Distributed language theory, with or without dialogue

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ABSTRACT

This review article is a discussion of Stephen Cowley's (2011) anthology entitled Distributed Language. The review takes up some important concepts and discussions that have acquired renewed interest within the language sciences, in and through Distributed Language Theory. These include the claims that language is ‘distributed’, ‘non-local’ and ‘values-realising’. In particular I discuss the relation of DLT to ‘dialogical’ ideas of language and languaging, that is, claims that human sense-making (in languaging and by other means) is fundamentally characterised by interdependencies between different sense-makers.

1. Introduction: language and languaging as distributed

This review article is based on Stephen Cowley’s (2011) Distributed Language, which is a collection of 10 papers dealing with distributed cognition and language. The chapters are: S. Cowley, “Distributed language” (which is an overview of the theory); T. Järvi-lehto, V.-M. Nurkkala, K. Koskela, “The role of anticipation in reading” (on experiments showing that readers act in an anticipatory manner (look ahead) when reading texts aloud and that the time interval between visual fixation and speech varies with structural complexity (projectability)); A. Kravchenko, “The experiential basis of speech and writing as different cognitive domains” (argues for the specificity of writing; writing is not a code for speech); E. Fioretou, S. Cowley, “Insightful thinking: cognitive dynamics and material artifacts” (the difficulty involved in assembling a complex object (a necklace) according to prespecified rules varies with experimental conditions, more specifically, manipulating real objects vs. working with pen-and-paper); K. Tylén, J.S. Bjørndahl, E. Weed, “Actualizing semiotic affordances in a material world” (experiments with subjects assigning meanings to pictures with motivated vs. unmotivated configurations of objects); E. Tribble, “Languaging in Shakespeare’s theatre” (on languaging and the absence of master texts in theatre performances in Shakespeare’s own time); B. van Heusden, “Semiotic cognition and the logic of culture” (arguing for semiotic cognition as not strictly Darwinian); B. Hodges, “Ecological pragmatics: values, dialogical arrays, complexity, and caring” (developing a Gibsonian model of values-realising activities, including languaging); J. Rączaszek-Leonardi, “Symbols as constraints: the structuring of dynamics and self-organization in natural language” (on different kinds of symbols, and the emergence of language from languaging at different time

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The Distributed Language Group (DLG) and the contributors to Distributed Language claim that language is distributed: “Far from being reducible to a system ‘in the brain’, language must be viewed as radically heterogeneous and as spread across space, time and bodies” (Rączaszek-Leonardi, 178). Furthermore, as some authors put it, if language is distributed, it is non-local; it cannot be located to any single place, such as the speaker’s brain, or on any single time-scale (Steffensen and Cowley, 2010). ‘Distributed Language Theory’ (henceforth DLT) also states that, in addition to being distributed, language is embodied (not merely abstractly procedural), embedded (not merely representational, but shaping and shaped by social systems in a cultural world), enacted (“living in or realised in and through action”, rather than being mainly a resource for static representations), extended, situated (Steffensen, 187), multi-scalar (existing on different time-scales), ecological (Cowley, 4), and dialogical (Cowley, 5) (linked to other-orientation, although this feature has been masked by the written language bias in linguistics). Yet, not all contributors agree on all points (cf. below), and Steffensen (187) in fact applauds a “discussion of the differences”.

Language originates in “how living bodies co-ordinate with the world” (Cowley, 2), i.e. in what the authors (after Maturana and others) call languaging, i.e. linguistic practices in real-life cognitive and communicative (inter)activities. Only secondarily, humans develop language systems as abstractions from languaging; they then acquire beliefs about how language is structured (a “language stance”; Cowley, 2011), and can use these structured symbols as constraints on further languaging (Rączaszek-Leonardi). Hence, Cowley (11) formulates his slogan “Dynamics first and symbols afterwards”.

Yet, this book is not only about distributed language, but just as much about distributed cognition, perception and action. Many articles argue that perception, thinking, action and the anticipation of action effects are empirically and conceptually intertwined. To take a traditional example, visual perception is not primarily about the reception of incoming signals, but about active bodily actions (moving head and eyes) and object manipulation, to explore the environment and expose oneself to its affordances (e.g. Noë, 2004). A central concept is anticipatory dynamics in speaking, listening, cognition and reading (Järvi-Lehto et al., Fioretou and Cowley, 75).

DLT has a rather close relation to biosemiotics, although this is more pronounced in Cowley et al. (2010): Signifying Bodies, less so in Distributed Language. (My review will contain some references to Signifying Bodies as well.) In addition to the kinship with distributed cognition and biosemiotics, DLT shares assumptions with relational and dialogical theories of human sense-making. Alfredo Dinis (2010: 82), in Cowley et al. (2010), cites “three theses on mind and cognition” formulated by the Canadian philosopher Evan Thompson:

1. “Embodiment. The mind is not located in the head, but is embodied in the whole organism embedded in its environment”.
2. “Emergence. Embodied cognition is constituted by emergent and self-organized processes that span and interconnect the brain, the body and the environment”.
3. “Self-Other co-determination. In social creatures, embodied cognition emerges from the dynamic co-determination of self and other” (Thompson, 2001: 2).

Despite formulations such as (3) above, it is debatable if DLT and biosemiotics are sufficiently dialogical. I shall return to this point in the discussion.

Some papers in the volume are more theoretical in orientation, especially Cowley, Steffensen, Hodges, Rączaszek-Leonardi and to some extent Kravchenko and van Heusden. Others are also based on particular empirical studies, especially Järvi-Lehto et al., Fioretou and Cowley, Tylén et al. and Tribble. Although the volume is quite coherent, the papers exhibit considerable variation with regard to topical domains and methods. This is definitely a great asset. Rather than discussing details of each paper, I shall here discuss some of the ideas that emerged from reading the volume as a whole.

2. Distribution in languaging (cognition) or language?

The term ‘distributed language’ goes back to Hutchins’s (1995) notion of ‘distributed cognition’: “The individual human mind is not confined within the head, but extends throughout the living body and includes the world beyond the biological membrane of the organism, especially the interpersonal, social world of self and other” (Thompson, 2001: 2; quoted by different contributors to Cowley et al., 2010: 82, 112). “Such a distributed cognitive system has cognitive properties that cannot be inferred from the components alone, no matter how much we know about the details of the components’ properties.” (Steffensen et al., 2010: 213).

Note that these quotes are about situated, cognitive or communicative projects/activities (languaging); Hutchins, for example, talked about the activities in the cockpit of an aircraft. However, talk about “distributed language” runs the risk of being associated with distribution of abstract linguistic resources across distant spaces and varying time-scales: language is seen as spread across media (speech, writing, electronic media), genres (from swearing to mathematics), activities and functions, heterogeneous linguistic forms and lects, i.e. the opposite of the unitary (national) language systems often

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3 References below to authors and page references are to the book under review, unless specifically stated.
postulated in linguistics (Linell, 2012). Here, ‘distribution’ may invoke interpretations of something falling apart, the whole thing (“language”) being the sum of pieces, a “meshwork” rather than a unified system. This is rather different from the distributed activity as an integrated whole, components functioning together (Hutchins). “A distributed perspective necessarily concerns interaction in its wholeness” (Pedersen, 2010: 255, with reference to Steffensen et al. in the same volume, i.e., Cowley et al., 2010); a team as a collective can solve problems that individuals cannot solve on their own (Pedersen, 2010: 262). DL theorists may therefore do better reserve the term ‘distributed’ for languaging and interactivity, rather than for ‘the second-order language’.

But the problem does not end here. Emergent integrity is essential for understanding something (putting hitherto separate pieces of information or knowledge together), but fragmentation is still a salient feature of the social world. And it is not only large sociocultural representations that are characterised by partial integration, fragmentation and tensions (Marková, 2003). Heterogeneities in sociocultures can also be realised in situ (in a focus group, for example). A conversation, regarded as a distributed system, is of course partly integrated as “interactivity”, but parties can still talk past each other (e.g. Pedersen’s, 2010, own example of a simulated emergency care situation with a doctor and a nurse not always synchronised but rather sometimes working with parallel projects). While sense-making implies some integration, sufficient (as opposed to complete) understanding for current purposes is realised on the basis of partial holism and partial integration.

3. Non-local or non-localisability?

“Human cognition is non-local (Steffensen and Cowley, 2010), i.e. it draws on brains, bodies and surroundings, including other cognizers, artefacts, social relations and environmental structures” (Steffensen, 186). Although we are accustomed to thinking of the world in terms of “things” located in space and time, it would be misguided to assign meanings (in languaging or language) to “simple locations” (Cowley, 6; Steffensen and Cowley, 2010: 346). This would amount to a “fallacy of misplaced concreteness” (Whitehead’s, 1926, expression cited in Steffensen and Cowley, 2010: 341). Instead, one should invoke a “field theory” (Steffensen and Cowley, 2010: 346). It is part of the “relational turn” in cognitive sciences (Cowley et al., 2010: 101).

Accordingly, what DLT means by ‘non-local’ seems to be that it is meaningless to try to determine where meanings are in relation to sense-makers and their environments; it would be especially nonsensical with regard to the conventional dichotomy “inside the brain (or the organism)” vs. “out there in the environment”. Meanings are relational phenomena which cannot be localised exactly: they belong to an “inter-world” (Linell, 2009: ch. 7). Similar ideas have been expressed by many, as in this quotation:

[N]either dualism nor behaviorism really permit us to talk as we do in life. A conversation does not take place inside each other’s heads alternately, nor at the surface of our bodies in their overt behavior; it is really in the region between the speakers that the conversation takes place (Barrett, 1979: 184, quoted by McCloskey, 1994: 347/italics added/PL).

However, this kind of formulation may suggest that, after all, a conversation and its effects are local phenomena. And it is true that participants to interactivities are actually tied to local situations. Conversation Analysis and ethnomethodological studies of interaction have shown that situated meanings are “locally produced” on (in principle) a turn-to-turn basis; in conversation, we are engaged in understanding and responding to (more or less immediately) prior contributions. However, ‘local’ (or ‘non-local’) in this sense is not the interpretation we are after, when we argue that it is meaningless to determine a localisation exactly, as we argued above. My own preference would therefore be to talk about what DLT is after as ‘non-localisability’.

Yet, apart from this, the association of the notion of non-localisability in DLT theorising to Hutchins’s (1995) ‘distributed cognition’ is dubious, since it is hardly clear that Hutchins himself makes the assumption of non-localisability. Rather, Hutchins is simply concerned with the fact that sense-makers often make use of external artefacts and other environmental factors in situated cognition; cognition would still take place in information-processing systems, primarily in the brains of team members, but presumably also in computers and instruments. Accordingly, Hutchins seems to stick to the inner/outer dichotomy, which is exactly what is partially relativised with the idea of non-localisability (Button, 2008). It is misleading to think of meanings, ideas and thoughts as being inside the head or brain, let alone in the computer. Rather, sense-makers use their processing embodied brains in making sense of the world. Instead of saying that meanings are in the head (locative case), we could perhaps say that meanings are made with the head (instrumental case), in the presence or absence of external aids (the latter case being true of solo thinking without any (non-trivial) use of any physical environment).

4. Living organisms and sense-making

DLT is closely related to biosemiotics and organism–environment theories. This transpires from several chapters in Distributed Language, although it is more evident in Signifying Bodies. Although it has become increasingly clear in many sub-disciplines dealing with human communication, including ethnomethodology, applied Conversation Analysis and gesture studies (Mondada, 2009), that languaging too must be seen as intercorporeal, this general “embodiment turn” invites an interpretation of a person’s body/organism as an important localisation. At the same time, some DLT proponents of organism–environment theory (Steffensen, 2011) accuse Clark (1997, 2008) of being too organism-centred. I would be inclined to
support Clark on this particular point; self’s embodied mind is the ultimate sense-maker of the environment. In other words, there seems to be a contradiction in DLT in, on the one hand, stressing the importance of the body and a system with an organism and its environment, and on the other hand, promoting a radical abolition of the inner–outer distinction (cf. the non-localisability thesis). Indeed, Steffensen (2013) himself points to the “interactional asymmetry” between organism and environment; “agents have goals or norms according to which they are acting” (Barandian et al., 2009: 5, which environments do not” (Steffensen, 2013). In this context, it will be important to distinguish between where processing takes place (largely in brains, but also in some artefacts, like computers) and where meanings, language etc. are (for which the attempts at localisation are meaningless in a crucial sense, see above).

However, the individual organism is not the only sense-maker in many organism–environment systems. The ecosocial environment includes other sense-making persons. This is the basic dialogical point, the importance of which biosemiotics tends to underestimate. The role of others is only incidentally taken up in the papers of the volume under review. However, one reason for this might be that several of the empirical papers (Järvilehto et al., Fioretou and Cowley, Tylén et al.) do not deal people working in teams. Rather, they are concerned with single problem-solvers in experimental situations in which they explore environments including artefacts (text, pictures, actual objects).

Biosemiotics forces us to ponder the question of what the difference is between a theory of living organisms (or systems) (biosemiotics; after Maturana, etc.) and a theory of (dialogical) sense-making. Biosemiotics deals with, among other things, signal transduction between cells; for example, when a primary molecular signal reaches a cell boundary, a receptor responds by changing its conformation, and activates a mediator protein, which in turn activates secondary signals inside of the membrane, which give rise to a cascade of intracellular processes (Hoffmeyer, 2010: 29). Is this similar to the sense-making practices of human agents, or their way-finding in the world?

In my view it is important to distinguish between cognitive processes and their content, between signal transduction and human meaning-making. (This is not to say that there are any absolutely sharp boundaries.) Within biosemiotics, there seem to be few penetrating discussions of differences between intra/intercellular processes or organisms’ reactions to environmental properties, and language and sense-making through language, or information vs. knowledge, different kinds of “codes” (Linell, submitted for publication), etc. There is not much awareness of the role of metaphors; e.g., when re-encodings across a series of signal transductions are seen as analogous to human linguistic communication. However, Raczaszek-Leonardi (163ff.), who deals with symbolic modes in living systems (building on H. Pattee), opens up for the assumption that language really makes a difference.

Semiosis distinguishes life from non-life (Hoffmeyer, 2010: 27). But many biosemioticians “living systems theory” (organism–environment systems) seems to have no (specific) place for other persons in the environment: other sense-makers with their minded bodies, or embodied minds, are simply immersed in ecosocial environments.

In biosemiotics there is often an insufficient attention to dialogue and the role of other sense-makers “out there”. And yet, dialogue is demonstrably crucial for human sense-making from the very start of individual life. We could just recall some facts about early infant development (e.g. Trevarthen, Bråten, Fogel, as quoted in Linell, 2009), in particular, the immediacy of the other in infant-carer (or deaf–blind child-carer) communication. Later we witness the role of others as guides to the outside world beyond reach (especially in the case of the congenitally deaf–blind), and much later the role of the generalised other (community) and several such others (thirds; different individuals, groups and communities holding different opinions on important matters; others to which self attributes sense-making abilities).

5. “Values-realising communication”?

One of Bert Hodges’s favourite concepts (in the volume under review, and elsewhere) is “ecological, values-realising dynamics” (135). The term “value” may have varied meanings, and Hodges’s paper does not do enough to clear the ground. However, one can turn to Hodges and Baron (1992) for an illuminating discussion.

Hodges and Baron build upon Gibson’s (1979) theories of perception and action. Values are, for them, embedded in the environmental arrays and activities of perception (Hodges and Baron, op.cit.: 269) and action directed to affordances of objects in the world. They are higher-order constraints on perception-action cycles, and as such different from (natural) laws, conventional rules and situated (individual or shared) goals; rather, values are “properties that underwrite (have priority over) goals and rules” (Hodges, 142). Values seem to be related to (what others may call) apperceived meanings and overall purposes, often remaining largely implicit in interaction, in selecting what is “efficient”, “appropriate” or “working” in the world, although Hodges often prefers to talk about what is morally “good”. Hodges and Baron (op.cit.) give concrete examples from the upbringing of infants, more specifically their learning of table manners.

Values in actions and affordances of objects can be very different, arranged in and changing with situations, dynamically negotiated “heterarchically” (Hodges and Baron, 281). They are, according to a quote from Turvey (1990), “defined over multiple scales of space and time” (Hodges and Baron, 1992: 269) and “self-organizing” (270) within cultures. Although one may perhaps sometimes substitute “meanings” and “purposes” for Hodges’s “values”, his own terminological or conceptual choice suggests that he is basically interested in human interaction and dialogue as a moral undertaking (“enact and embody the good”; Hodges, 151); there are references to Bakhtin’s notion of answerability (one might also have mentioned ethnometodology’s accountability), and to G.H. Mead and Charles Taylor (152).
Another idea in the same spirit is that languaging is seen as “caring”. “Conversing” is for Hodges “a caring system” (150), and this is a better idea than two (other) more “limited models for understanding language”, namely, representation and tool use (150). Caring is a primary function of conversing (149); orienting, integrating, way-finding (149), helping humans to recognise and realise existing (and each others’) affordances. In Cowley et al. (2010), several authors connect distributed cognition theory to care, health, well-being, even happiness and love.

Conversing is “a pragmatic activity that is concerned to realize appropriateness (i.e., values) from beginning to end. Such pragmatic activity is not caused, but jointly-enacted within the integrity of the ecosystem as a whole” (151). Pedersen (2010) regards dialogue (projects in interaction) as co-action, based on sharing and caring. Here “sharing” would seem to be trying to share one’s insights and feelings with the other, and “caring” is acting with respect for the other (Pedersen, 264).

However, doing good is not automatic or inevitable. It requires work (Hodges, 151). Communication and languaging are not always about striving for consensus and intersubjectivity. Starting from this insight, Hodges goes into an interesting discussion of alterity, the fact that different parties to communication have different background knowledge and different interests, and often different (and not always good) intentions. Indeed, I think that dialogical theories strive to explain any kind of human sense-making and social organisation, whether monologising or dialogising (e.g. Linell, 2009). At the same time, we may derive an applied ethics (such as the ‘Golden Rule’) from dialogical ideas, following, among many others, Buber, Bakhtin, Lévinas and Hodges.

To summarise, Hodges comes out as a dialogist. Thus, he quotes Thibault (2004: 2) on p. 151: “the principle of the other – the nonself … is an affordance – perhaps the most fundamental of all – of the ecosocial semiotic environment. … This observation suggests that the ontological basis of our bio-social being is the principle of alterity.”

6. Some other real or potential differences of opinion

DLT is not one homogeneous theory. As we have seen, terms like “distributed”, “values”, “non-local”, “ecological”, and others are far from unambiguous. The following are some other points where contributors seem to hold divergent or disputable opinions (I leave these for discussion elsewhere):

- There must be a language system (Rączaszek-Leonardi, 178), vs. language is not a system (Steffensen, 185).
- Direct interaction and reading a book are radically different (Kravchenko, 38) vs. similar processes (Järvilehto, 28).
- How much significance should be attributed to the “language stance” (Cowley, 2011) and its effects? A language is a second-order construct (Love, 2004; Steffensen, 192): it provides stabilised patterns of languaging in social context (Steffensen, 194), but also (sometimes false) beliefs about them (cf. Linell, 2012).
- What are the implications of talk about “the feeling of thinking” (Cowley, 5)? That “thinking” is “just” a sensation, of no particular importance?
- What is the point of seeing language as “irreducibly bound up with metabolic activity” (Steffensen, 185)

7. Conclusions

DLT challenges the assumption that verbal language is unique. It is a sound scientific strategy to try to “derive language from non-language” (Lindblom et al., 1984: 187). The idea of a distributed language assumes that language interacts with other phenomena (perception, action, brain, body, environments, artefacts, different media, etc.) and it is therefore improbable that it constitutes a totally separated and very special system. Tylén et al. raise more specific arguments against language modules; brain centres (such as Broca’s) traditionally assumed to be specialised on language deal with other semiotic phenomena too, and configurations of everyday objects are treated differently depending on whether they are communicative or non-communicative.

Biosemiotics includes both intracellular and intercellular signalling processes and human languaging; language serves as a metaphor for intra/intercellular processes (although even Hoffmeyer, 2010, admits that language does make a difference). Biosemiotics tends to be vague about the specificity of language (as opposed to life in general), as well as about the difference between information and meaning (Barbieri, 2010). Yet, language is largely conventional, dependent on other sense-makers, while cellular signalling involves causal, biochemical processes (Linell, 2012, submitted for publication). Biosemiotics and organism–environment theories therefore provide more of an explanation of the interaction between living organisms and their environments, more than for human sense-making in its ecosocial environment involving other human sense-makers.

References


P. Linell / Language Sciences 40 (2013) 168–173