

## Cultural transmission

### انتقال فرهنگی

- We acquire a language in a culture. We do not inherit it.
- Animals are born with a set of specific signals that are produced instinctively
- Compare a baby and a kitten that are moved into a different environment from their parents'
- Human infants, growing up in isolation, produce no 'instinctive' language.

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- Do animals understand us when we speak to them?
- Can animals of one species learn to produce the signals of another species?
- Physical structure of vocal tracts in animals.

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## Duality دوگانگی

Human language is organized at levels or layers simultaneously

- At one level we have distinct sounds, at another level we have distinct meanings.
  - t i p      tip, pit
  - a t p      tap, pat, apt
- With a limited set of discrete sounds, we are capable of producing a large number of words with different meanings. This can also be referred to as discreteness.

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Wahsoe and sign language  
more than 100 words (3.5 years)  
Sentences and combinations      water bird = swan

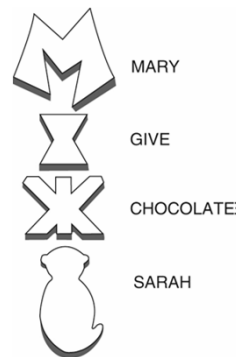
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## Interchangeability

### قابلیت تعویض

- We can communicate with others, give them information and receive information from them. Give and take
- We are able to understand what other people say and we can repeat what we hear.

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Sarah's arrangement  
of symbols into a  
sentence

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## Lana



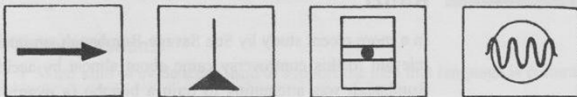
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- Can computers learn human language?
  - Computer speech has both discreteness and displacement
  - Computers can generalize sentence structures
  - Computers can associate names of objects with their pictures
  - Computers can be creative. poetry
  - There are some differences.

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Lana's use of the keyboard  
to produce a request

to a computer. When Lana wanted some water, she had to press four symbols, in the correct sequence, to produce the message *please machine give water*.



Did they really understand the meaning?  
Conditioned response?

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کدام ویژگی می‌تواند میان زبان انسان‌ها و حیوانات مشترک باشد؟  
 (۱) اختیاری بودن (Arbitrariness) (۲) جایه‌جایی (Displacement)  
 (۳) دوگانگی (Duality) (۴) زایی (Productivity)  
 ۱۳۹۷

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Nim Chimpsky

Mostly 2-word utterances in ASL.  
Rarely did he sign spontaneously.  
Responses stimulus-controlled.  
Noncreative Offsprings?

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The property of language according to which there is no natural connection between a linguistic form and its meaning is called -----

- |                 |                  |
|-----------------|------------------|
| 1) displacement | 2) arbitrariness |
| 3) duality      | 4) productivity  |

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کدام ویژگی زبانی امکان استفاده از نام حیوان را  
برای اشاره به انسان میسر می‌سازد؟

(۱) زبایی (Productivity)  
(۲) جابه‌جایی (Displacement)  
(۳) تولید دوگانه (Duality)  
(۴) انتقال فرهنگی (Cultural transmission)

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The pairs 'can' and 'knack' reveals the  
quality of human languages referred to as:

1. Displacement      2. Discreteness  
3. Recursiveness      4. Embeddedness

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