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From ‘psycholinguistics’ to the study of distributed sense-making: Psychological reality revisited

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ABSTRACT

The paper discusses the ‘psychological reality’ of human languaging. Basing on the dialogical and distributed arguments, the point of departure is in observations of the actualities of languaging in different modalities and environments. Arguing against the psychological reality of ‘mental grammars’ as storages of internal rules and representations, the concept of decontextual and amodal language knowledge is replaced by a know-how that is associated both with the modality and indexicality of usages. Further, instead of a ‘grammar’, the reservoir of agentive knowledge is approached as a personal repertoire that is discussed, using the concept of timescales, as an assemblage that develops during the agent’s personal trajectory, but that at the same time is made possible by developments over cultural-historical and evolutionary timescales. The discussion is associated particularly with the field of applied linguistics, and aims at offering new theoretical arguments for the research on language learning and teaching.

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1. Introduction

What are the ways by which humans learn ‘language’ and how they apply in practice what they have learned? These were the crucial questions that were raised by a new discipline, psycholinguistics, that emerged in the early 1950s. The new discipline was closely associated with formalist paradigms of theoretical linguistics and the individualist tradition of cognitive psychology - and was an example of approaches that Bakhtin (1993) called *theoretism.* Being theory-driven in their approach, the models that were supposed to seek psychological reality of, say, speech production (see, e.g. Fromkin, 1973), were in fact blind to the embodied and social actualities of human spoken interaction.

For theories of language learning the new psycholinguistics meant a paradigmatic change towards mentalism. The view, as delineated by Chomsky (1968:23) defined language knowledge as follows:

> The person who has acquired knowledge of a language has internalized a system of rules that relate sound to meaning in a particular way. The linguist constructing a grammar of language is in effect proposing a hypothesis concerning this internalised system.

In the years to come, the new tenets came to have a huge influence in applied linguistics and its fields of inquiry that investigated learning of first, second and foreign languages.

During the era of classical psycholinguistics, Per Linell’s 1974 dissertation on phonology (published as an extended version as Linell, 1979), was among the first to critically discuss the concept of psychological reality. In his later work, he has shown how linguistic thinking is influenced by ‘written language bias’ (Linell, 1982, 2005) and has continued to analyse language use

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in context, as a *dialogue* (e.g. Linell, 1998). In his discussion on the dialogicality of language and mind (Linell, 2009) he, in a way, returns to reconsider the agentive viewpoint.

Linell's life work and his emphasis on dialogue can be connected with developments in research of language and cognition. These include, importantly, a turn from individualist views of cognition towards *distributed* approaches to language and cognition (Hutchins, 1995; Cowley, ed. 2011) Also, since 1990s, the concept of language as a code (Love, 2004), or as a homogeneous national language (Blommaert, 2010) have been contested. Similarly, the static views on language as fixed, objectified entities have become replaced by views that speak of 'languaging' (Maturana, 1978; Steffensen, 2009; Cowley, 2019). It also has been observed how formalist descriptions have overlooked the functionality of human language use that has been the mainstay of, e.g., Michael Halliday's (Halliday, 1975) and Ragnar Rommetveit's work (Rommetveit, 1974). The recent research within sociolinguistics has questioned the monolingual bias of research, and pointed out the theoretical and pragmatic significance of social and individual multilinguality (Li, 2018; Pennycook, 2017). To continue, the disembodied views of language and cognition have been questioned to develop an understanding of human cognitive capacities as involving embodiment (Chemero, 2011).

All this has led towards a view of investigating languaging as multimodal, multimedial and multilingual flow of interaction that is jointly co-created and co-coordinated, or, as *interactivity* (Steffensen and Pedersen, 2014). Not all owes to the recent debates: many ideas that are significant in today's discussion were first discussed within the Russian dialogical and sociocultural tradition (e.g., Bakhtin, 1981; Leontiev, 1981). In this paper, I will lean on the above traditions in analysing the dialogues of human sense-making (Linell, 2009) - with a particular focus on the role of individual agency in human interactivity. Hereby, I will also go back to the concept of 'psychological reality'.

2. Language, learning and psychological reality: viewpoints in applied linguistics

According to a common lay metaphor, language learning is a process by which an individual memorises the grammar and vocabulary of the language in question and the metaphor is also remarkably persistent in the field of language teaching. As the data collected over the years on Finnish teachers' and learners' beliefs shows, a fundamental conceptualisation is that in order use language, you first need to assume its 'basics', that is, its grammar and vocabulary (for some results of the longitudinal study, see e.g. Kalaja et al., 2008; Kalaja et al., 2011). It follows that some kind of mental grammar is seen as 'psychologically real' and that this internalised knowledge determines language use.

How, then, is the assumed psychological reality of grammar discussed within applied linguistics, and its fields that study the learning and teaching of first, second and foreign languages? First, most academic studies today that focus on learning are, indeed, intended to be 'socially real' (for the 'social turn' of applied linguistics, see Block, 2003). Perhaps the most popular of the social orientations is CA (conversation analysis) for SLA (second language acquisition) where learning is studied as social practice "publicly displayed and accomplished" (Firth and Wagner, 2007). While having produced much valuable information about practices of spoken face-to-face interaction, the approach has usually been silent about agentive/cognitive operations. Still, there are recent attempts to combine the methods of CA for SLA with usage-based approaches and in there also cognitive operations that regulate learning of constructions are considered (for recent discussions, see, e.g., Wulff and Ellis, 2018; Pekarek Doehler and Eskildsen, 2022).

While the social orientation is clearly the mainstream approach in applied linguistics, there are research areas in the field of language learning that *do* address the 'psychology of language'. Their focus is commonly on different learner characteristics, such as age, personality, learning style or motivation (e.g. Dörnyei and Ryan, 2015) and thus also they leave questions of psychological reality of *language* aside. Therefore the most detailed introductions to 'psychology of language' can, indeed, be found in the introductory textbooks and handbook chapters. What one finds there is an explicit association with a formalist view on language and an internalist view of language knowledge as 'mental grammar' that strongly echoes the 1970s views of psycholinguistics. The most popular textbooks, intended for audiences interested in first, second and foreign language learning and teaching, have been reprinted again and again (see e.g. Gass and Selinker, 1994; Gass et al., 2020) and have undoubtedly had an influence in their readers' conceptualisations.

To sum up, while there are many worthy approaches and much valuable research, there is not much cross-disciplinary or metatheoretical discussion that would help towards finding some common ground (see, however, Douglas Fir Group, 2016) as to the psychology of language. In this paper, I aim at discussing the agentive viewpoint of learning and basing my arguments on the recent reconceptualisations of language and cognition. First, a perspective of *persons-in-interactivity* will be assumed that transcends the social vs. individual antinomy (Cole & Wertsch, 1996; see also Lantolf, 2014). Personal development—such as learning of first, second and additional languages - is inherently and essentially intertwined with the variety of social contexts. However, humans are not only social agents, but unique, individual persons with their different capacities, experiences and emotions (Bakhtin, 1993). Second, learners are regarded as embodied beings in material environments, and the language—or rather, languaging—they learn is mediated with a variety of material means (Dufva, 2022). Third, the conceptualisation of language as 'named' languages, echoing the concept of national, 'boundaried' languages, will be reconsidered (see, e.g., Li Wei, 2022).

Assuming these starting points, I aim at reconceptualising agentive language knowledge not as any sort of *grammar*, but as a collection of embodied and socially sensitive *know-how,* as a *personal repertoire.* The hypothesis that is discussed below is that one learns language as different sorts of *skilled action* (Zheng and Newgarden, 2017; Cowley, 2021). To be clear, both 'grammar' and 'repertoire' are metaphors (Sfard, 1998). My purpose here is to ask how appropriate a metaphor a 'grammar'

is—when searching for psychological reality—and how reasonable it is as a goal for individual learners. However, my discussion is not meant against linguistic or pedagogical grammars and nor to deny a need to explain order, structuration and patterning in language use. My key question thus is: is the notion of a grammar of a language explanatory enough to cover the agentive operations that are needed for coping with the heteroglossic and diverse material reality of language use - its spoken, written, signed and multimodal practices?

3. Ecology of languaging: towards the notion of personal repertoire

Below, human agentive knowhow is approached from the perspective the theoretical outlines of distributed language and cognition, yet avoiding *theoretism* (Bakhtin, 1993) and observing Shotter's (1995: 162) remark (of speaking): 'All that we need to know about is available in our dialogical or situated speech itself'. Starting from observations of the actualities of languaging, the assumptions of classical psycholinguistics about mind and language are questioned and a dialogical and distributed perspective is introduced (Dufva, 1998; Linell, 2009).

Classical psycholinguistics was *cognitivist* (for criticism, see Still and Costall ed. 1991): its view on cognition was individualist and internalist, and its description of language formalist. Hence 'language knowledge' was defined as an internalised system that consisted of 'grammar' and 'lexicon', metaphors still in active use. Here, the point of departure will be in observing *interactivity*, that is, in examining how people achieve coordinated activity in the *ecology of languaging*, with their fellowmen and artefacts at hand (Steffensen and Pedersen, 2014; Steffensen and Fill, 2014; Steffensen and Harvey, 2018; Cowley and Gahrn-Andersen, 2021).

The idea of language knowledge that was seen as a data bank of static system with its essentially permanent representations is replaced by an idea that human agents learn different types of 'skilled linguistic action' (Cowley, 2018, 2021; Newgarden et al., 2015). This kind of knowledge is dynamic, or procedural, and is referred here to as know-how (see also Devitt, 2011). The complex assemblage of different skills is called a 'personal repertoire'. It will be assumed that human repertoires—the range of what human agents can do - are sensitive both to the situated social/cultural aspects and different modalities and that they will be learned, or appropriated, in a distributed fashion, in close cooperation with one's environment, in different types of interactivity. While a grammar, as a term, suggests that the agents' goal is to capture (a) language as a system, repertoires are always *personal;* thus, a unique collection of resources that are multimodal, and also, multilingual in the sense of consisting of different dialects, genres and named languages (see also Dufva et al., 2010).

The repertoires are dynamic. Traditionally, the psycholinguistic view of 'language learning' discussed it as a series of moment-by-moment acquisitions until the end product - the 'grammar' of a particular language - was acquired. In contrast, a repertoire is not a finished product. As human agents grow up, and as their social and material environments change and vary, also their repertoires are subject to alterations up until the adulthood and old age.

3.1. *Know-how is not an* internal grammar …

The concept of know-how recognises language learners/users as embodied agents that operate in their various natural and cultural habitats that offer them particular resources and constraints. As argued above, the individual knowhow is not understood as a 'grammar'. To see grammars as mental constructions means to transfer an external artefact - a linguistic or a pedagogical grammar - into the property of an individual mind. There are several problems in this (Dufva 2022). One of them is that most, if not all, 'external' grammars were originally based on the notion of a national (or a majority) language (Blommaert 2005), and thus a *pedagogical* grammar is less a description than a normative guidebook, strongly associated with national ideologies (Joseph 2006). Pedagogical grammars aim to standardize practices and homogenize usages, but they also have an impact on how they the concept of language is understood. But also *linguistic* grammars that aim at being descriptive theories of language still have their own focus and normativity—as, e.g., in selecting what belongs to 'language' and what does not (Linell 2005). As Sapir (1921) notes, "all grammars leak": grammars are, by necessity, always pruned and often idealised descriptions.

A grammar does not address the actuality of language use, and it does not have to, simply because it is not its objective as Saussure de (1970 pointed out. But an infant is not a grammarian nor a linguist, but a novice encountering and entering into the actualities of human languaging: soundscapes of human speech and auditory-visual flows of multimodal interactivity. Participation in this is where the children are heading for, and to do that they use all the resources available in their communities and networks: spoken, written and signed activity, different situated usages, dialects, genres, styles, and 'languages' (e.g. Dufva et al., 2010). As their goal is participation, the personal project on which they launch is not to acquire knowledge of a language—and as infants they do not know what a language is - but to develop a repertoire of know-how that is practical and "ready-for-use".

Second, knowhow is not genuinely *internal,* but through and through dialogical (Bakhtin 1984). Knowhow is appropriated from others, with the help of others, and using the means and media that the environment affords (Dufva et al., 2014). And, when know-how is put in use, it will be recontextualised when distributed in different types of interactivity (Steffensen and Harvey 2018). Third, knowhow is not imagined as *objects,* such as abstract mental rules and items/representations. Rather, a learner/user's aim is to participate in real-time interactivity, in first-order languaging, by the different means the possess. Or, as Thibault (2017) puts it:

> "First-order languaging is an experiential flow that is enacted, maintained, and changed by the real-time activity of participants. To construe this flow as sequences of abstract forms is a radical misconstrual of what people are doing in their languaging."

The view of language use as "real-time activity" suggests that it is not feasible to imagine knowhow as 'linguistic' *objectified entities* (see also Voloshinov 1973: 38; Steffensen 2009). Instead, know-how means skilled action, or an ability for *doing* (Cowley 2018). Also, as Ingold (1993) observes, the notion of internalised knowledge as rules and representations separates knowing from doing, while actually "… (t)he novice becomes skilled not through the acquisition of rules and representations, but at the point where he or she is able to dispense with them." To rethink 'knowing' as 'doing' also observes the fact that language learning does not means a chain of momentary acquisitions, but that skilled action is, most often, constantly practiced, rehearsed and honed, and modified in different ways through the ongoing chains of usages.

As observed above, an internal grammar is just a metaphor. Perhaps so, but saying that we have a storage of 'linguistic' items seems to dissociate them from the modality of their uses and from the diversity of the sociocultural environments and encourages learners to think of language as an abstract phenomenon, to be memorised. What if, as also observed in cultural-historical tradition, learning would in fact mean acquiring an *activity* (Leontiev 1981: 56; see also Newman et al., 1989: 63) that would be associated with language use? And that languages would be taught by practices that are action-based (van Lier 2007)?

3.2. … *But a* dialogical repertoire

The metaphor of a mental grammar is based on what can be called an *observer view.* As Voloshinov (1973, p. 38) pointed out, grammars are artefacts that result from conscious analyses and that aim at capturing the principles that seem to govern the collective-level phenomenon, 'the language'. The purposes, principles and processes for grammar writing are, however, very unlike to the purposes, principles and processes of a novice who wishes to engage in languaging. An agentive know-how needs to be personal and applicable both for such purposes as the rapid on-line activity of spoken interaction and the pre-meditated and slow process of writing an essay. Here, it is suggested that human personal knowhow can also be approached from a *participant view.* This means to consider the situations and instances of interactivity the agents-as-learners encounter during their life-span, the resources that afforded and the driving forces that motivate them. The processes of learning are through and through dialogical and distributed; they first develop in face-to-face intimate dialogues and slowly expand to new situations, networks, and means. The processes are embodied and material, since the very beginning, and they involve the physical and sociocultural environments with all their artefacts.

To take ecology of languaging as a starting point helps considering the knowhow as a *repertoire* of different types of skilled action. The concept of repertoire comes originally from sociolinguistics where it referred to the collective reservoir of linguistic resources of a language community (Gumperz 1964), but also its individual dimensions are sometimes observed (see, e.g. Busch, 2015; Canagarajah 2018). Also Hymes (1972), in his discussion of *communicative competence* (while not using the concept of repertoire) observes the need to connect language knowledge to situated usages and resources, and aiming at a socially 'appropriate' rather than grammatically 'correct' language use.

A repertoire is dialogical, ie. individual-social. It is socially shareable and it emerges in particular sociocultural environments and uses the languaging therein as affordances. At the same time, it is personal, that is, a curated version of the environment's resources. In other words, the process of 'learning' is *appropriation* (*prisvoenie*), a process by which societal resources are recycled, and made one's own, not in the sense of possession, but in the sense of a right to use (Bakhtin, 1981: 293–294; Dufva et al., 2014). To see a 'grammar' as a goal for learning implies that the outcome is—or should be - identical for all speakers whereas a repertoire as a goal suggests that know-how is always personalised: while individual repertoires are necessarily shared with other, they are never fully identical.

3.3. *Know-how is embodied and indexical*

Considering the nature of the know-how, the first observation is that it is needed for the embodied and material languaging—and second is that it has to be related to the meanings, values and ideologies of the social environments (Thibault, 2015).

Language use is usually said to manifest in three main modalities: those of spoken, written and signed. Still, one also needs to consider the role of different artefacts, and similarly, different media and channels through which languaging occurs (Gahrn-Andersen 2019). An individual's knowhow is associated with the modalities and artefacts they have an access to. Hence, it will be assumed that knowhow embeds modality-specific and also artefact-specific skills, and, moreover, a capacity for multimodal, cross-modal and multimedial activity.

This seems to result in a view that knowhow is not 'linguistic', but consists of different sets of modality-specific *and* cross-modal know-how. These are based on particular embodied means (such as articulatory mechanism) and material tools (such as pens or keyboards) which involve particular sensori-motor and neural processes. Thus language learning actually would mean learning to *do* spoken interaction, to *do* literacy or to *do* sign language, and further, to *do* writing with the help of pen and paper, or typing using a keyboard and a screen, or texting, and so on. The knowhow for languaging would thus consist of a

variety of dynamic skills that are bound with the embodiment of the agents and the material circumstances and the socio-cognitive demands of the task in question.

This does not indicate a view that reduces languaging into mechanically parroting what is seen or heard. The embodied skills relate to the sociocultural circumstances, and are learned by participating interactivity in particular cultural, political and economic contexts. Thus the ability to deal with the variety of meaningful usages of the social world is another obvious driving force for developing one's personal know-how, and one's personhood.

When novices encounter the embodied and material flows of languaging, they also encounter meanings, values and ideologies therein. On their trajectory from childhood to adulthood, they learn the social meaningfulness embedded in languaging through their diverse social networks and media. Interactivity—regardless of its modality and means—is never mediated as 'neutral language'. There are always 'meanings', sets of values, to accept or to reject.

To learn, or to appropriate 'words', in the sense of Bakhtin (1981: 293–294), means recognizing their indexicality:

> Prior to this moment of appropriation, the word does not exist in a neutral and impersonal language (it is not, after all, out of a dictionary that the speaker get his words!), but rather it exists in other people's mouths, in other people's contexts, serving other people's intentions: it is from there that one must take the word, and make it one's own.

Knowhow is visualised as a multi-purpose network of resources that are basically not only multimodal and multimedial, but also indexical, maintaining a link to the social situations and societal environment. But this is also where one is bound to come back to 'language', the 'second-order' construct of first-order languaging—and consider its relevance for a person's knowhow. It would be a mistake to think that 'language' or 'grammar', such as we conceptualise them in our everyday and academic discourses, would not have a role in the ways of how our languaging will emerge. These questions will be considered with the help of the notion of timescales.

4. Timescales of languaging: heterochrony of knowhow

The classic view that assumed language knowledge as both static and abstract is even today sometimes seen as an inevitable fact. In fact, it can be associated with the theoretical stand of synchronicity that has been typical of language sciences since Saussure. A synchronic description of a language is, by default, an abstraction. In contrast with diachrony, it does not aim at a description of time, and with its focus on the underlying invariance it also wipes out the description of language as used (see also Voloshinov 1973 for discussion of Saussurean abstract objectivism). The synchronic principle is thus inherently based on abstraction, and - ultimately—this can lead towards seeing language as static reified entities and formal rules. This has also been the way of language learning sciences that have contrasted (internal) language knowledge with (external) language use.

Another approach is to approach languaging in a way that recognises it as eventing and activity, or *energeia*, as opposed to *ergon* (von Humboldt 1999/1836; see also Kashkin 2002) and further, to consider the relevance of different *timescales* (Lemke 2000, 2002; Uryu et al., 2014). The processes by which humans talk, think, solve problems and learn do not happen only "here-and-now", but reach across various *timescales:* there are different layers of time, different rhythms and processes that mesh in the particular case of interactivity (Steffensen and Pedersen 2014).

Above, human agents' knowhow was imagined as ability for *doing*. This is of course true of on-line eventing: speaking, reading, texting or watching a movie are definitely examples of doing, but this is not the whole story. As Merleau-Ponty (1974) says, time is not "an object of our knowledge," but a "dimension of our being". What agents can do while languaging involves *multiscalarity*: interactivity is distributed not only in space, but also in time.

A "here-and-now" description of languaging cannot possibly be exhaustive, particularly if one considers the agents' engagement, but a dimension of "not-now" and "not-here" needs to be assumed (Steffensen and Pedersen 2014; Steffensen, 2013; Madsen and Cowley, 2014). For example, there is both individual and collective *remembering* going that reaches across the participants' personal timescales, but there is also a presence of longer timescales ranging to evolutionary and cultural-historical developments (Cowley and Markoš, 2019). Interactivity is characterised by *multiscalarity*. Here, three timescales are considered: *evolutionary, cultural-historical* and *personal* (see also, e.g., Uryu et al. 2014)

Human agents have their own trajectory in time, or their own *chronotope* (Bakhtin, 1981) a timeline that is connected to both time and space—a life story, so to say, that is based on their experiences on different contexts and that defines, to an extent, their knowhow. As argued above, a repertoire is never finished, but keeps on being modified throughout one's life—and being on the move is one aspect of how time is present. Another aspect is that language users are actually time-travellers (Dufva, 2013) or time-rangers (Cowley and Steffensen 2015), as their embodiment is also a "historical body" (Scollon & Scollon 2004). Simply, languaging is made possible for the agents only when one considers the influence of their personal *past*—the capacity of how the events and experiences on one's trajectory can be remembered and recontextualized (on embodied remembering, see, e.g. Sutton and Williamson 2014).

Similarly, although *context is* often spoken of as a "place" or "setting" fixed in time, one should think of it rather as a dynamic and evolving scenery for different political, cultural and economic flows and forces of nature (Blommaert et al., 2018). This means also that not only human as agents are time-travellers, but also our environments involve *heterochrony* (Lemke, 2000, 2002): human culture—such as art, architecture, farming or institutional practices of language teaching - builds on the cultural past. What seems a novelty, always embeds layers of the past.

The culture around us constantly informs today's knowhow: it allows us material and symbolic artefacts that are ready-for-use as affordances but that have been developed over a longer timescale. We do not have to re-invent an artefact and neither we do not have to understand "how language works" and how it is put together in order to participate interactivity. We just need to learn "how to do it". Today's agents can, as Leont'iev (1981: 391; 56) observed, use the outcomes of long-scale cultural-historical developments and turn them into faculties of their own system of activity. The cultural-historical timescale is inevitably present in all interactivity.

Finally, the first-order interactivity embeds also an evolutionary timescale. This is particularly clear when observing interactivity in early infancy. Human infants will communicate in a number of species-specific embodied ways: by gaze, vocalisations and touch, for example, and they also seem to develop following particular cognitive principles that are typical for our species. The early 'communicative' and 'cognitive' dimensions, although not necessarily usually regarded as 'language', are highly significant for first-order interactivity and its development. What needs to be noted, however, is that the early embodied features never lose their meaning in later life and are a highly significant part of adult face-to-face interaction, being an essential dimension of 'languaging'.

When infants step into the flow of interaction (Voloshinov 1973), they step into the evolutionary-historical-biographical flow of languaging-in-the-world. The ways in which the young novices first start to appropriate the resources of their environments cannot be defined by a 'synchronic' approach. Here, it was suggested that the development of the personal repertoire and its knowhow is to be regarded through understanding their *multiscalarity* or *heterochrony*.

5. Developing a personal repertoire: language, languages and languaging

The notion of timescales helps to understand how both the evolutionary-cultural heritage and the individual agent's shorter-timescale language biography are at work when developing one's personal repertoire. Further, this also helps to approach the notions of 'language', 'languages' and 'languaging', and explore how the knowhow develops in different networks and their dialogues. The child not an isolated Cartesian agent, but a partner-in-interactivity, and their know-how will be developed in interactivity with various Others. This implies that language ideologies typical to the environment and everyday practices that involve support, scaffolding, correction, repair and the like, will have an effect on both learning and the learner's conceptualisation of language.

While infants seem to start from species-specific (human) languaging, the cultural 'languages' are immediately present as well - and intervene. Infants do have means for interacting with their conspecifics from the very early on - and they also have means for observing their world and its objects and events. As the dialogues around them will involve a particular adult language or languages, the children are exposed to a how a particular being-in-world works. But again, although one may investigate the languaging as 'words', 'syllables' or 'phonemes', this is not necessarily what the child learns. For example, the skill to recognise an object when hearing its name articulated or to say the word aloud oneself does not necessarily imply that they have acquired a 'lexical representation'. 'Words' and 'lexical representations' are *wordings*, cultural artefacts by which linguists and other speakers name phenomena, when taking a *language stance* (Cowley, 2011). When a child is exposed to the flows of interactivity, particular cultural patterns for languaging are "smuggled in" as skilled action.

Further, children do not only 'learn' spontaneously by being exposed to the flows of languaging. They are constantly coached, trained and taught. Adults actually *teach* 'vocabulary' by naming the objects and events in the environment, they teach 'pronunciation' by repeating their utterances or talking slowly and they teach 'sociolinguistics' by means of rewards or prohibitions. They also teach 'grammar' by a series of repairs and corrections. By this, from very early on, the child is told what is 'right' or 'wrong', and perhaps also what is 'good' and 'bad'. Adults, both implicitly and explicitly, actually tell the child what 'language' is and how this particular language should be spoken. This has a great deal to do with social values, and learning is never neutral as Bakhtin (1981) notes. That is also why the development does not mean exclusively an addition to one's repertoire: repertoires are not only expanded but involve much pruning, shaping and also, elimination.

When becoming literate—at home or at school - children face another kind of language, and other kind of skills to be learned. A text with its printed words and orthographic conventions is a totally different set of resources from spoken interaction (Linell, 2009), and learning to read and write means that you need develop new kind of skilled action and, in a way, to 'tune' or to 're-learn' some of your skills for languaging. Frequently, however, literacy also radically changes the child's language awareness. By its permanent nature, stability and prestige, the script particularly seems to enhance a reified understanding of language as objects (Dufva and Alanen, 2005). As language education and assessment practices have been, by tradition, literacy-based, and as written language is strongly associated with the norm, it is no wonder that the children's image of language is strongly (mis)guided towards written language.

It may be justified to say that language learning does not ever happen "in the wild". Both through everyday interactivity, literacy, media and education, novices pick up 'languaging', but are also told what 'language' (and/or 'our language') means. Thus cultural-historical layers of values and practices of 'a language' are slowly added to the evolutionary capacity for doing the 'human languaging'.

So, in a way, one's knowhow does not start at birth, but much before that. Know-how is defined by "being-in-the-world" as a member of the human species, but also influenced by the cultural history of language, languages and literacy. Ultimately, it is influenced by one's unique position, the particular era and one's unique trajectory of lifetime.

6. The reality of 'language': psychological or social?

Above, it was argued that learners' main motivation is to participate in the first-order languaging and that, the ways in which languages are learned, must reconsider the actualities therein. This might be read as saying that learners do not learn 'language' at all. One therefore needs to ask whether 'language' is psychologically real at some level, or is the whole idea of an internalised language just a fallacy? To reconsider this, Bakhtin's (1981) definition of heteroglossia might be helpful. Although often mistakenly interpreted as diversity only, what Bakhtin (1981: 272) pointed out is that heteroglossia - the flows of languaging - are regulated by *two* forces. While *centrifugality* is the force that causes dynamicity and variation, it works side by side with *centripetality*, the force that brings about control and unification. The opposite forces work at the level of social groups—as defined by age, gender, social class, religion, or ethnicity etc. There is no status quo: while centripetality works towards group cohesion and convergent languaging, different dialects, sociolects and national 'languages' as their products, the centrifugal force reappears and urges towards divergence and emergence of constantly new speech genres.

'Languages' are thus very real in the sense of population-level phenomena and they are immensely strengthened by different social and political maneuvers, such as institutional and educational policies that are often fortified by an official or a national status. Thus 'languages' will have a huge impact on languaging as culturally specific ways of participating interactivity, and accepted ways of doing. The impact will obviously increase along with literacy, formal education and language education in mother tongue and second and foreign language.

Still, also 'languages' are not genuinely homogeneous but can be understood as consisting - in the absence of a better word—of different 'dialects' that are associated with the modalities of speaking, writing and signing. These may have different 'syntaxes', 'phonologies' and 'vocabularies', plus dozens of others markers that separate them. Basically, each modality and each situation would have its own 'dialect' that would be defined by the affordances and constraints (see, e.g. Trasmundi et al., 2021 for embodied reading). Still, it may not ultimately be a 'language' that the learners set out to learn, but a way to participate the particular languaging.

So what is 'language'? Clearly, *a* language is something that is usually associated with a national language or a language of an ethnic group, and in this sense, it is undoubtedly a 'socially real' concept. However, when one think of language—in the sense of human species-specific capacities and behaviours—and as an object of linguistic study—the boundaries seem to be somewhat hazy. For example, we have been accustomed to call certain facial and bodily features of interactivity as 'nonverbal' or 'extralinguistic'. Clearly, however, they are part and parcel of face-to-face interactivity, and obviously, a strong element in human languaging. But are they 'language'?

Similar problems emerge when thinking of research focusses. When choosing a particular research focus, we exclude something else. But does this result in what can just be called an orientation or a *turn* (as in social turn, Block, 2003), or do we end up with a *bias*, an inclination and a failure to recognise something essential and relevant (e.g. *written language bias,* Linell 2005; *monolingual* bias, Kachru 1994). A recent example comes from sign language researchers who ask whether the usual definitions of 'language' fail to recognise the essence of sign language and are therefore based on *spoken* languages (Jantunen, 2022; Puupponen, 2023). This would certainly mean an *orality bias*?

As a body of recent research indicates, there is certainly need for a theoretical discussion of 'language' itself. In fact, as Jantunen (2022) suggests, different realms of 'languaging' might be understood not by any fixed set of properties—but through the Wittgensteinian family resemblance This is precisely what I have argued above. When one investigates the processes of agentive 'languaging', its points of departure need to be found in the actualities of speaking, writing, signing and all the different variations therein.

Coming back to psychological reality, the arguments above are definitely against internalisation of formal objects, and *compositionality*. Giving up the idea of memory as a storage also allows stopping to search for 'psychological reality' of the linguistic units that was one of the aims of 1960s and 1970s performance models (e.g. Fromkin, 1973). Linguistic units are real in the sense of being products of a human intellect—as dimensions of languaging that are frozen for analysis, but psychologically real only in the sense that they are shorthand descriptions, tools for talking about language. Further, to dissect languaging into discrete objects is closely associated with cultural innovations such as writing and literacy. Thus claims for psychological reality of this or that alleged unit have alarmingly often been results of the written language bias (Linell, 1982, 2005).

A particularly strong case has been made against the psychological reality of phonological units such as 'phonemes' (e.g. Ramscar and Port, 2016; Samuel, 2020). Instead of seeing speech as a linearisation of discrete phoneme-like units that will be decoded from acoustic flows for comprehension and encoded for articulation, the research indicates that agents use their know-how for recognising the patternings in the acoustic flow of speech and aim at the 'same' in their own articulations. To re-think entities such as 'phonemes/segments', one might see them as attractors that work for the 'sameness' and mutual understanding (Thibault, 2011).

7. Conclusion: towards ecological reality

As Linell (2009) argued, in searching for 'psychological reality' the focus needs to be expanded beyond the individual. The last decades have shown that the workings of the 'mind' cannot be feasibly investigated by limiting it to the workings of an internal machinery, and that human cognition and languaging is to be studied as processes that are distributed both in space and in time. One way of saying this is to say that human mind is dialogical (Linell, 2009), or that the focus is not an isolated

Cartesian agent working with abstractions of language, but a person-in-interactivity, working with languaging that is modified according to the needs of real-life situations.

Describing learning and use of language as distributed and dialogical does not deny the significance of human personhood and individual agency. The individual dimension is as important as ever, and, for example, particularly significant for any language learner, parents, teachers and other language professionals. To gain an in-depth understanding of 'language learning' for applied linguistics also means questioning the traditional views. As Pennycook (2001: 8) pointed out, the task means

> also questioning what is meant by and what is maintained by many of the categories of applied linguistics: language, learning, communication, difference, context, text, culture, meaning, translation, writing, literacy, assessment, and so on.

This means also to see agency and languaging from a new standpoint, thinking of learning as appropriation of linguistic resources (Dufva et al., 2014), as 'becoming' or 'gaining facility' (e.g. Rogoff, 1995), or, as Cowley (2018) argues, working towards 'skilled action'. This is particularly important in language education. To think of language knowhow as repertoires allows the teacher to see the individual differences between the learners. Instead of seeing them as generic learners, it helps the teachers to understand the differences in their capacities, needs and motivations. As suggested, repertoires most definitely relate with socio-economical and political circumstances, and learning is not only determined what learners are able to do, but also to what they have access to and what constraints exist. Rethinking the agentive knowhow from the viewpoint that brings together social and cognitive views and that shifts the focus towards embodied and material ecologies of learning, encourages towards dialogical and meaning-based (Bakhtin, 2004) ways of instruction and a use of action-based practices (van Lier, 2004, 2007; Newgarden et al., 2015). Therein, language learning is neither seen as a mechanical process, nor merely as a utilitarian project, but something that is intimately concerned with the personhood of the learner. And finally, yes, arguing against internal grammars does not mean that one should reject the external ones, in language education. The ultimate goal of language education is to provide means for languaging—and in that, grammars and dictionaries may still be very useful, as artefacts and tools for support.

When seeking psychological reality, one has ended up with 'ecologically real' description for agentive languaging. To quote (Bakhtin, 1993: 91):

> "We cannot break out into the world of events from within the theoretical world. One must start with the act itself, and not with its theoretical transcription"

CRediT authorship contribution statement

Hannele Dufva: Conceptualization, Resources, Writing – original draft, Writing – review & editing.

Data availability

No data was used for the research described in the article.

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