Origins of Human Communication

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Lecture 1: The Intentional Communication of Great Apes

Ape gestural communication flexible, intentional, but not co-operative (no shared intentionality).

⇒ Biol. comm. = any physical or behavioral feature that evolved to influence others

- Need equilibrium of costs & benefits for Comm. (C) & Audience (A)
- EG: angler fish, duck mating displays

⇒ Communicator = behavioral manipulation <=> Audience = information

1.1. Great Apes' Vocalizations and Gestures

- Displays = genetically fixed <=> Signals = flexible, voluntary
- Vocalizations = displays
  - Unlearned & inflexibly used
    - ¬ no indiv diff; isolation exps; cross- fostering exps
    - ¬ inflexibly used: particular situations and emotions
    - ¬ do not learn new vocalizations (even w/ with humans)
    - ¬ Goodall: "The production of a sound in the *absence* of the appropriate emotional state seems to be an almost impossible task for a chimpanzee"
  - Broadcast to all: audience effects = presence/absence of kin (at best)
    - ¬ e.g., call even when whole group is there (predator, food)
  - Evolutionarily urgent functions ==> high emotions
    - ¬ e.g., vervet alarm calls: [apes = no referentially specific calls]
      - A = extract information (learn bird alarms)
      - C = cause behavior: predator retreats; kin run to safety
    - ¬ Seyfarth & Cheney (2003, p. 168): "Listeners acquire information from

signalers who do not, in the human sense, intend to provide it."

- Vocal comm. basically same in all mammals (ground squirrels, dolphins)

- Gestures = signals
  - Many genetically fixed postures & facial expressions
  - But some: less evolutionarily urgent functions ==> relaxed emotions
    - ¬ e.g., play, riding, nursing, begging, grooming
  - Flexible Use [analogy: tool use]
    - ¬ learned: individual differences; novel (idiosyncratic) gestures, new gestures with humans (see below)
    - ¬ flexibly used: means-ends dissociation
      - ¬ combinations/sequences
    - ¬ ontogenetic ritualization, not imitation
      - ¬ sequence: (i) C does X; (ii) A anticipates by doing Y at int. move.; (iii) C notices this, and just produces int. move.
      - ¬ evidence: group comparisons; experiment
      - ¬ no imitation: gestures = one-way, not shared (¿convention?)
  - Attention to the attention of the partner
    - ¬ Directed at individual recipients (not broadcast)
      - ¬ much evidence: visual gestures only when A attending
    - ¬ Visual modality: focus on attentional state of partner
      - ¬ A: is it directed to me? C: Is she attending?
  - Type I: Intention movements: und. others' goals
    - ¬ e.g., arm-raise, touch-side: I want you to do X.
    - ¬ imperative, dyadic (food-beg as exception; object 'offer')
    - ¬ metonymic (no iconic) => function/meaning internal to activity
      - ¬ supposed gorilla examples of iconic
  - Type II: Attention getters: und. others' perception
    - ¬ to obtain attention on displays: I want you to see me [do X]

        - ¬ e.g., leaf clipping (erection), throw stuff (play face)
        - ¬ function/meaning from display
        - ¬ chimp and gorilla examples of hiding displays
        - ¬ auditory attention getters: only African apes
            - make noise without emotion
    - ¬ to obtain attention to body part or object: groom, play, food
    - ¬ I want you to see: ¿Gricean claim of attention?
    - ¬ apes do not produce sequence: att-getter + intention-movement
        - ¬ walk around (observations, experiment): esp. *Pan*
- Comparison: ape gestures more cognitively sophisticated (closer to language) than vocalizations => based on und. that others have goals & perceptions
    - Learned, flexible, novel, creative combinations (vocal = no)
    - Chosen w/r/t attentional state of the recipient (vocal = no)
        - ¬ and use of attention getters, walking around
    - More sophisticated in apes than in monkeys (vocal = opposite)
    - But not conventions => not shared, only one-way (not imitated)
    - But no pointing or iconic gestures: not even when want something
    - Not collaborative (no requests for clarification)

1.2. Great Apes and Pointing

- Approx. 60-70% of captive chimps point imperatively for humans
    - to out-of-reach food, w/ persistence, when human looking

      - nothing systematic w/ vocalizations (auditory att-getters: yes)
    - point to tool, so humans can use it to get them food [C&T, '94]
        - ¬ so human can use it for self? (so far = no)
        - ¬ point to where food was hidden many hours before
        - ¬ Kanzi combines pointing with lexigram to specify who
    - others: bring human to place where she can help; give human locked box for

help; put human's hand on pocket => analogy = tool-use

- no declarative (sharing) pointing; no informative (helping) pointing
  - ¬ no characterizing gestures; but can be taught ASL signs = imperative
- ¿What are these points? And why for humans, but not for conspecifics?
  - ¬ conspecifics competitive <=> humans helpful
  - ¬ human evol.: imperative pointing when others become helpful

- Comprehending pointing
  - Apes can follow gaze or pointing gesture to, e.g., food (no inference)
  - But apes terrible in object choice, w/ food hidden; Why?
    - ¬ kids good at 12-14 mos.
  - Hare & T competitive object choice experiment
    - ¬ und. goal & perceptions of other (in competition)
    - ¬ make inference about goal of reaching
  - Herrmann & T => "Don't!" experiment => inference from prohibition
    - ¿ und. indiv. imperatives?
  - Next Lecture: not missing und. of intentionality [goal, percept, act]
    - ¬ but missing shared intentionality: joint attention, communicative intention (relevance to JAF), cooperative motive to share info.
  - Sidebar on domestic dogs (and foxes) => skills in obj choice
    - ¬ wolves, undom. foxes => no skills
    - ¬ Rico 'words': frame is always "Fetch!" (natural + trained)
      - new experiment w/icons

1.3. Summary: Ape Gestural Communication

- Ape gestures => intentional communication: (i) flexible, (ii) audience design
  - Based on und. goals & perceptions of others (vocal. = no!)
  - Intention movements - function/meaning inherent if und. goals
  - Attention getters - function/meaning inherent if und. displays (+percept)

- But not co-operative comm. b/c no skills & motivations of shared intentionality
    - Gestures one-way (not imitated), not collab. (no reqs. for clarification)
    - Helpful partner leads apes to indiv. imperatives, but not co-op. comm.

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