Verbal Patterns: Taming Cognitive Biology

Stephen J. Cowley

Abstract Linguists classically focus on phenomenologically salient units or verbal patterns. In biolinguistics, these are "explained" by positing a brain that grows a system that identifies/generates linguistic forms (a "language faculty"). The paper offers an alternative: individuals become skilled in linguistic action by using cultural resources to extend their embodiment. Language and languages are heterogeneous and distributed. Although the verbal is salient, its basis lies in coordinated biosemiotic activity. In illustrating this perspective, the paper builds on two case studies of real-time events. These show that people link fine inter-bodily coordination with skills in orienting to utterances as types – they use cultural patterns to constrain biosemiosis. As people become strategic actors, they rely on embodiment (and, of course, brains) to develop skills based on *taking a language stance*. By imaginatively separating language from activity, they both tame biosemiotic powers and transform the brain's functional organisation. There is no need for language genes, neural spandrels or undiscovered physical principles. Wittgenstein's view that language connects living human bodies within *forms of life* can thus be extended by means of empirical and observational work.

Keywords Biosemiotics • Distributed cognition • Enactivism • Systemic cognition • Interpersonal communication • Coordination • Social interaction • Distributed language • Languaging • Embodied cognition

Where Is Language?

The hypnotic effects of verbal patterns induce us to picture human languages in terms of verbal patterns and, of course, we are likely to think of verbal patterns as specifying meanings. If not wary, we may even ascribe the meanings to the hypnotic effects of languages that are constituted by verbal patterns. That, of course, is

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circular. Yet, in spite of circularity, just such an approach dominates mainstream linguistics. The scientific study of language is all too often restricted to the study of forms that arise in acts of saying and, conversely, how the results allegedly reflect not only what is said but also what is meant. Of course, this persists because, in human forms of life, people are bound to regard acts of speech and construals as public events that arise as we communicate. From this perspective, language is separate from cognitive biology.

One well-known school challenges this view. Building on Noam Chomsky's generative grammar,[1] some linguists deny that language co-evolved with human communication.[2] Dismissing the external or E-language, language is ascribed a hypothetical inner *language faculty*. On a *biolinguistic* view, an internal or I-language grows in the brain. Using comments of Chomsky's, Prisca Augustyn[3] connects biosemiotics to this neurocentric view. Human genetics, she believes, allow cognitive processing to draw on semiotics. This paper uses another view of cognitive biology in its approach to language. Far from ascribing language to a mental organ, it is seen as extending primate biosemiotic abilities. While neutrally enabled, language spreads across bodies, societies and space: it is multi-scalar or *distributed*. As people *language*, neuro-dynamics connect phenomenological experience, life-span events, history and, crucially, semiotic processes. Language is based in, not words and genes, but the evolutionary history of semiosis. While computation and textual use of language have a formal basis, they serve to extend embodiment. Even today talk and meaning depend on meshing bodily dynamics with wordings: human understanding binds symbolic aspects of language to iconic and indexical modes of neurophysiological activity.

Why a Distributed View?

Emphasis on the distributed nature of language[4] arose from challenging the "code" view of mainstream linguistics.[5] Figures as diverse as Ferdinand de Saussure, Leonard Bloomfield, Zellig Harris, Noam Chomsky, Burrhus Fredric Skinner, Michael Halliday, George Lakoff and Michael Tomasello all identify language with the words and rules that they were taught at school. By contrast, on the distributed view, language is traced to a history of coordination that transforms human biofunctionality. The neurobehavioural results enable humans to integrate bodily

[1] In Chomsky 1957, this was presented as a descriptive model; however, by the time of publishing *Aspects* (Chomsky 1965), it was said to some kind of inner reality. While the theory has changed greatly over the years, Chomsky retains the view that scientific linguistics has discovered a neural language organ.

[2] Cf. Jenkins 2000.

[3] Augustyn 2015.

[4] Cf. Cowley 2007 and (ed.), 2011.

[5] Cf. Love 2004; Kravchenko 2007.

dynamics with speech gestures[6] and use utterance acts in treating (partly shared) situations as meaningful. The distributed perspective thus denies that language is reducible to semantic, phonological, syntactic and morphological "forms". While necessary for developing writing systems and in language teaching, "forms" are to be recognised as theoretical constructs. Rather than invoke behaviourism or cognitivism, language is a dialogical activity that prompts people to develop linguistic skills. It is therefore a category mistake to posit an inner process to "explain" language. Far from using a neural or mental "faculty" (or I-language), people need strategic ways of interlacing language, action, perception and thought. Using a principle of ecological assembly,[7] people make what they can of social rules and all the other resources of the life-world. Since language meshes action-perception with thinking, it shapes context as, together, people construe circumstances. Remarkably, this applies *even if nothing is said*. As I look out of the window and see (as it happens to be the case) a train, language shapes perception. Though the train is no more than a salient part of the surrounding, the consequences of looking are verbally constrained: they prompt me to pick out something that is likely to be familiar to a reader. Wordings call forth a familiar world of objects and events based on how we act and perceive. However, neither wordings nor verbal patterns determine anything. Most certainly, they cannot influence how populations act-perceive and how individuals think. Rather, they serve bonding functions, acting to ensure that lives cohere within communities. Embodied and embedded acts of utterance unite speaking, hearing and action. "Language exists", Mikhail Bakhtin suggests, "only in the dialogic imagination of those who make use of it".[8] As imaginative activity, language is irreducible to forms; rather, it shapes living human beings. Wordings merely constrain what William James calls *the thinking that goes on*.[9] In short, picturing languages as verbal patterns that specify meanings lead us astray. This hypnotic effect occurs because it is so tempting to accept the commonplace that language depends on verbal patterns. Patently, however, this view is circular. Unlike computers, human infants have no need to ground their "words" in an objective world: they are learned as part of activity and, of course, their function is inseparable from action. From the start, infant activity is construed in terms of wants and beliefs that a caregiver uses to sustain consistent modes of action (and thought). Later, these simple forms of understanding become intermeshed with language: people come to say what they want and believe. As a result, language both allows individuals to act under collective control and enables them to develop as persons. This gives rise to what Ludwig Wittgenstein appositely calls *forms of life*: complex social practices during which people feel, think, speak and act by linking language with cognitive biology.[10]

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[6] Rączaszek-Leonardi and Keslo 2008.

[7] Clark 2008.

[8] Bakhtin 1963 [1984, p. 183].

[9] James 1890, p. 225.

[10] Wittgenstein 1953 [1958, p. 226].

Human activity can be described as semiosis. This occurs, among other things, as language spreads in space and time both during talk and when they engage with text, computers and their technological extensions. Human sense-making connects circumstances as people orient to social (and verbal) routines as well as one-off events. In pursuing the distributed view, studies described elsewhere bring home how dynamics shape real time construal.[11] Species-specific *languaging* is influenced by wordings that take on a particular sense for each person concerned. *First-order languaging* is defined as, face-to-face (non-ritualised) activity in which wordings play a part. Its basis lies in sense saturated coordination or *interactivity*[12] that allows people to coact as they echo voices, doings, sayings and ways of using common expectations. For Charles Sanders Peirce, therefore, even man is a sign.[13] This striking claim is vindicated in how software designers encourage "users" to present themselves as semiotic beings. They are encouraged to develop habits in projecting likely events, acting, monitoring the results and re-engaging with the system. Language and interactivity or cognitive biology thus ground semiosis. Pursuing this, the paper focuses on the unfolding of two complex social events. It highlights how the persons concerned use a dialogical imagination to integrate their embodiment with how verbal patterns serve to appraise and manage the changing circumstances of their actions.

First-Order Languaging

As the life-world comes to be seen as irreducible to information processing, new importance falls on *languaging*. Qualifying Humberto Maturana's use of the term,[14] I limit its application to action where wordings play a part – or to the human world. It is striking that Maturana's biological perspective[15] preceded the neuroscientific challenge to the view that neural activity resembles machine code. Rather than posit a language "faculty", languaging was seen as structural coupling between environments and living beings. It is thus a form of communication bound up with attention, perception, action and learning. Languaging gives rise to selections that make up an individual's lived world. When traced to organism-environment relations, language can emerge independently of discontinuities in natural selection, a spandrel or mysterious physical principles. Its basis is embodiment, iconic and indexical activity that, in our species, is also phenomenological. People create a "consensual domain" as, in our terms, they use biosemiotic skills to create and construe the

[11] The analytical details of the simulation are described in detail in Steffensen et al. 2010; the South African interaction is the main focus of Cowley 2001. Finally, Stephen Cowley links the two incidents in a paper on intercultural communication (Cowley 2012a). While the analysis remains much the same, in this context, the interpretation is substantially extended.

[12] Kirsh 1997; Steffensen 2011; Cowley and Vallée-Tourangeau 2013b.

[13] Peirce 1931, §34.

[14] Maturana and Varela 1992.

[15] Maturana 1988.

wordings and practices of a familiar world. In *Homo sapiens*, feeling and thinking fall under verbal constraints. Given skills in orienting to these second-order patterns, people come to accept the agreements in judgement that underpin all kinds of social order. In an English speaking environment, therefore, they see *trees* as trees. Yet, while having a general aspect, as Maturana realised,[16] linguistically grounded experience is connotational. An individual not only construes what, on a given occasion, is meant by *tree* but also learns to discriminate what counts as trees in different situations. Human languaging allows self-creating, self-maintaining autopoietic systems to thrive in a constrained environment. In this sense, like other living systems, they depend on language. In the terms of the semiotician Thomas A. Sebeok,[17] they rely on a primary modelling system.

Most linguists (including biolinguists) ignore this plausible link between language and what Maturana calls the structural coupling of living systems. However, many trace language to coordinated use of the body. In independent work, Alton Becker demonstrates that acts of utterance always mean something to someone.[18] In short, their particularity undermines any code view. In making real-time events/construals part of what he too calls *languaging*, Becker concurs that understanding has a public aspect. However, within this dwelling-place, as Martin Heidegger puts it,[19] language speaks through us. General meanings disambiguate a situation (for a person) while the sense of an utterance – and situation – is particular. As the case studies show, even barely "linguistic" acts (e.g., "**ye:::s**") make utter sense. In linking culture to embodied coordination, Roy Harris suggests that "biomechanical" constraints are necessary to language.[20] Building on this observation, Nigel Love contrasted what linguists usually describe (verbal patterns) with embodied "first-order" activity.[21] On this view, mainstream tradition – Saussure, Bloomfield, Skinner, Chomsky and Lakoff etc. – are trapped by conceptual confusion. First-order bodily activity (languaging) is conflated with second-order products (imagined counterparts to wordings). In Per Linell's terms,[22] written language bias prompts the erroneous view that form-based patterns arise from a language system or faculty. Using a covert analogy with texts, mainstream linguists overlook *dialogicality* or the creation and construal of linguistic signs. While languaging occurs in space-time, it evokes the not-here and not-now. For Linell[23] mainstream models go wrong in conflating the situated aspects of language with its non-local resonances. In social life, people create/construe physical events that evoke expectations, norms and traditions. In dialogical imagination, wordings grant utterances a particularity derived from the astounding precision with which we concert activity. Human lan-

[16] Maturana 1978.

[17] Sebeok 1991.

[18] Becker 1988.

[19] Heidegger 1959 [1971].

[20] Harris 1998.

[21] Love 2004.

[22] Linell 2005.

[23] Linell 2009.

guage is polyphonic – a voice (or text) echoes others: it is iconic, indexical and, yet, symbolic. In terms of the distributed perspective, speaking while moving unites the general with the particular. In the next two sections, therefore, this symbiotic view of language is illustrated with respect to instances of first-order languaging.

The Case Studies

The first case study reports on a discussion which took place in the 1990s within a South African non-governmental organization (NGO) whose mission was to retrain Black teachers. A (male) senior teacher, Musa (M), comes to discuss a transfer to a place called Jozini with a White female administrator (Daphne, D). She had already heard about his upcoming request and, correctly, anticipates what he wants. She thus picks up *his* point of view (he had bad luck in the draw). The teacher accepts this view of the situation

1 D: hi musa you wanna see me is it about going to Jozini
2 M: ye:::::::::::::s
3 M: ye::::s eeh I had a bad luck eeh
4 D: d'you have a bad luck with the draw okay musa
5 M: ye:::s

Instead of directly *saying* that she will help, she uses an indirect strategy. In ways that may strike a reader as odd, she tells him how to act – to do like two other ladies by writing his name on a list in the blue block (or group f). As becomes apparent in 10, he does so.

6 D: will you plea(se) put your name here
I've I've jus I've just said to two ladies who has just come to see me as well
7 M: yes
8 D: hmm # I can't make any promises alright musa which group are you in
9 M: umm group ef

Thus, in the next utterance, she offers implicit reassurance.

10 D: group ef okay okay that's fine okay your name is there in the blue block so I can't miss that name I've gotto look at it alright

However, Musa does *not* thank her. Ignoring reassurance that she will look at it (and, by conventional implication, act on the basis of his request), he pleads in a respectful Nguni way (saying little, speaking slowly and using a deep voice) – saying only "**please eeeh**".

11 M: please eeeh

Daphne is unmoved; she repeats her indirect reassurance (in 12) and, in so doing, fails to adapt to his pace or the Nguni custom of showing respect by saying little. It is thus perhaps not surprising that she fails to elicit his thanks but, as shown below, triggers further strained interaction:

12 D: but I can not make any promises alright
13 M: mmm
14 D: and I'm I'm not gonna be able to l look at this

15 M: when uh will you you be final
16 D: Monday morning
17 M: Monday morning
18 D: yes
19 M: ah

Having not been thanked, in 14, she indirectly suggests that there is nothing to be done. Musa displays understanding by asking when she will finalise the decision. Instead of showing gratitude, he repeats her utterance and, once again, meets her reply with a respectful *ah*. At this point a colleague, Lynette, is moved to contribute to the conversation. She says (of Daphne):

20 L: she always does her best with everyone

She makes explicit to Musa that Daphne is doing her best – and, by implication, being fair (favouring neither him nor the two women who came earlier). But Musa knew this – did he not? After all, in accepting that she would not finalise the decision until Monday, he shows his grasp of the process. So what is going on? To give another view, I turn to an examination answer written by a black South African student months after having heard – and discussed – the recording in an academic seminar. To these ears, the conversation exemplifies:

> [w]hat we come across and see in our daily lives. […] There was a big problem with the interaction because of language boundaries i.e. Daphne was an English speaker and Musa a Zulu speaker. The problem of language led into Musa being offered answers and options, not given a chance to choose for himself and just accepting and acknowledging everything. I do not blame Daphne for this, she could not switch in register or even code-switch and Musa too could not express himself in English. The interaction did not become productive, as Musa was not well informed about what he wanted and Daphne on the other side wanted to get rid of him as soon as she could.[24]

Beyond the *said*, much more is happening. However, the nature of the "big problem" is not clear (even if familiar from "our daily lives"). Perhaps the reader will gain from reconsidering the narrative. As noted, Lynette acted in a way that (from her point of view) is fair: using a "block system", she agrees to consider Musa for transfer to Jozini. He understands and, Nguni style, shows due respect. However, Lynette feels moved to say that Daphne always does her best. In the examinee's terms, Musa proceeds by "just accepting and acknowledging everything".

21 M: ye:::s
22 M: ye::s and I I also yo::u see:::: you see:: why

Offering repeated respectful, low-voice drawled versions of "ye:::s" he concurs and, then, using another indirect strategy, starts to repeat his plea. However, he does not get to the end of his account of why he wants to go to Jozini (in that, as noted, speaking slowly enacts respect). Lynette interrupts:

23 L: if she can't do it then you know that God can't do it/[25]

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[24] Cowley 2001, p. 180. In fact Daphne is Afrikaans speaking and, of course, the analysis is limited. It is striking that the student pictures her Whiteness and fails to identify her accent; further, in my view Musa, a senior English teacher, expresses himself well in Black South African English. However, his style is typical of a man from an oppressed group.

[25] In the transcript, slashes (/) indicate overlap.

This too seems to be an attempt to get him to understand the situation and, perhaps, to show gratitude. Daphne laughs:

24 D: haha/
25 M: I'm so much willing to go there.

Far from laughing, Musa again repeats his desire for the transfer. Although all three are skilled in the local *lingua franca*, English, the legacy of living apart (apartheid) generates an ugly tone. The problem is neither miscommunication nor non-understanding: they re-enact behaviour that occurs between oppressed and oppressor groups.[26] The administrators speak to Musa as if he was a child – and he responds *like* a child. Verbally, this appears in comparing Daphne's good grace with that of a (most likely) shared God. However, it is most audible in how speaking "**she always does her best with everyone**" is rhythmically integrated with the beat of the previous four utterances (shown in bold).

16 D: Monday morning
17 M: Monday ***mor*** *ning*
18 D: ***yes***
19 M: ***ah***
20 L: ***she*** *always does her*
best *with*
ev *eryone*

She chimes in with a striking mode of articulation. Showing exquisite timing, she changes the tone by seeking to render explicit what has occurred. She tells Musa – almost directly – that Daphne is doing her best. Her action is especially striking because, a moment before, the talk had seemed to be coming to a close. In 17, Musa's rhythm had picked up on Daphne's "**Monday morning**", elicited confirmation and he had, still showing respect, signed off with "*ah*". Lynette's attunement is striking because of a metrical/intonational mismatch[27] that uses the syllable timing of her first language (Afrikaans). This displays that she is speaking *to* Musa (prominent initial "**she**" sounds marked in English) while standing up *for* Daphne (prominent, but softly spoken, *always*). Further, the syllable-based style allows loudness to parallel metrical patterning. (She speaks the first two feet loudly [to Musa] and the last softly [to Daphne].) The metrical organization can be shown by using updated classical notation.[28]

20 L: // ***she al***ways *//* ***does*** her ***best*** *//with everyone//*
//— ~ ~ // ~ ~ — // ~ ~ ~ —//

Unexpected prominence on "**she**" (spoken on a low-falling tone) is striking: this allows her to emphasise Daphne's goodness, reassure (always) and offer solidarity (with everyone). Both parties hear "their" message. Musa sounds (slightly) reas-

[26] This alludes to Georg Wilhelm Friedrich Hegel's insight that collective forces provide a setting for master-slave relations (Hegel 1807 [1967, p. 65]).

[27] Cf. Pike 1945.

[28] The transcription shows prominent syllables in bold — and how the utterance ends with suppression of loudness. In the accompanying metrical gloss, longer syllables are shown as '—' and shorter ones as '~'. Thus while '**she**' is both prominent and long, the first syllable on '**always**' is prominent and short.

sured as he ups the loudness and smilingly repeats 'yee:::s, yeee::::s' before restating his wish. Daphne, by contrast, is silent. Perhaps, it is this – plus Musa's again repeated non-display of gratitude that prompts Lynette to *go on* by explicitly supporting her colleague to the extent that she is comparable with God.

First-order languaging uses modulations in voice dynamics to perform a *cognitive* role: the phonetics of one burst of speech influence what follows (and the thinking that goes on). Many implicatures depend less on verbal content than voice dynamics. In echoing a historical context, I show their subtlety – and, yet, I have only begun to show how finely people use acoustic and gestural resources.[29] Nonetheless this level of detail clarifies why no neural model of "forms" can "explain" the events. In spite of failure to meet each other's expectations, Musa, Daphne and Lynette are all highly competent in their own languaging and, thus, each experiences events in a particular sense. More theoretically, unless the events are deemed "non-linguistic", they show that human language does not reduce to the "use" of verbal patterns. Further, given the role of bodies, it cannot be "explained" by models of genes and brains. As for infrahuman species, languaging is embodied or biosemiotic activity.

Timing shapes communication because, to affect B, A's behaviour must impact on B's attending. Human language is therefore necessarily temporal. In its classic manifestations of speech, it arises as people control the airstream while using the muscles of the vocal folds to modulate the vibrations used in voicing of vowels and many consonants. These physical changes in time generate pulses of energy that are modulated by the vocal organs.[30] This results in speech whose timing is inseparable from bodily movement (and, especially, gesture). Further not only are prosodic and gestural-expressive aspects of language actual movements but these are also heard as verbal patterns. However, timing is not only a vocal skill: as illustrated in the second case study sense-making also draws on how visible movements are timed. The events occur in a high fidelity simulator, a safe setting where doctors learn about emergency situations (cf. Fig. 1). In this training scenario, while a senior doctor takes the role of a nurse (on the left), a junior doctor (on the right) is expected to take charge of the case (through diagnosis and administration of pharmaceuticals). The event occurs early in the simulation where, perhaps because of nerves, the doctor fails to carry out a physical examination. Rather, after greetings, he enquires about the patient. The nurse-facilitator picks up the medical chart and seeks out relevant facts. Thus, we might expect a verbal description of the patient's condition: in fact, the act of utterance functions as a Zeitgeber: it contributes to prompting the doctor to take the patient's pulse. This appears on the video still that is presented in Fig. 1.

What brings about the junior doctor's action? Crucially, pulse-taking both interrupts the doctor's course of action and, strikingly, parallels what is articulated. It arises under dual control. On the "surface" these routine events consist in a greeting,

[29] Cf. Cowley 1994 and 2010; Thibault 2011a; Steffensen 2013.

[30] While mainstream linguists claim that brains (or minds) identify and recode linguistic features (viz. as "forms"), the well-established ecological aternative is that, on the one hand, we make and track phonetic gestures (cf. Fowler 2010) and, on the other, use rich phonetic memory (cf. Port 2010).

Fig. 1 Culmination: taking the pulse

introduction of the patient and, in 6, an enquiry about the patient's condition ("**What happened?**"). When scrutinised, they can be traced to *exactly* how the nurse's bodily response draws on movements accompanying the voicing of 8–9.

1. N: Hello
2. D: Hello
3. N: Hi. (.) I'm n[urse (.) Smith
4. D: [Doctor (xxx)
5. N: Hello hi. I work night here. (.) I look after (.) mrs. Kennedy here.
6. D: uhum, what happened?
7. N: (0.8)
8. N: Well, all I pretty know uh is that u- (.) um she- she had some
9. N: (0.7) orthopaedic surgery on this [leg here=

The main cue has little, not nothing, to do with what can be seen in the transcript. The cue lies in the pacing of events that include a 800 millisecond pause that is followed (in 8–9) by filled and unfilled ones ('uh', 'u- (.)) and a 700 ms silence. In replying to the question, the experienced facilitator slows the action or, colloquially, gives the doctor "time to think". Turning to a pico-scale, key moments are shown below. In picking up on context – on *how* the nurse moves – the doctor is prompted by *the act of hearing* that the patient has had orthopaedic surgery. As this is said, the nurse acts as if he were taking the pulse; he touches the bandaged leg. Embodied interactivity thus overrules the said (cf. Figs. 2, 3, 4, and 5 below) by prompting the doctor to act in a mimetic fashion.

In presenting the patient, the nurse speaks slowly: "**Well, all I pretty know uh is that u- (.) um she- she had some (0.7) orthopaedic surgery on this [leg here]**". Wordings serve, above all, in coordinating attention. As the nurse says 'well' (Fig. 2), his action culminates in touching the chart (a gestural "stroke"). The doctor follows the nurse's gaze onto the object (Fig. 3). Serving as a Zeitgeber, the speech-gesture movements enable the doctor to size up the situation. He finds a common perspective as the nurse says "**uh is that u:::**". Like a caesura, the second "**u::**" is a non-gestural beat which, as it turns out, leads into "**she had some …**" During

Fig. 2 "**Well all I pretty know**"

Fig. 3 "**uh is that u- she had s'm**"

another long pause, the gesture's pre-stroke phase (up to first syllable of "**orthopaedic**"), the doctor's body begins to sway (Fig. 4). He mimics the nurse's gestural stroke as the nurse utters the prominent syllable of "**orthopaedic**" – and touches the patient's leg (Fig. 5). The doctor moves to the patient and carries out a minimal physical examination. Mimicking the nurse, he takes the patient's pulse and, as he does so, reorients gaze. By the next beat ("**on this leg here**"), as shown initially, the

Fig. 4 "(.)**ortho**pedic surgery"

Fig. 5 "(.) ortho pedic surgery"

doctor is again attending to the nurse (Fig. 1). The words actually spoken – together with bodily synchrony – give coaction a temporal rhythm. The result arises in moving together as perception prompts creative mimesis. This aspect of human communication uses interactivity or an individual's changing sense of *how* to gesture and articulate syllabic patterns. Physical words enact pico-scale events that prompt the doctor to orient to patient care.[31]

[31] The pico-scale captutes how syllables are articulated, faces moved and gestures made – typically using dynamics of 40–200 milliseconds. By comparison, a stressed syllable lasts about 200–300

Given their rapidity, events like those described elude any brain-based model. Far from depending on inner processes, people use body's communicative and cognitive power in adapting to what happens. At this instant, biosemiotic attunement stands in for inference. In turning to first-order languaging, investigation turns to how people engage by connecting wordings with actions. The thinking that goes on connects circumstances with the said as people draw on each other's manifest expectations. People demonstrably generate synergies – ways of acting that, otherwise, would not have arisen. Indeed, it is when persons are influenced by each other's movements that they come up with the thoughts and feelings that drive events. In what follows, therefore, I ask how we might use biosemiosis to rethink aspects of first-order languaging that occur beyond the reach of verbal patterns.

Beyond Symbols: Part of the Game

Like visible movement, verbal patterns become salient to speakers of a language. No doubt this is why they dominate both writing systems and Western theories of language. However, in first-order languaging, the verbal often serves merely to orient affect and attention to a common focus. At such moments, wordings direct (often) subtle actional and perceptual moves. If we are not to be distracted by abstract models, attention must be given to how thinking is enacted. As Timo Järvilehto shows,[32] focusing on *results* offers a radically different perspective on mind and behaviour. Indeed, in the case studies, people use pico-scale events to attune to whole body activity. However, this is *not* always so: often, verbal patterns are more prominent. Even in talking to oneself, people listen and learn from their voices.[33] Indeed, because generalities (or future causes) influence human action, verbal patterns attain influence: in Biblical exegesis, reciting the Qu'ran or legal and scientific practice, inscriptions are treated as (relatively) fixed. When said to depend on "language", appeal is made to written language bias. Far from relying on verbal patterns "in themselves", people take a special attitude to "what is said". Where wordings dominate, Cowley argues, they *take a language stance.*[34] They draw on skills in construing utterances as instances of peculiar types (e.g., of words that are [un]true). That is beyond debate. In this context, however, the point is that, during much first-order languaging, people rely exclusively on neither verbal patterns nor trust in abstract types. Synergies between bodies enable people to attune to each other's ways of attuning. Strikingly, this is intrinsic to expertise and, just as

ms and the time-span is often treated as the window of consciousness; for example, pauses of 200+ milliseconds can be heard. Pico-scale contrasts with the micro-scale used by above all, most who work in the field of *Conversation Analysis* and gesture/nonverbal behaviour.

[32] Järvilehto 2009.

[33] Cf. Cowley 2014.

[34] Cowley 2011.

crucially, consistent with the claim that the evolution of human intelligence has a mimetic basis.[35]

Not only does "body language" (or nonverbal behaviour) communicate but, on a distributed view, the dynamics are *partly* constitutive of thinking. Human coordination enacts physical changes as people draw on parameters to control action. As in many biological systems, physical changes trigger *possible* goal-states. While autopoietic, organisms also draw on physical and social constraints. For example, a bacterial population use collectively engendered constraints as they move. Simple forms of structural coupling predate brains. Of course, more sophisticated coordination appears in vertebrates. Horses, for example, *learn* from a felt, two way, anticipatory relation. As they get to know their riders, they share understanding through what Susan Stuart calls *enkinaesthesia.*[36] Much is gained from concerting bodily dynamics. In social mammals, play nurtures anticipatory modes of action. In dynamical systems theory, neural "frustrations"[37] are said to be released as organisms appraise circumstances. Of course, frustrations also arise in the world beyond the skin – much of what is said and done seeks to avoid their effects. Although sometimes goal-directed, as David Kirsh and Paul Maglio show,[38] action is often epistemic. In computer games, for example, simple moves depend on orienting to norms: expertise plays out as sense-saturated coordination or interactivity.[39] This is why software packages encourage habit-taking; they prepare people for future benefits. Further, human life is embedded in social institutions that favour the use of available external resources. Just as in human-computer interaction, sense-saturated coordination is shaped by skilled action and expertise. This interactivity is necessary to language because it links felt anticipation (or enkinaesthetic events) to statistical phenomena. Given a sensorimotor basis, the said evokes connotations that prime for what is likely. In careful study of reading, the process is shown to be anticipatory[40]: sense-making enables a reader to project what may follow. These ideas underpin how pico-scale events contribute to cognition and communication[41] and, specifically, undergird cognitive event analysis.[42]

While first-order dynamics can be measured, persons also use non-local parameters. Using experience, they draw on recurrent patterns or, simply, what is familiar. In the case studies, whereas contingencies prompt the doctor and nurse to attune, at the NGO, Musa and the ladies fail to do so. On such occasions, dynamics come to the fore. In everyday life, however, such cases may be rare. Much of what we do and say is routine activity based in phenomenological or micro-scale events. Action uses meshed neural control hierarchies: temporal (and other) phonetic aspects of "**she**

[35] Cf. Donald 1991 and 2007; Cowley 2012b.

[36] Stuart 2010.

[37] Wallot and Orden 2010.

[38] Kirsh and Maglio 1994.

[39] Kirsh 1997.

[40] Cf. Järvilehto et al. 2009.

[41] E.g., Cowley 1994; Steffensen and Cowley 2010; Thibault 2011a, b.

[42] Steffensen 2013.

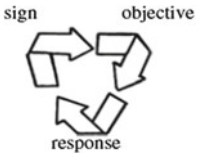

Fig. 6 Alexander's relabelled Peircean triad (reproduced with permission)

always does her best with everyone" pick up and trigger (partly) shared effects. Equally, the "nurse's" touching the mannequin (while saying "**orthopaedic**") sets off Zeitgebers that serve mimesis. Events afford opportunities to realise values.[43] Thus, whereas Lynette reassures Musa while also showing solidarity with Daphne, the doctor acts professionally by checking if the patient is alive. Not only do social affordances fit nature's normative order but, crucially, they call forth human values. Shifting sensitivity in perceiving affordances affects an organism's (changing) "objectives". In human life, at least, it matters that much behaviour is lived as purposeful. The idea appears not only in biosemiotics but also, for example, in Daniel Hutto and Erik Myin's "teleosemiotics".[44] In broad terms, it is captured by Victoria Alexander's[45] relabelling of Peirce's triad (cf. Fig. 6) as showing sign-objective-response relations.

The simple model serves not only to highlight what systems achieve but, in allowing comparison across cases, shows broad application. Thus, applied to protein synthesis in the paradigm case of "organic coding",[46] a second-messenger becomes a sign. Its effects set off folding that contributes to an organic "objective" as transcribed DNA synthesises a protein (response). Indeed, the model's strength is also its weakness: while unable to clarify *how* the process is accomplished, it captures a general pattern. Precisely because mechanism is ignored, the model can easily be generalised to, for example, how a cockpit manages a plane's speed. As Edwin Hutchins showed in his classic work,[47] the "objective" depends on a distributed pilot-cockpit system whose human part attunes to *precisely* when an airspeed indicator indexes a "salmon bug" (cf. Fig. 7[48]).

When the salmon bug is reached (a pink marker at 240 mach), the pilot enacts the objective by acting to extend the flaps and slats. This "response" reduces the plane's speed. In Alexander's terms, an objective can be managed by either an RNA complex or a coupled pilot-cockpit system. At other times, objective-based responses may exploit conditions in a beehive, weather, or silent thought. However, since biosemiosis enacts a web of criss-crossing processes,[49] the objectives that shape systemic actions (Alexander's "responses") rarely depend on individual intentions.

[43] Cf. Hodges 2007; Hodges et al. 2012.

[44] Hutto and Myin 2012.

[45] Alexander 2013.

[46] Barbieri 2003.

[47] Hutchins 1995.

[48] From *ibid.*, p. 273.

[49] Lotman 1984 [2005].

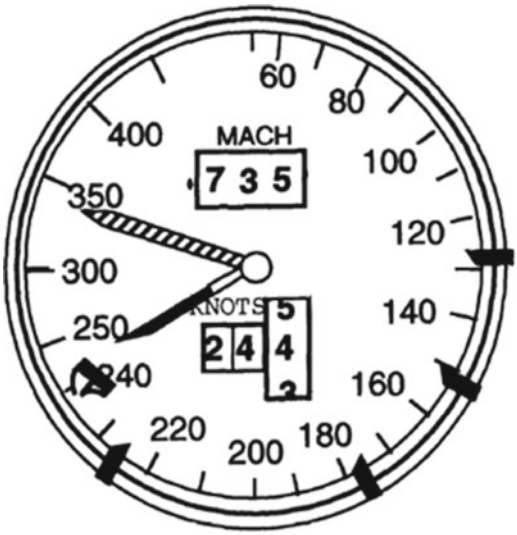

Fig. 7 Speed bugs (this illustration is modelled on the airspeed indicator instrument in the McDonnell Douglas MD-80, as described by Tenney 1988. Reproduced with permission from Hutchins 1995)

Much depends on, not life history, but a lineage and/or social strategies that exploit body-world relations. Importantly, this shows that Maturana's "structural coupling" functions as an abstract description of iconic-indexical processes. In at least some cases, structural coupling is biosemiotic. Indeed, this helps clarify how, often without intending to do so*, people reach* objectives that can trigger normative – or culturally tuned values. Often it is sufficient to show sensitivity to qualities and relations, colour, and affect to act in ways that link interactivity with practices and verbal patterns. Even though philosophers often seek explanations in terms of natural kinds – objects, events and causal relations – this is likely to be mistaken. This is because, far from being part of the natural world, these pertain to how nature appears from a language stance. With history, human lives draw heavily on structures beyond symbols: our ecology is extended by bodies, social institutions and technology. Since artifacts and institutions contribute to our lives, Alexei Sharov[50] views our world as a pragmasphere. Human modes of engagement are increasingly dominated by how we perceive the species-specific counterpart to fundamental physical reality. For, as Sharov brings home, the creative force of nature is logic.

The Pragmasphere: The Role of First-Order Languaging

Whereas nineteenth century disciplines like psychology, linguistics and chemistry posited an "object" of enquiry, semiotics focuses on relations. In biology, the focus falls on the dynamics of living systems and, above all, their complexity. While there

[50] Sharov 2010.

are many views of evolution, Sharov[51] stresses how a lineage of agents exploits the functional interplay of utility and logic. Physics thus provides constraints within which life evolves and, as evolutionary products, humans come to regard its constraints as logical. An agent is a system that (from an observer's perspective) is capable of goal directed behaviour by virtue of how it is connected "horizontally, hierarchically and genealogically".[52] Accordingly, agency evolves in the context of achievable effects and sustained values. Although blind to underlying function, living systems rely on replicable sequences of actions based, presumably, on how bodies master functional information. Actions and metabolic processes result from selection based on functional value. Agents use functional signs/interpretants: simple agents depend on mechanisms often likened to lock-and-key devices. In protein synthesis, organic coding uses objectives that include the adaptor-molecules (RNA complexes) that give rise to metabolism. However, even that process depends on a whole cell in an environment that functions within a multicellular system. Semiosis occurs both as agents encode/regulate or as they control events at a boundary with the environment and also as they contribute to a goal that given for a hierarchy of agents.

Living systems make much use of hierarchical organization: this is especially marked in organisms that perceive and, using a CNS, learn. In this case, Sharov argues, basic signs that prompt perception and learning serve to *aggregate* functional information.[53] While able to pick up affordances, agents attend to cues that appear meaningful. Thus, something remarkable occurs: an organism can ready itself for later actions by relating current circumstances to earlier events. Using statistical learning, brains favour the anticipatory action that characterises first-order languaging. Thus, while verbal patterns disambiguate, much depends on habit and the specifics of a situation. Humans adapt to the familiar by construing circumstances and, thus, develop powers of discrimination. The semiosis-saturated nature of embodiment sharpens perception: a way of touching a leg or vocal chiming resonate between people. Far from being word-based interpretation (or decoding) this is based on using iconic-indexical behaviour. However, the depth of the interpretation is not explicable by determinate cues: simple events can evoke complex expertise.

A Biosemiotic View of the Case Studies

In the simulated emergency, the nurse's iconic-indexical behaviour triggers action that might well have occurred in a hospital ward. The doctor *knows* that he should check the patient's pulse. In the simulation, under stress, he fails to activate the routine. Relying on higher-level knowledge (as in medical school), he seeks out facts – he relies on the language stance. Thus he asks "**what happened?**" In the

[51] *Ibid.*

[52] *Ibid.*, p. 1052.

[53] Sharov 2010.

situation (as opposed to the simulation), the "nurse" facilitates appropriate behaviour. He speaks in an inarticulate way, bringing home that what is on the chart is not, at this moment, the most relevant affordance. In touching the patient's leg, he both shows that the patient has had orthopaedic surgery and also gets the doctor to attend to the mannequin. The "nurse's" hand-to-leg movement *is* functional information (in Sharov's sense). It regulates the junior doctor's actions as a contingency displays the situation's *logic*. To find out what is wrong, he moves *down* the hierarchy of control. Using mimesis, non-conscious sensitivities come to the fore. Thus, instead of focusing on what the nurse says – wordings – situated dynamics trigger the doctor to move into a professional role. He realises a goal – in Alexander's terms,[54] semiosis is mediated by an objective: overcoming frustration, he uses medical skills to establish that the patient is alive (he feels the mannequin's pulse). A biosemiotic view thus allows first-order languaging – and thinking – to arise as interactivity meshes with wordings. Knowledge arises in concert as, together, parties use circumstances to collaborate. Without any need to be explicit, the trainer brings about an affirmation of the trainee's skills.

In the South African NGO, a different logic applies. The big problem comes to the fore when Lynette utters "**she always does her best with everyone**" (and compares Daphne with God). By being explicit, she sounds patronising, an effect enhanced by unexpected prominence on the initial "**she**" and use of a slow, soft syllable-based rhythm. She sounds as if she is talking to a (big) child. In this way, events depend on more than the words actually spoken.[55] In the NGO, tension rises, in part, because of failure to meet/acknowledge embodied perception expectations. Having failed to elicit gratitude, Daphne makes no attempt to grasp Musa's perspective. Rather, she moves *up* the control hierarchy by invoking (likely) shared values. Speaking as a Christian, she draws on the commonplace that Black Africans are often devout. Space permits no further analysis of the "big problem" that connects languaging with second-order logic. Accordingly, let us be generous and suppose that Lynette intends to help Musa. Indeed, in spite of cultural disharmony, her tone does have a noticeable effect. Having offered more Nguni style agreement with a low-voiced and respectful "**ye::::s**", he follows up with a recycling and an attempt to explain. He does not hear her speech as offensive (for the examinee, such events are "part of our daily lives"). Nonetheless, rather than let him speak, she moves to the cultural level (one of shared beliefs); if it is in God's power for him to go to Jozini, it is in Daphne's too. While more could be said, the point is that most of what is said depends on – not inner processes – but cognitive dynamics.

Enkinaesthesia and participatory sense-making contribute to the talk. The bodies concert, the affective is partly anticipatory and, given an admixture of tension and politeness/respect, the parties exert hierarchical control. Equally, wordings and the social order influence the outcomes. Since wordings contribute to face-to-face activity, a biosemiotic view traces understanding to indexical-iconic dynamics. In dis-

[54] Alexander 2013.

[55] The same idea is central to Wittgenstein's view that language has much in common with musical themes and that a sentence (or word) can be heard in a particular sense (Wittgenstein 1953 [1958]).

tributed terms, first-order languaging is whole-body movement. The words that are actually spoken are *one* aspect of activity that relies heavily on shifts in attention. Situational particulars change together with the multiple objects that contribute to signs/responses. In both settings, it seems that stress induces people to shift attention up or down a control hierarchy: in the medical case, they experience empathy and, for a moment, rely on motor mimicry.[56] In the NGO, the opposite occurs: the ugly encounter features lack of interpersonal connection and, in its place, an attempt to be explicit by establishing (dubious) religious links.

The Boundaries of Language

Where the boundaries of the verbal are taken to identify the boundaries of the world, there is a danger that first-order languaging will vanish. Indeed, when linguists focus on form/meaning, they lose sight of how people create and track understanding. However, the case studies show the importance of boundary events: human meaning-making uses a continuing flow of pico-scale coordination. Through *saying things*, language alters attention, perception and action: thinking meshes with non-verbal experience. Hearing how people speak is, in Wittgenstein's sense,[57] crucial to *how we go on*. Language-use is far too impoverished a concept to suffice to clarify why people act, feel and think as they do. If linguists are not merely to describe form-based patterns and functions, they can turn to events at the boundaries of language. Interaction and understanding depend on connecting linguistic (and other forms of) knowledge with affect and our experience of embodiment. If we are concerned with how language contributes to humanity, biosemiotic phenomena matter. No alternative to mainstream linguistics can be built on transcriptions, analysis of linguistic forms or statistical relations between invariant verbal patterns and (perceived) wordings. From a distributed perspective, attention to languaging must be central to the language sciences.

The case studies show that biosemiotic processes link verbal patterns to how people deal with hierarchies of (putative) objects. People depend on anticipatory coupling between bodies, pico-scale activity and thinking – events that affect the fringe of conscious experience. So what does it imply for everyday views of words, languages and, indeed, the conception of human language? Although the distributed view retains the folk "intuition" that language is (partly) verbal it reverses standard priorities. Second-order or verbal patterns are perceived against a foreground of first-order activity: embodiment relies on (constraining) forms and functions. To the extent that populations (or linguists) agree, models can indeed be developed to *describe* languages, language-varieties and even ways of speaking. In diachronic

[56] Such phenomena appear in, for example, watching sport or during a first date: the simulation centre may be a valuable learning environment because people act under stress and thus relate closely to each other (in "facilitation-based learning").

[57] Wittgenstein 1953 [1958, Sections 179–181].

linguistics, the same logic captures aspects of language-families and even linguistic super systems. Each has a population-level complexity – it describes *abstracta* or social constraints. These draw on what people *believe* language to be and, importantly, how these beliefs impact on the practices of the human life-world. However, they do not build on psychology: descriptions of language-systems show little about mind (let alone the brain!). Rather, they show the transformational power of taking a language stance. Indeed, the case studies matter because they show how peripheral "form" can be when people depend on orienting to each other as they go about their lives while relying on how language shapes action and perception. In this way, classic linguistic models marginalise people, thinking and understanding. Rather than scrutinise linguistic action, language is treated like a machine code.[58] However, quasi-mechanistic views leave aside human embodiment or the role of activity in languages, persons and cultural achievements. They cannot show how, given its grounding in biosemiotics, language resembles dance, music, law and religion. It is metabolic activity that draws on non-local or culturally derived pattern. On the distributed view, language is a species-specific mode of cognition. For, in spite of tradition, a person's intelligence is *not* brain centred. As argued by James Hollan, Edwin Hutchins and David Kirsh,[59] human cognition has three main characteristics:

1. Its main processes are social;
2. Its main processes arise as we (together and alone) connect internal and external resources;
3. By linking these resources, we exploit the products of past events (including verbal patterns) in ways that impact on later events.

Though rooted in the first-order dynamics (speech and visible expression), these are heard as wordings: these evoke other voices, meanings and what is absent. Lest this be seen as a truism, the reader is invited to draw something that he or she can see (say, a lampshade or a tree). Yes, dear reader, please stop reading and draw! For, when a person articulates *what* they perceive, non-local patterns come to the fore. In drawing, while skilled actors use movements to conjure up form, those with less experience draw familiar shapes. They focus on, not the seen, but imaginary features: people mask any local details and their own traces. A linguistic counterpart is uttering, say, "**my name is Stephen**" or "**propositions are picture like**". Like a thing drawn, language is all too readily identified with *what* is perceived – what is *not* here (e.g., a statement or a set of words). Just as the picture masks physical details, no inscription captures precisely how wordings are (or could be) articulated. Indeed, even in looking at marks, first-order activity connects the here and the not-here. Dynamics – human interactivity – evoke voices/objects that inform experience. If an utterance is clear, or the sketch is good, it may later seem to be "the same": the maker masks circumstances, materials and what prompted the act. Polyphony and shared experience offer foreground, a second-order domain that

[58] Love 2004; Kravchenko 2007.

[59] Hollan et al. 2000.

reinforces certainties – including the folk intuitions that grant familiar views of language and the world.

Recalling the work by Hollan, Hutchins and Kirsh,[60] to ensure that the products of past events (including verbal patterns) impact on later events an observer must treat them as "unchanged" (on at least two occasions). However, language lacks any observer-product invariance. Only written language bias tempts one to see "**my name is Stephen**" (or "**vgyulasy**")[61] as other than an inscription. In consistently failing to grasp this basic fact, the written or sketched is erroneously seen as *prior* to creation of pixelated patterns. Careful consideration of how products of past events impinge on later ones leads to an unexpected finding. Dynamic activity falls under various available constraints. Although we depend on making/perceiving physical changes (articulation), we tend to think about this in terms of producing static forms (what can be said/seen). While language statics – its verbal aspect – can be extended by institutions and e-technologies, their role is not to be exaggerated. Their grounding is always in first-order or biosemiotic timescales. Patterns merely anchor functional information that has potential value for collaborating with others. As semiotic creatures, we gain skills in using this functional information. Given human forms of life, we use wordings to reach agreements in judgement and make sense of experience. Indeed, the symbiotic nature of language is necessary to making sense in a human life-world. In spite of appearances, it is non-trivial to recognise that language is distributed.

Languaging: Cognitive Biology

First-order languaging is cognitive biology in action. It arises as (non-ritualised) face-to-face activity in which wordings tame much older biosemiotic processes. Using the case studies I have shown that events depend on neither words nor intuitions about meaning but, rather, a frustration-based dynamic that sets off indexical-iconic activity. This applies even now. My meaning-making arises as I use biosemiotic skills to make inscriptional marks; you use biosemiotic activity to deal with reliably copied (and corrected) versions of these inscriptions (and their successors). To make sense for each other, to the extent that we can, we trust each other to see/mean the inscriptions as signs: however, we also rely on skills in using the visible marks to stand in for working modelling systems. These skills depend on a peculiar attitude or, alternatively, *taking a language stance.*

Both languaging and making use of a language stance are temporal processes whose salient results are verbal patterns. In construing this differently, both the general public and biolinguists blind themselves to the symbiotic nature of language. However, while the general public regard it as non-biological, biolinguists

[60] *Ibid.*

[61] Like "**my name is Stephen**", "**vgyulasy**" is an inscription; if the former invites more confident acts of construal, this depends on a reader's biosemiotic skills.

prefer to invoke a mysterious I-language.[62] By failing to see that first order language depends on available functional information, they make the simple logical error of attributing language to genes and the brain. However, the case studies show that embodied living beings, not brains, mix languaging with using a language stance. Cognitive biology serves to construe thoughts, visible marks or first-order events as wordings. People learn to attend to aspects of the world – vague thoughts, patterns of pixels or phonetic/visible gestures: we use the said to develop individual understanding. Unlike much practical action, languaging draws on a dialogical imagination or, in Maturana's sense, is connotational. Overlooking this, the public struggle to "explain" utterances like "**she always does her best with everyone**" or, indeed, "**ye::::s**". Biolinguists ignore its sub-verbal nature. However, by once its importance is acknowledged languaging is found to enact perception-action: a doctor is moved to pulse-taking as *this* gesture co-occurs with *that* syllable of *orthopaedic*. Conceptual analysis cannot explain judgements that enact forms of life. As we language, we modulate use of the language stance as we rely more and less on biosemiotic skills. Human language is thus quite unlike the languaging of other species. While based on local features and skills in real-time coordination, much depends on its non-local aspects (forms, voices and second-order constructs). For Sebeok,[63] this contrast is to be described in terms of primary and other modelling systems.

Stance-taking depends on treating utterances as utterances of something. Over time, skills in "repeating what is said" give rise to human rationality.[64] By regarding this as a developmental achievement, we come back to the challenge to mainstream views. Neurocentrism builds on the lay person's views and thus ignores history. The hypnotic effects of verbal patterns induce even linguists to picture human languages as verbal patterns and, when they turn to semantics, to trace meanings to languages that constitute arrangements of verbal patterns. They mistakenly separate language from living human beings. As a result, linguists get trapped by their models. They oppose a descriptive approach to models which purport to "explain" utterance perception and production. On the one view, language is non-biological and, on the latter, living beings use a mysterious "system". The problem has been known for 60 years – Fred Householder opposed hocus pocus linguistics to a God's truth view.[65] Wittgenstein cleared the conceptual ground for an alternative.[66] He traced language to the agreements of judgements or certainties that shape human forms of life, events that shape an individual's "natural history". In terms of this paper, language emerges in ontogeny as biosemiotic activity moves infants to action and, then, once they learn to take a language stance, they are able to develop the strategies of social

[62] Ignoring neurophysiology, Chomsky posits that a language "organ" can be detected by means of the formal analysis of verbal patterns. A cheeky response was that, if this were true, he would deserve a Nobel prize in Medicine.

[63] Sebeok 1991.

[64] Neumann and Cowley 2013.

[65] Householder 1952.

[66] Wittgenstein 1980.

actors. As discussed elsewhere,[67] the skills needed for the language stance emerge late in the first year and depend on how children learn from concerting with caregivers. Gradually, they come to hear utterances as utterances of something and thus discover the power of linguistic reflexivity. They pretend, name objects, ask questions, make paraphrases and challenge others. Eventually, they may learn to think hypothetically, focus on the said and gain an individual grasp of aspects of the world.

Given the richness of iconic-indexical understanding, the language stance is crucial in becoming a *person* who performs various roles. In modern societies, self-development is channelled, to a large extent, by exposure to many kinds of literacy. The resulting written language bias has led many to reduce language and languages verbal patterns. If this is combined with appeal to an organism, it seems natural to suppose that these are manipulated in a brain. By challenging neurocentrism the *distributed view* opens up horizons. In the first place, traditions – and forms of life – become the basis for stance taking and, thus, the establishment of meaning and truth. Further, first-order languaging is inherently biosemiotic. By hypothesis, embodiment suffices to allow people to individuate, develop relationships and enact both individual and collective lives. A population's ways of acting exert control over our individuals and, as Heidegger suggests,[68] we gain experience of *what questions grant*. Humans develop individual-collective agency. Mimicking the social nature of ants, termites, mole-rats and meerkats, humans live a unique kind of eusociality. As communities and individuals, people accord much weight to what is, can and cannot be said and done. This depends on the language stance. It has a down-side too. For one thing, it detaches us from the lived environment and our biosemiotic nature. Further, it tempts us to revere (or fetishise) what language makes salient – verbal patterns and textual or technological extensions. Though needed to bring forth the new, the language stance also favours conformity, collective blindness and ostentatious display. It biases us towards languaging that shapes tools, institutions and technologies. Often, these diminish biosemiotic modes of engagement with the world; by treating life as mediated we risk coming to experience it as less than lived.

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[67] Neumann and Cowley 2013b.

[68] Heidegger 1959 [1971].

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