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University Exchange Students' Practices of Learning Finnish: a Language Ecological Approach to Affordances in Linguistic Landscapes

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Abstract

In linguistic landscape (LL) studies, various projects have demonstrated how language learners benefit from tasks that involve the documentation and interpretation of the LL. In this chapter we contribute to research on LL-based language learning, investigating how Finnish as a second language learner exchange students turned the local LL into affordances during their time abroad in Finland.

While *language awareness* and its relation to learning and teaching have been extensively discussed, it has often been regarded as a property of an individual consciousness: a faculty or a tendency of a particular person to perceive, notice and reflect upon the linguistic features present in their environments. In contrast, we argue for an approach that contests the person vs. environment dualism and frames language awareness in terms of *relational* processes. Using awareness raising tasks in second language pedagogy may help learners not only to notice what is useful in their environments, but at the same time invites them to reflect on how they can make use of such resources.

Based on the analysis of our corpus we argue that the students explored the role of the LL in their learning and thus, implicitly, also displayed elements of an ecological model of distributed cognition which we discuss in detail. We believe that taking notice of the dimensions of language learning ecology helps teachers in designing LL-based tasks in a way that they can consider and include all relevant elements of a distributed cognitive ecosystem when planning and implementing their courses.

Keywords

Language awareness; Affordances; Metalinguistic narratives; Ecology of language learning; Learner agency

1 Introduction

In linguistic landscape (LL) studies, various projects have demonstrated how language learners benefit from tasks and activities that involve the documentation and interpretation of the LL (e.g. Dagenais et al. 2009; Sayer 2010; Chesnut et al. 2013; Chern & Dooley 2014; Burwell & Lenters 2015; Gorter 2018). We contribute to research on LL-based language learning, investigating how Finnish as a second language learners turned the local LL into affordances during their time abroad in Finland. Drawing on van Lier's (2004) ecological framework in which the notion of "input" has been reconceptualized as "affordance", we emphasize that language learners are active perceivers of linguistic resources rather than mere consumers of signs they encounter.

In this chapter we discuss the results of a study in which learners of Finnish as a second language university courses were invited to take notice of linguistic resources in their LL. We analyze how they report on when and why they turn resources in the LL into affordances and thus, recognize learning opportunities. This paper is an exploratory study that establishes links between ecological frameworks of language learning and LL studies by researching the ecology of learning-in-the-LL.

Learning environments or spaces of learning are social spaces the usage of which is intertwined with socially co-constructed conceptions and discourses of learning and teaching. Although out-of-school environments such as urban neighborhoods had already been discussed from the point of view of learning (for example in the realm of Cultural Geography: Hart 1979), Linguistic Landscape Studies as an ever growing research agenda has given new impetus to the investigation of educational interaction not bound by classroom walls. Extending the study of *schoolscapes,* we build on Brown's fairly inclusive definition which covers "the physical and social setting in which teaching and learning take place" (Brown 2005: 79). While this definition focuses on learning and teaching as processes without specifying the spatial arrangements in which they take place, Malinowski (2015) has discussed how the classroom can become a purposefully constructed micro-environment for studying all kinds of literacy practices that are outside the classroom, and in reverse, how "every space and place in the world becomes readable or interpretable as a classroom" (p. 95).

Our perspective in this study describes a task which was used to make learners perceive and consciously reflect upon linguistic affordances of their environment. Learning outside school premises has been labeled in various ways such as *learning in the wild* (e.g. Little & Thorne 2017); *informal learning* (e.g. Benson & Reinders, eds. 2011), *incidental learning* (e.g. Rogers 2017) or *ethnomethodological and usage-based learning* (e.g. Wagner 2015). Our perspective aims at pointing out that language learning is not exhaustively explained by either 'social' or 'cognitive' analyses alone, but needs to be approached as an ecology where subjective processes intertwine with social embodied interaction and with different multimodal affordances of the environment. Many (e.g. Cenoz & Gorter 2008) have argued that observing linguistic landscapes can raise teachers' and students' awareness to multimodal and multilingual sources of language learning in the physical environment. However, making use of outside-of-school landscapes in education still cannot be considered mainstream. Although there are several studies highlighting how creatively students recognize learning opportunities and resources in their out-of-school life contexts (e.g. Kalaja et al. 2011), there are still reports that argue for increased awareness-raising and claim that primary and secondary school

students find it challenging to recognize resources their material environment would provide for language learning (e.g. Menegale 2013). To address this challenge, we discuss a specific task as a means for enhancing learners' agency (cf. Dufva & Aro 2014), and present an ecological approach as a framework for designing tasks.

2 Context

We conducted the study in Jyväskylä, an increasingly multilingual university city in Central Finland with a total population of 140,000 (City of Jyväskylä n.d.). There are two higher education institutions in the city: the University of Jyväskylä with nearly 15,000 students, including international and exchange students from approximately 100 countries (University of Jyväskylä n.d.), and the JAMK University of Applied Sciences with more than 8,000 students, including international and exchange students from over 70 countries (JAMK n.d.). Jyväskylä is also a developing tourism destination with more than 33,500 annual visitors from abroad in average in the last five years (Statistics Service Rudolf 2017).

By constitution, Finland has two national languages, Finnish and Swedish, and municipalities can be administratively either Finnish speaking, Swedish speaking, or bilingual (see Halonen et al. 2015). Since Jyväskylä is officially a monolingual Finnish-speaking municipality, public signage is mostly in Finnish only. As some exploratory studies suggest, the linguistic landscape of Jyväskylä displays effects of internationalization, but still, the dominance of Finnish in visual language use is clear (for a study of "main street English", see Laitinen, Leppänen & Mutanen 2016; for graffiti, see Laukkanen et al. 2016). However, there is no study about people's perceptions of and interaction with the local LL in Jyväskylä. Since the two universities, some companies and tourism bring tens of thousands of visitors and temporary residents from abroad to the city, we were interested in studying how they make use of the local LL for the purposes of learning Finnish. Here, we focus on one group, exchange students.

In our study we focus on exchange students as learners of Finnish as a second language for two reasons. First, we wanted to involve persons who had already shown commitment to explore the language by enrolling in a course. Second, we wanted to contribute to the development of teaching materials and practices that can later be used at our university. While the students' language background is heterogeneous, it can be argued that Finnish as a Finno-Ugric language often means a challenge to them, its grammatical structure and vocabulary being significantly different than their L1 and the various Indo-European languages that are most commonly taught as L2s globally. Duly, students often find Finnish unfamiliar, even exotic, when exploring its use in various everyday contexts and they may not find easy to refer to their previous L2 study routines either. The task we analyze below was designed to show how signs in the private, semi-public and public linguistic landscape may help the students to notice learning resources and function as sources of motivation for further study of Finnish..

3 Language Awareness: Towards an Ecological and Distributed Approach

While *language awareness* and its relation to language learning and teaching have been extensively discussed (for a review, see Svalberg 2007), it has often been regarded as a property of an individual

consciousness: a faculty or a tendency of a particular person to perceive, notice and reflect upon the linguistic features present in their environments. In contrast, we argue for an approach that contests the person vs. environment dualism and frames language awareness in terms of a *relational* process. Using awareness raising tasks in second language pedagogy may help learners not only to notice what is useful in their environments, but at the same time invites them to reflect on how they can make use of such resources.

An ecological view of language education (e.g. Kramsch & Steffensen 2008) points out the reciprocal relationship between learners and their environments. Thus the approach embeds cognitive considerations, but sees cognitive operations as extending beyond a single agent's brain-based processes, and thus, *distributed* across participants and resources of the environment (e.g. Hutchins 1995; Cowley, ed. 2011). At the same time, the approach allows social considerations and recognizes the significance of social interaction in particular socio-cultural contexts. However, the ecological perspective particularly points out that social activity is afforded and constrained by embodied and material circumstances and that humans are both social, cognitive and embodied agents (Dufva 2012). Hence, human activity is approached as emergent in the human-to-human and/or human-to-artefact activity and regarded as a result of the activity within organism–environment system (Järvilehto 2009), or, achieved in *interactivity* where embodiment is an important consideration (Steffensen 2013; Steffensen & Cowley 2010; Steffensen & Pedersen 2014).

The central idea of the ecological approach, i.e., the intertwining relationship between humans and their environment was pointed out already by Jakob von Uexküll (1934/1957) who argued that each organism has its own perceptual environment *(Umwelt).* Today, ecological psychology is mostly known through James J. Gibson's (1979: 127) pioneering work which introduced the concept of *affordances,* suggesting that affordances are "what (the environment) *offers* the animal, what it *provides* or *furnishes,* either for good or ill." Hence, to analyze the affordances for language learning, it is clear that the linguistic landscape analysis is highly appropriate: here, we describe how the rich and complex linguistic environments outside classroom, both multilingual and multimodal, may offer various types of resources that learners can benefit from. However, affordances are not a property of the context, i.e., linguistic landscape, as such. Rather, the concept indicates a relation between the perceiving agent and the features of the environment. Thus, the learners' awareness and noticing strategies are significant.

Affordances can be provided by human interlocutors and physical objects alike (see, e.g., the discussion in van Lier 2004: 94–96). In the present paper, we focus on the role of various signs in the linguistic landscape to discuss how a task led the participants to notice the linguistic resources present in their linguistic landscape and how they described their reflections of them. The cases we analyse show that the signs of the environment are affordances that routinely provide action potential for a particular immediate action, as is the case, for example, when encountering instructions of how to use a washing machine or when trying to interpret a traffic sign. However, it is important to note that to be able to carry out an action may also pave the way for managing subsequent actions, and thus, allow learning.

Finally, it can be suggested that the task we analyze below relates to the learners' awareness, and respectively, to their *agency.* It is rather obvious that resource-laden environments do not guarantee any outcome in regard of language proficiency if the agent lacks motivation, opportunity or skills to genuinely assume an involvement and responsibility in the learning process. That is, to enhance and facilitate the learning process, specially designed tasks may give inspiration to the students for

recognizing environmental resources as affordances, and to develop their LL awareness. In other words, we argue that when learners are encouraged to detect and recognize the semiotic resources in the LL, these can be turned into affordances and become appropriated as part of their repertoire (Dufva et al. 2014; Busch 2017).

4 Materials and Methods

Data was gained from two courses of Finnish as a second language given by the Language Centre of the University of Jyväskylä in the academic year of 2014/2015. The task was originally developed by Language Centre teachers that regularly use this and other activities exploring the LL. For example, during a 'City Rally' students were asked to walk through Jyväskylä, observe the environment and engage in conversation in Finnish with local people in various situations (e.g. service encounters, information request, etc.). We as researchers collaborated with teachers of two courses who then integrated our task into the program of their courses. One of them, *Survival Finnish* was meant for those who wanted to get a quick overview about the language and build receptive skills and language learning strategies, while *Finnish 1* was the first unit of a series of courses developing language proficiency in a more systematic way. Both courses used English as the initial language of instruction while Finnish was introduced gradually.

In the particular task we analyze, we asked the students to explore Finnish in their LL and first, take photos of the Finnish-language signs that that they thought they understood, and second, signs that they could not understand but considered to be important for some reason. Further, we asked them to comment shortly on why they had chosen these photos. That is, we asked them to build on and demonstrate their already existing Finnish skills, and also to set new goals of their Finnish studies. The text of our instruction was as follows.

> TAKING PICTURES ON FINNISH…
>
> Please take pictures about texts or signs which are written in Finnish and can be found anywhere around you (on the street, in a shop, at the university, in your room…). Please take at least two pictures: one about a sign or a text which you can understand and about another which is not intelligible for you but you think it would be important to understand. Please write a short comment on both of your choices in English and send the pictures and the comments to your teacher's and to our e-mail address which is indicated at the end of our letter. Please write us where and when you took the photos, why you sent those particular pictures and how you interpret the depicted texts or signs.

Our task is an online mediated version of photo elicitation (Rose 2012), a widely used participatory visual method in which participants are asked to take photos and comment on them. Our instruction focused on the Finnish language, and we asked the students to take the role of an observer who is in the middle of an imagined space of observation ("take pictures about texts or signs [that] can be found anywhere *around you*").

We organized data collection online and received photos and texts via e-mail. Participation was voluntary. Completing the above task was one of the non-graded course assignments, so all students sent their materials to the teacher via e-mail, and those participating in the study included us in the

message as well. Altogether 16 students submitted materials for research purposes, and 13 of them agreed on using them in publications (8 students from the Survival Finnish course and 5 from Finnish 1). We guarantee the participants' anonymity by using pseudonyms which they were invited to choose themselves.

For this study we analyze 31 images and c. 2000 words of students' written comments. We apply multimodal discourse analysis (e.g. LeVine & Scollon 2004) on the students' submissions. We interpret students' submission as manifestations of multimodal metalinguistic narratives, that is, narratives about language use constructed with the help of both visual and textual resources. The analysis of such materials reveals how students discursively reconstruct learning environments and their own agency in such environments. We believe that the visual-textual accounts we analyze in the next section help us to identify some mechanisms of individuals' relation to affordances in out-of-school learning situations.

We are aware of the limitations of our exploratory study. For example, the materials we analyze here are just a small fragment of the course material. The scope of the activity was also wider; for example, the students briefly discussed the collected materials in small groups in one of the course meetings. However, we argue that our present analytical experiment on these materials is suitable for combining points of view of previous research traditions, and preparing further studies that apply the ecological approach we elaborate on.

5 Analysis

5.1 An Overview

In this section we discuss (i) what kind of signs and texts the students chose for sharing with us; (ii) how they explained their choice; and (iii) how they reconstructed their learning practices through multimodal (visual-textual) metalinguistic narratives. In students' submissions and in our paper alike, texts and images are combined to reconstruct the students' multimodal interaction with the LL.

To draw a general overview of the submitted materials, we quantified the textual and visual pieces of information from two points of view: (i) what kind of signs the students photographed, and (ii) where they took the photos (see Tables 1, 2). Both aspects tell us about the students' perceived environment in Finland in general, and in Jyväskylä in particular, in the period of their exchange studies. Further, the submissions can also be connected to their status as young international exchange students. The research participants were particular agents in particular environments, and the quantitative overview of their materials reflects this relationship. Tables 1 and 2 indicate the number of submissions with one focal (textually commented) sign in each of them so we can see what phenomena the students took as the object of their observations.

Table 1. Sign categories

Category	Number of submissions
Regulatory signs	15
Information signs including commercials	12
Package of commercial product	2
Textual narrative (in museum)	1
Travel ticket (online)	1
Total	*31*

Since the task invited students to walk and observe signs in their environment, mobility played an important role in completing the task (cf. Szabó & Troyer 2017). As the sign categories in Table 1 show, the students captured signs that they recognized as learning opportunities in various ways. The class of regulatory signs mostly included traffic and warning signs that are used to regulate the mobility and trajectory of people and their vehicles (e.g. *Läpikulku kielletty* 'No trespassing'), but also regulatory signs in other contexts were included (e.g. *Ethän varaa saatavana olevaa kirjaa* 'Don't reserve a book which is available' on a library screen). Most information signs that were sent to us were meant for pedestrians on the street about available services or opening times of shops and other service provider units. The display of signs in these two categories was located; that is, the signs were posted on walls or projected by wall-mounted screens. Students could make implications about action potentials in relation to the signs. According to students, some signs were meant to block some directions (e.g. 'no trespassing'), to encourage them to enter somewhere and do something there (e.g. opening times in shop windows invite customers to buy something), or to make them stop and read (e.g. information tables with maps and lengthy explanations). In some cases, students reported their confusion about the relationship between visual symbols and additional text that was not clear for them. An example of this was a 'no parking' traffic sign in which an additional plate with a Finnish-only text listed exceptions to the main message (e.g. people with certain permits are allowed to park there).

From the point of view of mobility and trajectories, the remaining three categories in Table 1 constitute another group. Packages of commercial products can easily be carried anywhere; that is, their visibility is not located as strictly as that of, for example, billboards. Commercial packages include textual and visual information about the products they cover, and also influence customer decisions. Such packages are delivered from big distances to the shop and are moved away from shops by the buyers. That is, as sign holders packages are always on the move, and constitute mobile languaging. In Finland, commercial packaging needs to be bilingual by legislation, including the text both in Finnish and Swedish (see e.g. Decree 1084/2004). Such LL elements bring nation-wide, constitutionally regulated bilingual practices also to administratively monolingual municipalities, such as Jyväskylä.

The sole example that pictured a sequence of a textual narrative in a museum exhibition calls our attention to the phenomenon that some collections of signs are meant to be read in a sequential order; that is, people need to find out in what order they should be read, and set their trajectory accordingly.

Further, the example with a screenshot by an online travel ticket brought virtual linguistic landscapes to the study.

Below Table 2 summarizes what locations the students captured.

Table 2. Locations captured (PU = public, SP = semi-public, PR = private spaces)

Category	Classification	Number of submissions
Street	PU	11
Library, museum	PU	6
Shop, restaurant, club	PU	5
Home (including yard and shared premises)	PR/SP	3
Railway station, airport	PU	2
Workplace	SP	1
Computer screen capture	PU/PR	1
Unspecified	N/A	2
Total		*31*

The frequency of items in the categories reflects the wording of our instruction; that is, we asked the students to capture signs on various locations, for example "on the street, in a shop, at the university, in your room", and these four location categories occurred most often in the submissions. Computer screen as a location refers to the above mentioned travel ticket. "Unspecified" covers a map the location of which is not named in the accompanying text, and a tobacco packet hold in the hands of the student against a black background which does not make the location recognizable.

We adapt a tripartite categorization in data analysis, distinguishing public, semi-public and private spaces (for semi-public spaces see Gorter 2018). It is not surprising that the students' submissions were mostly of public spaces since access to those is available to all with or without payment. For example, in Finland libraries are free of charge as are also museums on certain days, and in comparison, an entry to a restaurant or a bar is linked to buying products or services. However, also private settings were included among the sites. There were also examples of semi-public spaces including institutions such as workplaces and schools where entry might be available for certain groups of people, but at the same time it is also policed (e.g. by key cards) and surveilled (e.g. special permission is needed for community-external visitors). Similarly, entry to accommodation premises (e.g. yards, shared laundry or sauna) may also be policed and surveilled. Virtual spaces, again, challenge our above categorization since for example webshops of service providers are available to all, but personally purchased items, invoices, receipts, etc. can be displayed only with personal accounts.

The sites captured by students were naturally mainly designed for other purposes than learning. Only library and museum spaces can be categorized as custom designed learning environments. However, the task was designed with the purpose of helping students to explore their learning in relation to several types of social spaces, not only those that were particularly designed for studying and learning. Further, we argue that the task supported students to establish or strengthen connections between their everyday space-, place, and sense-making routines, treatments of space (de Certeau 1984) and their Finnish learning experience. Finally, we argue, reflection on their already established literacy practices directed their attention towards new goals that they could set during or after their exploratory photo tours.

5.2 Examples

In what follows, we discuss eight examples of signage that the students recognized as affordances. We mainly include regulatory and information signs in public spaces in this section since these sign types and contexts constitute the biggest part of the corpus (see Tables 1, 2). To show the potential diversity of interpretations, we include cases where the same sign was interpreted twice by the same student, or the same sign was photographed and commented by two students. We publish the students' commentaries in an unedited form.

5.2.1 Making Sense of 'Unintelligible' Signs

First, we discuss the signs that the students had considered "not intelligible, but potentially important to understand". One reason for giving this subtask was that any moment of not-understanding offers a natural stop for a person, and potentially raises their awareness and curiosity. By this design, we both made the students stop and gained some insight into their perceptions of semiotic features in the LL that made them curious of the message.

In the first example (Fig. 1; Excerpt 1), the student shared a traffic sign which indicates a pedestrian area. The additional plates in Finnish read as follows: 'Taxi transfer of physically disabled persons is allowed' (above), and 'Service traffic is allowed' (below). The numbers on the plate below indicate time restrictions (unmarked: hours on working days; in brackets: hours on Saturdays; in red: hours on Sundays or public holidays; that is, service traffic is allowed any day between 5 a.m. and 10 a.m.).

Fig. 1 Pedestrian area with restrictions

(1) I also took this picture during the exercise, but have seen it before and wondered what it meant. It is at the beginning of the downtown and seems important to know. I still do not know the meaning, but feel as if I should.

This example demonstrates the importance of the task for beginner learners who need support to make sense of an unfamiliar environment. As the comment shows, the task resurfaced one of the student's recurring challenges of everyday life ("...have seen it before and wondered"). The traffic sign itself might be universally used and understood (at least in Europe; cf. Wikipedia n.d.), but the additional plates in local languages can be challenging. Although the student does not specify why he considers the sign important, it is easy to argue that knowing the meaning of traffic signs is essential for security reasons, but also because drivers entering the pedestrian area without proper justification or outside the time interval are charged a penalty fee.

Besides outdoor spaces, the university library was a commonly captured public indoor space. This is quite natural as the library relates closely to the study routines of the students and can be considered a custom designed space for studying. As Fig. 2 and Excerpts (2a) and (2b) illuminate, a library is not only a space that provides a wide range of textbooks and other sources of academic texts for learning, but also displays various types of both permanent and non-permanent signs that may serve as affordances for second language learners.

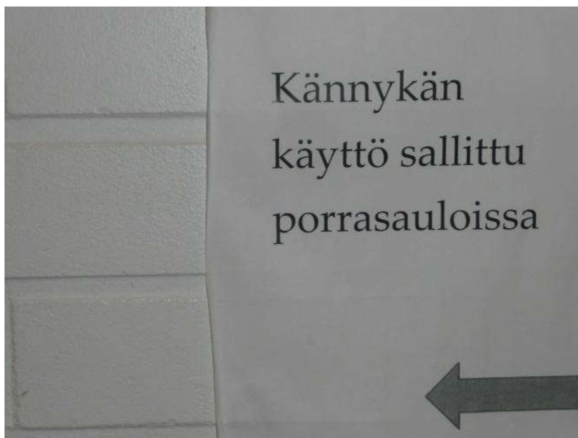


Fig. 2 “The use of mobile phone is allowed in the staircase areas”

The photographed sign above in Fig. 2 reads in Finnish ‘The use of mobile phone is allowed in the staircase areas.’ Thus it is an indirect prohibition sign telling not to use the mobile phone in the proximity of the sign, i.e., in one of the library rooms, but somewhere else. The arrow points to the referred location, i.e., the staircase. It is also interesting that the photo was sent us twice with different explanations. Since Stéphane, the student was not sure whether we had received his first e-mail message, he re-sent his material and attached a more detailed explanation for the second time.

His first message referred to an assumed, potential function of the sign:

(2a) [it] looks important, we have a pointer so maybe an emergency advise or something really followed to do.

His second message approached the sign from a different perspective:

(2b) [it] is the picture that I don’t understand. No translation, only a pointer and a Finnish sentence. So my way of understanding this sentence had to ask a Finnish student, and she told me something like we could talk on our cell phones (she did not succeed to explain me where it was followed to call but not at this place in the library...).

As the excerpts show, the student reported two different strategies of meaning-making. In his first comment, Stéphane highlights the arrow as a visual symbol, and builds his interpretation on that. In the second message, he comments that the sign is rather ambiguous and no translation is provided (“only a pointer and a Finnish sentence” in Excerpt 2b). Further, not understanding the sign made him ask for help from another person whom he recognized as a native speaker. Strengthening his claim on the ambiguity of the sign, he adds that even the “Finnish student” was not able to tell either where the arrow pointed to, that is, interpreting the sign together was only partially successful.

Our last example in this subsection can be placed on the border between understanding and non-understanding. Two students, Stéphane and Václav, photographed the same sign, and one of them included it among the unintelligible signs, while the other one reported on it as a sign he understood. However, neither of the students claimed that they would understand the textual content which gives

insight into different interpretations of the task. We suppose that Václav focused more on the textual element of the sign when claiming unintelligibility, while Stéphane considered ‘understanding’ a semiotic meaning-making process in which different features of signs are all important, and textual information can even be neglected. The sign in question (Fig. 3) hangs in one of the reading rooms of the library and the text in Finnish says ‘Silent area’.

Fig. 3 “Silent area”

Václav only commented that he did not understand the sign and added no further comments while Stéphane sent two explanations in his two messages mentioned above. The first message claimed that no Finnish language proficiency is needed for the interpretation of the sign; it is most likely a reference to the visual content of the sign:

(3a) [it is] also something important to respect and I don’t need to speak Finnish to understand it.

In this message, *also* refers to the fact that this is the second regulatory sign from the library he chose for the task. In his second message, Stéphane wrote the following:

(3b) I understood [this]. Depending on the context, the place, and thanks to the picture, we can guess what this picture means.

That is, Stéphane argued that the meaning of the sign can be understood (‘guessed’) by taking only some of its semantic features (location and image). In the second message he elaborates on why one does not need to speak Finnish to understand the sign; that is, he calls attention to the picture which we interpret as a sign warning others to keep silent. In his own way, the student describes what is essential for our approach as well: understanding something is not exclusively about language but interpreting and understanding the particular resources within the context of their own ecology by drawing on one’s cognitive resources and one’s own learning trajectory. In this sense, when writing about his success in understanding a Finnish sign, Stéphane does not mention his emerging Finnish skills. What he does is rather the opposite: he refers to the visual aspect of the sign which seems to scaffold his understanding in a similar way than a textual content in another language on a bi- or multilingual sign would do (cf. Fig. 5; Excerpt 5).

5.2.2 Signs 'understood'

In this subsection we discuss examples in which the participants told us they had managed to understand the textual content in Finnish. Discussing the examples, we also build on the insights gained from the previous subsection and show how the (fragmental) understanding of textual content is complemented by a general level interpretation of various other semiotic features.

Our first example (Fig. 4; Excerpt 4) is about a prohibition sign near the Jyväskylä Travel Centre which is here referred to with its Finnish name *Matkakeskus*. The travel centre is a junction of train and bus lines and the sign in question forbids leaving bikes on the overpass. It is also worthwhile mentioning that the student chose a Finnish-language pseudonym *Kiitos* which translates as 'thank you'.

Fig. 4 "Leaving bikes on the overpass is forbidden"

(4) I took this picture on the bridge of Matkakeskus about two weeks ago (I don't remember the exact date) and I understand that it refers to bikes. Since there are no bikes around it probably means that it's forbidden to leave your bike there.

This textual account highlights that the sign and its proximity are taken as closely related, inseparable units in the meaning-making process (just as in Excerpt 3b). As obvious in the text, the student had recognized the word *polkupyörä* 'bicycle' (in the sign it is in plural Genitive: *polkupyörien*), and noticed that there were no bicycles in the proximity of the sign. That is, even a partial translation of the sign and the lack of certain objects (i.e., bikes) in the environment seemed to have played a definitive role in the student's interpretation. Further, although Kiitos does not explicitly mention it, we could speculate that also other aspects of the sign, such as the commonly used yellow-red color code for warnings or prohibitions may have supported this interpretation. This remains only our assumption.

In the message, the student translated the Finnish word into English *(bikes)*, but used the Finnish word *Matkakeskus* to indicate the Travel Centre. The lack of translation and the capital letter seem to suggest that *Matkakeskus* is used as a proper name. The use of languages that involves 'code-switching' or 'translanguaging' can be interpreted in various ways. The students may use certain lexical elements,

especially references to familiar locations or institutions, as kind of proper names that may be learned in their original language so that the translatability of the item may not even be recognized or that it is seen as unnecessary. In addition, the explicit use of Finnish in the message and in the choice of the pseudonym may indicate the student's intention to show some of their Finnish skills.

The next example (Fig. 5; Excerpt 5) is also from the Travel Centre of Jyväskylä. In this case, the same student captured direction signs showing the way to the city centre.

Fig. 5 "Centre"

(5) This was also taken on the Matkakeskus bridge and although it has english translation, I would still know it means center ☺

Since the current study was carried out in connection with a Finnish as a second language course, our instructions focused on how the students interpreted signs in Finnish. However, students sent us pictures also of multilingual signage, as shown in this example. Here the sign displays Finnish, Swedish and English in a hierarchical manner (from left to right; cf. Kress & van Leeuwen 1996). Finnish and Swedish are prioritized as national languages and English is added as a global language and lingua franca – as we researchers understand it. However, it is obvious that lexical items such as *Centrum* and *Centre* could also be words of many other languages. In this, they can also be considered hybrid lexical elements the spellings of which are the same in several languages (for hybrid language practices, see e.g. Csernicskó & Laihonen 2016). From this perspective, *Keskusta* is the only word affiliated with only one language, Finnish. In their account, Kiitos identified *Centre* as an English word and referred to translation from English as a potential support of meaning-making, leaving the presence of Swedish uncommented. They also referred to their growing Finnish vocabulary, stating that they would understand the word *Keskusta* even without seeing its equivalent in English. In our interpretation this shows that they highlighted a language from their own repertoire while erased Swedish as irrelevant when discursively reconstructing the LL. Again, Kiitos referred to the importance of translation in meaning-making.

The following example (Fig. 6; Exc. 6) shows a movie poster photographed in Tampere, a city near Jyväskylä. This setting directs our attention to the fact that exchange students often make trips to other regions of Finland, and those trips are also parts of their University of Jyväskylä experience when narrated in the frame of the task. The poster in the example advertised the premiere of a new animated movie entitled 'The Moomins in the Riviera' *(Muumit Rivieralla)*, which is based on popular Moomin books by the Finnish writer and artist Tove Jansson.

Fig. 6 "The Moomins in the Riviera"

(6) This photo was taken in Tampere on 17. 10. 2014. I took this photo not only because Moomin is quite cute and famous, but also it had some information about movie in Finnish.

There are lots of endings and suffixes in Finnish words, so sometimes it's hard for me to look up the words in dictionary. However, I think most movie posters in different countries are quite similar. I still could catch the released time of the movie.

Moomins are labeled by the student, Frances, as successful ("Moomin is quite cute and famous"). "Famous" might refer to the popularity of the stories and the visual design in general, but this can also be understood in a global context since the Moomin family, in this contemporary animated form, is the end product that combines a Swedish speaking Finnish writer's stories with Japanese visual design.

The second paragraph of Frances' account shows signs of 'dictionary literacy or 'language learner literacy'. Here, she seems to connect the photo with classroom instruction and her experiences of learning and studying Finnish by mentioning such grammatical features as suffixes. Further, she explains that this is also why there are challenges in applying established literacy practices to the context of studying Finnish. It may simply be difficult to find the correct dictionary entry if one encounters the word in its inflected form only. For example, in the poster the word *elokuvateattereissa* 'in cinemas' is in plural Inessive, while the dictionary entry would be in singular Nominative, i.e., *elokuvateatteri* 'cinema'. Interestingly, Frances points out that many features of a particular genre of signs, in this case, a movie poster, are recognisable across national borders. In this, Frances is able to relate her interpretation not with the current location and space only, but also with her previous experiences, acknowledging the commonalities.

Our next example (Fig. 7; Excerpt 7) emphasizes the mobility of objects as facilitators of learning. Caroline took a photo of a milk carton in her home, and her textual narrative recalls shopping experiences in Finland. This dual locatedness of the case calls our attention to links that are established between different sites of learning (in this example, shops and home, but also, as in the previous example, Finland and other countries).

Fig. 7 Milk carton

(7) The second picture was captured on October 9th 2014, at 15:00. The reason why I took the picture of the milk for the context I can understand is because the first words that you learn in a new country except from Hi, Good Morning, Thank you are the foods. This category of words are really important for your survival and through the first weeks I spent hours in the super market trying to learn new words!!!

In the above text, Caroline creates an iterative narrative (Baynham 2011), that is, a narrative of regularly repeated routine actions. In this case both shopping and learning Finnish are presented as iterative actions which are intertwined. Caroline highlights the importance of building a basic lexicon including formulaic expressions and words referring to food products for one's "survival", The word "survival" might be recycled from the course title *Survival Finnish* and it also refers to the course agenda which is to build basic skills and carry out mundane actions. This example also seems to suggest that there are learners who may spontaneously see their everyday activities as language learning opportunities, just as Caroline in this example does.

In a similar manner, the next example (Fig. 8; Excerpt 8) makes connections between mobility as well as public and private spaces. The picture below shows a washing machine in the shared laundry room of the student housing unit. The signage on the machine shows pictograms that are supposed to help in choosing the correct temperature, program and detergent. The images are accompanied by explanatory

text in Finnish (first row) and in Swedish (second row). The bilingual Finnish-Swedish control panel also seems to be a manifestation of the manufacturer's awareness of the national language policy.

Fig. 8 Control panel of a washing machine

(8) The second picture is from the washing machine in my building. Perhaps this doesn't really answer to the task anymore as I do understand all of it now, but I had to use a translator. So these signs were not obvious for me, as I didn't do much laundry yet at home and anyway the signs are often different. But of course this was very important to understand.

We chose this example as our final one because it shows a complexity of language learning in the LL. First, we find it interesting that the student, Hilda, included this example among unintelligible signs even though she reports that at the time of completing the task she had already found out the meanings ("I do understand all of it now") by using technology that helped her to translate the instructions. While our first example (Fig. 1) showed how the task directed students' attention to challenges of language learning, this final example is a brief narrative of solving a challenging situation and finding personal interpretation strategies. We argue that such explications help students to recognize their own ways of making sense of the LL, and also help them in finding tools for language learning which suit them the most. Further, although the control panel is bilingual in Finnish and Swedish, Hilda herself does not mention nor name any of the languages. That is, what seems to be challenging in this case is not necessary knowing a certain (named) language ('studying Finnish'), but rather, solving a situation via more holistic sense-making (understanding "all of it", that is, making sense of the control panel as a tool for interacting with a machine).

As Hilda explains here, she faced two challenges at the same time: doing the laundry which was a relatively new task to her, and interacting with a machine which was labelled in languages she could not understand for the first time. In exchange students' everyday lives, such encounters are both common and important, as they start running their households independently in a new country. Further, while Hilda seemed to have recognized pictograms as potentially helpful, she also observed that their

meaning is not universal ("the signs are often different"). This case is in contrast with, for example, the sign for 'silence' in Fig. 3, the meaning of which was considered unambiguous.

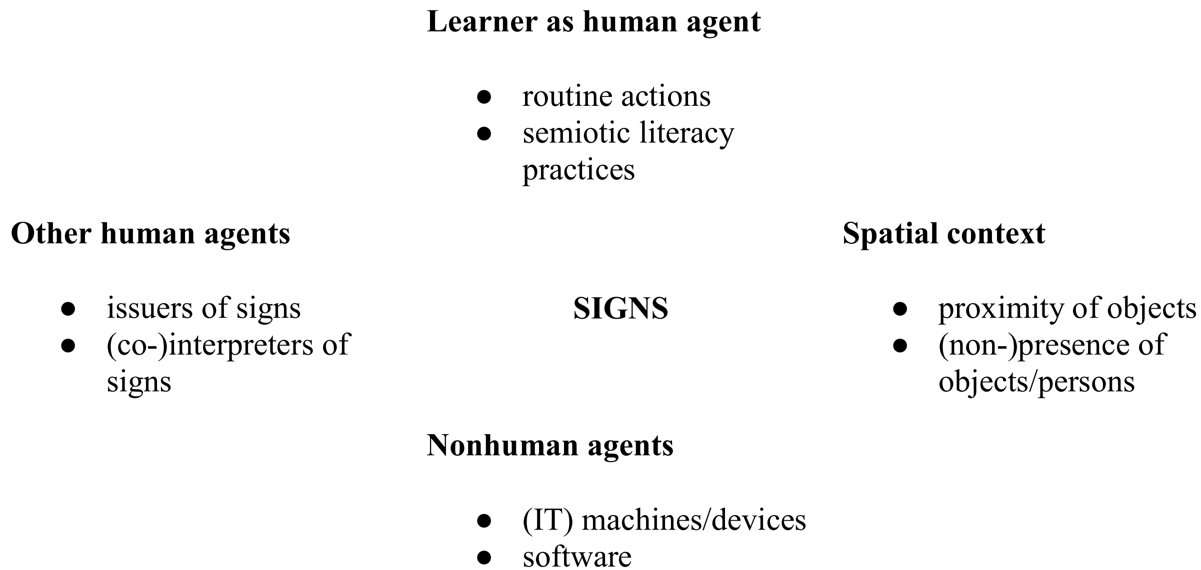
Finally, the example seems to show that signs such as the control panel above influence human agency in different ways than the signs in Fig. 1–7. All other signs discussed above are designed for influencing embodied conduct with an emphasis on the human agent; that is, how to regulate the trajectory of humans and their vehicles (Fig. 1, 4, 5); where to speak and where not to speak (Fig. 2, 3); or what services and products to buy and consume (Fig. 6, 7). In contrast, here we see an example of human–machine interaction with an emphasis on the non-human agent, the machine. In a way, the machine can be considered a gatekeeper for human action if the person cannot interpret or misinterprets the instructions. This case is even more complex since the instructions were translated to another language with the help of another nonhuman agent, in this case, "a translator" (unspecified but assumably a computer or smartphone application), which we interpret as a facilitator for human action (for the role of artefacts in human cognition, see, e.g. Susi 2009).

6 Discussion and conclusion

In general, our chapter contributes to various dimensions of second language learning research, focusing on language awareness, learner agency and multimodal literacy in relation to LL. The task we used for research purposes was integrated into University of Jyväskylä Language Centre courses, and explored students' LL as part of instructed language learning (cf. Clark & Lindemalm eds. 2011). Tasks like this are regularly used in courses, and they are also discussed in the class. With the help of the task, students have been encouraged to turn many different kinds of LL items into affordances, and further, they also passingly reported on their experiences of learning. Among other things, students referred to their learning trajectory, for example mentioning in retrospect how a sign which they now understand was unintelligible to them at first (e.g. Excerpt 8) or how they had used their shopping routines for studying new words (e.g. Fig.7). In many messages that we received, the students presented themselves as active, skillful (new) speakers of Finnish by using Finnish expressions such as *Moi* ('Hi') or *Hauskaa viikonloppua!* ('Have a nice weekend!'). In this paper, however, we did not wish to focus on the development of language proficiency, but rather, examined in what kind of ecology learning outside the classroom is made possible.

Based on the examples presented in this paper and the analysis of our whole corpus we argue that the students did manage to explore the role of environments in their learning. Below, in Fig. 9 we aim at presenting how our findings can be related with the ecological model of distributed cognition (cf. Section 3) that emphasizes the need to analyze learning as interactivity that involves the learner, other human agents, non-human agents and the learning space. We believe that taking notice of the dimensions of language learning ecology helps teachers in designing LL-based tasks in a way that they can consider and include all relevant elements of a distributed cognitive ecosystem when planning and implementing their courses. Such tasks can include a comprehensive investigation of students' own linguistic environments (e.g. objects in home environment, face-to-face and mediated interactional practices with members of personal networks, use of various media, etc.; cf. Clark & Lindemalm eds. 2011).

Fig. 9 Signs as affordances in a distributed cognitive ecosystem, based on students' submissions



In Fig. 9, signs are in the centre of a distributed cognitive ecosystem because the task focused on signs. The task instructed students' exploration of the LL, and doing so it helped the students to build (further) their awareness of LL. That is, the task did not concentrate on vocabulary or grammar learning per se, but rather developed general learning skills. The task asked the students to explicate mechanisms of LL perception which are often overlooked in everyday life. All in all, the task can be interpreted as a tool through which interaction with the LL can be enhanced. Interaction in and with the LL led to LL-focused interaction with the teachers, researchers and peers, and finally we hope that these interactions provided tools for recognizing and exploiting learning opportunities in the LL (cf. Excerpts 7, 8).

Although we focused on how the students recognized the Finnish language in the LL, the signs they chose also included other languages and various kinds of visual semiotic means (Fig. 3 and 5, 7, 8; Excerpts 3a, 3b, 5, 7, 8). For example, they mentioned languages other than Finnish (Excerpt 5), an arrow (Excerpt 3), pictograms (Excerpts 3, 8) as well as typographic conventions (Excerpt 6) as resources that scaffolded their understanding. Furthermore, they seemed to be attentive to proxemic relations between signs and other artefacts, and built their interpretations on the presence (Excerpt 3) or the non-presence (Excerpt 4) of certain objects or persons in the proximity of their focal signs. The students' observations illustrate some of the main theses of the ecological conceptualisation: while learning needs to be analyzed holistically, in its many ecological niches, language as an object of learning should be understood as inherently intertwined with those ecologies – the variety of contexts, modalities and genres – and inseparable from other semiotic resources.

In their observations, students pointed to the importance of interaction with artefacts and human agents. In line with our instruction ("Please take pictures about texts or signs") they focused on certain types of LL items, that is, textual and multimodal signs, but at the same time they highlighted their own role and their own agency in seeing the signs as affordances (e.g. spending time in the supermarket with searching for food names; Excerpt 7). Further, they also recognized the role of other human and non-

human agents in their environments as means of scaffolding (e.g. asking a fellow student to translate a sign in Excerpt 2, and using a translator to interpret washing machine instructions in Excerpt 8).

Students have built metalinguistic narratives, that is, narratives about language use in which they also applied their personal, specific viewpoints on the LL. For example, naming some languages while erasing others from their narratives (e.g. not mentioning Swedish in Excerpts 5 and 8), they reconstructed personal LLs that at the same time bear signs of their own personal trajectories and repertoires. Such solutions manifest customized visual representations (cf. Troyer & Szabó 2017) which need more consideration in the design of language teaching. That is, although in a physical sense the same LL is available to all, perceptions differ individually (as in the case of the 'Silent area' in Fig. 3). This also seems to suggest that open-ended tasks that allow learners to explore and examine LLs without an expected normative outcome encourage them to become more aware of their own resources and strategies in learning.

While noticing the details and analysing one's own navigation in the LL can be demanding for a student, the photos and the text excerpts seem to show that students in fact had detected and recognized several elements that contributed to their meaning-making. Further, some of them even recalled how customizing and consciously using the LL helped them in solving daily tasks (e.g. Excerpts 7, 8). It is exactly this kind of reflection that we hoped to develop with this task: openness to the LL, seeking learning opportunities (affordances) in it, and benefiting from help (either from humans or non-humans) that help customizing or (co-)interpreting it. The task functioned as a tool supporting embodied learning experience in different environments as it involved all senses and the mobility of human bodies and artefacts (cf. Bucholtz & Hall [2016] theorizing the relationship between language and embodiment).

Above, we have explored ecological thinking as a theoretical background for combining the fields of LL and second language learning. We argued for an extended notion of language learning that reaches beyond classroom instruction and sees learning-in-the-wild as an important dimension of language education. However, we emphasize that learning-in-the-wild does not refer to social verbal interaction between human agents alone, but that it comprises the variety of contexts and environments where human languaging is present in different modalities, where not only human but also non-human agents are involved and where both here-and-now and virtual dimensions are at work.

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