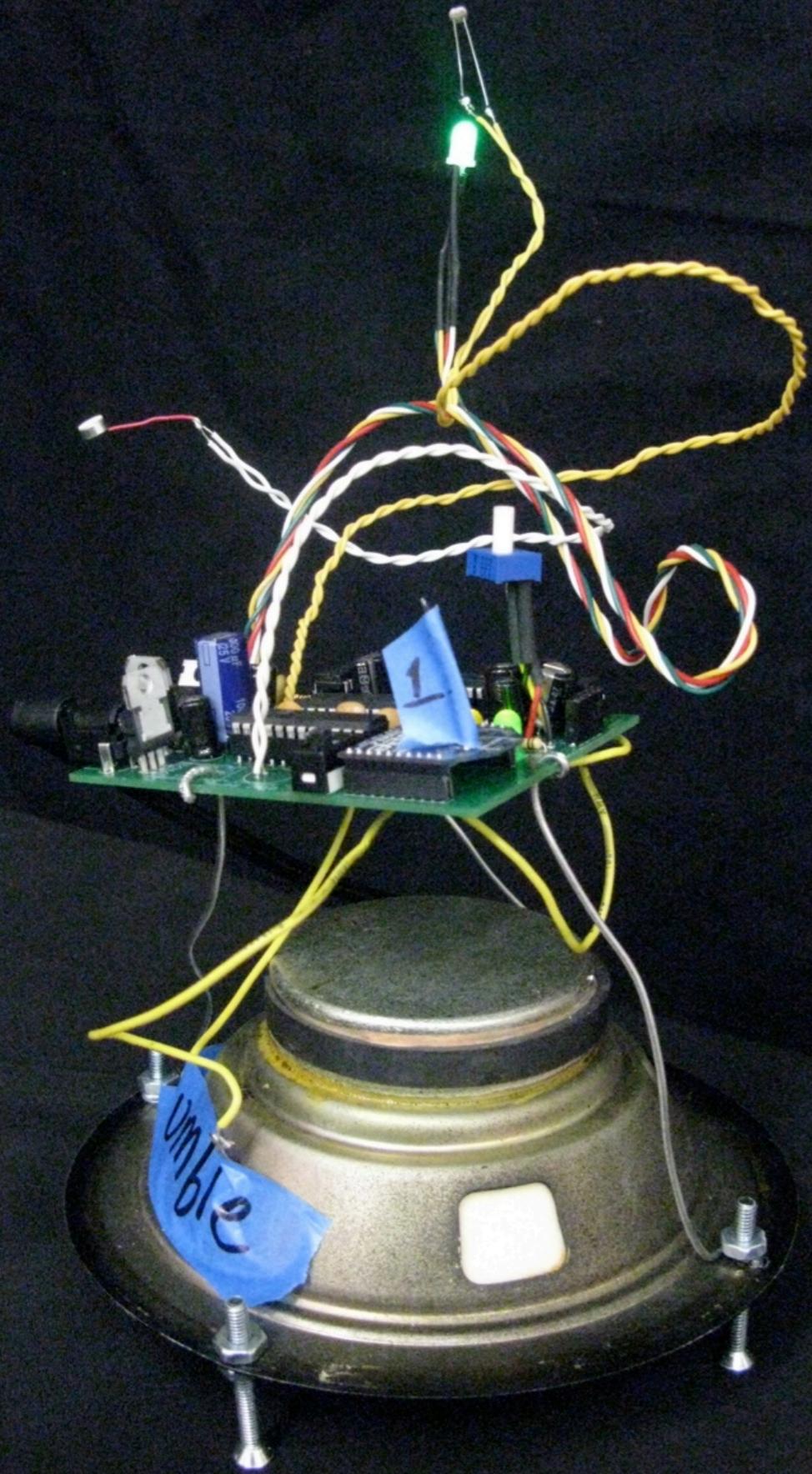


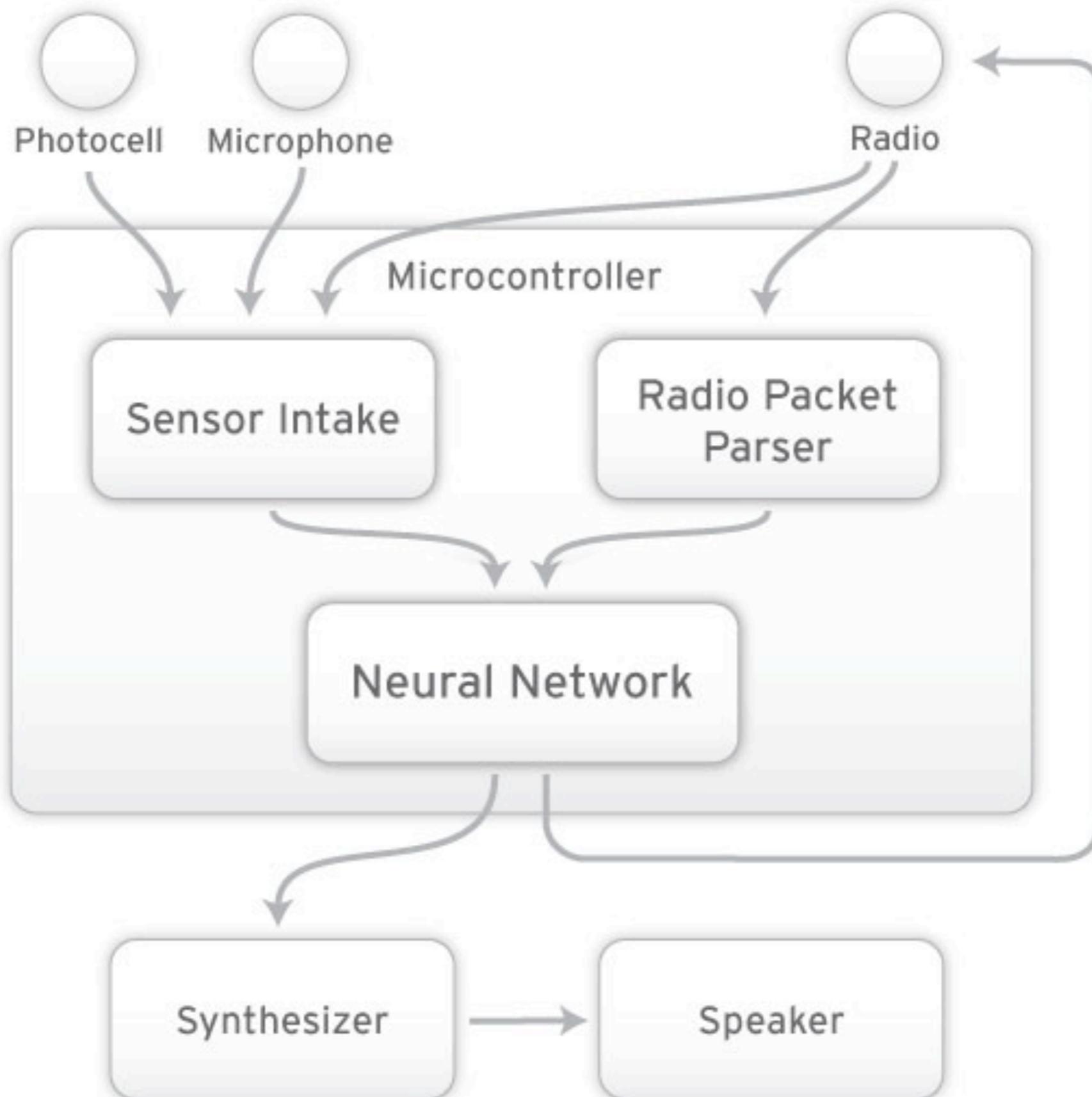


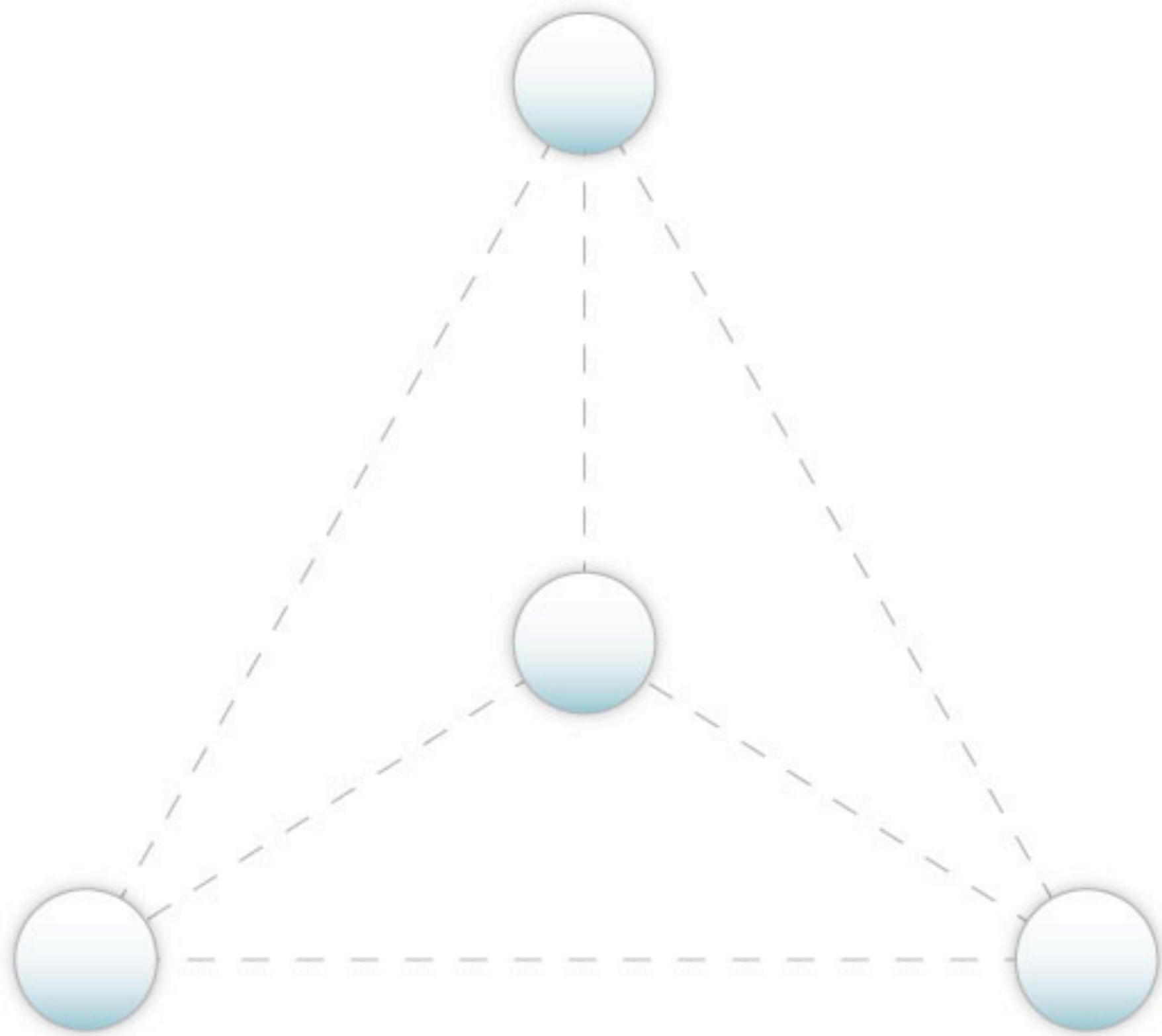
- The only thing that links two symbolic signs together is people saying they go together

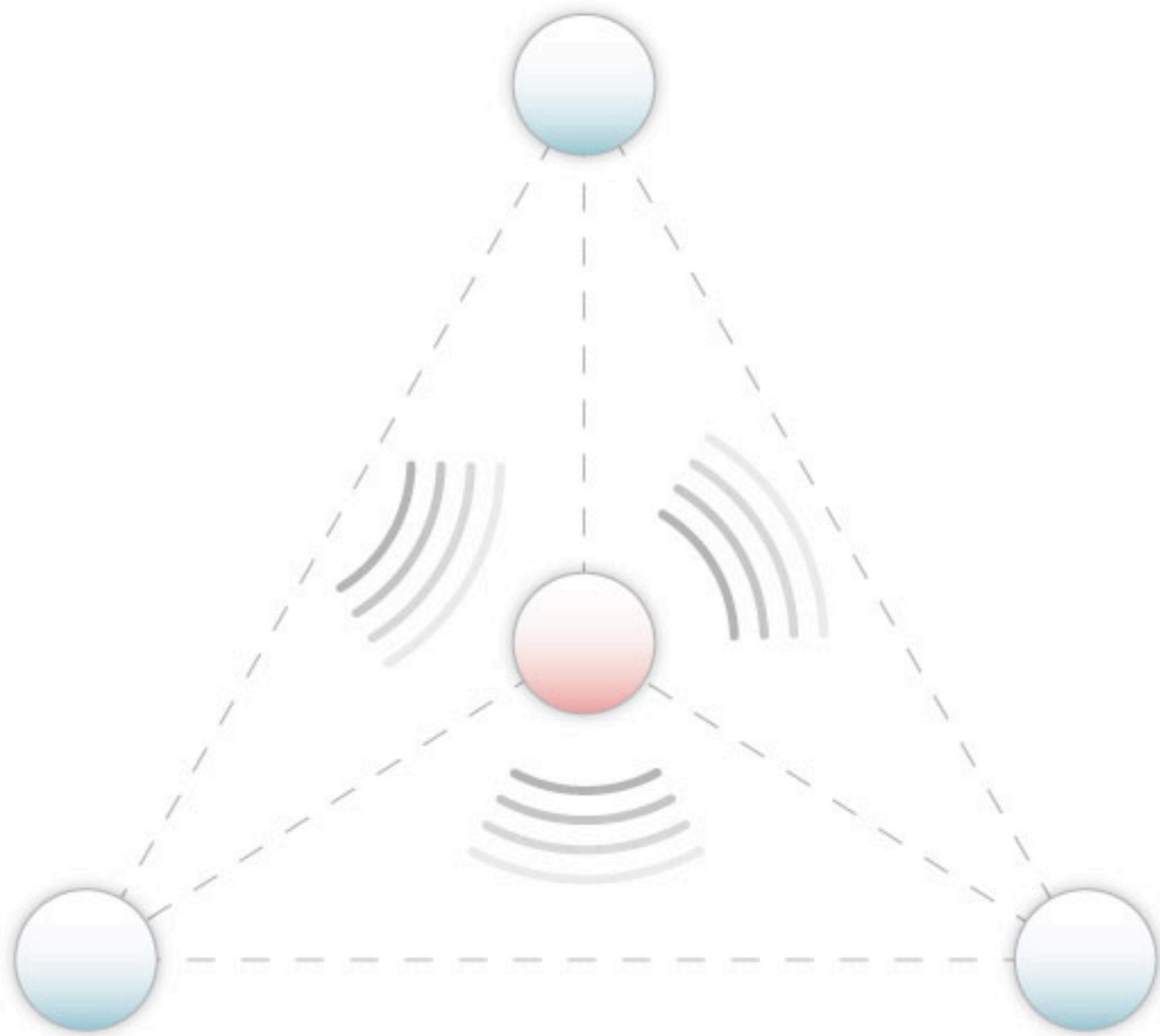
- The only thing that links two symbolic signs together is people saying they go together
- How do people know what symbols mean what?

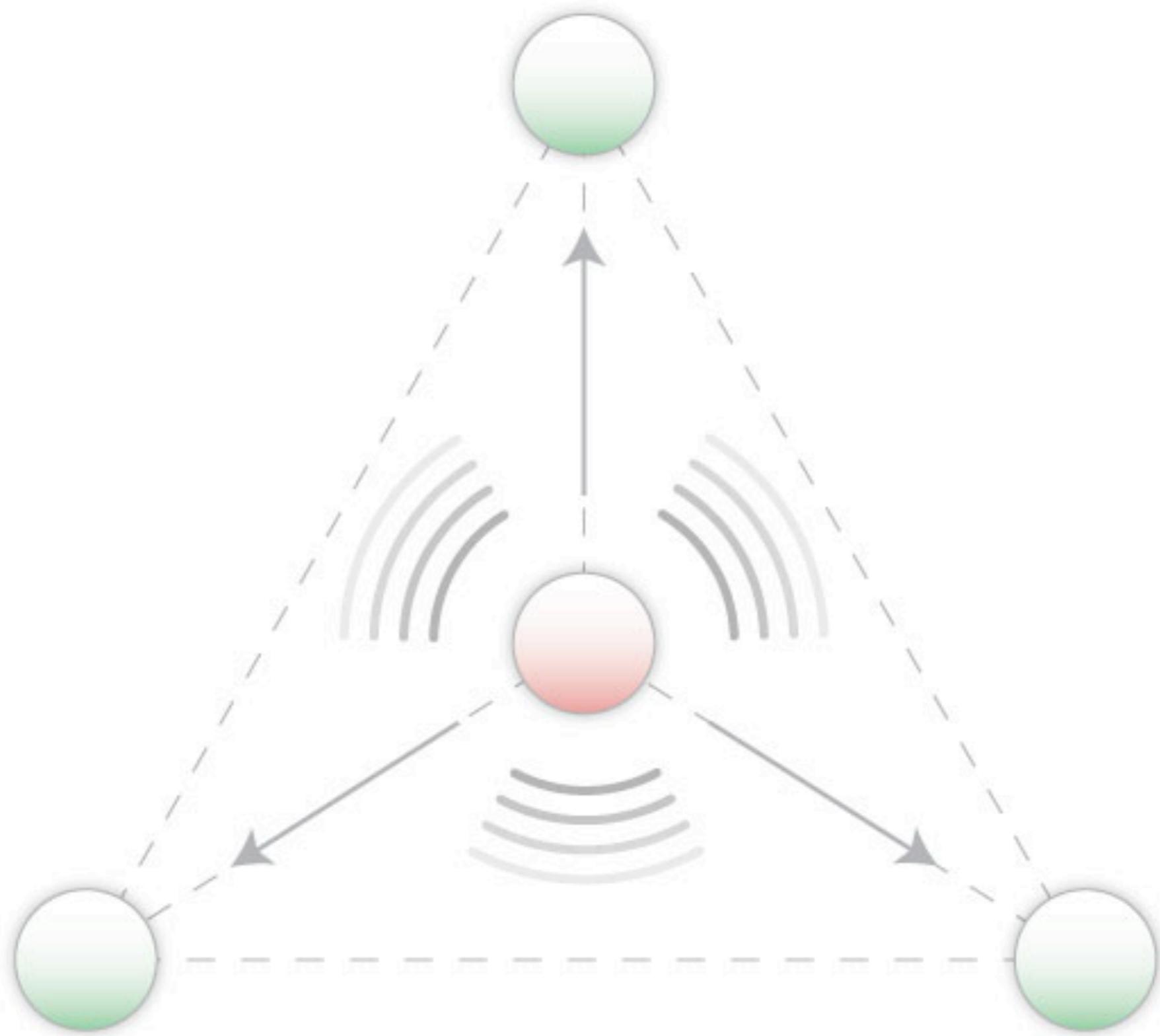
- The only thing that links two symbolic signs together is people saying they go together
- How do people know what symbols mean what?
- **Watching & learning**



















???



if (chair) then ...

if (plastic chair) then ...

if (3-legged chair) then ...

if (red chair) then ...

if (chair) then ...

if (wood chair) then ...

if (knee chair) then ...

if (broken chair) then ...

NEURAL NETWORKS

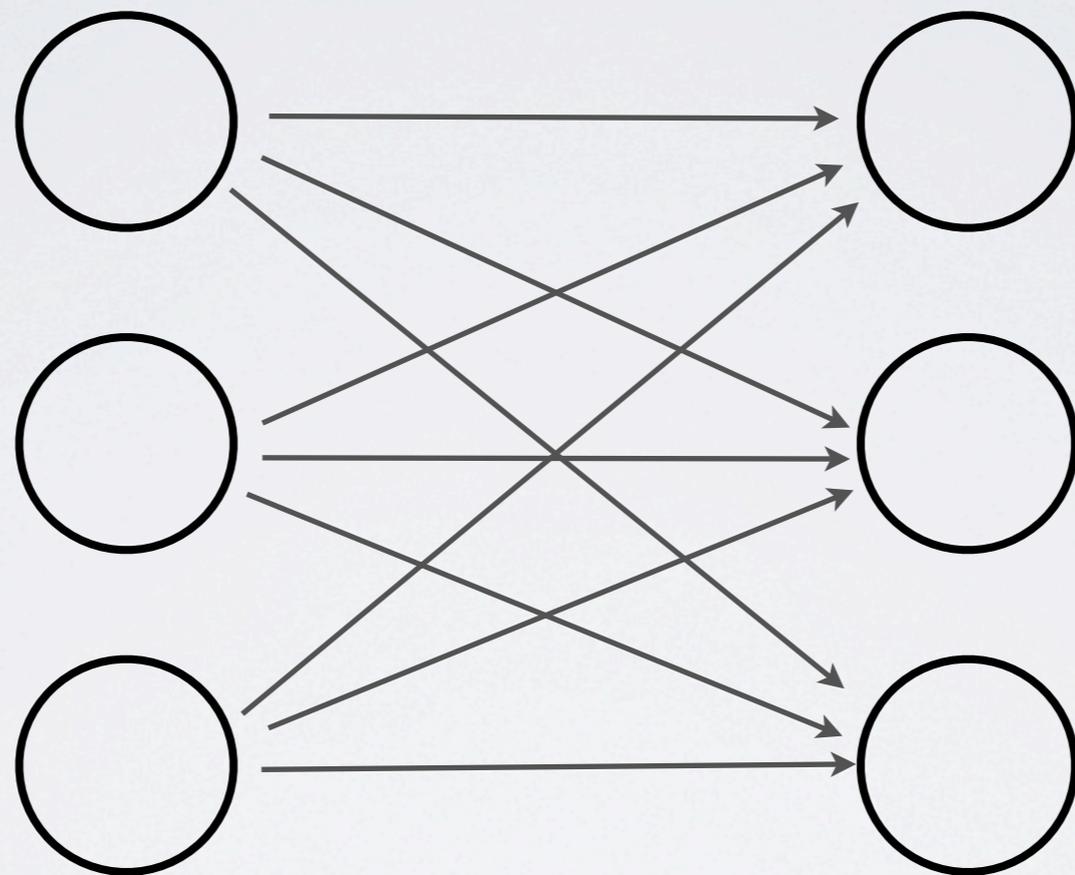
NEURAL NETWORKS

**ARE PATTERN-
RECOGNITION
MACHINES.**

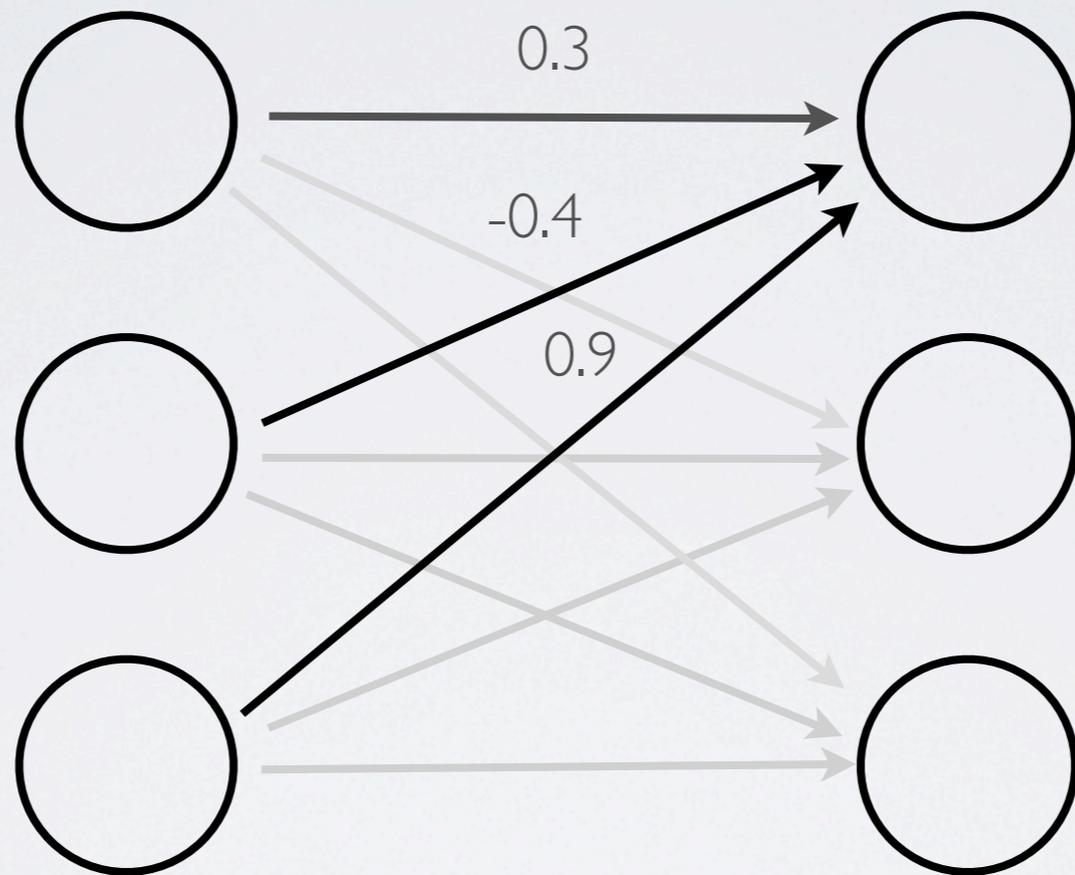
NEURAL NETWORKS DO THESE THINGS

- Train incrementally
- Are resilient to noisy input
- Recognize novel patterns

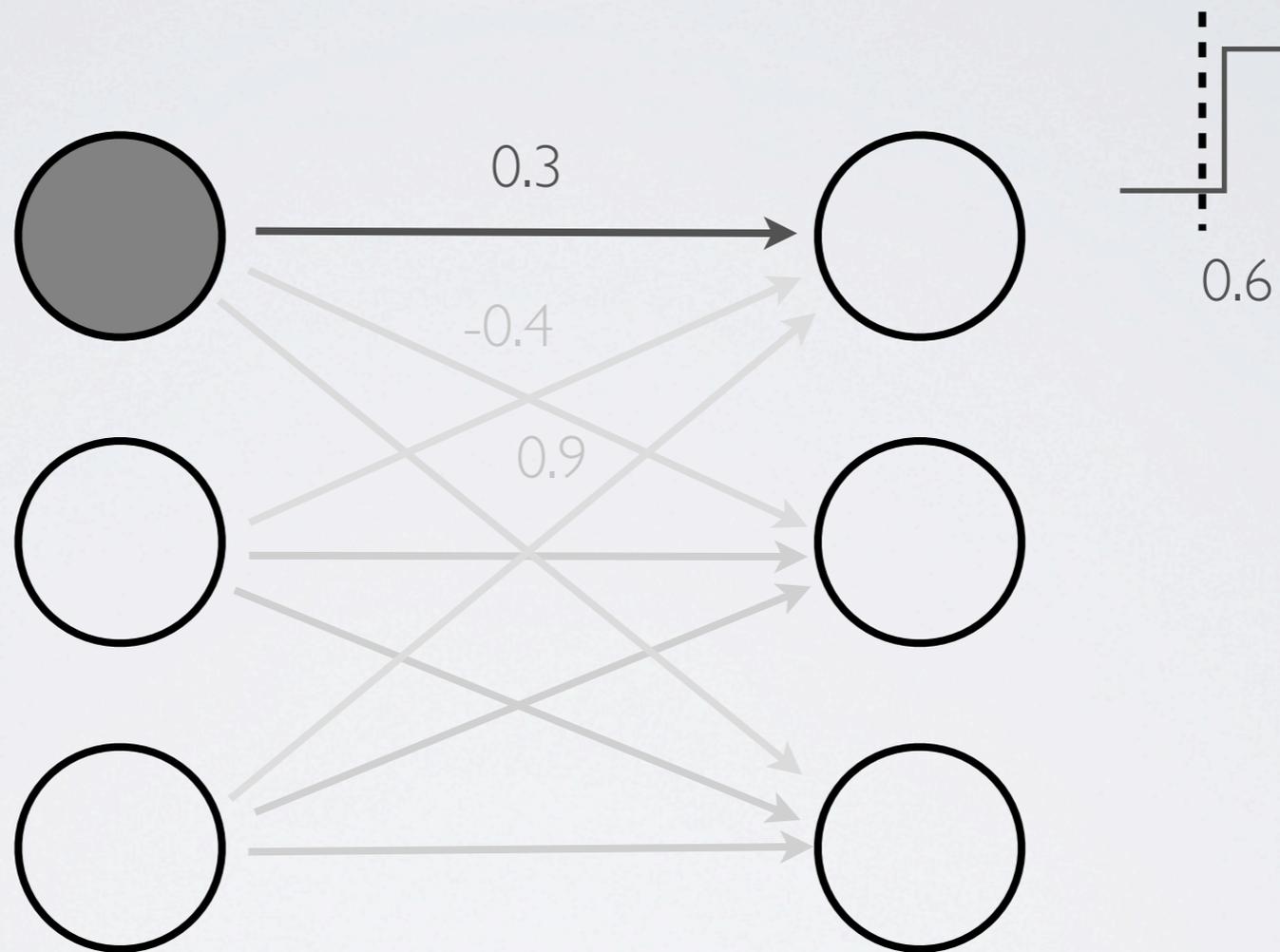
PERCEPTRON



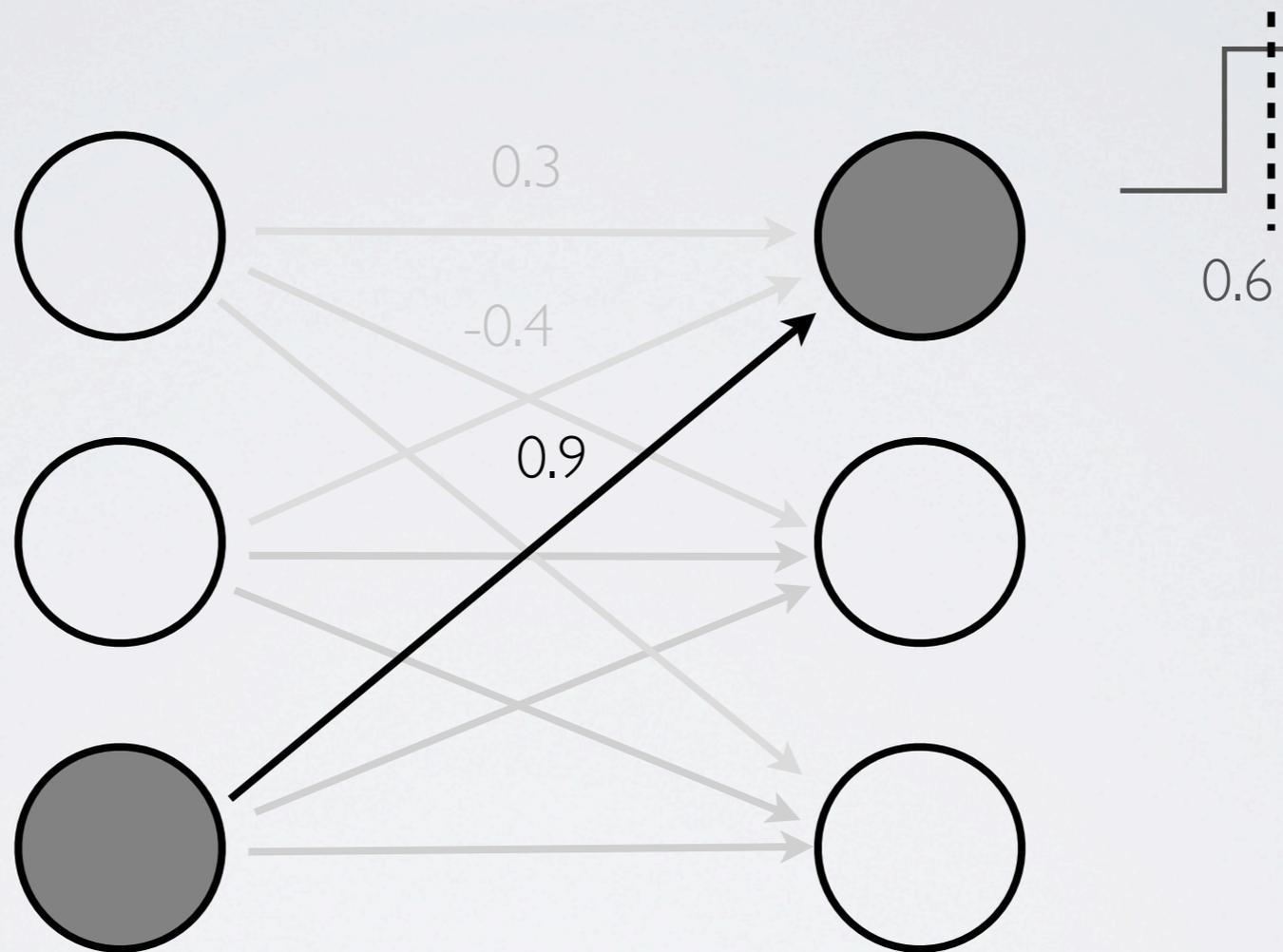
PERCEPTRON



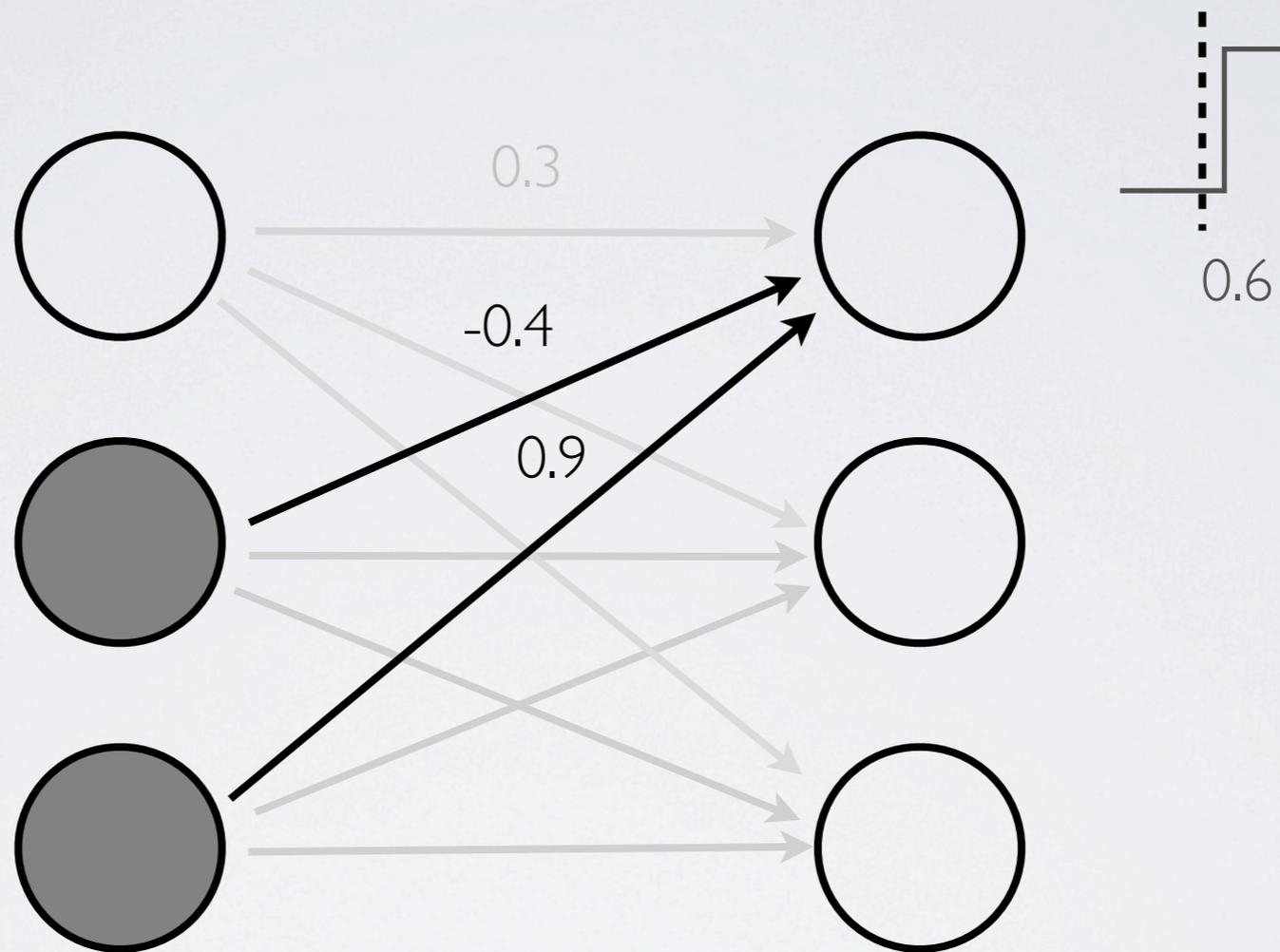
PERCEPTRON



PERCEPTRON



PERCEPTRON



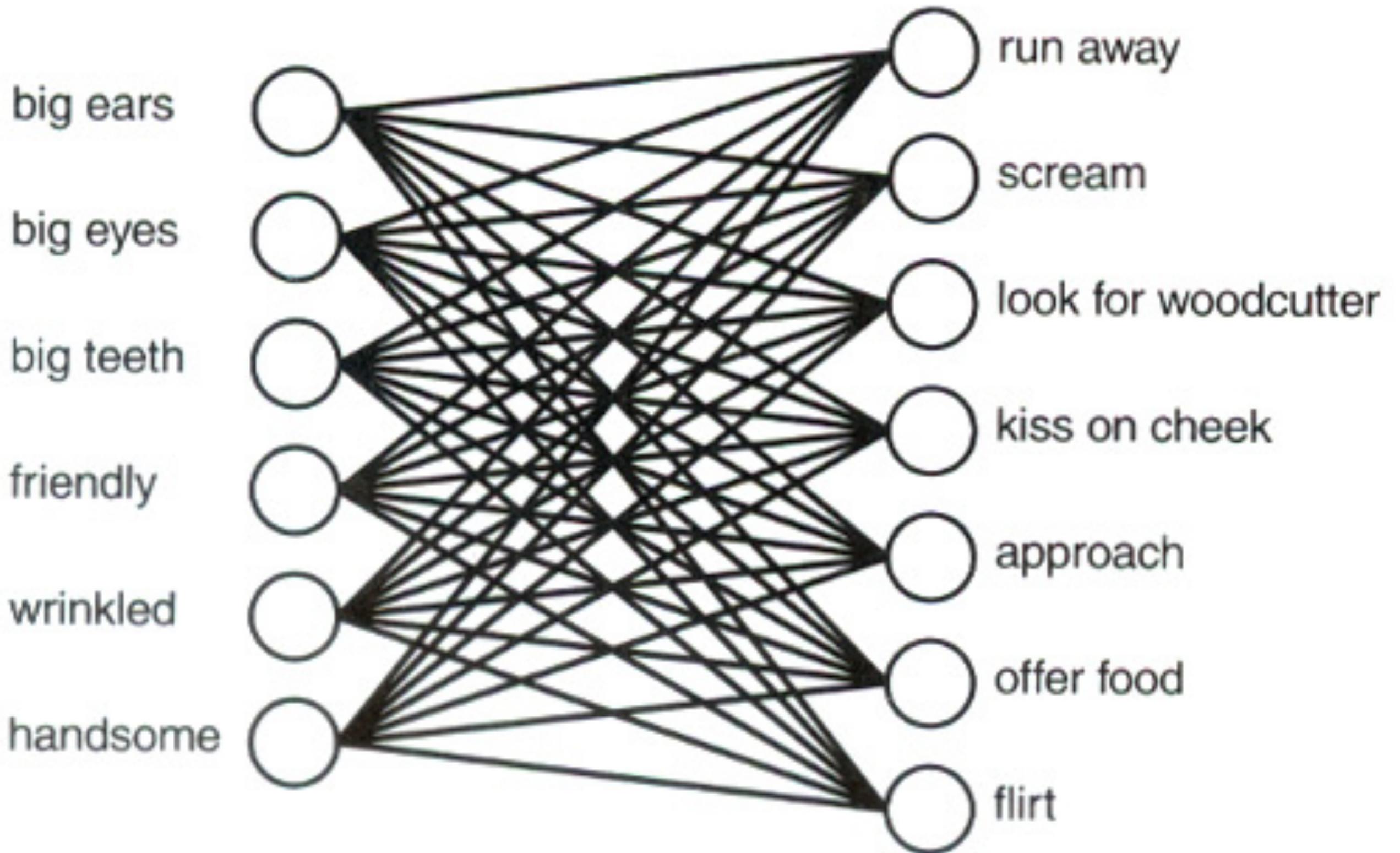
PATTERN RECOGNITION

- Is not only fundamental to language...
- ... but underlies every facet of cognition.

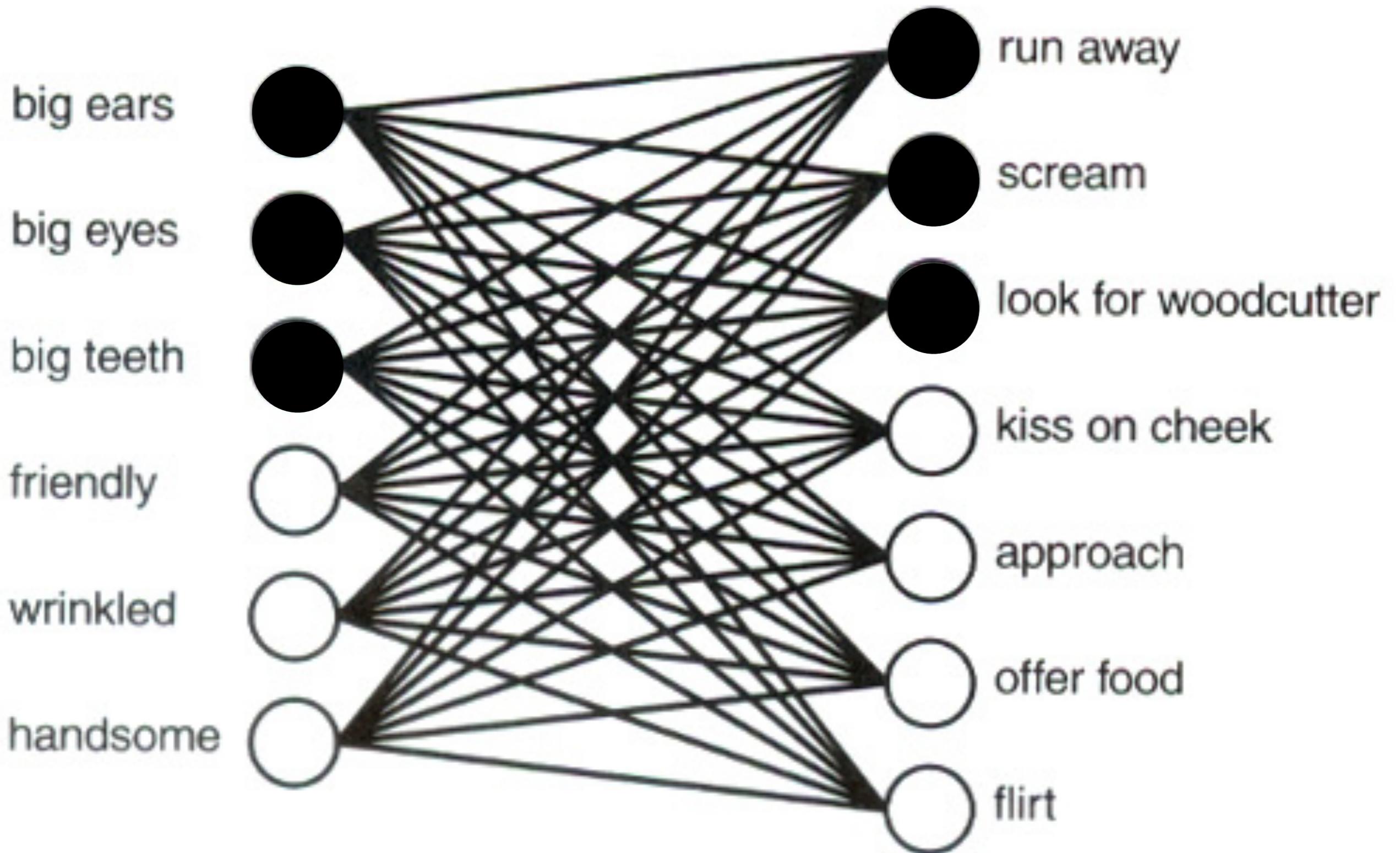
PATTERN RECOGNITION

- When we start to observe patterns, it is natural for humans to start extrapolating these patterns
- This is why we're here right now!

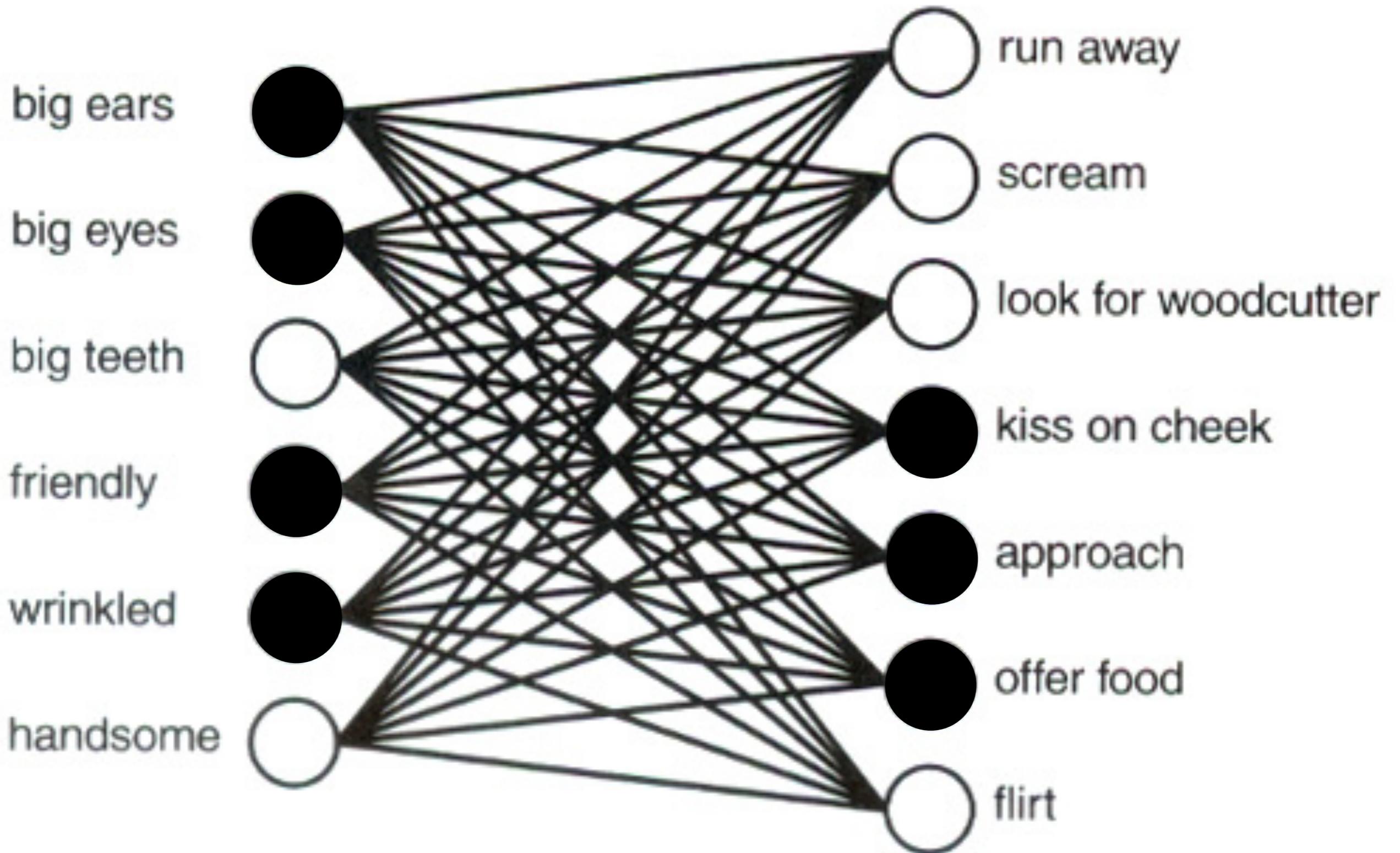
LR³



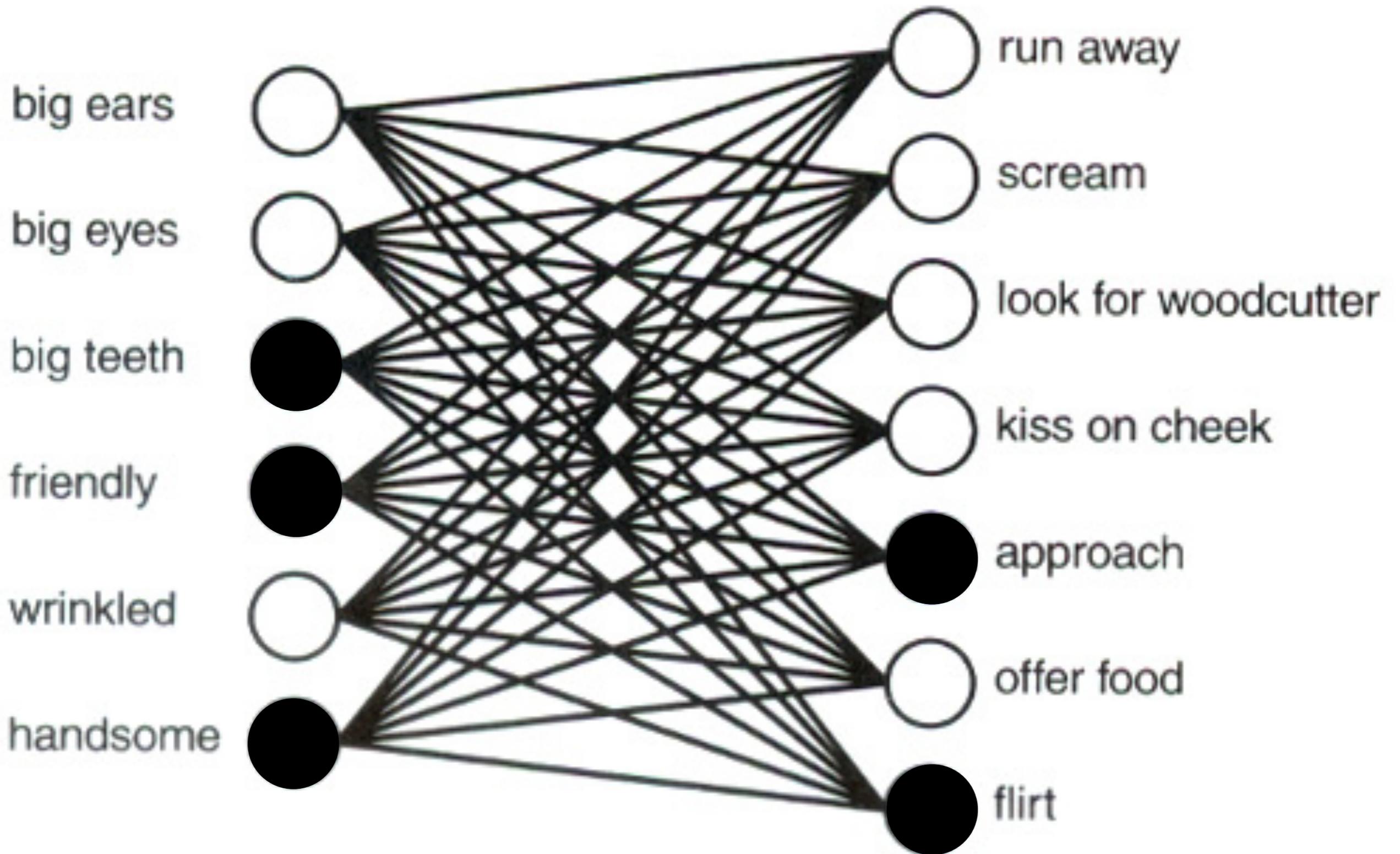
LR³



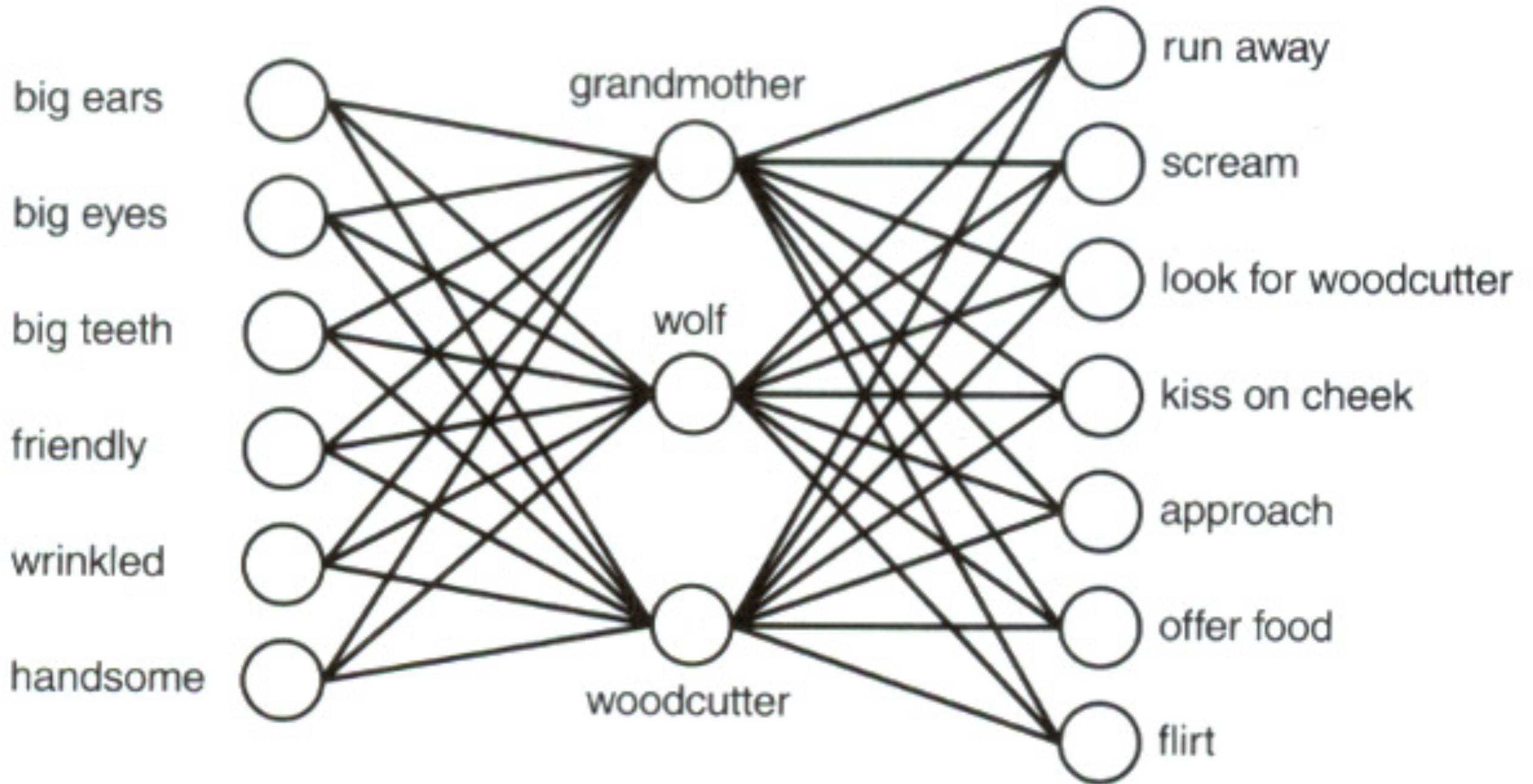
LR³

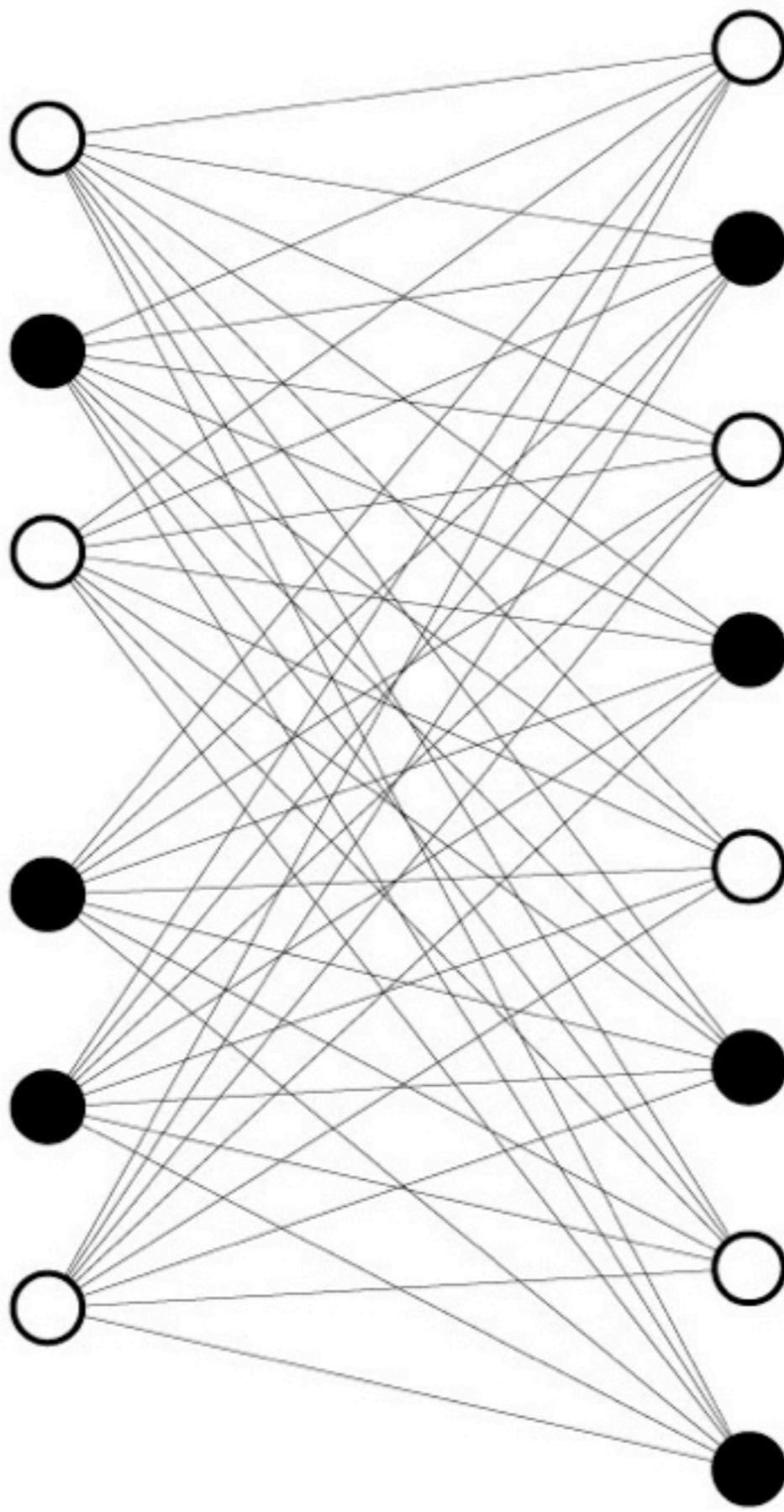


LR³



LR³

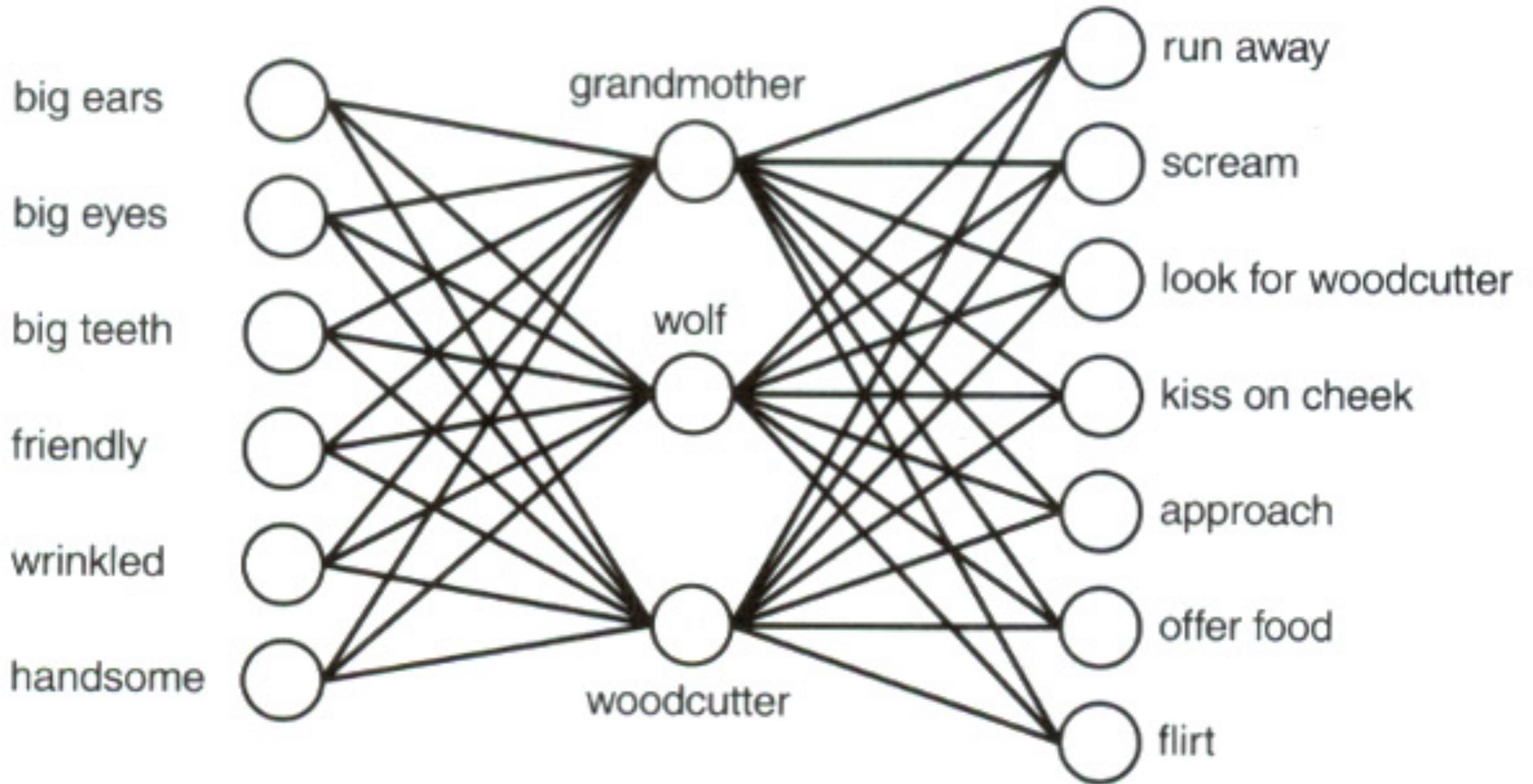






	Unit			
Trial	0	1	2	3
0	○ ○ ○ ●	○ ● ○ ○	○ ● ● ●	○ ○ ○ ○
1	○ ○ ○ ○	○ ○ ○ ○	○ ● ○ ●	○ ○ ○ ○
2	○ ● ○ ○	○ ○ ○ ●	○ ● ○ ●	○ ● ○ ○
3	○ ● ○ ○	○ ● ○ ●	○ ● ○ ○	○ ● ○ ○
4	○ ● ○ ●	○ ● ○ ●	○ ● ○ ●	○ ● ○ ●

LR³



PERCEPTIONS & LAYERS

- “Output” nodes of one pair of layers can be the “input” nodes of another pair of layers
- —and the network doesn’t know that this input is “internal” or “external”
- —which means that internal representations can work just the same way as physical sensory perceptions!

PERCEPTIONS & LAYERS

- Activation of the “wolf” node recalls its features
- gives rise to the sense of that node as representing “wolfness.”

The ability of the network to flexibly activate the “wolf” node gives rise to the sense of that node as representing “wolfness.”