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EMPIRICAL STUDY / ANALYSIS

Two Types of Demonstration Through Guided Touch with Cane: Instruction Sequences in Orientation and Mobility Training for a Person with Visual Impairments

Yasusuke Minami[1] · **Hiro Yuki Nisisawa**[2] · **Mitsuhiro Okada**[1] · **Rui Sakaida**[3]

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Abstract

Persons with visual impairments (hereafter PVI) detect and discover obstacles and road conditions by touching with a white cane when walking on the streets. In one training session, an Orientation and Mobility specialist (hereafter SPT) guided a PVI by grasping and moving the cane that the PVI was holding. We conducted a multimodal analysis of two instruction sequences, one a "proving and achieving" demonstration (Sacks in Lectures on conversation, Blackwell, 1992) and the other a "learnable" (Zemel and Koschmann, in Discourse Stud 16:163–183, 2014) demonstration. The achieving demonstration proved the assessment of the PVI's performance. In the "learnable" demonstration, the PVI was able to receive and perform the most critical part of the "learnable" of the long contact touch without the aid of talk. Sharing a single cane touch is an efficient way for both the guiding SPT and the guided PVI to jointly experience and understand the environmental features. The SPT did not need to verbally confirm that the guided touch was accountable to the PVI and seemed confident that intersubjectivity with the PVI had been established. A unique form of being with others and achieving intersubjectivity in society was identified. In traditional learning instruction, it has been assumed that the learnable is presented and communicated visually and audibly. However, through guided touch learnable is presented and conveyed effectively in the cases of this paper. It seems that the sense of touch has been considered to be just for the occasion, but this is an example of something that is not just for the occasion but is consequential, that is, usable for further occasions. The data is in Japanese.

Keywords Visual impairments · Instruction · Learnable · Assessment · Multisensoriality

✉ Yasusuke Minami
yminami@seijo.ac.jp

[1] Faculty of Arts and Literature, Seijo University, 6-1-20 Seijo, Setagaya, Tokyo 157-8511, Japan

[2] Musashino Art University, Kodaira, Japan

[3] Future University Hakodate, Hakodate, Japan

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Introduction

Persons with visual impairments (hereafter PVI) detect and discover obstacles and road conditions by touching with a white cane when walking on the streets. A basic operation of touching with a cane is called the "two-point-touch long cane technique". The next point where the foot lands from the current position is touched to obtain "information on the level, texture, or composition of the surface and obstacles in the path" (Jacobson, 2013: 168). The touch contact may be long or short, as stated in "(t)he cane glides, slides, or pokes along the ground for an instant". For example, the contact is held when walking along and trailing a curb. Also, "long touches" that maintain contact with the ground surface are made at places where changes in the road surface are expected, such as steps and Braille blocks (blind guidance blocks for visually impaired people).

Proficiency in cane operation is essential for the visually impaired when walking down the street, and presumably in the early stages of learning to operate a cane, it is common for an instructor to grab the cane in a student's hand, and guide and demonstrate the operation. On the other hand, the case of guided touch discussed in this paper was observed in a training session of a PVI who had already mastered the basics of cane operation and had been walking outside for more than 10 years. The objective of the session was to learn about landmarks and other points to watch out for while walking the route between the two points that the PVI would be walking frequently after moving to a new place. The data this paper deals with was recorded on the first day of 5 training sessions with the same Orientation and Mobility specialist (hereafter SPT).

On this day, the pair of the PVI and the SPT made two round trips, walking from point A to point B and back. The distance was about 1.1 km each way. Guided touch with cane was performed more than 10 times. The cases of guided touch were classified into four types: (1) those touching a referent with verbally providing its name, and (2) those to correct an inappropriate use of the cane by the PVI just before. In addition, we observed (3) a demonstration that could be called a "proving and achieving" (Sacks, 1992) demonstration and (4) a demonstration that could be called a "learnable" (Zemel & Koschmann, 2014) demonstration.

The guided touch as a "proving and achieving" demonstration was to assess the PVI's performance and provide "proof" of failure. The PVI walked from the entrance of a building to a public street, but she could not get out because of a guardrail on the way. The SPT guided the cane held by the PVI and touched the horizontal part of the guardrail to demonstrate that she could not get out. This guided touch is of the same type of "proving and achieving" demonstration studied by Nishizaka (2020), in which the midwife guided the pregnant woman's hand to touch the "fetal head" to demonstrate that "the fetal presentation has been rectified".

On the other hand, demonstrations of "learnable" were deeply embedded in an action pair such as "instruction-instructed action" (Mondada, 2018a; Zemel &

Koschmann, 2014) and "instruction-instruction following" (Lindwall et al., 2015). This is the scene where the PVI should learn the path to reach the entrance of Building A from the last landmark on the public street. The SPT instructed to use a modified version of the "three-point-touch technique" of the cane. This is what Zemel and Koschmann called "learnable". With a guided touch, the SPT operated the cane initially to convey the presence and height of the curb on the left side of the road using a modified version of the "two-point-touch technique". The SPT continued, without removing the hand from the cane, and moved the cane in the way of a modified version of "three-point-touch technique" four times. The crux of the modified version of three-point-touch technique is that when touching the side of the curb, the touch should be a long touch, holding the contact, rather than a momentary touch. The tip of the cane should touch the bottom of the curb and then be pulled upward while maintaining contact. The key is to know the height of the curb by feeling the time and distance until the contact is lost. The idea is to enter the site from the point where the curb is lower.

The SPT did not provide any explicit talk about this feature of curb touch during the guided touch. Nevertheless, the PVI understood the point of the lesson and successfully enacted a modified version of three-point-touch in the subsequent performance. It is at this point that the verbal talk of the lesson's point was finally made: the three-point-touch and the long contact touch in the curb touch were indeed "learnable," and as such, were followed by their enactment and assessment.

Let us state the research question of this paper here: how guided touch with a cane is performed and what kind of work it achieves? In Sect. "Touch, Interaction, Instruction," we discuss relevant studies on touch and instruction in ethnomethodology and conversation analysis (hereafter EMCA) and illustrate analytical points of the paper. Sect. "Data and Method" describes the data and methods, while Sects. "Demonstration of "Gone Too Far" through Guided Touch with Cane" and "Guided Touch with Cane in Learnable Demonstration" analyze and describe each of the two cases. Finally, Sect. "Concluding Remarks" provides concluding remarks.

Touch, Interaction, Instruction

Touch in EMCA Studies

Research on touch has been rapidly accumulating in EMCA studies in recent years (Cekaite & Mondada, 2020b). Cekaite and Mondada provide the following summary statements:

> Among embodied contacts, touch has a special importance, both as a communicative resource and a sensorial experience. Touch can be used to express affection, instruction, and enskillment or control and imposition. Letting another person touch you escalates the balance of intimacy. Among other

> senses, touch is a way to engage in the perception of the surrounding environment and its materiality. It is a fundamental dimension of both the way we interact with other humans and the way we access the material world. (Cekaite & Mondada, 2020a: 1)

The guided touch in this study is mainly concerned with "to engage in the perception of the surrounding environment". However, it is unique in that it is performed with a guided cane. For the guided PVI, touching and being touched occur simultaneously.

Nishizaka (2020) has also studied guided touch. In Nishizaka's case, the major differences from ours are that the touching device is a hand and the object to be touched is the body parts of the fetus located inside the pregnant woman's body. On the other hand, the guiding midwife herself relies heavily on the sense of touch to know how to touch the touched area, and the purpose of touch is to achieve recognition of the touched object, which is common to the case of this study.

As seen in the case discussed by Nishizaka (Excerpt 1, Nishizaka, 2020: 225), the midwife first knows the location of the fetal head by touching it with her own hand. Based on what she has learned she guides the pregnant woman's hand to that location. When guiding, it is inferred that the midwife knows whether the pregnant woman's fingers have touched the fetal head by the sensation of touch. It can be said that whether the guided touch is touching in such a way that it achieves its purpose is determined not by visual information but by the guiding person's own touch sensation as a resource. It is especially important that the midwife's guided touch is proof and demonstration that the breech has been rectified.[1] The guided touch is launched as a way to demonstrate what the midwife verbally reports. This is parallel to the cases in this paper, in which the SPT who assesses the walking performance of the PVI as a failure launched a guided touch to demonstrate the failure.

In good contrast to the guided touch practice discussed in this paper is Mondada and her colleagues' study of situations in which touching food products is shown (Mondada et al., 2021). For example, in the buying and selling of cheese and sausages, sellers touch the products to check their hardness in order to know the degree of maturity. Then, by showing it to the customer, the seller shows that the product is ready to eat. This touch is the same as the touch with the cane in our study in that "the way we access the material world" (Cekaite & Mondada, 2020a, 2020b: 1). The mode of communication, however, is visual, which differs from guided touch with the cane, where the senses are shared through a single cane. The sensation of being touched, of being guided with and moved by the cane that one is holding, seems to be unique and critical. It can be said that guided touch is located at the intersection of two opposing axes of touch: the touch of objects and the touch of people, and the instrumental touch and communicative touch.

[1] One reviewer suggested that "correction" be one of the key concepts of the analysis in this paper. In the case study by Nishizaka, the midwife made two "guided touches" to the pregnant woman, and the second guided touch is indeed a case of correction. However, the cases in this paper do not show such obvious cases of "correction" (see Koschmann, 2018; Macbeth, 2004; McHoul, 1990).

Instruction in Interaction

In the domain of EMCA, "instruction" has been used to mean both activities and actions. Mehan's work on the I-R-E sequences (Mehan, 1979a, 1979b), focuses on the "evaluation" action that appears in the third position and deals with instruction as activity. The "I" in I-R-E is "initiation," not "instruction". One notable type of initiation is to ask a known-answer question (Mehan, 1979b). The I-R-E sequences are mostly embedded in the activity of classroom lessons.

In recent years, research has been focused on instruction as an action, where anything that produces an "instructed action," whether "direction," "order," or "mandate" (*Oxford English Dictionary* cited in Lindwall et al., 2015: 145), regardless of the intensity of the request, is considered collectively as an action called "instruction," as a part of a coupled action sequence with the subsequent "instructed action". Lindwall and his colleagues (2015) refer to this as "instructions and following instructions" rather than "instruction-instructed action".

This specification of instruction-instructed action, combined with the development from conversation analysis to multimodal interaction analysis, has led to the discovery of various forms of instruction and instructed action (Lindwall et al., 2015). For example, Mondada, who studied coaching situations on a racing circuit, found that there are various linguistic resources and gestures as instructional formats that occasion the instructed action of driving as a "response" (Mondada, 2018a).

Sensoriality in Instruction

Lindwall and his colleagues (2015) take four examples of instruction and compare them to emphasize the importance of sequential analysis of the temporal and spatial organization of the instructional sequences: the textual instruction of crocheting, the one-on-one face-to-face instruction of crocheting, the face-to-face instruction of revising an essay manuscript, and the face-to-face instruction of watching a video broadcast of dental surgery in an adjacent room with a group of students. As they emphasize, there is a variety of relationships between instruction and instruction following, typically when an instructor and students are co-present and instruction and instruction following occur in the "same" time and space. However, this is not always the case. The following remarks about talk are also made: "It is only in the lecture, which we have described here as a special case, that talk itself carries the weight of functioning as the primary medium for the production of both instruction and displays of understanding" (Lindwall et al., 2015: 154). They also say that crocheting's one-on-one face-to-face instruction is "a typical case of 'learning by doing' or 'experiential learning'" (Lindwall et al., 2015: 150). "Learning by doing" occurs in both two cases examined in this paper. In particular, where instructions are immediately turned into courses of action, "learning by doing" is observed in the second case of a "learnable" demonstration.

Let us now compare the cases studied by Lindwall and his colleagues (2015) in terms of the resources of perception and sensoriality. First, let us focus on the activity to be learned: crocheting is a manual activity that primarily involves the motor senses, but is monitored visually. In essay writing, the production of text is done manually, either by hand or by typing it into a PC, but the written text is read and checked visually. However, advances in technology have opened up the possibility of utilizing the sense of hearing, such as voice input and reading out loud using a PC. When performing dental surgery, in addition to sight and hearing, touch is also mobilized although touch is not involved when it is viewed through media such as video.

Next, when considering the sharing of such activities in interaction, it is first noted that all parties involved in the cases discussed are sighted people, and that vision is the most important resource. In textual instruction, the instruction is presented in the form of text and drawings. In face-to-face tutoring, the student actually performs the crocheting and the teacher watches. Movements that require special attention or should be modified are pointed out with the help of the talk by means of an embodied movement. This is a typical case of "learning by doing" or "experiential learning".

In the essay instruction, while "the texts provide grounds for both assessment and further instructions" (Lindwall et al., 2015: 150), the instructional interaction is performed verbally. Even when the students in the dental education program watch a live video of root canal operations being performed in an adjacent room, there is a verbal exchange of questions about the names of the techniques being performed. The instruction is given in the form of the I-R-E sequence formulated by Mehan (1979a). The "known-information question" (Mehan, 1979b) is utilized. Here, the "learnable," which will be discussed in the next section, is evaluated by looking at its performance and being able to identify and name it.

Although in EMCA studies of instruction touch is sometimes shown being mobilized in instructional activities as described above, it is rarely used in instruction as an action. Interaction is carried out with visual and auditory as the primary resources.

Learnable and Assessment

In instructional activities where there is something to be learned and mastered, we can think of what should be called "learnable" (Zemel & Koschmann, 2014). The "watch winding" technique in the dental surgery instruction discussed by Lindwall and his colleagues (2015) above is an example. Not a few "learnable" practices have been given names. The "learnable" is often given a name because it is the basic building block in the formulation of practice and is also a critical component in its learning. Examples include "making a chain stitch," "watch winding," "the Triangle of Doom" (Koschmann et al., 2007), and "two-point-touch technique".

In Zemel and Koschmann's (2014) scene of surgery for a resident and a medical student serving as a medical clerk in a medical school hospital, the learnable is demonstrated visually by an attending surgeon. As they point out, when the action sequence of instruction-instructed action is performed, learnable is not always involved. Stopping at a red light is just a local execution on the spot, and has no special consequences for the future. In instructional sequences involving learnable, it is expected that the participants display orientation toward learnable. Zemel and Koschmann states: "The instructor produces a demonstration as an instructing action, the instructee enacts what he takes to be the demonstrated action for assessment by the instructor for its adequacy" (Zemel & Koschmann, 2014: 165).

In their case, in a surgical procedure with sigmoidectomy, the attending identifies and demonstrates the surgical site. The affected area is manually inspected with visual input resources. The resident is then encouraged to palpate the site. In this sequence, the demonstration of the affected site is done through visual and auditory modes, and orientation toward assessment is observed among the participants in the instructional sequences involving learnables. In their analysis, Zemel and Koschmann show that students are oriented toward assessment both during the demonstration of the learnable and during their own enactment of it.

A study by Koschmann and his colleagues (2007) analyzed cases in which gesture is used in the formulation of learnable's demonstration. The attending surgeon uses his hands and arms to gesturally construct a representation of a specific anatomic region ("the Triangle of Doom") for the benefit of two medical students viewing and participating in the surgery. This case is also characterized by the use of vision as the communicative mode.

As Zemel and Koschmann (2014) have pointed out, learning has been assumed to occur within the individual. This has made it difficult for EMCA students to focus on learning as a subject of study. Focusing on instruction as action or learnable is one promising way to address this difficulty, and multimodal interaction analysis is one way to address it by focusing on the following points: "there are also central differences in how the issues are formulated, how the instructions are responded to, and how the progressivity of the event is achieved" (Lindwall et al., 2015: 150). Visual rendering is key here. Zemel and Koschmann says: "We show how these learnables are rendered visible to the participants (and to us) within" (Zemel & Koschmann, 2014: 164). Assessment is particularly critical and indispensable in instruction sequences. Lindwall and his colleagues (2015) use the term "displays of understanding" as a counterpart to claims of understanding. They characterize claims of understanding, as distinct from the class of performances that in a given situation are treated as exhibiting or displaying understanding (Sacks, 1992 vol. 2: 252; Macbeth, 2011: 448).

Let us summarize the discussion in this section. There are two types of touch: object touch and interpersonal touch. Touch serves either instrumental function or communicative function, or both. In the guided touch with the cane, we can think of

an aspect in which each of these elements is simultaneously embodied in the person being guided and the guiding person. When considering instruction as observable action, it is important to look at instruction and following instruction as a pair, and it is critical to focus on learnable and assessment.

Data and Method

From 2013 to 2019, we observed and recorded Orientation and Mobility (hereafter O&M) training sessions between PVI and O&M specialists. All participating PVIs had considerable experience of walking on their own. Practices of guided touch with cane are rarely observed. One rare exception is the specific session this paper deals with. The female PVI of the sessions from which this paper draws data had just moved to a new area. She attended school for PVI and had basic O&M skills and knowledge. The male O&M specialist (hereafter SPT) had several years of experience.

The PVI and the SPT were video-recorded with two video cameras from the front and back. Wireless microphones were placed on each person. The audio input from the mic placed on the SPT was recorded on the front video camera, and the input from the mic on the PVI went into the back camera. The informed consent procedure was properly performed. The form was read aloud to the PVI and permission was obtained verbally and recorded. The SPT provided written consent.

Data analysis was informed by Video-based Ethnography (Heath et al., 2010) and based on multimodal and multisensorial Ethnomethodological Conversation Analysis (Mondada, 2018b). Utterances were transcribed using Jefferson's (2004) system, and gestures and movements were transcribed using Mondada's (2018b) convention.

Cekaite and Mondada suggest that interactional studies on touch should "focus(ed) in detail on *when* people engage in touching the other or touching some object, in which circumstances, *how* this engagement takes form and unfolds in time, and *how* other people participate in it (Cekaite & Mondada, 2020a 9; italics in original). In the present study, the following analytical issues are set up by slightly modifying the Nishizaka's study (2020), which applies Cekaite and Mondada's idea to guided touch.

(1) In what kind of *sequential and physical environments* is the guidance of cane launched?
(2) How is the guidance *organized*?
(3) How is the sequence for guided touch *brought to a completion*?
(4) What *kind of feeling* does such guided touch achieve?
(5) Which aspects of guidance are critical?

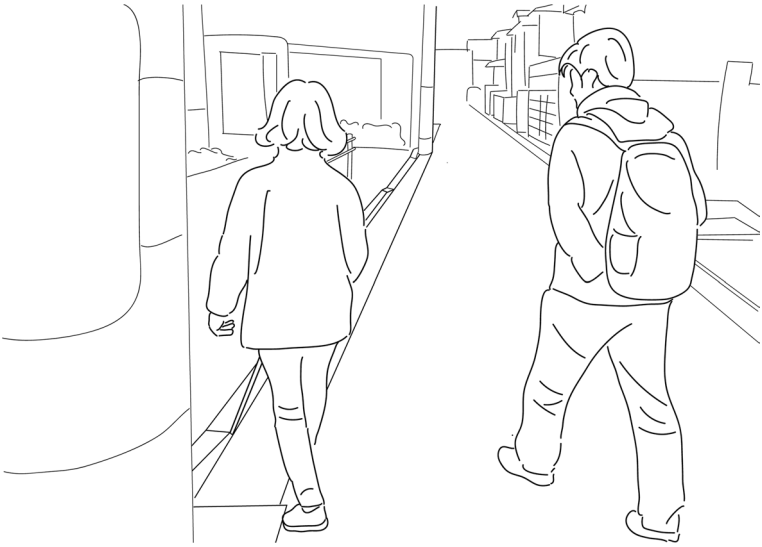


Fig. 1 Just past Power Pole A. The corner of Building A in front of the vending machine is on the left. The entrance is around the corner. You can see the guardrail, the lowered curb, and the next Power Pole B

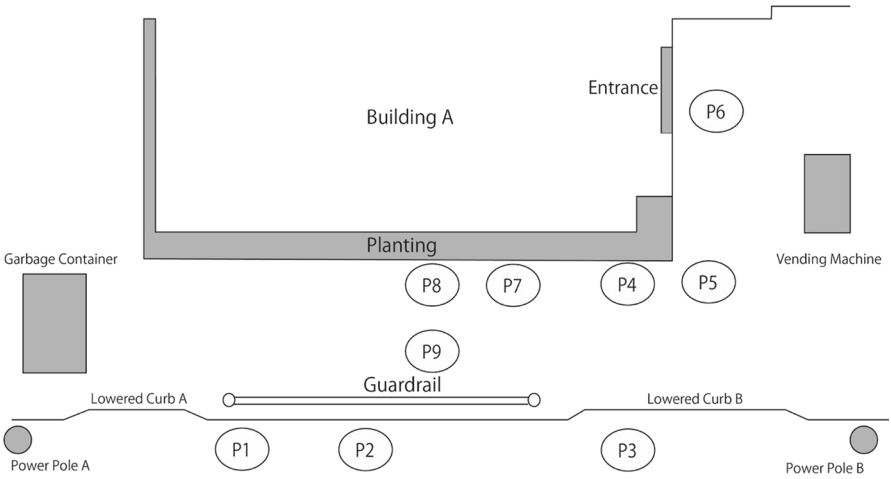


Fig. 2 Overview map

Demonstration of "Gone Too Far" Through Guided Touch with Cane

At first, an overview is presented in relation to the map (Fig. 2). Figure 1 gives an overall view of the setting. The two instructional sequences are almost continuous. The first begins at Point 1, which is just next to Power Pole A. The pair walked to

point B, about 1.1 km away, and back in one trip. This is the third power pole after turning left at the last corner. At this location, the sequence involving a guided touch as learnable, which will be described second, is performed. A modified version of the three-point-touch technique is presented, followed by a walk with enacting it and entering the site at the lowered curb (Point 3). Ten steps to planting in front of the building and a right turn (Point 4). 4 steps to a left turn (Point 5) and 9 steps to the entrance (Point 6).

There are two main environmental features that the SPT is presumed to be oriented towards: first, there are two areas where the curb between the road surface and the site is lowered: Lowered Curb A and Lowered Curb B. In the other areas, the curb is 5 cm high, but in these areas it is 2 cm. The other feature is the guardrail between the site and the road. As seen in #2 below, two poles are set parallel to the ground at heights of about 50 cm and 70 cm. The distance between the support pillars is approximately 1 m. The idea seems to be to find and enter the area where the curb is lowered because there is no guardrail there. Such structures are particularly difficult to detect with a cane.

Immediately after arriving at the entrance, the walking activity continues, this time back to the public street. After 9 steps, the PVI reaches Point 5 and turns to the right. Then, at the 13th step, she changes direction to the left (Point 8). Then she stops after 5 steps (Point 9). This is where the guided touch that we will focus on first occurs. This is where the path is blocked by the guardrail between the road and the site. This guided touch demonstrates that the path enacted by PVI has failed.

Enacting Learnable

Let us look at the sequences from here. As mentioned above, the first guided touch sequence to be focused on occurs as a part of assessing the PVI's walking performance initiated by her. After arriving at the entrance of the building, she makes a 180-degree turn round and starts walking while uttering the words "deru toki mo, (when ((I)) go out, too)" (line 1). This utterance can be paired with the SPT's "hairu tokoro no renshuu (practice of an entering path)" at the beginning of the immediately preceding sequence of events that will be discussed in the next section (lines 1–2 in Excerpt 2–1). The two contrasting words are "hairu (to go in)" and "deru (to go out)". And "mo (too)" can be heard as meaning to walk again along the same path one has just followed. It is also possible to point out that this performance is taken by the PVI as an enactment of "learnable" (Zemel & Koschmann, 2014).

In Japanese, the subject of a sentence is often not explicitly indicated. This is compensated for by the double-round parentheses. In the excerpts L indicates left, R indicates right, C indicates cane, H indicates hand, and F indicates foot. l. indicates line. + and * denote the beginning of bodily movements by the PVI and the SPT respectively. We treat guided touch as the SPT's.

Excerpt 1–1.

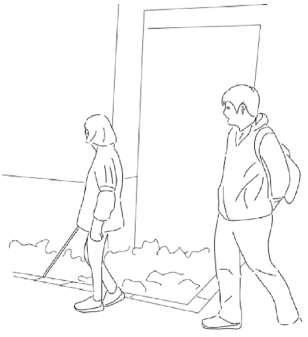
1 PVI: +deru toki mo,
when ((I)) go out, too
pvi +starts walking until when she stops --->1.12
+starts dragging cane L and R till PVI turns to L --->1.6

2 SPT: deru toki +mo,
when ((you)) go out, too
pvi +C caught in a break between tile and concrete

3 PVI: kore ga + (0.3) + (koko)
this is, here
pvi +swings C to as far R as 60 degrees
+C hits the edge bw asphalt and concrete

4 SPT: n: +
yeah
pvi + RF is placed in the R direction

5 PVI: n : : : +# koko ka
hmm:: here or there
pvi +C hits on the planting and moving direction
is modified slightly
fig #1



#1

6 +(4.3) +
pvi +9 steps+
--->+stop C dragging

The SPT provides little verbal guidance until just before Point 9, where the PVI stops after she starts walking in front of the entrance. The road surface is not asphalt but stone tiles in the vicinity of the entrance from Point 6 to just before Point 5. The PVI detects that she has come to Point 5 (line 3) and changes direction to the right (line 5) by a large swing to the right of the cane without catching any surface change before it finally reaches the edge between asphalt and concrete. The SPT's utterance of "n: (yeah)" (line 4) can be heard as an acknowledgment token to encourage the PVI to keep going. This is the only verbalization of the SPT observed before the next left turn by the PVI at Point 8. It is also to be noted that this utterance provides assessment.

After turning to the right, the PVI continues to move forward. The utterance "n:: koko ka (hmm:: here or there) can be heard displaying that the PVI has detected something. The PVI is around Point 7, just after Point 4 where she turned right on its inward journey from Point 1 to the entrance. However, there was no significant leftward change of direction by the PVI. It seems that the PVI reacted to the fact that the tip of the cane hit the planting between the asphalt and the building (#1). Immediately after this, the PVI appears to slightly change its walking direction so that she is parallel to the building wall. After that, she walks straight along the building wall for 9 steps (line 6).

Excerpt 1–2.

7:	**PVI:**	**+moo kono atari *de**
		almost around here
	pvi	+turns to L
		+C starts sliding forward --->l.12
	spt	*stops walking momentarily
8		**+(0.7)+**
	pvi	+3 steps+
9	**SPT:**	***kono atari da to ne[:**
		if ((you turn to the left)) around here
	spt	*approaches to PVI --->l.12
10	**PVI:**	**[dechau**
		((I)) will go out
11	**SPT:**	**+cho[tto iki +sugi*te *te : =**
		a bit ((you've)) gone too far and

12 PVI: **[a::**
oh:
pvi +C hits the edge of lid
+stops walking and sliding C
spt *extends RH towards C --->l.13
--->*stops walking

13 PVI: **= > iki sugi*te masu? < =**
((I've)) gone too far?
spt --->*stops extending RH

14 SPT: **=* #ano ne: * #**
say
spt *grabs C --->l.19
*C hits support pillar then horizontal pole
fig #2 #3

#2

#3

15 PVI: ***a: [honto da]**
oh ((it)) really is, indeed.
16 SPT: **[kono ne:] (1.2) ***
this one, say
spt *C hits support pillar 6 times*

The PVI turns left at Point 8 (line 7), 13 steps after turning right at Point 5. This is when the PVI starts the utterance, "moo kono atari de (almost around here)". The word "almost" expresses the assumption that the PVI has already been traveling long enough, but not too long. If the PVI is trying to retrace her path in reverse, she is going too far. For the inward path turned at Point 4, 4 steps from Point 5, so 13 steps are too far.

The SPT walks slightly to the left of the PVI while the PVI walks along the building from Point 5, about two steps behind. At the end of the PVI's "moo kono atari de (almost around here)," the SPT stops (line 7), sees the PVI turns left and moves forward (line 8), and begins to say "kono atari da to ne: (if ((you turn to the left)) around here" (line 9). The phrase "around here" is a repetition of the expression used by the PVI; the PVI's "dechau" in line 10 can be heard as a continuation of "already around here" in line 7. In combination, it means something like "((I)) will go out around here".

The utterance "chotto ikisugi te te: (a bit ((you've)) gone too far" (line 11) is a continuation of line 9 and expresses the negative assessment already projected in line 9. This is an assessment that the walking activity that the PVI herself declared to "deru (go out)" (line 1) from the entrance to the street was a failure. Upon hearing the word "chotto (a bit)" (line 11) before the words "iki sugi (gone too far)" is uttered, the PVI produces a change of state token "a::" (Endo, 2018; Heritage, 1984), indicating an understanding. In the middle of the SPT's utterance "iki sugi (((you've)) gone too far," the PVI stops walking. This movement, combined with the acknowledgment of understanding, can be considered a display of the PVI's orientation toward the assessment since the SPT has not uttered a directive to stop.

If the performance of the PVI here is the enactment of learnable, then a positive assessment is preferred. That it is not immediately delivered, i.e., the delay projects a dispreferred response (Pomerantz, 1984). As we have already seen, when the SPT saw the PVI turn right at Point 5, he issued an acknowledgment token (line 4); when the PVI turned left at Point 8, there was no such token, and after that, something verbal was absent. The phrases "kono atari da to ne: (if ((you turn to the left)) around here" (line 9) and "a bit" (line 11) delay anticipated assessment, which can be understood as projecting a dispreferred response.

While latching on to the SPT's utterance in line 11, the PVI asks quickly a confirmation request question ">iki sugi te masu?<(((I've)) gone too far?)" (line 13). It is at this point that the focused guided touch begins. In line 14, the SPT grabs the cane that the PVI is holding (#2) while saying "ano ne: (say)," which works as "attention getting device" (see Mondada, 2013), projecting that a detailed account will follow. Grabbing the cane and the talk constitute what Mondada calls a "multimodal gestalt" (Mondada, 2018b), projecting that the guided touch is about to begin and that it is relevant to the "here and now" and assessment of "((you've)) gone too far".

Then, the SPT moved the cane upward. The cane first hits the bottom of a support pillar, then the lower horizontal pole (line 14, #3). The PVI says "a: honto da (oh,

((it)) really is, indeed)" (line 15), displaying understanding and agreement. While the change of state token "a::" in response to the verbal assessment (line 12) is followed by a confirmation request, "a:" in response to the guided touch (line 15) is immediately followed by the display of agreement, "((it)) really is, indeed" The Japanese word "honto" means "real" or "true". It means capturing the original state of something through experience. Touching the horizontal pole thus occasions such a strong form of displaying agreement based on her own experience. Maynard, who studied News Delivery Sequences, found that "oh really?" is often used in news receipts (Maynard, 1997: 107). While "oh really?" is a request for confirmation as a response,[2] the PVI's "a: honto da (oh, ((it)) really is, indeed)" does not make such a confirmation request, but displays that the news is accepted as it is. This indicates that "a problem of realization" (Maynard, 1996) has been resolved and that the knowledge state of the PVI has changed.

To summarize the analysis so far, the guided touch was launched in the context of assessing the success or failure of the enactment of learnable, which was a task set by the PVI herself, i.e., going out from the entrance to the street. The utterance, "a: honto da (oh, ((it)) really is, indeed" asserts that, as a construction, the PVI is agreeing with the SPT's assessment based on her own experience, and displays that the guided touch is demonstrating what the SPT said is true. The PVI had already stopped moving and was in a location where some kind of instructional conduct was expected (see Broth & Lundström, 2013). This was a location where the cane would normally touch the guardrail in its current position, and also a location where the PVI would bump into the guardrail if she took two or three more steps forward. Note that the movement of the SPT reaching for the cane begins in line 12. It is before the PVI's confirmation request. According to the SPT's orientation, this movement cannot be regarded as responding to the confirmation request. On the other hand, for the PVI who does not have access to visual resources, the guided touch can be regarded as a response to her confirmation request.

A focus of this part is the enactment of learnable. The PVI is voluntarily engaged in going out from the entrance to the street. It seems that both the PVI and the SPT are oriented toward the fact that it is an object of assessment. In particular, the fact that the SPT rarely uses supportive acknowledgment tokens reflects the SPT's orientation.

Guided Touch in Reference

The guided touch does not end at line 14 but continues for some time. Overlapping with the PVI's reception displaying understanding and agreement, the SPT verbally describes the environment: "saku ga ne" (line 17) "chotto arun desu yo"

[2] Maynard contrasts "encouraging or discouraging elaboration of news" (2003: 100).

(line 19) (a guardrail is, say, existing indeed). Note that Japanese "saku" is usually put to be "fence" but instead we choose "guardrail" here. In delivering this description, the SPT perturbates with "kono ne: (this one, say)" and "eh:". "Kono ne: (this one, say)" is a deictic expression that leads to "guardrail". During this utterance, the SPT hits the pillar of the guardrail with the cane six times (line 16). In line 17, while saying "e: saku ga ne (well, a guardrail is)," the SPT hits weakly the lower part of the pillar once with the cane. These guided touches are resources to make reference and also constitute a multimodal gestalt (Mondada, 2018b).

Excerpt 1–3.

```
15  PVI:  *a: [honto da]
           oh ((it)) really is.
16  SPT:      [kono ne:]  (1.2) *
              this one, say
    spt   *C hits support pillar 6 times*
17  SPT:  e: +saku ga ne
           well a guardrail is
    spt      +C hits bottom part of pillar from L to R
18  PVI:  [a
           oh
19  SPT:  [chotto aru n de +su yo
           say, existing indeed
    spt                ---->+removes RH from C and starts stand upright
20  SPT: +etto ne * soshitara [ne:
            say, well  and  then  well
    spt            *stands upright and looks down
    pvi   +turns to L and starts walking but stops after one step
21  PVI:                      [(doko kara * iku ka) na : :
                              from where ((shall I)) go, ((I)) wonder
```

The word "ne" in "kono ne:" (line 16) and "ne" in "saku ga ne" (line 17) are what Morita (2005, 2008) calls interactional particle, as is the "ne" in "ano ne:" discussed above. Morita says, "on the occasion where the interactional particle *ne* is used, the speakers display some interactional concern at that moment in terms of establishing or maintaining *alignment* to the ongoing activity (Morita, 2005: 97, italics original). Morita's alignment is based on the idea of Goodwin and Goodwin (2004).

Morita says: "for all participants to interact 'to be aligned' towards the present ongoing *activity* in such a way as will allow for successful *co*-participation is the most fundamental accomplishment in that it that is *pre-required* for the building of conversational frameworks of variously specific kinds" (Morita, 2005: 97f.; italics in original). Based on Morita's analysis and interpretation of "ne" as an interactional particle, we argue that the use of "ne" three times here indicates SPT's orientation to that there is a concern that there is trouble with alignment and that it is important for the PVI to pay attention to the guardrails presented in the guided touch.

The PVI utters a change of state token "a (oh)" in line 18 as a newsreceipt, expressing that she has heard the name of the obstacle, "saku (guardrail)" (line 17). The SPT finally removes his hand from the cane when he finishes the verbal description of the environment, saying, "chotto arun desu yo (((a guardrail is)), say, existing indeed.)" in line 19. This move concludes the sequence of the assessment.

Both the PVI and the SPT quickly move on to the next activity. The PVI turns to the left and tries to walk back toward the entrance, which displays her orientation to the fact that she is engaged in the activity of walking form the entrance to the streets. But she stops when the SPT is in front of her (line 20). The SPT removes his right hand from the cane (line 19), raises his upper body, looks at the guardrail in front of him (line 20), and looks doing some thinking. The word "soshitara (and then)" (line 19) indicates that he is about to say something about what he is going to do next, based on the procedure already shared.

To summarize:

(1) The guided touch was launched after a confirmation request from the PVI. This question was a weak, but kind of challenging, response to the verbal assessment of the failure of enacting the learnable of "going out" from the entrance to the street. The spatial location where this occurred was where the PVI was, with the cane, just within the reach of the guardrail blocking the path. The fact that the PVI had stopped on her own without explicit directives from the SPT indicates the PVI's orientation to the relevance of the assessment.[3]

(2) There are two types of guided touch: those with and without co-occurring talk. In the former, guided touch constitutes the practice of referring to an object. In the latter case, the SPT uttered a kind of attention getting device when grasping the cane held by the PVI but did not say anything while touching the objects with guided touch. Both were received by the PVI with change-of-state tokens "a:" and "a" (both can be put as "oh"), displaying changes in the epistemic state.

(3) The first phase of the guided touches immediately generated the PVI's display of agreement and was followed by the next phase of the guided touches. The latter

[3] One reviewer found an element of "correction" in this point. In the case of Excerpt 1, the SPT provides a negative assessment (evaluation) of this particular walking path by the PVI. After that, another walking path is proposed as a "correction" by the SPT. In this paper, however, only the doing part of the negative assessment that triggers the corrective phase is described and analyzed. Further discussion of the correction aspect is beyond the scope of this paper.

phase was concluded by the SPT's removing his hand from the cane just before the verbal reporting of the environmental feature was completed.

(4) All contacts produced by the guided touches were brief. The presence of the obstacle was known by the PVI through the touch produced, and the shape of the obstacle was known by the location of the touch produced. The metallic sound produced by the touch would have signaled the material of the obstacle.

(5) The movement of the cane against the horizontal pole is particularly difficult, and significant for our analysis. In normal cane operation, the cane tip is rarely raised 30 cm off the ground. The SPT knows where the horizontal pole is with visual input resources. The maneuvering promptly accomplished the discovery by the PVI of the obstacle, the guardrail, through the cane. This is a demonstration of "gone too far," or "not being able to get out because of the obstacle," by showing the presence of the obstacle.

In this way, the guided touch proved that the PVI had "gone too far". The guided touch was not to re-formulate or re-claim that the PVI had "gone too far," but to achieve a demonstration that the PVI and the SPT confirm that together with their bodies. In other words, the SPT was working with the PVI using *one* cane to detect that there was a guardrail in front of them. The explanatory power beyond Sack's distinction between claim of understanding and demonstration (proof or achievement) of understanding (Sacks, 1992) can be observed, i.e., the power of the actual doing with the concrete feeling of the body, is the key to the effectiveness and power of reality.

Guided Touch with Cane in Learnable Demonstration

Next, we will deal with the guided touch which constitutes a model presentation of cane operation. The three-point-touch technique is a basic form of cane operation. What is to be presented here is a slightly modified version of it. In the focus sequence, the two-point-touch method is performed with guided touch first. This is to show the environmental features of this part. The analysis begins with this two-point-touch.

Preparatory Modified Two-Point Guided Touch

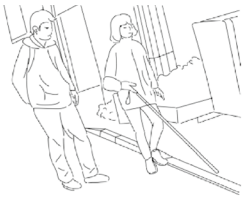
This is a situation in which the PVI learns a new path to enter Building A, a building she will visit frequently in the future, from the outside. As the PVI and the SPT walk around the last corner to the street leading to this building, they stop just past the third power pole that marks the building (Point 1 of Fig. 2). The SPT asks the PVI if she has done "hairu tokoro no renshuu (practice of an entering path)" (Excerpt 2–1, lines 1–2). The PVI replies, "a mada (.) shite nai: desu (oh ((I)) have not done ((that)), yet" (line 3). Then the guided touch begins.

Excerpt 2–1.

```
1  SPT:  +de e:tto:+# (0.9) .hh koko tte *ha+iru tokoro no
           And well                  as for here, of an entering path
   spt                                      *...-->
   pvi   +C hit curb
   pvi             +places LF over curb      +stops walking
   fig              #4

2  SPT:  renshuu tte * nanka *shimashita?
         some practice have ((you)) had?
   spt                *stops
   spt                     --->*puts both H to pocket of jacket

3  PVI:  a mada (.) [shite nai: desu         ]
         Oh ((I)) have not done ((that)), yet.
4  SPT:             [mada shite nai?       n*]  n.# [*ja]
                    Haven't ((you)) done ((it)), yet?  right,  right. then.
5  PVI:                                                [hai]
                                                        yes.
   spt                                      *pulls LH out of pocket
                                             towards C
   spt                                               *places LF one
                                                      step forward and
                                                      extends LH toward C
   fig                                          #5
```



#4

#5

First, let's look at how the pair came to a stop. As seen in #4, the PVI and the SPT are on a residential street with no sidewalk (Point 1 of Fig. 2). Building A is on the left side of the road. They have walked along the left side of the road, passed Power Pole A, and come to a stop by the curb near the property line (#5). The curb is just at the point where the lowered curb (Lowered Curb A in Fig. 2) becomes higher again. The curb is low right next to where the left foot of the PVI is placed, but the curb is high where the cane is swung at it.

Just before this, the pair move slightly away from the left edge of the road to avoid Power Pole A (Fig. 2). After passing the pole, they change the direction of travel to the left, and just after the cane hits the curb again, "de (and)" is uttered (line 1). At the same time, the PVI swings the cane to the left and it hits the curb. "De" marks the end of the pole avoidance and, combined with the point where the cane touched the curb, it sounds as if it specifies this very location. There is a pause of 0.9 s while the PVI continues walking, and then the PVI stops walking when the "ha" in "hairu (go in)" is uttered in "koko tte hairu tokoro no renshuu (as for here, some practice of an entering path)" (line 1–2). "Koko tte (as for here)" is uttered in a high, loud voice, and it appears that some instruction is projected to occur "here" and the PVI stops in response. The PVI takes four steps before stopping from where the cane touches the curb in line 1. The curb is lower where the cane touched the curb in line 1 (#4), but where the PVI stopped was just before it began to rise again (#5).

The PVI's utterance "a mada (.) shite nai: desu" (line 3) sounds a bit apologetic. The micro pause and the stretching of "nai:" seem to create such a stance. The SPT's "n n" in line 4 sounds like a response to such an apologetic display. It is as if the SPT is saying, "right, right" or "no problem". Before that, the SPT makes a confirmation request, "mada shite nai? (Haven't ((you)) done ((it)), yet" (line 4), which is a repetition of the PVI's utterance and overlaps with her "shite nai: desu (((I)) have not done ((that)))". The repetition of the acknowledgment token "n n" at the end of the overlap seems to express the stance of "no problem" by taking it deep.

As the SPT utters the two acknowledgment tokens, he takes his left hand out of his pocket and reaches for the cane that the PVI is holding (line 4). Both hands were put in his pockets just before this (lines 1–2). When he was walking, he had his hands clasped behind his back, and when he begins to say "hairu" in line 1, he begins to lift his hands. Asking whether or not the PVI had "hairu tokoro no renshuu (practice of an entering path)" may display the understanding that he was at a point where he should consider the flow of instruction after listening to the PVI's reply.

Another issue to consider is that at this point, more than one hour and 20 min have passed since the training session began. And it is to be noted that the pair have just returned from point B to point A, which is a good time to take a break. If the PVI responds that she has already practiced "an entering path," it is quite possible that the break would have been taken at this point. They took a break about 5 min later, after they had made several attempts to go in and out of the entrance of Building A.

The SPT receives the PVI's response of "((I)) haven't done ((it)), yet," with two "n" acknowledgment tokens. At the same time as this second "n" is uttered, the SPT takes his left hand out of the pocket of the jacket. He then steps forward with his left foot, tilts his upper body, and extends his left hand to the cane while saying "then" (lines 4–5). Now the guided touch is to take place. The utterance "ja (then)" (line 4) projects that something will follow. The PVI can anticipate the occurrence of something that corresponds to the "practice of an entering path" which "((I)) haven't done ((it)), yet" "Then" is overlapped by the "yes" (line 5) with which the PVI responds to the confirmation request.

In brief, the guided touch is about to be launched as something that the SPT begins to do. It is what can be called "practice of an entering path". Its starting point is the current location identified by "here" (line 1), but its goal is not specified. However, the goal being the entrance of a building is implied in the words "an entering path" in line 1.

Excerpt 2–2.

6 SPT: sanbonme koe*te+:

((after you)) pass the third ((power pole))

spt *grabs C with LH and swings to R

pvi +places LF 5 cm forward

7 SPT: *#ma[a *#

well

spt *T1C1 *T2C1 ((drags cane on ground for 20 cm))

fig #6 #7

8 PVI: [>hai<

yes

#6 #7

9 SPT: *shibaraku *sono

for a while, say

spt *T1C2 *T2C2

10 SPT: *dan *sa[de *: * *ko:o

((there is)) height difference, this way

11 PVI: [(ano:)

say

spt *~~T1~~C3 *T2C3 *T1C4 *T2C4 *T3C4

12 SPT: *natte*run desu kere[*domo:

((the environment)) is, though

13 PVI: [hai.

yes.

spt *T1C5 *T2C5 *T1C6

The SPT grabs the cane at the end of the utterance and begins to move it, saying, "sanbon me koete: (((after you)) pass the third ((power pole)))" (line 6). First of all, it is to be noted that this utterance returns the pair to the point just before reaching the location where they are currently standing. What is about to happen is projected as a "practice of an entering path," and the starting point is formulated as the point where they "passed" the "third" power pole. The talk also specifies and identifies the landmark. The "third" power pole is identified as the location transition from the activity of walking to the activity of finding the entrance should take place.

We call a set of touches "cycle" here. The guided touch constitutes nine cycles: five cycles of two-point-touch in the first phase and four cycles of three-point-touch in the second phase. During this time, the PVI moves the foot forward slightly three times. This is presumably to balance the body position for the cane operation, which requires close work with the body. Each step was only 5–10 cm in length. On the other hand, the SPT, who is perceiving by work of distant sensation of looking, does not change his standing location at all. The guided touch is initiated as an instruction, action appropriate to the "here and now".

The first five times of guided touches are in the two-point-touch technique. Here the touch cycle is denoted "Cycle 1" through "Cycle 5". In the transcript, we will use "C1" and so on. Then, the cane touches shall be called "Touch 1" and "Touch 2" and abbreviated as "T1" and "T2". So "Touch 1 of Cycle 1" is abbreviated as "T1C1". The trace #6 shows the moment of Touch 1 of Cycle 1. The cane touches the road surface 60 cm in front of the PVI at 2 o'clock. The cane then moves to the left and hits the curb (T2, #7). In this case, the cane was dragged while making a little contact with the road surface after T1C1, and this is indicated by double underlining in the transcript. This dragging does not seem to be specifically intended. Point 1 touches of the other eight cycles are all short contacts.

The guided touch that follows has two phases, as mentioned earlier. The first phase is intended to inform of the environmental features of the site. After that, a demonstration of the modified three-point-touch technique, which is the focus of the current analysis, begins at the same location.

The lot of Building A is about 5 cm higher than the road surface from which the pair walked. That is, the height of the curb is 5 cm. The guided touch produces 5 cycles of two-point-touch. The basic form of the two-point-touch is to touch the road surface with an equal swing of about 60 degrees to the right and 60 degrees to the left. The PVI often uses a modified two-point-touch technique when walking on her own. On this particular day, the pair were walking on a residential street with no sidewalks. By placing the outer touch of the two-point-touch on the side of the curb, the PVI can maintain a certain distance from the edge of the road. It is this modified two-point-touch that is being used in the guided touch in question.

During the five repetitions of the modified two-point-touch, the utterances "shibaraku sono (for a while, say" (line 9) and "dansa de ko:o (((there is)) height difference, this way)" (lines 10–11) are made. The left side of the road is separated by a

5-cm curb ("dansa") for a while from the point where they are now standing. The fourth of five touches is a three-point-touch. Following the two-point-touch (right front road surface and left curb side), a point in the site at about 75 degrees to the left is touched. This point is 5 cm higher than the road surface. The word "this way" is uttered in conjunction with this third touch (line 11, T3). The importance of the relationship with the site is marked.

Upon hearing the SPT's "dansa de ko:o natte run desu (((there is)) height difference ((and the environment)) is this way" (line 10, 12), the PVI utters the word "hai (yes)" as an acknowledgment token. This can be heard as a display of understanding of the SPT's utterance as well as an understanding of the environmental features to be noted in this section. The SPT's "keredomo (though)" marks that the delivery of a piece of information is complete.

Let us summarize the analysis of the guided modified two-point-touch. It was performed in a location where the previous sequence of interactive actions ended and a new one began. It is where new instructional activity is spatially relevant. In order to convey the environmental features of the place, a modified version of two-point-touch was employed in combination with talk. It is uttered that what is verbally characterized as "dansa (height difference)" will follow "shibaraku (for a while)" while the curb and the site are touched with the cane. The PVI's acknowledgment of "yes" allows the SPT to proceed to the next phase. The guided touch does not focus on any particular sensation for the PVI. Only the location of touch matters. Preparation is made that leads to the instruction of "an entering path".

Guided Touch in Learnable Demonstration

The two-point-touch is changed into the modified three-point-touch, which is the main focus of the analysis. The SPT's only observable move to mark the transition is the word "keredomo (though)" conjunctive. The pair remain in the same location, and the touch moves into the modified three-point-touch without any interruption. The next touch at the right front position (T1) in Cycle 6 occurs at the same time as the PVI's overlapping "hai (yes)" (line 13) in the middle of "keredomo (though)" (line 12).

Excerpt 2–3.

```
14   SPT:  *yotto        *koo
                yelling.sound    like this
      spt   *T2C6          *T3C6

15   SPT:  *#konna *#kanji de *#koo *
                  with like this feeling,    like this
      spt   *T1C7    *T2C7       *T3C7 *T1C8
      fig    #8        #9          #10
```

#8 #9 #10

Touch 1 of Cycle 6 occurs at the end of line 12. The trace #8 shows Touch 1, #9 shows the following Touch 2, then #10 shows Touch 3. The curb touch at Touch 2 is the long touch and the focus of the analysis; it is a rubbing contact touch from the bottom to the top of the 5 cm curb. Since Touch 2 follows the right-to-left swing movement, presumably there is a large reaction force at work. The double underlining of "T2" in line 14 in the transcripts indicates that this is not an instantaneous touch but a prolonged touch. It sounds as if the SPT is marking this with the verbalization "yotto (hup)" (line 14). "Yotto" is one of the "hups" used for lifting heavy objects, like "yoisyo".

A modified version of the three-point-touch, in which contact is maintained on the side of the curb, is repeated twice in Cycles 6 and 7. What the SPT utters is just "konna kanji de koo" (line 15). In English, the phrase is "with like this feeling, like this". Both "konna" and "koo" are deictics, and while "konna" is usually followed by a noun, "koo" is sometimes used alone linguistically with body movements. "Koo" is also invoked at the end of line 14. The word "kanji" (line 15) can be translated as "feeling". It cannot be determined whether it refers to a particular touch feeling or not, but rather to a kind of impression that is difficult to specify.

In any case, as a composition, this utterance is made to package the movement and touch of the cane to constitute a specific gestalt. At the very least, the utterance does not make sense on its own. And, importantly, the PVI understands what it means, as will become clear in the following section.

Recognition of Learnable

At this point, after two cycles of three-point-touch, the PVI formulates the object of awareness as "a sankasho (oh, three places)" (line 16). "A" is a change-of-state token, the same as the English "oh," which marks a new understanding of something at that

moment (Endo, 2018; Heritage, 1984). What is understood is that the PVI should touch "three places". After whispering "hidari no (of the left)" the SPT repeats the PVI's words "three places" (line 17). Although it sounds as if it follows "koo" in line 15, "hidari no (of the left)" is overlapped by the PVI's "sankasho" and is never responded to.

Excerpt 2–4.

```
16   PVI:  a [sanka sho    ]
           oh, three places
17   SPT:  * [>°hidari no°<] san *kasho
               of the left     ((at)) three places
     spt   *T2C8                   *T3C8

18   SPT:  [san*ten] *de   *
            at three points
19   PVI:  [mite.  ]
            ((I will)) look at
     spt      *T1C9 *T2C9 *T3C9

20   PVI:  hai
           yes.

21   SPT:  chotto * shibaraku +
           for a little while
     spt          *removes H off C and stands straight
     pvi                      +T1S1

22   SPT   +>itte [moratte +ii desu ka<
             could ((you)) please go along?
23   PVI          [hai
                   yes.
     pvi   +starts walking +T2S1

24   SPT   *hai +
            yes
     spt   *starts walking -->1.41
     pvi       +T3S1
```

The PVI says "mite (see)" (line 19) as if following the SPT's "sankasho" in line 17.[4] However, this "mite (see)" is overlapped by the SPT's utterance "santen de (at

[4] Note "Mite" is "see," but should be understood to mean perception in general, not to specifically mean vision. A similar example is found in the exchange Nishizaka studied (Nisizaka, 2020).

three points)" (line 18). The words "sankasho" and "santen" are synonymous. The difference is that the location marker "de" is added. The PVI receives this utterance with an acknowledgment of "yes" (line 20).

After the PVI begins the display of understanding of "three places," the guided touch of the modified three-point-touch continues. The SPT's "santen de (at three points)" in line 19 is uttered almost simultaneously with the three touches in Cycle 9 as if he is verbally doing the three touches as well. In contrast to the first two cycles of three-point-touch, which led to the PVI's formulation of and understanding as "sankasho," the remaining two cycles of three-point-touch may seem unnecessary. However, it may be considered to have continued throughout the utterance, as if to embody the very package consisting of the movement and touch of "three places".

Two points should be noted in this part. One is that the PVI formulated and recognized the "three places" touch as learnable through guided touch. The second is that Touch 2 was not verbally articulated by either the SPT or the PVI as a long touch of contact. It is to be noted that the terms "two-point-touch" and "three-point-touch" are mentioned in textbooks. This PVI who was enrolled in the school for the blind may have used this terminology. However, neither the SPT nor the PVI used these terms in this day's session.

The PVI's acknowledgment token "hai (yes)" in line 20 makes it possible to end the guided touch. The SPT removes the hand from the cane while making the instruction, "chotto shibaraku itte moratte ii desu ka? (for a little while could ((you)) please go along)" (line 21–22). The removal of the hand from the cane also allows the PVI to move. As soon as the SPT utters the word "itte (go)," the PVI responds, "hai (yes)," in an acknowledgment. As her subsequent performance indicates, she understands that the instruction is to walk "for a while" while doing the modified three-point-touch. This "yes" can be heard as a display of that. The cycle when indicating the time and point of the modified three-point-touch in the cane operation by the PVI alone, starting at line 21 after the SPT has removed his hand, will be indicated by "S".

Assessment of Learnable

The analysis and description of the enactment and assessment sequences will be limited to the main points. In line 24, the PVI is moving forward while performing a modified version of the three-point-touch; the long touch of Touch 2 is technically difficult and sometimes not smooth, but the PVI still manages. The SPT who monitors the progress is not only checking and assessing the correctness of the progress with a "yes, yes, yes" (line 29) but is also examining the accuracy of the PVI's touch and issuing acknowledgment tokens that encourage her to "keep going". The modified version of the three-point-touch is presented as "learnable" and the SPT's acknowledgment can be heard as an assessment of whether it has been accurately enacted.

Excerpt 2–5.

24 SPT *hai +

yes

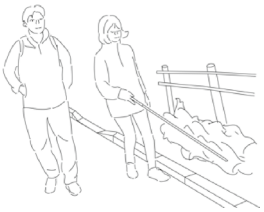
spt *starts walking while making modified 3PT --->l.41

pvi +T3S1

25 + (2.9) +#

PVI + walk 6 steps +C hit weeds

fig #11



#11

26 PVI: [otto

wow

27 SPT: [hai

yes

28 PVI: kore [ga dete kuru [(ka)

this appears, don't they?

29 SPT: [hai [hai hai hai

yes yes yes yes

30 (0.5)

PVI initiates a modified version of three-point-touch alone while walking (line 24). And finally, at the point where it becomes the fourth cycle, the puzzle to be solved utilizing three-point-touch is presented (lines 31, 33, at Point 2 in Fig. 2). The SPT says "sore ga ne: i ima takasa ga hikuku(h) na(h)ri(h)masu (of that, say, soon the height will get lower)". "Sore (it)" is taken to refer to the curb. That "the height will get lower" is what is to be detected is finally stated explicitly. Nevertheless, there is no verbal instruction to find the spot or to find it and enter the site from there.

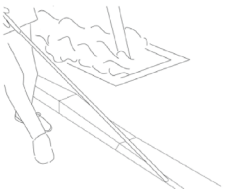
Excerpt 2–6.

31 SPT: sore ga ne: (0.7) [i
that is, say n(ow)
32 PVI: [hai
yes

33 SPT: ima takasa ga hikuku(h) na(h)ri(h)ma+su
soon ((its)) height will get lower
pvi +T2S6

34 (0.8)

35 PVI: hai + (0.2) +#(0.5) + (.) +#
yes
pvi +T1S7 +T2S7 T3S7 +T1S8 +T2S8
fig #12 #13



#12

#13

36 SPT: >de koko wakari ma[shita hikuku natta no]
now have ((you)) noticed here that ((it's)) gotten lower
37 PVI: [+ a honto da]
oh, ((it)) really is
pvi +T3S8 & walking slow down

38 PVI: chotto hikuku nari mashita.
a little ((it)) has gotten lower.

39 SPT: chotto hikuku na(h)tta(h)?
((have you noticed that)) ((it)) has gotten lower?

40 PVI: hai(h)
yes

```
41   SPT   soshitara moo + koko haitte: =
           then now here ((you)) go in
     pvi             --->+stops & turns L

42   PVI:  =+hai
             yes
     pvi    +places RH over curb

43   SPT:  massugu +susunde moratte, hai
           please go straight,              yes
     pvi           +starts walking again --->>
```

The PVI acknowledges with "hai (yes)" (line 35) and displays understanding. The SPT's words "hikuku(h) na(h)ri(h)masu (will get lower)" (line 33) ends at the time of Touch 2 of the 6th solitary three-point-touch. There is a slight pause (0.8 s in line 34) before the "yes" is uttered (line 35), which can be caused by a difficulty with the contact touch on the side of the curb. Although the PVI is just told "will get lower," and there is no specific verbal instruction on what to do, the PVI does not show any display that indicates a problem with understanding. The next Touch 2 of S7 is at the point of the lowered curb (T2S7 in line 35, #12). However, PVI does not seem to notice the change. So, SPT says quickly, "de koko wakari mashita hikuku natta no (now have ((you)) noticed here that ((it's)) gotten lower)" (line 36). This utterance begins just as the next Touch 2 (T2S8, #13) occurs. And just after "ma" of SPT's "wakari mashita" (line 36), the PVI starts uttering "a honto da (oh, ((it)) really is, indeed)" with a change-of-state token. The PVI indicates that she has gotten new information and displays agreement. This was expected to occur following T2S7 on line 35 if the modified three-point-touch had been learned and was operating properly and as expected. After two opportunities for spontaneous detection had passed, the PVI's detection was asserted in response to the SPT's hint. Nevertheless, the utterance construction is the same as that of line 15 of Excerpts 1–2 described above, indicating strong agreement and realization (Maynard, 1996). At the same time, as the onset of this utterance, there is an eighth Touch 3 and at the same time the PVI slows down. After a verbal assertion of detection (line 38), a request for confirmation (line 39), and confirmation (line 40) that the curb has been lowered, the SPT instructs the PVI to turn left and enter the property (lines 41, 43).

As a result, we do not know whether the PVI was able to perceive the lower curb height on her own. The operation touching the side of the curb while walking and maintaining contact is not easy to repeat. It is even more difficult to detect slight changes in the height of the curb. What is important for the discussion in this paper is that the rubbing of the curb side is the key part of the model presentation, the learnable is conveyed to the PVI through guided touch alone, without the aid of talk. The fact that this worked is displayed by the SPT's assessment. Unfortunately, it was

not possible to detect the changes in environmental features that one would expect to be detected by this learned operation.

To summarize the analysis of this section:

(1) The guided touch was launched at the place where the sequence began. In the beginning, the guiding person, who relied on vision to remotely perceive the object, was at the exact location where he had previously been located, but the guided person moved slightly to maintain her bodily balance.
(2) The verbal contribution was small: during the two-point guided touch, the verbal expression was complementary to the movement of the cane touch, and only the word "dansa (height difference)" was used to describe the environmental features. In three-point guided touch, it was the PVI who initiated the verbal characterization of "sankasho (three places)," and the SPT only repeated it. In touch 2, which was difficult to operate, the SPT marked the difficult operation by "yotto (yup)," but no words were used to express movements like contact or rubbing.
(3) Each of the guided touches ended with the PVI's "yes" acknowledgment token. These "yeses" seemed to be taken to display that what was to be communicated was appropriately understood and received by the PVI.
(4) Through the repetition of the two-point-touch and one three-point-touch in the first phase, the PVI seemed to perceive the environmental features of the road, the curb, and the site elevated by 5 cm. The three-point-touch in the second phase is perceived as a model and learnable movement for the PVI to make in the solo walk that immediately follows.
(5) The two-point-touch in the first phase could easily be accomplished by the PVI alone without guided touch. She has been walking with a modified two-point-touch, touching the side of the curb. It is unknown whether the PVI had heard of "three-point-touch" in advance. Most importantly, it can be argued that the movement of the PVI to maintain contact with the side of the curb was only possible because of the guided touch. Verbal instructions alone would have required much more time than the four demonstration cycles observed here.

Concluding Remarks

The two series of guided touch we studied were launched and effective enough in their respective interactive and environmental contexts. In assessing the spontaneous performance of the PVI, the SPT conducted the guided touch which proved what the verbal assessment claims. The guided touch was performed in a place to function if the cane was operated at that location by the PVI herself. In the instruction of the new path, the SPT was presenting the movement as learnable, adapted to the environmental needs of the place. The three-points-touch were not verbalized except for the second touch point, which was indicated by the word "dansa (height difference)," and was communicated to the PVI only by the touch of the cane. In particular, the critical movement of rubbing the side of the curb was not mentioned during the

execution of the guided touch. It was not until after the enactment of the learnable by the PVI that it became verbally explicit that this was the core of the learnable.

These two series of guided touches are quite different types of "demonstration". The guided touch of the guardrail can be situated in the contrast that Sacks (1992) suggests: claiming and demonstration. The SPT initially verbally claims a state that the PVI has "gone too far". The PVI, however, is not able to agree and requests for confirmation. So the SPT demonstrates the state of having "gone too far" by touching the guardrail with guided touch. Here, the demonstration of a state of affairs is made as a "redoing" of the verbal description of the state of affairs, i.e., as a "redoing" of the claim. In the case of the modified version of three-point touch, on the other hand, the PVI immediately understands that guided touch is a learnable demonstration, which the PVI learns in just two performances. The demonstration by the PVI alone immediately afterward shows this. Both guided touches are effective forms of communicating, which are recipient designed (Sacks et al., 1974) for the PVI who uses the white cane as an extension of their body to perceive the environmental features.

As we have already discussed, in instruction between clear-sighted people, the main mode of the learnable demonstration is usually visual. In the instruction of "the Triangle of Doom," in addition to endoscopic images, face-to-face gestures were mobilized (Koschmann et al., 2007), both of which are mainly communicated visually. During laparotomy, the attending used visual and tactile inspection and detected the affected area during the surgical procedure. When instructing residents and medical students on how to do this, the attending relied on visual and verbal resources (Zemel & Koschmann, 2014). In the cases organized by Lindwall and his colleagues (2015) the participants relied on visual and auditory comprehension for instructional content transfer.

The identification of the learnable may not be easy in the presentation of the learnable in the demonstration when it is a visual demonstration. As for the resident, Zemel and Koschmann state the following: "The resident is thus faced with the problem of a) making sense of the attending's demonstration for what the 'learnable' in the demonstration might be, and b) making evident in some manner to the attending his understanding of her demonstrated actions in the enactment he performs as an assessable enactment of her demonstration" (Zemel & Koschmann, 2014: 172). But the PVI in our study does not seem to face such a problem. The sense of touch can only be used when a touching person is close to the object. What is at issue in the cases of this study is the perception of 0 or 1 rather than gradational, such as the presence or absence of contact or the identification of a location of contact. The guided touch, in which the SPT grabs a cane and investigates the environmental features, is a unique means of interaction. The SPT grasps the environment with the cane and shares it with the PVI at the same time. The information conveyed by the touch can be assumed to be understood by the PVI without the aid of language. The guided touch with the cane has a high degree of accountability. It also achieves intersubjectivity.

Many situations in which touch is used in the perception of the external world have been studied in recent years. In Zemel and Koschmann's (2014) study of the inspection of an affected area during surgery, the lesion was detected by touching the affected area with the hand. Mondada and her colleagues (2021) also showed a series of scenes surrounding food by touching the food and diagnosing its condition. In both cases, what is found

out by touching is "shown" to others visually. In contrast, guided touch does not involve such a modal shift. Pregnant women moved their fingers according to the guidance and touched a certain position in a certain way to detect the fetal head. In the guided touch discussed in this paper, the cane touched the guardrail and rubbed the side of the curb, and the PVI herself felt and detected the touch together with the SPT through the one cane. In this case, the person being guided cannot use the visual mode. The mode of perception and communication is touch, with the help of talk.

Knowledge of the experience and world of others is essential to interaction and the formation of human sociality. People achieve intersubjectivity by making their behavior accountable. Guided touch is assumed to produce "practically the same" sensation and experience to both the guiding and the guided simultaneously. At least neither the SPT nor the PVI, the parties involved, seem to have any doubt about that. Guided touch, thus, constitutes a powerful resource, both instrumentally and communicatively. In traditional learning instruction, it has been assumed that the learnable is presented and communicated visually and audibly. However, as the cases in this paper show, there is something that is presented and communicated by touch. It seems that the sense of touch has been considered to be just for the occasion, but this is an example of something that is not just for the occasion but is consequential.

Appendix Additional Transcription Conventions

T1C1 normal, instantaneous cane touch 1 of cycle 1
T2C1 cane keeps longer contact than instantaneous tap
~~T1~~C3 cane does not touch normally expected object

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