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FIRST GENERATION - MEMORY AND SPEECH

2.1 FROM ANIMAL TO HUMAN

2.2 FROM CHILD TO ADULT

2.3 THE SEARCH FOR MEMORY

-- so much more language sophistication comes out of a child than goes in, that you have to conclude that they were born with blueprints, plans, software - whatever you want to call it - that enables them to learn as fast as they do.

Jay Ingram, TALK, TALK, TALK, Pages 185-186

There is no step more uplifting, more momentous in the history of mind design, than the invention of language. When Homo sapiens became the beneficiary of this invention, the species stepped into a slingshot that has launched it far beyond all other earthly creatures in the power to look ahead and reflect.

Daniel C. Dennett, 1996

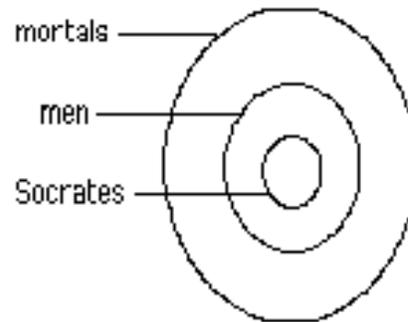
The brain is born not as a blank slate but as an exposed negative waiting to be slipped into a developer fluid.

Edward O. Wilson

(Quoted in Tom Wolfe, HOOKING UP, Page 80)

CLASS LOGIC (All, some, no)
 Puts things into categories and considers relationships among those categories

All men are mortal
 Socrates is a man
 Therefore, Socrates is mortal



ORDINAL LOGIC (greater than, equal to, less than)
 Puts things along dimensions and considers relationships along dimensions

A is greater than B
 B is greater than C
 Therefore, A is greater than C



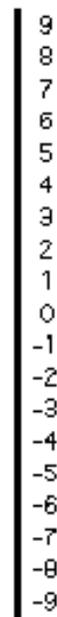
NATURAL NUMBERS (1, 2, 3, ---)
 To permit more precise propositions about differences along dimensions
 A is 5 units greater than B
 B is 2 units greater than C
 Therefore, A is 7 units greater than C

ZERO (0)
 To provide an answer when a number is subtracted from itself

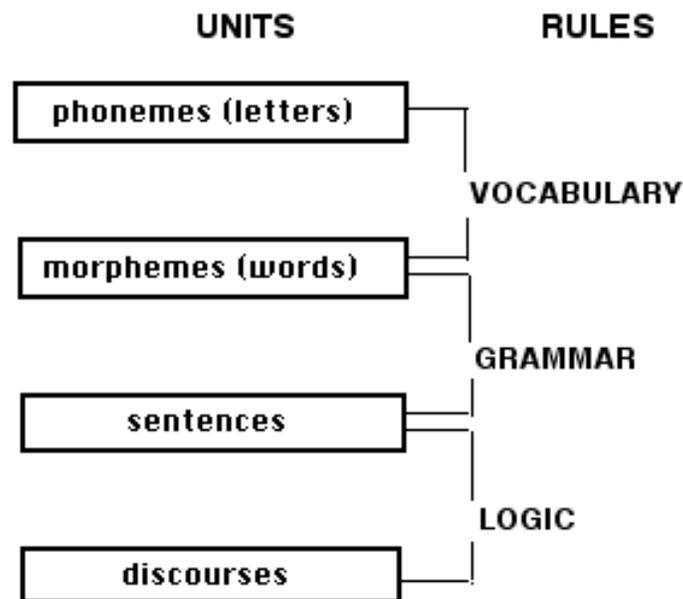
NEGATIVE NUMBERS (-1, -2, -3, ---)
 To provide an answer when a large number is subtracted from a small number

FRACTIONS and DECIMALS (1.1, 1.11, 1.111, ---)
 To provide an answer when one number is divided by another and it doesn't go in even

IRRATIONAL NUMBERS (2 ,3 ,5, ---)
 To provide an answer when the square root of a number is not a natural number



LOGIC AS "MISSING LINK"



HIERARCHICAL STRUCTURE OF LANGUAGE

QUESTIONS

- | | |
|--|---|
| <p>1 Suppose you know that
 If I have a marble in my right hand,
 then I have a marble in my left hand
 I have a marble in my right hand</p> <p>Then would this be true?
 I have a marble in my left hand</p> <p>YES NO MAYBE</p> | <p>3 Suppose you know that
 If I have a marble in my right hand,
 then I have a marble in my left hand
 I do not have a marble in my right hand</p> <p>Then would this be true?
 I have a marble in my left hand</p> <p>YES NO MAYBE</p> |
| <p>2 Suppose you know that
 If I have a marble in my right hand,
 then I have a marble in my left hand
 I have a marble in my left hand</p> <p>Then would this be true?
 I have a marble in my right hand</p> <p>YES NO MAYBE</p> | <p>4 Suppose you know that
 If I have a marble in my right hand,
 then I have a marble in my left hand
 I do not have a marble in my left hand</p> <p>Then would this be true?
 I have a marble in my right hand</p> <p>YES NO MAYBE</p> |

ANSWERS		p	q
		p or notp p.q or p.notq	q or not q notp.q or notp.notq
1	if p, then q p x Therefore q	x	x
		YES	
2	if p, then q q x Therefore p	x	
		MAYBE	
3	if p, then q notp Therefore q	x x	
		MAYBE	
4	if p, then q notq Therefore p	x x	x
		NO	

A COURSE IN LOGIC

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