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Iconic strategies in lexical sensory signs in Finnish Sign Language

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Abstract: Iconic strategies—methods of making iconic forms—have been mostly considered in terms of concrete semantic fields such as actions and objects. In this article, I investigate iconic strategies in lexical sensory signs—signs that semantically relate to the five senses (sight, touch, smell, sound, and taste) and to emotions (e.g., anger)—in Finnish Sign Language. The iconic strategy types I discuss are hand-action, entity, drawing, and locating. I also discuss the indexical strategy type (e.g., finger pointing). To gain as rich and broad a view as possible, the mixed methods in the research consist of three components: intuition based, intersubjective, and statistical analyses. The main findings are (1) that, in order from most preferred to least preferred strategy, the hand-action, the entity, the indexical, and the drawing were found in lexical sensory signs; the locating strategy was not found at all, and (2) that the interpretation of iconic strategies is not always unambiguous and absolute. In conclusion, I reflect on methodological issues, and suggest that the concept of cross-modal iconicity and indexicality should be further studied in sign language linguistics.

Keywords: emotion; iconicity; iconic strategies; sense; signed language

1 Introduction

In sign language linguistics, iconicity is a popular research topic because of the visual nature of signed language, which allows the strongly iconic expression of visual things (i.e., how objects or actions look) (e.g., Perniss and Vigliocco 2014). Klima and Bellugi (1979) compared the iconicity of signs cross-linguistically for the meaning "tree" and found that the formational features in the signs for it vary across sign languages. They argued that although a sign is iconically motivated by its meaning, the way the iconic sign gets its particular form is unpredictable. Researchers (Hwang et al. 2017; Padden et al. 2015) have challenged the unpredictability of iconicity by drawing attention to the recurrent iconic strategy types—

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methods of making iconic forms—that are found in the signed language lexicon. Currently, the three iconic strategies most typically distinguished in sign language linguistics are the handling strategy (imitating the way hands manipulate objects), the entity strategy (e.g., representing objects with the hands), and the size and shape specifier strategy (SASS) (leaving traces in the air to express spatial forms) (e.g., Hwang et al. 2017; Padden et al. 2015; Takkinen 2008).

To illustrate recurrent iconic strategies (see also Section 4), the meaning "tree" can be depicted by means of the entity strategy (a hand itself as the tree) or the SASS strategy (hands tracing a cylindrical tree) (Hwang et al. 2017: 576). Although I have not found an example of the handling strategy for the meaning "tree" in the lexicon of any sign language I am familiar with, an example can be easily invented: a sign that looks like the action of climbing could convey the meaning "tree" by associating a tree with something that children climb. Thus, the meaning "tree" can be represented using all three iconic strategies. The available iconic strategy types in both gestures and signs are rooted in bodily affordances (ibid.: 3).

Note that I use the term iconic strategies rather than depicting signs. The latter term strongly associates with non-conventional iconic units in signed language. Also, the term iconic strategy is similar to Müller's (2014) term, modes of representation as techniques of depiction, rather than "pre-determined" iconic mappings between form and meaning, which might be the impression given by the term patterned iconicity as used by e.g., Hwang et al. (2017).

Iconic strategies have been extensively studied in sign language linguistics. For example, Hwang et al. (2017) investigate iconic strategies across concrete semantic fields (tools, animals, fruits, and vegetables) in eight sign languages. Kimmelman et al. (2018) extend this to establish a database covering 31 sign languages. Both these studies show that iconic forms may vary across sign languages, but the iconic forms are always based on the iconic strategy types in a patterned and predictable manner.

However, iconic strategies in sensory signs, which are semantically related to the senses and emotions, have not been extensively studied. The data used in research (e.g., Hwang et al. 2017; Kimmelman et al. 2018; Padden et al. 2015) has mostly relied on the concrete semantic fields of objects and actions, for which the visual-gestural system affords a high degree of iconicity. In contrast, sensory experiences (e.g., smell) are quite invisible, and thus cannot be compared with visible bodily affordances. It is therefore interesting to consider which iconic strategies and kinds of patterns are found in the sensory lexicon. The study of iconic strategies in sensory vocabulary will extend our understanding of the role of iconicity in the whole lexicon. The understanding of these patterns in signed language (and gesture) will contribute to our understanding of other semiotic systems (e.g., spoken and depiction) that depend on different kinds of affordances.

A few researchers have considered iconic strategies in sensory signs. Emmorey et al. (in press) examine codability in American Sign Language (ASL) using a stimulus-based method. In their study, signers were asked to perceive sensory stimuli—by touching, smelling, etc.—and to describe them using different strategies such as depicting signs, fingerspelling, and source based signs (e.g., a salty taste is expressed with the ASL sign SALT). In an example of their finding, a bumpy surface is depicted by tracing a bumpy line in the air rather than by showing directly how the bumpy surface feels (Emmorey et al. in press: 27). This finding seems to hold that recurrent iconic strategies are also found in (non-conventional) sensory signs.

Here I investigate iconic strategies in lexical sensory signs in Finnish Sign Language (FinSL), using the database of Finnish SignBank (The University of Jyväskylä, Sign Language Centre 2018) as data. FinSL is used in Finland and its roots go back to at least 19th century Swedish Sign Language (Salmi and Laakso 2005). One reason for this choice of data is that studying local sign language lexicons will allow cross linguistic comparison in the future. Another reason is that in Emmorey et al.'s (in press) data are more non-conventional depicting signs, which are quite similar to non-conventional gestures; they do not show which iconic strategies are found in lexical sensory signs.

I will also include emotion-based semantic fields in this analysis of iconic strategies. Emotions are literally experienced in our body—for example, cold feet from a feeling of excitement (Nummenmaa et al. 2014). Östling et al. (2018) show that many emotional signs are consistently articulated at the chest, which is where emotions are experienced, but emotional signs may be produced in various places (e.g., the stomach) across languages, and should be considered in each language's own terms. Winter (2019) argues that senses and emotions should both be considered because emotions and senses are usually neurologically as well as linguistically interconnected. Sensory words such as sweet in spoken English are not used only for describing perceptual features but also emotional ones (see more discussion in Winter 2019: 199–211). To simplify matters, here I use the term sensory signs as an umbrella word for sensory and emotional signs.

To summarize, the first aim of this paper is to investigate the iconic strategies used in lexical sensory signs in FinSL. Thus, the research question in this study is: Which iconic strategies are found in lexical sensory signs, and in which patterns? My hypothesis is that the recurrent iconic strategies apply also to lexical sensory signs because of the bodily affordances in signed language. However, I have no hypothesis regarding what kinds of distributional patterns are found. All the signs that are considered here are from FinSL, unless otherwise mentioned.

My framework can be characterized as cognitive semiotics, which is defined by Zlatev (2015) as the transdisciplinary study of meaning, combining methods and concepts from linguistics, semiotics, and cognitive science. In addition, I apply three types of analysis: Subjective (intuition-based analysis), intersubjective (analysis through interpersonal communication), and objective (statistical analysis) (see Zlatev 2015). The purpose of a mixed methods approach is to gain insights from a range of angles.

My second aim is to reflect on methodological issues connected with the form-based approach that I have chosen to use. The (strong) form-based approach (e.g., Kimmelman et al. 2018) is concerned only with issues about how iconicity occurs in form, and it is often used to study a large number of signs with statistical methods. In contrast, relation-based approaches (e.g., Emmorey 2014) consider issues in detail regarding the structural relation between formal and semantic properties, often deeply focusing on just a few signs. Some scholars may exploit the (weak) form-based approach but also reflect on the relationship in order to explain phenomena (e.g., Ortega and Özyürek 2019). I reflect on the issues in terms of the question of why certain strategies occur more frequently in certain sensory semantic fields, and the concept of cross-modal iconicity.

2 Theoretical background

2.1 Semiotic signs

I use the term sign for a lexical or depicting unit used in signed language and the term semiotic sign as a "Peircean sign" (sign, word, etc.). In the Peircean sense (e.g., Peirce 1894), a semiotic sign is anything (a form, representamen, or expression) that stands for something else (the object or referent) in a person's mind (the interpretant). A form becomes a semiotic sign only when a referent is subjectively the focus and is differentiated from the form (the representamen) (e.g., a banana as a phone); otherwise, it is a matter of perceptual experience (e.g., a banana as itself) (Sonesson 2016). Semiotic signs can be divided into three sub-types, according to their semiotic grounds: iconicity (resemblance), indexicality (spatio-temporal contiguity), and symbolicity (social convention) (e.g., Jakobson 1965).

According to Jakobson (1965), a linguistic expression may be simultaneously symbolic, indexical, and iconic, but usually one of the semiotic grounds is predominant. For example, the sign HAMMER is iconic (showing the way a hand uses a hammer), indexical (a grasp-like handshape indicates the "invisible" hammer being held), and symbolic (a conventionally shared sign in the FinSL community that refers to the meaning "hammer").

A signed language lexicon does not comprise only iconic and non-iconic strategies but also indexical strategies (e.g., deictic signs) (Johnston 2012). For example, the pronoun sign ME is indexical (pointing at the signer's chest). In order to answer the research question, I mostly focus here on iconic strategies.

2.2 Iconicity and iconic strategies

Signed language displays a high degree of iconicity due its visual nature (e.g., Perniss and Vigliocco 2014: 2), that is, the resemblance between the visually perceptible articulators and visually perceptible objects and actions. Many lexical signs have their origin in depicting signs and pantomimic actions. Over time, some signs may de-iconize – lose their iconic properties through use and time— while others preserve more of their iconic properties (Emmorey 2014; Frishberg 1975). Thus, I assume that many sensory signs were originally based on non-conventional units, but some of them may have de-iconized. In some contexts, fully lexical signs may also regress into more iconic signs through the process of de-lexicalization (e.g., Johnston and Schembri 1999). However, this is not in focus here. Some sensory signs may also be purely non-iconic.

The perception of iconicity in signs also relies on individual experience, and social factors (Occhino et al. 2017; Zlatev and Möttönen in press). Thus, a sign may be less iconic for one person, more iconic for another, depending on the individual's previous experience (e.g., having seen a car) and on socially shared knowledge (e.g., knowing what the CAR sign means within the linguistic community).

There is another kind of iconicity: Cross-modal iconicity, where a form resembles its meaning across sensory modalities (Ahlner and Zlatev 2010). Real or fictive words as well as vowels and consonants in certain patterns may evoke cross-modal impressions (senses, actions and so on). For example, there is a tendency to perceive the word bouba as similar to softness, and the word kiki as similar to sharpness (ibid). The concept will be discussed in Section 5.2.

The types of iconic strategies have been terminologically and taxonomically discussed in different ways, depending on the approach in sign language linguistics and gesture studies (e.g., Liddell 2003; Müller 2014; Padden et al. 2015; Takkinen 2008). Here, I recategorize iconic strategies according to their main functions into four types, and I do not take their subtypes into account. However, the categories could be changed or elaborated in future research.

The first three types are based on the categorizations commonly used by scholars (e.g., Hwang et al. 2017; Padden et al. 2015; Takkinen 2008). Unlike most

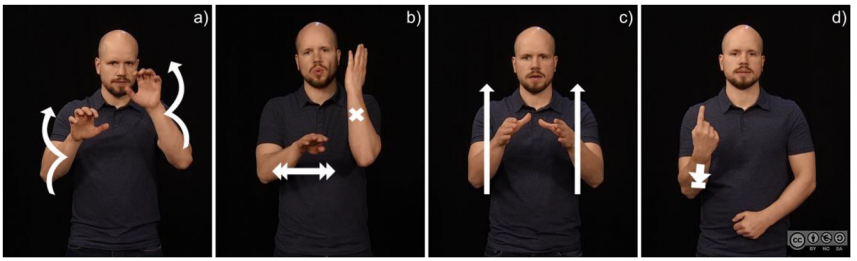

Figure 1: The iconic strategy types (a) hand-action: climbing, (b) entity: tree, (c) drawing: cylinder and (c) locating: tree at the ground (The University of Jyväskylä, Sign Language Centre 2018). In the hand-action type, a hand or hands show the action, e.g., climbing (Figure 1a). In the entity type, a hand itself represents a part of or the whole object. For example, in the sign TREE, the non-dominant hand represents a tree (Figure 1b). In the drawing type, the hands depict the size and shape of an object by leaving traces in the air or on a surface. The three-dimensional cylindrical trunk of the tree can be represented in this way (Figure 1c). The object can be linear, two-dimensional or three-dimensional. Lastly, in the locating type, a hand depicts the location of an object with a short downward movement at a particular place. Usually, in the drawing and locating types, the hand exploits either a handling or an entity strategy but the movement performs drawing or locating functions. For example, an upright index finger as the tree (entity) is located on the ground (locating) (Figure 1d).

sign language linguists, here I use the term hand action as an umbrella concept for non-handling actions (e.g., hands swinging while running) and handling actions (e.g., climbing). It is not very satisfactory to ignore the non-handling action type, because it forms a different kind of meaning from the handling action type. With regard to the drawing type, some gesture researchers (e.g., Müller 2014) distinguish between moulding (tracing three-dimensional forms) and drawing (tracing two-dimensional forms). I categorize these as one type because their tracing functions are similar in both cases. Lastly, as a precaution, I have taken the locating type from Liddell's categories (2003) because it is not yet known if this type is found in lexical sensory signs. This strategy is not usually categorized as a distinct type; Takkinen (2008), for example, categorized this as the movement root under three classic types. However, I regard it as a distinctive function in its own right, namely, locating things somewhere.

Here, intuition-based analysis is involved because it is not possible to classify any strategy type without interpreting the signs. For example, the five fingers bent can depict a way of holding something (hand-action) or a tiger's paw (entity), depending on what the signer means or the interlocutor understands.

3 Methodology

3.1 Data

The data of the study is a collection of 184 lexical signs from Finnish Signbank (The University of Jyväskylä, Sign Language Centre 2018) (see Appendix A). To select sensory signs, I went through the whole database of Finnish Signbank and identified all the signs that belong in semantic fields related to the senses and the emotions, excluding the Finnish glosses and signs that may very indirectly relate to senses or emotions (e.g., "to evaluate"). Also, with the aim of possible insights, there is a small number of signs for sense-related anatomy (eyes, ears, nose, mouth, and chest), through which we mostly experience the senses. I did this without regard to the degree of iconicity of the signs, so some of the signs in the data could be purely non-iconic.

The data is divided into two parts: 150 sensory signs and 34 control signs. The selection of the sensory signs was motivated by the research question, but their number is due to their availability in Finnish Signbank (Table 1). The 150 sensory signs include 96 signs related to the five senses (sight, smell, etc.), 5 signs connected to sense-related anatomy, and 49 emotional signs (expressing anger, happiness etc.). Of the 96 signs related to the five senses, 38 relate to sight, 35 to touch, 18 to sound, 3 to smell, and 2 to taste.

Occasionally, it is difficult to place sensory signs in one particular sense category because several signs have semantically multisensory properties, as happens with spoken words (see Winter 2019). Is the sign SHARP (or, more

Table 1: The sensory signs in the data of the study.

Sensory signs	**No**
Five senses	96
Emotions	49
Sense-related anatomy	5
Total	150
The five senses signs	**No**
Sight	38
Touch	35
Sound	18
Smell	3
Taste	2

commonly, "sharpness") more a matter of touch or sight? Recognizing the problem, I decided to categorize the signs according to my native signer intuition as regards which sensory property is most salient. For me, touch is semantically most salient in this sign. Signers may have slightly different experiences (e.g., sharpness as mostly visual). However, Winter (2019: 185–186, 197) shows that intuition is a relatively reliable basis for judging sensory strength(s) of meaning in a decontextualized task because, for instance, it correlates with linguistic patterns (e.g., the pairing of the words smoky and taste) evidenced by corpus data. Thus, the categorization of sensory signs based on my intuition is sufficient for the purpose of this study.

I also deliberately selected 34 control signs. The control signs are similar to the semantically concrete signs, e.g., CAR, in the data used by Hwang et al. (2017) and Kimmelman et al. (2018). These signs were randomly selected, however, based on iconic strategy types. The 34 control signs consisted of 10 hand-action signs, 9 entity signs, 10 drawing signs, and 5 locating signs. As we can see from the research question, the control signs are not a focus of this study, but they were there because it might sometimes be useful to compare them with the sensory signs, to provide some reflective insight, for example, in terms of how consistently they are identified by coders. I expect that consistency is lower in sensory signs than in the control signs, because the former are semantically relatively abstract (e.g., invisible).

3.2 Methods of analysis

Following cognitive semiotics, I integrated aspects of three different methods with the aim of opening up multifaceted insights into the subject of study (see Table 2; applied from Zlatev 2015: 1059): (i) A subjective (i.e., intuition based) analysis for identifying strategy types; (ii) intersubjective discussion (i.e., interpersonal communication for understanding interpretations); (iii) objective method to check inter-rater reliability, and a frequency distribution for detached, statistical analysis of the results. Subjective, and intersubjective methods are epistemologically essential in the study of meaning, and they are implicitly performed also when using "only" objective methods, even if this is not always fully realized (ibid). The analysis process conducted in this research will be presented step by step in the next sections.

The aim of the subjective component was to classify the sensory signs according to iconic strategy types, using intuition. To make the intuition-based analysis intersubjectively comparative, I recruited two co-coders, also deaf signers and trained linguists from the University of Jyväskylä, to whom I gave theoretical and practical instruction.

Table 2: Methodological triangulation in cognitive semiotics: integrating methods from three perspectives to study meaning (from Zlatev 2015).

Perspective	Methods	Usually applied to
First person ("subjective")	Conceptual analysis	Perception
	Phenomenological methods	Mental imagery
	Systematic intuitions	Norms (in language)
Second person ("intersubjective")	Empathy	Other persons and "higher" animals
	Imaginative projection	Social interaction
Third person ("objective")	Detached observation	Isolated behaviours (e.g., spatiotemporal utterances)
	Experimentation	
	Brain imaging	Biochemical processes
	Computational modelling	

We three coders watched 184 videos of signs in Finnish Signbank (The University of Jyväskylä, Sign Language Centre 2018), and we each independently filled in our own analysis forms in the software Excel. The analysis form comprises 184 analysis matrixes, that is, one for each sign in the data.

		DH.IS	NDH.IS
SMELL		E	O
Comments:			
Hand as gas			

Figure 2: The analysis matrix of SMELL; dominant hand (DH.IS) as entity (E); non-dominant hand (NDH.IS) as non-participating (O).

In the analysis matrix (Figure 2), the strategy of a sign, e.g., SMELL, was marked in the dominant hand (DH.IS) and the non-dominant hand (NDH.IS). One reason for the separation of the two hands is that strategies in the hands may be asymmetrical.

When a sign was not iconic, it was coded as N—non-iconic. Those that were classified as iconic were each coded according to the type of strategy: Hand Action (A), Entity (E), Drawing (D) or Locating (L). When it was too difficult to identify the iconicity of the sign (e.g., it was too blurry), the sign was coded X. Signs were coded with a P when their strategy type was unidentifiable but at least one of the parameters (e.g., movement) was iconic. The indexical strategy mark (I) was used for indicating signs (e.g., finger pointing). A code had to be given also when the non-dominant hand did not participate in the signing; for this we used O—N/A.

Finally, the coders could write their own notes and any thoughts in a comment box.

When the coders had completed all the 184 analysis matrixes, I turned to the objective component and checked inter-rater reliability for the coders' subjective results. Reliability was tested by computing Krippendorff's Alpha (Kalpha) (Krippendorff 2004: 221–223, 241–243) and Cohen's Kappa (Kappa) both (McHugh 2012), using the software IBM SPSS Statistics for Windows version 26.0. Kappa is for two person agreements (A–B, A–C, and B–C), and Kalpha for three person agreements (A–B–C). The percent of agreement between analysts ranges between 0 and 1, that is, from no agreement to perfect agreement. In Kappa and Kalpha, over 0.8% indicates high reliability. In Kalpha, more than 0.667% is acceptable.

Table 3: Inter-rater reliability in the subjective results.

Kalpha		Kappa			
Analysts	**A–B–C**	**Analysts**	**A–B**	**A–C**	**B–C**
Sensory signs					
DH	0.24	DH	0.43	0.26	0.15
NDH	0.61	NDH	0.68	0.59	0.55
Control signs					
DH	0.63	DH	0.55	0.75	0.60
NDH	0.81	NDH	0.72	0.88	0.83

Table 3 shows that the subjective results are statistically unreliable for the strategies in the sensory signs (Kalpha 0.24; Kappa A–B 0.43, A–C 0.26, B–C 0.15), and, for comparison, in the control signs (Kalpha 0.63—below 0.661). Surprisingly, the analysis of concrete signs is not so simple, after all. Because almost half of the signs (87 out of 184) were one-handed, it was easier to consistently code the non-participating hand (NDH) with a O—N/A.

After completing this stage, I summarized differences found in the subjective results by comparing every code on the three analysis forms, to identify what questions needed to be considered in the intersubjective analysis. In this analysis I asked the two coders to describe exactly how they interpreted each sign that was variously labelled across the three coders. Then we three coders described our interpretations to each other as intelligibly as we could. The purpose of this was to identify possible errors and to understand different interpretations.

When the coders had explained their interpretations to each other, we could each decide if we were going to change or keep our original codes for every sign; each coder was free to reach whatever final decision they considered best. The

reasons for keeping an original code might be (1) that there were no disagreements among the coders, or (2) that others' interpretations looked counterintuitive to them. Conversely, a coder could change their original code either because they recognized that they had made an error or for some other reason (see Section 3.3).

Table 4 shows the intersubjective results after changes had been made to the original subjective results. Now, reliability is almost perfect in all aspects of the results for strategies in sensory signs (Kalpha 0.94; Kappa A–B 0.93, A–C 0.98, B–C 0.93). The number of disagreements was now quite low.

Table 4: Inter-rater reliability in the intersubjective results.

Kalpha		Kappa			
Analysts	**A–B–C**	**Analysts**	**A–B**	**A–C**	**B–C**
Sensory signs					
DH	0.94	DH	0.93	0.98	0.93
NDH	0.96	NDH	0.95	0.99	0.94
Control signs					
DH	0.94	DH	0.96	0.96	0.92
NDH	0.97	NDH	0.96	1	0.96

3.3 Explaining the changes in the intersubjective results

Failing to explain and understand the changes that were made and led to the final results (Table 5) would weaken the reproducibility of this study for further research. Hence, it is necessary to go through the reasons for the changes. The first of the reasons was the usability of the analysis form itself: Filling hundreds of boxes in 184 analysis matrixes was exhausting, and this increased the number of careless mistakes.

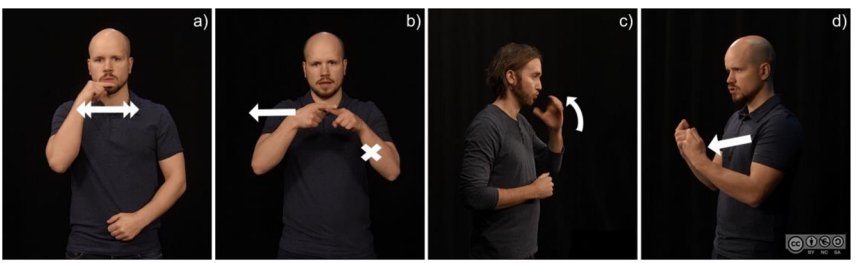

Figure 3: The signs (a) RED, (b) SHARP, (c) TO-DRINK and (d) INTERESTING (The University of Jyväskylä, Sign Language Centre 2018).

Another reason was the very nature of the lexical signs: Many signs whose iconicity had faded or whose etymological origins were unknown to the coders were marked inconsistently. In these cases, it was sensible not to try to classify the signs in any way at all but to re-code them X, because etymologically they might be non-iconic. On the other hand, some signs that were originally coded X were later re-coded after the coders had checked their explanations. For example, the coders re-coded with a P (i.e., at least one of the parameters is iconic) many emotional signs (place of articulation: articulated at the chest, which is where we experience emotions; see Östling et al. 2018), and the sign BIG (movement: hands moving away from each other to represent bigness).

Sometimes the coders inconsistently labelled indexical signs (e.g., the sign RED; Figure 3a) with iconic strategy codes because they seemed to be iconic. In fact, paraphrasing Peirce (1903; Nöth 2020: 314), an index shares some qualities with its object. Thus, an indexical finger pointing also includes iconic properties (e.g., pointing at the same place as the object being pointed at is located).

Another reason for changing the code was when the coders agreed about a denotative meaning of a given sign but they had labelled the sign with different codes—even if the etymological origin or iconicity of the sign was clear. I call this phenomenon ambiguous iconicity. For example, the sign SHARP (Figure 3b) can be based on either a hand-action strategy (A) (the index finger touching a sharp object) or an entity strategy (O) (the index finger as the sharp object cutting the finger). In the intersubjective analysis the coders agreed that alternative interpretations such as these are reasonable, so we combined codes for the ambiguous iconicity types found in the data: A–E, A–I, E–I, D–I and A–E–D.

The nature of the semiotic process may lead us to focus on a referent instead of a physical form (Sonesson 2016). As a result, the process may be misleading and coders may classify signs based on their referents instead of on formal strategies—due to the asymmetric salience between them. To illustrate with an example, the coders easily classified the control sign TO-DRINK (e.g., drinking with the hand from a glass) as a hand-action strategy correctly because the aspects of both the hand and the glass are equally salient parts of the whole referent (Figure 3c). In comparison, the sign INTERESTING is based on a hand-action strategy (the hands pulling away from the signer's chest) (Figure 3d). The referent is the feeling of being drawn towards something attractive. The aspect of the pulling hand, however, becomes almost conceptually invisible, and the aspect of the thing being pulled becomes most salient. As a result of focusing on the referent (the thing being pulled), the sign INTERESTING may easily be seen as an entity strategy instead of a formal hand action strategy.

Where there were such mistakes with the codings, these were amended. Importantly, I do not want to imply that the referent-oriented interpretation was incorrect in itself or unnatural. To re clarify, my research aimed to consider formal

strategies. In the next section, I will present the final results as regards which iconic strategies are found in sensory signs.

4 Results

The frequency distribution of the strategy types is shown below (Table 5). For space-saving reasons, and because the findings regarding the non-dominant hand do not provide any novel information regarding the research question, I consider only the dominant hand. The findings confirm previous studies (e.g., Kimmelman et al. 2018): Strategies are found in one- and two-handed signs and they may be symmetric or asymmetric in two-handed signs.

In Table 5, the strategy types are shown in the column, "Types." The sensory signs are presented in different columns according to semantic field. Signs relating to sight are divided according to semantic sub-types (brightness, colour, visual perception, and spatiality) because I think it is more fruitful to consider the sub-types separately than bundle them all together under just one group of signs referring to sight (see a discussion of colour in Section 5.1).

The most frequent strategy type was the hand-action (total 51); it was found in touch (22), emotion (17), sound (8), smell (1), colour (1), visual perception (1), and spatial signs (1). The next most frequent strategy was entity (total 24). This type was evenly distributed in relation to the number of signs in each semantic field: in emotion (7), touch (5), sound (5), brightness (3), visual perception (2) smell (1), and taste (1). Surprisingly, the third most frequent strategy type was indexical, found in 15 sensory signs. The drawing type was found in only 6 signs, 4 of which were for emotions, 1 for anatomy and 1 in a spatial sign. Lastly, the locating type was not found at all in sensory signs.

A total of 18 unidentifiable types (coded X) were found, most frequently in emotion (7) and colour signs (7). Interestingly, the coders did not classify any signs as non-iconic. There was also a total of 17 unidentifiable signs with at least one iconic parameter that was coded as iconic (with a C); 12 in emotion signs, 3 in touch, 1 in sound, and 1 in taste. Ambiguous iconicity types (A–E, A–I, E–I, D–I, and A–E–D) seem to have been distributed quite evenly across the data.

5 Discussion

5.1 Research question

The research question concerns which strategies are found in lexical sensory signs. The frequency distribution (Table 5) shows that the strategy types found in lexical sensory signs—in order from most to least preferred—are the hand-action (51), the

Table 5: Frequency distribution of types.

Types	Touch	Emotion	Sound	Smell	Taste	Anatomy	Bright.	Colour	Percep.	Spatial	No.
A: Hand-action	22	17	8	1	0	0	0	1	1	1	51
E: Entity	5	7	5	1	1	0	3	0	2	0	24
D: Drawing	0	4	0	0	0	1	0	0	0	1	6
L: Locating	0	0	0	0	0	0	0	0	0	0	0
N: Non-iconic	0	0	0	0	0	0	0	0	0	0	0
X: Unidentifiable	0	7	1	0	0	0	0	7	1	2	18
I: Index	1	0	0	1	0	3	0	5	2	3	15
P: Iconic parameter	3	12	1	0	1	0	0	0	0	0	17
A–E	3	1	0	0	0	0	0	0	1	4	9
A–I	0	0	1	0	0	0	0	0	0	0	1
E–I	0	1	2	0	0	0	0	0	2	1	6
D–I	0	0	0	0	0	1	0	0	0	0	1
A–E–D	1	0	0	0	0	0	0	1	0	0	2
No.	35	49	18	3	2	5	3	14	9	12	150

entity (24), the indexical (15), and the drawing strategies (6); the locating strategy was not found at all (0). Generally, the frequency distribution confirmed that recurrent iconic strategies are found also in lexical sensory signs.

Turning to the distributional patterns of strategy types, my findings concerning the order of most preferred strategy correspond to Ortega and Özyürek's (2019) findings for gestures for concrete concepts: From acting to representing and drawing. They suggest two reasons for their findings (Ortega and Özyürek 2019). Firstly, regarding affordances, in the acting strategy, the hand directly represents itself to afford the highest degree of iconicity, thus facilitating comprehension. In contrast, drawing is used to express, for example, objects that cannot be held with the hand (e.g., a whole house), because acting does not have such an affordance. The disadvantage is that drawing does not offer much aid to comprehension. The second argument is action simulation (Hostetter and Alibali 2008): Meaning is processed (in production and comprehension) by re-activating neural areas that are responsible of actions and perceptions.

Regarding the affordance argument, action is most preferred in sensory signs in FinSL, although they represent invisible sensations. This may be explained by indexicality, which, semiotically, links two things such as the holding-hammer handshape and the hammer being held (see Section 2.1). How we perceive a person experiencing heaviness is seeing the person having certain facial and bodily postures (e.g., lifting a heavy box) in a certain context so that these physical postures indicate the heaviness related experience the person is having. That is, a whole scene indicates a certain aspect of it (i.e., part-whole). Similarly, for example, in the sign HEAVY, which looks like lifting or persistently holding something, the action strategy is used to indicate the heaviness related meaning (see also Taub 2001). More generally, everyday action that is quite multisensory can be re-enacted to re indicate the specific sensory aspect of the action. Drawing may do that less efficiently in a single sign, and hence it is less frequently used in the sensory lexicon. Action simulation, on the other hand, may lead to a bias towards the action strategy but this does not explain the role of indexicality. Regarding both arguments, the role of indexicality needs to be further considered.

In line with e.g., Ferrara and Hodge (2018), I believe that the third most preferred strategy, indexical, a kind of pointing sign, must be acknowledged because lack of attention to this strategy can lead to error in the understanding of distributional patterns. According to the frequency distribution (Table 5), the indexical strategy occurs prominently in colour signs (5). It is not enough to say, however, that the indexical strategy is conventionally dominant in colour signs. Iconicity is found less frequently in colour signs also in ASL and BSL (Emmorey et al. in press; Perlman et al. 2018). I conclude that because skin colour does not

afford iconicity for colour-related meaning (see also Perlman et al. 2018: 11), it is necessary to shift to either indexical (e.g., pointing at red lips) or non-iconic symbolic strategies. The visual-gestural system does not afford iconic expressions equally for all visual sub-types, and it is especially weak on colours. In conclusion, it seems that certain iconic or indexical strategies are selected to optimally indicate desired meaning within the limits of the affordances of the semiotic system.

Interestingly, no sensory signs were coded as non-iconic—despite the fact that all control signs were deliberately iconic. This may be due to the coders' inability to mark signs as non-iconic when they were not familiar with the etymological origins of the sign. The coders thought that the sensory signs may originally have been iconic, but they had de-iconized, or had been displaced from their historical context so that their iconic properties were no longer identifiable (e.g., Emmorey 2014). Because of this difficulty, the coders coded many signs X, unidentified. Etymological research would also benefit iconicity studies. On the other hand, the inability to classify some signs may also imply that the strategy types need to be re-considered from a taxonomical perspective.

However, although my hypothesis that iconic strategies are found in sensory signs was confirmed, the intersubjective analysis showed that the interpretation of iconic strategies is not always unambiguous in lexical signs (see the sign SHARP in Figure 3b), even if their iconic properties are clearly identifiable. To refer to this ambiguity, I use the term ambiguous iconicity. It would be more accurate to say that iconic and indexical strategies may be rooted in bodily affordances but are also a question of interpretation.

Importantly, the results do not show that the perception of iconicity relies only on individual subjective interpretation; it relies also to a large extent on social factors such as linguistic conventions and shared knowledge (Occhino et al. 2017; Zlatev and Möttönen in press). For example, although signs may have been interpreted as ambiguous by the coders in this study, the alternative interpretations were intersubjectively acceptable to the coders because of shared knowledge.

5.2 Reflections on the methods

The research methods included subjective, intersubjective, and objective analysis (Zlatev 2015). Methods based on intuition or statistics-based analysis are frequently used in iconicity studies on sign languages. Intersubjective analysis, in which the coders share their interpretations with each other, is less frequently used. However, the present research shows that it is an efficient way of eliminating errors and of understanding different interpretations. Only through the

intersubjective analysis was it possible to identify ambiguous iconicity and the way in which the semiotic process can lead coders to focus on a referent instead of on formal iconic strategies.

We must also bear in mind that intuition-based interpretations may not always take into account signs' etymological origins, which may provide more accurate information in terms of strategy types in signs. Again, hopefully this finding will encourage those interested in sign languages to pursue etymological studies.

The data of this study is the lexical database of Finnish Signbank (The University of Jyväskylä, Sign Language Centre 2018). This has its own limitations. Ambiguous iconicity may become less ambiguous in certain contexts: in some pragmatic contexts, the sign might be interpreted in only one way, as just one type. However, this lexical analysis is a significant step towards more advanced methods.

The second aim of the research was to discuss methodological issues with the strong form-based approach, which considers only formal features (i.e., strategies). The approach yielded the frequency distribution (Table 5), which gives a descriptive overview of how frequently iconic and indexical strategies occur in certain semantic fields. However, there are two problems with the form based approach.

Firstly, the frequency distribution does not explain why certain strategies occur more frequently in certain sensory semantic fields. The form-based approach is, rather, descriptive, that is, it describes the frequency distribution in the raw, but it does not explain why or how. As discussed above, the dominant frequency of indexical strategy type in colour can hardly be merely a matter of convention. The frequency distribution seems to be rooted in more universal factors, whether biological, cognitive, or semiotic factors, such as affordances. Thus, instead of the strong form-based approach, we need a more relation-based approach (also Ortega and Özyürek 2019) to better explain the reasons behind the distributional patterns.

Secondly, a careful relation-based approach is needed to identify cross modal iconicity, because this is essentially a relational phenomenon. Cross modal iconicity is a kind of resemblance between two distinct senses (Ahlner and Zlatev 2010), for example, between visual form (e.g., hands) and any sensory meaning (e.g., smell) other than visual meaning. For example, the form-based approach identifies the sign SMELL as an entity strategy (the hand as gas), but it does not identify if the iconicity between the entity strategy and the odour meaning is cross-modal; only semiotic analysis can identify cross-modal iconicity. In my preliminary semiotic analysis, the hand represents visual aspects of the gas flying into the nose, but it is the indexicality that captures the odour meaning. Indeed, the flying into the nose indicates the place where we smell. Based on this analysis, the sign SMELL is not cross-modal iconic but rather same-modal iconic and cross

modal indexical. Here, the cross-modal indexicality refers primarily to the fact that the form indicates meaning across sensory modalities.

Zlatev and Möttönen (in press) have criticized cognitive linguists for rarely referring to semiotics when speaking about iconicity. Similarly, sign language linguists rarely refer to the concept of indexicality in parallel with the concept of iconicity (see Perniss and Vigliocco 2014; Wilcox 2004). In consequence, iconicity is often conflated with indexicality. The example of the sign SMELL shows that iconicity does not capture the denotative meaning of odour. The flying gas may refer to any gas, without reference to smell: It could be an odourless gas that the person is breathing in. In other words, it is indexicality that captures the denotative meaning of odour. These observations should motivate at least sign language linguists to study cross modal iconicity as well as the way it overlaps with indexicality.

6 Conclusions

Regarding the research question, this study has shown that iconic strategies are also found in sensory signs. However, some sensory signs are rather ambiguous in their iconicity. Strategy types may therefore be rooted in bodily affordances, but the identification of a certain iconic strategy type depends on the semiotic interpretation. I have emphasized that when investigating iconic strategies, indexical strategies should be kept in mind, to avoid confusing the two kinds of strategies.

Regarding the second aim of this research, I started off with the idea of a form-based approach to address the question of why certain strategies occur more frequently in certain semantic fields, and the concept of cross-modal iconicity. I found that to explain these matters it is necessary to move to a wider, multidisciplinary approach. One of my conclusions is that the concepts of cross modal iconicity and indexicality would be a fruitful field for further research in sign language linguistics.

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Appendix A

The list of Finnish glosses, English translations, and strategy codes in the inter-subjective results.

	Coder		A	B	C	A	B	C
No.	**Finnish glosses**	**English translations**	**DH**	**DH**	**DH**	**NDH**	**NDH**	**NDH**
1	AALTO	Wave	E	E	E	E	E	E
2	AAVISTAA	Guess	P	P	P	O	O	O
3	AHDAS(SS)	Narrow (SS)	A	E	A	A	E	A
4	AHDISTAA	Anxiety	A	A	A	A	A	A
5	AJAA-AUTOLLA(L_eteen)	Drive (forward)	A	A	A	A	A	A
6	AJAA-AUTOLLA(L_sivuttain)	Drive (sideways)	A	A	E	E	E	E
7	AJAA-AUTOLLA(L_vuoro)	Drive (alternative)	A	A	A	A	A	A
8	AJAA-PARTAA	Shave beard	A	A	A	O	O	O
9	ALAMÄKI	Downward	D	D	D	O	O	O
10	ALAS	Downward	I	I	I	O	O	O
11	AMPIAINEN(P_poski)	Wasp (cheek)	E	E	E	O	O	O
12	AMPUA-KIVÄÄRILLÄ	Shoot with rifles	A	A	A	A	A	A
13	AMPUA-KÄSIASEELLA	Shoot with handgun	A	A	A	O	O	O
14	BUSSI(BB)	Bus	D	D	D	D	D	D
15	HUOMATA-EI(B)	Not notice	A–E	A–E	A–E	O	O	O
16	ELOKUVA	Movie	E	E	E	O	O	O
17	HAI	Shark	E	E	E	O	O	O
18	HAISTAA(L_sivulle)	Smell (sideways)	E	E	E	O	O	O
19	HAISTAA(Lq)	Smell (Lq)	A	A	A	O	O	O
20	HAISTAA(OS:nenä)	Smell (nose)	I	I	I	O	O	O
21	HARMAA	Grey	X	X	X	X	X	X
22	HATTU	Hat	L	L	L	O	O	O
23	HELPOTTUA	Relieved	P	P	P	O	O	O
24	HENGÄSTYÄ	Become breathless	A–E–D	A–E–D	A–E–D	O	O	O
25	KOSKEA	Touch	A	A	A	A–E	A–E	A–E
26	HERKULLINEN	Delicious	P	P	P	O	O	O
27	HIIHTÄÄ	Ski	A	A	A	A	A	A
28	HILJAINEN(BqBq) (ääni)	Silent (BqBq)	A	A	A	A	A	A
29	KIRKAS	Shiny	E	E	E	O	O	O
30	HUOMATA	Notice	A	A	A	O	O	O
31	HUONE	Room	D	D	D	D	D	D
32	HUONOKUULOINEN(Bc)	Hard of hearing	E	E	E	O	O	O
33	HUUTAA	Shout	X	A	X	X	A	X
34	HUUTAA_ele	Shout (gesture)	A	A	A	A	A	A
35	RENTO	Relaxed	A	A	A	O	O	O
36	HYMY	Smile	D	D	D	D	D	D

(continued)

	Coder		A	B	C	A	B	C
No.	**Finnish glosses**	**English translations**	**DH**	**DH**	**DH**	**NDH**	**NDH**	**NDH**
37	HYVÄ-OLO	Good feeling	X	X	X	X	X	X
38	HÄMMÄSTYÄ(55)	Be amazed (55)	X	X	X	X	X	X
39	HÄMMÄSTYÄ(silmät-avautuvat)	Be amazed (eyes-open)	A–E	A–E	A–E	A–E	A–E	A–E
40	HÄMMÄSTYÄ(silmät-putoavat)	Be amazed (eyes-fall)	A	A	A	O	O	O
41	HÄMMÄSTYÄ(suu-auki)	Be amazed (mouth-open)	E	E	E	E	E	E
42	HÄMMÄSTYÄ(Vc-P_nenä)	Be amazed (Vc-P_nose)	X	A	A	O	O	O
43	HÄVETÄ	Be ashamed	A	A	A	O	O	O
44	TUNTEA FYYSISESTI	Feel physically	A	A	A	E	E	E
45	ILME-HAPAN	Facial expression surly	A	A	A	O	O	O
46	ILOINEN	Happy	P	P	P	P	P	P
47	ISO(5c)	Big (5c)	A	A	A	O	O	O
48	ISO(L_ylös)	Big (upward)	A–E	A–E	A–E	A–E	A–E	A–E
49	ISO(SS)	Big (SS)	P	P	P	P	P	P
50	ISTUA	Sit	L	L	L	E	E	E
51	ITKEÄ(GG)	Cry (XX)	E	E	E	E	E	E
52	ITKEÄ(XX)	Cry (XX)	E	E	E	E	E	E
53	JÄNNITTÄÄ(5c5c)	Nervous (5c5c)	P	P	P	P	P	P
54	JÄNNITTÄÄ(F)	Nervous (F)	A	A	A	O	O	O
55	JÄNNITTÄÄ(LcLc)	Nervous (LcLc)	D	D	D	D	D	D
56	JÄYKKÄ	Stiff	A	A	A	A	A	A
57	JÄÄKIEKKO	Ice hockey	A	A	A	A	A	A
58	KAATUA	To fall	E	E	E	E	E	E
59	KATSOA(O_eteen)	See (forward)	E–I	E–I	E–I	O	O	O
60	KATSOA(O_taakse)	See (backward)	E–I	E–I	E–I	O	O	O
61	KATUA(P_käsi)	Regret (hand)	X	X	X	X	X	X
62	KATUA(P_pää)	Regret (head)	A	A	A	O	O	O
63	KAUKANA	Far	I	I	I	O	O	O
64	KEINU	Swing	E	E	E	E	E	E
65	KELLO	Clock	E	E	E	O	O	O
66	KELTAINEN	Yellow	X	X	X	X	X	X
67	KEVYT	Light	A	A	A	A	A	A
68	KIINNOSTAA(AxAx)	Interesting	A	A	A	A	A	A
69	KORVA	Ear	I	I	I	O	O	O
70	KOSKETTAVA	Touching (emotion)	P	P	P	O	O	O
71	KUIVA	Dry	A	A	A	O	O	O
72	KUULLA(B)	Hear (B)	A	A	A	O	O	O

(continued)

	Coder		A	B	C	A	B	C
No.	**Finnish glosses**	**English translations**	**DH**	**DH**	**DH**	**NDH**	**NDH**	**NDH**
73	KUULLA(G)	Hear (G)	E–I	E–I	E–I	O	O	O
74	KUULLA(L)	Hear (L)	A	A	A	O	O	O
75	KUUMA(BB)	Hot (BB)	A	A	A	E	E	E
76	KUUMA(P_otsa)	Hot (forehead)	A	A	A	O	O	O
77	KUURO(P_korva)	Deaf (ear)	A	A	A	O	O	O
78	KUUROUTUA	Deafening	A	A	A	O	O	O
79	KYLLÄSTYÄ	Get bored	P	P	P	O	O	O
80	KYLMÄ	Cold	A	A	A	O	O	O
81	KÄRSIÄ	Suffer	P	P	P	O	O	O
82	LUKEA(B)	Read (B)	E	E	E	O	O	O
83	LUKEA(VB)	Read (VB)	I	I	I	E	E	E
84	LÄHELLÄ	Near	E–I	E–I	E–I	E–I	E–I	E–I
85	LÄMMIN	Warm	A	A	A	O	O	O
86	MAATA	Lie (bed)	L	L	L	E	E	E
87	MAKU	Taste	E	E	E	O	O	O
88	MASENNUS	Depression	E	E	E	E	E	E
89	METELI	Noise	P	P	P	P	P	P
90	MUSTA	Black	A	A	A	O	O	O
91	MUURI	Brick wall	D	D	D	D	D	D
92	MYKKÄ(P_kaula)	Mute (neck)	A	A	A	O	O	O
93	MÄRKÄ	Wet	A	A	A	A	A	A
94	NARU	String	D	D	D	D	D	D
95	NAUTTIA	Enjoy	P	A	P	P	A	P
96	NENÄ	Nose	I	I	I	O	O	O
97	NOUSTA-KARVAT-PYSTYYN	Get goosebumps	E	E	E	A	A	A
98	NYRKKEILLÄ	Boxing	A	A	A	A	A	A
99	NÄLKÄ	Hungry	P	A	P	P	A	P
100	OKSENTAA (oksettava)	Disgusting	E	E	E	O	O	O
101	OMATUNTO	Conscience (emotion)	P	P	P	O	O	O
102	ORANSSI (arki)	Orange (Vc)	X	X	X	O	O	O
103	ORANSSI (P_poski) (ikä)	Orange (B)	X	X	X	O	O	O
104	ORANSSI(OG)	Orange (OG)	X	X	X	X	X	X
105	PAIKKA	Place	L	L	L	E	E	E
106	PAINAVA	Heavy	A	A	A	A	A	A
107	PALELLA(SS)	Be freezing	A	A	A	A	A	A
108	PALLO	Ball	D	D	D	D	D	D
109	PAMAHTAA (ääni)	Bang	E	E	E	E	E	E
110	PASTORI(Lc)	Pastor	D	D	D	O	O	O
111	PATSAS	Statue	A–E	A–E	A–E	A–E	A–E	A–E
112	PEHMEÄ	Soft	A	A	A	A	A	A

(continued)

	Coder		A	B	C	A	B	C
No.	**Finnish glosses**	**English translations**	**DH**	**DH**	**DH**	**NDH**	**NDH**	**NDH**
113	PELÄSTYÄ(55)	Be scared (55)	P	P	P	O	O	O
114	PELÄSTYÄ(G)	Be scared (G)	E–I	E–I	E–I	O	O	O
115	PELÄTÄ(F)	Be afraid (F)	X	X	X	O	O	O
116	PELÄTÄ(L)	Be afraid (L)	X	X	X	O	O	O
117	PIDÄTELLÄ-NAURUA	Make laugh	A	A	A	O	O	O
118	PIENI(L_alas)	Small (downward)	A–E	A–E	A–E	O	O	O
119	PIENI(L_lähenevä)	Small (adduct)	A–E	A–E	A–E	A–E	A–E	A–E
120	PIENI(P_leuka)	Small (chin)	X	I	X	O	O	O
121	PIIKIKÄS	Spike	E	E	E	A–E	A–E	A–E
122	PITKÄ(L_loittoneva)	Long (abduct)	A–E	A–E	A–E	A–E	A–E	A–E
123	POTKAISTA	Kick	E	E	E	E	E	E
124	PUHELIN	Phone	E	E	E	O	O	O
125	PUHUA(B)	Speak (B)	A	A	A	O	O	O
126	PUHUA(BqBq)	Speak (BqBq)	E	E	E	E	E	E
127	PUHUA(G)	Speak (G)	E–I	E–I	E–I	O	O	O
128	PUHUA(L)	Speak (L)	E	E	E	O	O	O
129	PUNAINEN	Red	I	I	I	O	O	O
130	PYSYÄ(1T)	Stay	I	A–I	I	I	A–I	I
131	VALOISA	Bright	E	E	E	E	E	E
132	PÖYTÄ	Table	D	D	D	D	D	D
133	RAKASTAA	Love	A	A	A	A	A	A
134	RAKASTUA	Fall in love	E	E	E	O	O	O
135	RASKAS	Heavy (emotion)	A–E	A–E	A–E	A–E	A–E	A–E
136	RAUHALLINEN	Peaceful	D	D–I	D	D	D–I	D
137	RENTO	Relaxed	A	A	A	A	A	A
138	RINTAKEHÄ	Chest	D–I	D–I	D–I	O	O	O
139	RUSKEA	Brown	X	X	X	O	O	O
140	KIPU	Pain	A	A	A	A–E	A–E	A–E
141	SAKSET	Scissors	E	E	E	O	O	O
142	SATTUA(L_sivulle)	Hurt (sideways)	P	A	X	O	O	O
143	SEINÄ	Wall	D	D	D	O	O	O
144	SHOKKI	Shock	A	A	A	A	A	A
145	SILMÄ	Eye	I	I	I	O	O	O
146	SININEN	Blue	I	I	I	O	O	O
147	SOKEA	Blind	P	P	P	O	O	O
148	SULKEA-SUUNSA	Close mouth (emotion)	E	E	E	E	E	E
149	SURU	Sad	P	P	P	O	O	O
150	SUU	Mouth	D	D	D	O	O	O
151	SUUPIELET-ALAS	Corners of mouth down	D	D	D	D	D	D
152	SUUTTUA	Get angry	A	A	A	A	A	A

(continued)

	Coder		A	B	C	A	B	C
No.	**Finnish glosses**	**English translations**	**DH**	**DH**	**DH**	**NDH**	**NDH**	**NDH**
153	SYVÄ	Deep	I	I	I	E	E	E
154	SÄRKY	Ache	P	P	P	P	P	P
155	TAKTIILIVIITTOMINEN	Tactile signing	A	A	A	A	A	A
156	TASAPAINO	Balance (touch)	E	E	E	E	E	E
157	TEHDÄ-MIELI	Feel like	E	E	E	O	O	O
158	TERÄVÄ(GG)	Sharp	A–E	A–E	A–E	A–E	A–E	A–E
159	TIUKKA	Tight	A	A	A	A	A	A
160	TUNTUA(B)	Feel (B)	A	A	A	O	O	O
161	TUNTUA(HH)	Feel (HH)	A	A	A	A–E	A–E	A–E
162	TUNTUMA	A feel	A	A	A	A	A	A
163	TURKOOSI	Turquoise	I	I	I	O	O	O
164	TYMPÄISTÄ(P_kämmen)	Be frustrated (palm)	A	A	A	A–E	A–E	A–E
165	TYMPÄISTÄ(P_rinta)	Be frustrated (chest)	A	A	A	A	A	A
166	TYYTYVÄINEN	Satisfied	P	P	P	O	O	O
167	VAHVA(SS)	Strong	A	A	A	A	A	A
168	VALKOINEN	White	I	I	I	O	O	O
169	VIHAINEN	Angry	P	P	P	P	P	P
170	VIHATA	Hate	A	A	A	O	O	O
171	VIHREÄ	Green	X	X	E	X	X	E
172	VIITTOA	Signing	A	A	A	A	A	A
173	VIOLETTI	Purple	I	I	I	O	O	O
174	VISUAALINEN	Visual	I	I	I	I	I	I
175	VOIMAANTUA	Empower	A	A	A	A	A	A
176	VOIMAT-LOPPU	Exhausted	A	A	A	A	A	A
177	VÄRI	Colour	A–E–D	A–E–D	A–E–D	E	E	E
178	VÄRINÄ	Tremble	A–E	A–E	A–E	O	O	O
179	VÄSYTTÄÄ(BcBc)	Tired (BcBc)	E	E	E	E	E	E
180	VÄSYTTÄÄ(FF)	Tired (FF)	E	E	E	E	E	E
181	YLEISÖ	Audience	D	D	D	D	D	D
182	YSKÄ(G)	Cough	I	I	I	O	O	O
183	PIMEÄ	Dark	E	E	E	E	E	E
184	ÄÄNI	Sound	A–I	A–I	A–I	O	O	O

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