

Conventionality in an evolutionary perspective

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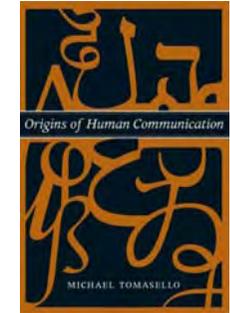
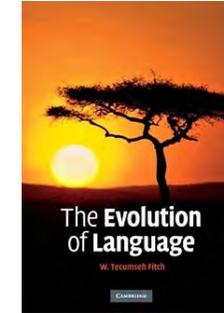
Evolutionary perspective

- General project: integrating study of language, cognition, culture, and biology
- Develop, re-interpret, modify, ... concepts through confrontation to allow for integration
- Evolutionary theory: “population thinking”
 - Evolution consists in change of relative frequencies of variants in a population over generations
 - “populations evolve, individuals are selected”
 - Language: instantiates evolutionary algorithm
 - besides organic life, immune system, and others

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Conventionality

- Issue in evolutionary studies:
 - Fitch (2010): practically absent
 - Tomasello (2008): main problem to be explained

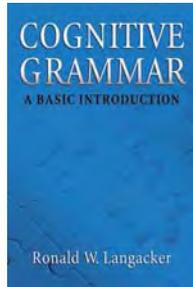


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Conventionality

- Issue in cognitive/functional linguistics
 - Langacker (2008: 19)

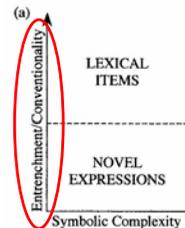
“... a language is characterized as the set of internalized structures (conventional units) that enable its users to speak and understand.”



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Conventionality

- Issue in cognitive/functional linguistics
 - Id.: 21



- fn 13

“For ease of discussion, I am conflating two parameters that eventually have to be distinguished: **entrenchment** or **unit status** (pertaining to a particular speaker) and **conventionality** (pertaining to a speech community).”

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Conventionality

- Id.: 29

But does a single individual really ever know an expression’s meaning? One objection is that linguistic meanings are conventional and thus reside at the social rather than the individual level. [...]
- Id.: 30

We can validly distinguish, however, between what a single speaker knows and the collective knowledge of a whole society. The former is arguably more basic, since collective knowledge consists in (or at least derives from) the knowledge of individuals. For purposes of studying language as part of cognition, an expression’s meaning is first and foremost its meaning **for** a single (representative) speaker.

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Conventionality

- Id.: 30 [contd]

This is not to deny or diminish the social aspect of linguistic meaning. An individual’s notion of what an expression means develops through communicative interaction and includes an assessment of its degree of conventionality in the speech community. By their nature, moreover, certain questions have to be studied at the population level (e.g. how norms are established and maintained, the extent to which consensus is achieved, and the range of variation actually encountered). Still, these questions cannot be fully answered unless the knowledge of individual speakers is taken into account.

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Conventionality

- “population level”: OK, but
 - what exactly is the relationship to and difference from individual level (entrenchment, unit status)?
 - is there any difference in explanatory role?
- Employ biological model as framework
 - to the extent that this is helpful, we may also learn more about how to use such models
- Model: “Tinbergen’s 4 *why*’s”
 - Intrinsic value + consensus among evolutionary theorists (including, e.g., Fitch and Tomasello ...)

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Tinbergen’s 4 *why*’s

- Tinbergen, N. (1963), On aims and methods of ethology. *Zeitschrift für Tierpsychologie* 20: 410-433.
- Response to debates and controversies on concepts and methods (including accusations of “armchair science”...) in behavioural biology
 - ‘simple [...] question: “Why do animals behave as they do?”’
 - Full biological answer (explanation) will, as a matter of principle, not be a single one, but comprise **four** different types of ‘because...’
 - (cf. Aristotle)

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Tinbergen's 4 why's

- Proximate:
 - 1) Mechanism: What are the (molecular, anatomical, neuro-cognitive, etc.) mechanisms that produce the feature?
 - 2) Ontogeny: What process of development (from egg to adult) made the feature possible?
- Ultimate
 - 3) Function: What are the effects of the feature? What and how does it contribute to the fitness of the organism?
 - 4) Evolution: What is the phylogenetic history of the feature? What did it evolve out of and how?

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Tinbergen's 4 why's

- Proximate (mechanisms, ontogeny): causes and effects within individual organisms
- Ultimate (function/survival value, evolution): causes and effects on population level

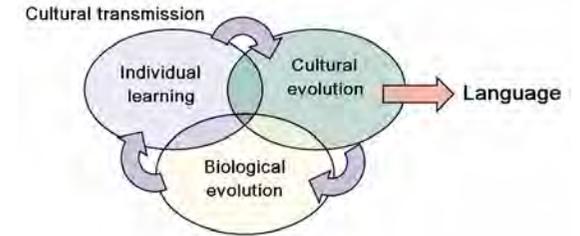
Q: "Why do speakers use the linguistic items they use?"

- 1) Mechanisms: communicative situation/problem (stimulus), cognitive dispositions, etc.
- 2) Ontogeny: development of the individual (this is what s/he learned to do, the result of language acquisition)

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Tinbergen's 4 why's

- Ultimate: complication when behaviour is transmitted culturally (by means of imitative learning), rather than genetically
- (not only in case of humans: learned vocal communication systems ('song') of songbirds, parrots, whales, seals, bats)



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Tinbergen's 4 why's

- Both biological and cultural evolution: population level phenomena (changes in relative frequencies of variants)
 - Ultimate *Why*-questions applicable on both levels
- For cultural phenomena: *immediate* domain for answers is culture

Q: "Why do speakers use the linguistic items they use?"

 - 3) Function: The linguistic item's contribution to communicative/social success (its 'meaning')
 - 4) Evolution: What is the cultural history of the item? What did it evolve out of and how?

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Tinbergen's 4 why's

- Both biological and cultural evolution: population level phenomena (changes in relative frequencies of variants)
 - Ultimate *Why*-questions applicable on both levels
- For cultural phenomena: *immediate* domain for answers is culture
- *Secondarily, indirectly*:
 - How does communicative success contribute to biological fitness?
 - How did the capacity for culture evolve?

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Conventionality

- Proposal
 - conventionality, as a population level phenomenon, is part of explanations in terms of cultural evolution
 - entrenchment, as an individual level phenomenon, is part of explanations in terms of mechanisms (and ontogeny)
- Implication: not necessarily tightly coupled (indistinguishable as explanatory factors)
 - A non-linguistic example

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Conventionality

- What is the meaning of



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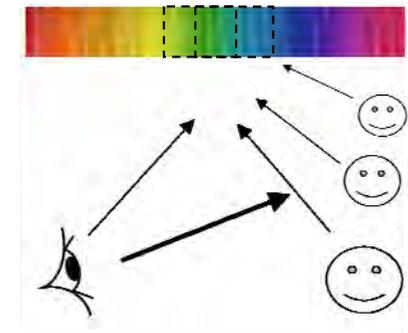
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Conventionality

- Entrenched: "I have right of way" (with routinized behavioural consequences)
- Conventional
 - Dutch: "green: pedestrians on the crosswalk have priority over all other traffic"
 - Chinese: "green: other traffic allowed on the crosswalk (turning the corner) has priority over pedestrians"
 - Basis for inference: 1) driver clearly expected me to behave in that way; 2) other pedestrians clearly expected the driver to behave in that way
 - Conventional knowledge, single/few instance(s)
 - entrenched routines still there...

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Coordination - intersubjectivity



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Coordination - intersubjectivity

- Evolution of convention (in a population)
 - Choice of signal based (also) on estimation of interlocutor's apprehension
 - If problem solved successfully, and same/similar problem occurs again: re-use same solution
 - When other members recognize problem and a successful solution: chances of adoption increase
 - When most members use the strategy most of the times the problem occurs: members start to expect the strategy to be used, know that others will expect it to be used, and therefore use it.
- (Series of usage events, multiple members)

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Partial overview

Entrenchment

- Ontogeny: result of repeated individual experience
 - Produces routinization ('habits')
 - Especially useful for linguistic units that have to be used in many utterances: grammar
- Causally interacting
 - candidate conventions that are easily entrenched: better chance of being adopted, etc.

Conventionalization

- Evolution: result of recurrence, in a community, of a solution to a communication problem
- Produces mutually shared expectations ('rules')
- Equally useful for frequent and infrequent aspects of linguistic usage

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Conclusions

- Structural parallels and causal interaction: → 'entrenchment and conventionality are the same kind of phenomena'?
- Evolutionary perspective: they are different types of processes, with different causal properties
 - Cf. "a single (representative) speaker": a fictive entity, abstracting away from variation, which would precisely make evolution (at population level) unaccounted for.

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Conclusions

- Process of conventionalization is an important part (if not the most important part) of the answer to Tinbergen's 4th *why*, when applied to language
 - Cf. Fitch vs. Tomasello
- Extension of existing evolutionary theory, step towards development of comprehensive theory of evolving systems
 - not only contribution from biology to linguistics, also the other way around (Fitch again), and to scientific development in general

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