Parsing Tasks for the Mobile Novice in Real Time

Orientation to the Learner's Actions and to Spatial and Temporal Constraints in Instructing-on-the-move

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Abstract:

This paper studies parsing as a practice used in mobile instruction. The findings build on ethnomethodological conversation analysis and on observations made on video data that have been collected from three settings: skiing, driving a car and flying a plane. In the data, novice learners are instructed by more experienced instructors to accomplish various mobile tasks. The paper shows how instructors use parsing to guide learners to carry out, step-by-step, the sub-actions that the ongoing mobile task (e.g. turning, landing) is composed of. The paper argues that parsing is a practice employed by instructors to highlight the sub-actions of a mobile task. Instructors may also use parsing to orient learners to emergent problems to do with the timing, quality and order of the sub-actions in the performance of a complex mobile task. Finally, the paper shows that sometimes there is not enough time to parse an ongoing task, in which case the parsing can be carried out afterwards.

Highlights:

- Parsing is an interactional practice that instructors use to highlight the individual steps of a complex mobile task in real time and to keep the learner “on track”.
- Instructors may use parsing to deal with emergent problems with the timing, quality and order of the sub-actions in learners’ performance.
- Parsing is a flexible practice for dealing with spatial and temporal demands in mobile instruction.

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Introduction

Mobility plays an important part in our everyday lives: we move within, across and between different places and spaces by relying on our bodies as well as on various kinds of equipment and machinery. Some forms of mobility may have to be specifically taught and learnt because they require specialised knowledge, competence and, possibly, a licence (see Haddington et al., 2013: 30; Keevallik, 2013: 347). Consequently, instructing mobility can occur in a range of formal and informal settings that promote learning: for example, instructing someone to ride a bicycle usually takes place in domestic settings, while in many countries instructing someone to ride a motorcycle takes place in specific driving schools. What these various settings have in common is that instruction is accomplished in and through social interaction, and typically while on the move (e.g. Broth et al., 2017; De Stefani & Gazin, 2014; Deppermann, 2015; Gazin, 2015; Levin et al., 2017; Melander & Sahlström, 2009; Rauniomaa, 2017; Rauniomaa et al., 2016).

One of the key aims of instructing-on-the-move is for the novice to learn to take into account any spatial and temporal constraints: for instance, a driver should cross an intersection when the light is green, a pilot take off when still on the runway or a skier adopt an appropriate position when heading down a slope. In many such situations, a failure to produce relevant actions in the appropriate order, at the right time and in the right place could cause some inconvenience or have severe, even fatal, consequences. To adjust their actions in appropriate ways to such local contingencies, the driver, pilot or skier has to be able to parse larger actions into several smaller sub-actions (see Lindwall & Ekström, 2012; Melander & Sahlström, 2009; see also Byrne, 2006). To put it differently, a mobile novice first has to learn to recognise the individual steps that a particular task consists of, and the possible junction points therein, in order gradually, over time, to learn to complete the task in a seamless fashion.

Drawing on video data from three different types of mobile settings, this paper explores how more experienced drivers, pilots and skiers instruct their less experienced co-participants to accomplish relevant mobile tasks and to execute them in appropriate ways in order to make mobility possible or to secure its continuation. That is, we examine how various mobile tasks (e.g. driving a car through a junction, landing an airplane, making a turn on skis) are parsed into recognisable sub-actions by a more experienced participant, an instructor, for the benefit of a less experienced participant, a student. Moreover, we focus on cases in which the instructor guides the student to carry out the steps of a mobile task at a particular point in time and space, in an appropriate order and with reference to other relevant steps in the task and to the mobile situation as a whole. We argue that instructors may employ parsing as a general practice for instructing mobile tasks – and, especially, for guiding students to consider the tasks as ones that can be accomplished without evident hitches – or for dealing with emergent problems in the student's performance of some sub-action (e.g. problems in the overall timing, order or quality of sub-actions). Furthermore, we show that sometimes it is not relevant or even possible to parse an ongoing mobile task in real time and that, in such cases, the parsing may be carried out afterwards, nonetheless making visible the participants' orientation to the constraints posed by space and time on their mobile activities.

This paper draws on the methodology and concepts of ethnomethodological conversation analysis. The studies of social interaction that this paper aligns with are essentially concerned with examining the methods participants use to accomplish social actions in interaction. On the basis of recorded and transcribed naturally occurring interaction, this body of work aims at describing the verbal and bodily resources (including talk, gestures, gaze, body positioning, body movements and object manipulation) and interactional practices that participants employ to construct social actions.

Instructing mobility in interaction

The analyses in this paper are grounded in a new area of mobility studies that explores the interrelationships between social interaction and mobility (see Haddington et al., 2012; Haddington et al., 2013; McIlvenny et al., 2014). Researchers are interested, on the one hand, in how mobility is made possible through talk and interaction, and, on the other hand, in how

talk and interaction are affected by the mobile situation and the different forms of mobility in play. Studies focusing on a range of situations in which interactants are mobile together – such as dancing, walking, driving, cycling and flying (e.g. Broth & Keevallik, 2014; Broth & Lundström, 2013; Haddington, 2010; McIlvenny, 2013; Melander & Sahlström, 2009; respectively) – have shown that in order to understand the interrelationships between interaction and mobility, it is important to consider how social participants coordinate their talk and embodied conduct with respect to the unfolding mobile situation and for the purpose of achieving and maintaining mobility (see Nevile, 2012).

However, few studies have examined how mobility is instructed in actual instances of social interaction. Psathas (1992) and Relieu (1994) both explore the instruction of mobility to visually impaired participants, the former focusing on the use of a cane and the latter on the crossing of a street. Among other things, Psathas (1992) shows how a blind student is instructed to use hearing and touch in order to reconstruct relevant features of the surrounding space. In an aviation context, Melander and Sahlström (2009) examine how instructors and students discuss relevant actions prior to flying, i.e. in a pre-flight briefing session, how those actions are carried out in the airplane during the flight lesson and how they are then recapitulated and assessed in a de-briefing session. Koskela, Arminen and Palukka (2013), in turn, focus on the actions and activities involved in instructing trainees to coordinate and observe mobility in air traffic control.

A few recent studies also show how (the lack of) time and (the limits of) the space in which the participants are moving influence the design of instructions and the production of instructed mobile actions. For instance, in the context of dance instruction, Keevallik (2013) shows how the teachers' deictic expressions – in Keevallik's data, 'here' – in instructions and corrections establish their meaning in combination with on-going embodied movement as well as with when and where the expressions are produced. De Stefani and Gazin (2014), in turn, show how the design of instructions in car-driving lessons varies systematically depending on whether the nominated action is to be accomplished immediately or at some later point: "late" instructions tend to be short and occasionally reduplicated, whereas instructions that come "early" give more time to the instructor to formulate and to the student to perform the projected mobile task before the car reaches the location where the task is due

(see also Gazin, 2015).[1] Furthermore, similarly focusing on car-driving lessons, Deppermann (2015: 74–75) notes that if the student is evidently failing to accomplish the overall mobile task set by the instructor, the instructor may come in to guide the student with corrective instructions. These, Deppermann (2015: 74) argues, "explicitly formulate individual steps of the larger sequence which were tacitly made relevant by the initial request, and they immediately respond to the emerging local contingencies of the student's actions and the changes in the traffic situation". While corrective instructions provide a more granular description of the expected next action by the student, they are typically linguistically elliptical and highly indexical, serving as reminders of actions that the student is expected to know how to perform rather than introducing new knowledge (Deppermann, 2015: 74–75). As Levin et al. (2017) show, instructors in various mobile settings may also unpack corrective instructions, i.e. account for them explicitly, in order to explicate some local contingencies and socialise learners into dealing with them in appropriate ways. It is possible to argue, then, that corrective instructions assume some ability from the learners to parse complex mobile actions into several sub-actions and typically target the learners' accomplishment of those sub-actions. However, not all parsing is necessarily corrective nor does it always attend to learners' problems in accomplishing tasks; parsing is better understood as a general instructors' practice that may, among other things, be employed to respond to or pre-empt potential problems in accomplishing complex mobile actions.

Parsing tasks in instruction

Byrne (2006: 478) argues that

> [a] characteristic of skilled action is that, in physical terms, its organization is invisible. Whether driving a car, uttering a sentence, or baking a cake, all that is physically present to be perceived is smooth, fluid movement.

However, Byrne (2006: 478–479) continues, a skilled participant observing or carrying out the action is able to discern its underlying organisation, to parse a complex action into

[1] Similar observations about how participants communicate whether a particular projected action is to be carried out immediately or at a later time in non-mobile settings have been reported by Parry (2013) and Szczepek Reed et al. (2013).

recognisable elements and reasonable relationships between them. A novice, then, will have to learn how to parse in order to acquire, through practice and over time, the competence to accomplish actions in what appears to be "smooth, fluid movement". Moreover, parsing may also be taught, the novice being guided to accomplish particular tasks step by step. In such cases, parsing may, on the one hand, follow an external pedagogical format, e.g. an instruction manual, that is pre-planned and delivered more or less as a package. On the other hand, because it is impossible to tell in advance whether a finite, known set of sub-actions is adequate to accomplishing a task (see, e.g. Heinemann & Möller, 2016; Levin et al., 2017; Suchman, 2007), parsing may also be tailored to the specific setting and situation under way.

By breaking down a practical task into several smaller steps and thus presenting the task to the learner piecemeal, the instructor is better able to ensure that the learner recognises and manages the steps involved in completing the task (see Lindwall & Ekström, 2012). In a sense, parsing provides moments of instruction that "enable an informed and cumulative sense of the action and the case to emerge" (Sanchez Svensson et al. 2009: 904); that is, occasions for the student to gain insight on how a formal procedure or manoeuvre may be adapted to the local circumstances and contingencies of the particular case at hand. Furthermore, in many settings such parsing makes it possible for the learner to halt and ask for confirmation about certain aspects of the task, before reaching a point at which it becomes difficult to backtrack in the task or impossible to undo some individual steps of it (see Heinemann & Möller, 2016; Mondada, 2014; see also Ekström & Lindwall, 2014). Through practice, over time, the learner may then acquire the competence to accomplish the entire task seamlessly, without further consideration of its individual steps.

Parsing may take place in real time, online (as in 'online commentary', Heritage & Stivers, 1999), i.e. when the task to be parsed is in effect being carried out. Lindwall and Ekström (2012: 31), for instance, note that in a demonstration of crocheting chain stitches, the verbal and embodied actions of a crafts teacher are "interlinked through the use of pace and timing, which further segment the crocheting into recognizable sub-actions". The parsing of an on-going task thus guides the student in identifying the individual sub-actions that the task consists of and in accomplishing them one at a time. By contrast, Melander and Sahlström (2009) analyse how a student pilot learns to recover a plane from unusual attitudes and show how parsing is done both outside the task itself and as the task unfolds. For instance, during the pre-flight briefing session, the flight instructor and the student parse the recovery task in

talk to organise it into an ordered sequence of sub-actions and, furthermore, discuss the consequences of any of those sub-actions being produced late. When carrying out the task in the airplane, however, different aspects of the unfolding situation need to be taken into account simultaneously and the order of the sub-actions may be altered accordingly. Melander and Sahlström's (2009) analysis thus highlights that knowing how to carry out the recovery task requires the ability to perform the correct sub-actions appropriately in the airplane as well as to construct the same sub-actions discursively before (and possibly after) the event.

By analysing parsing as it occurs in real time in mobile situations, we wish to shed new light on this interactional practice of instruction, which is modified to contexts that are constantly changing and that thus continue to present participants with new temporal and spatial contingencies and constraints.

Data

Our data consist of video-recorded, co-present interactions taking place in settings where the participants are involved in a mobile activity – namely driving a car, flying a plane and cross-country skiing. In these settings, mobile activities are made possible through the drivers', pilots' and skiers' timely accomplishment of specific actions according to various spatial, mechanical and technological features (see Nevile, 2007). It should be noted here that these three settings each also involve their own specificities, which may or may not affect the generalisations that can be made. For instance, when driving a car or flying a plane, the instructor and student form one 'vehicular unit' (Goffman, 1963) and, by contrast, when skiing, they can better be considered as individuals who move in a coordinated fashion (e.g. in mobile formations, McIlvenny et al., 2014). Furthermore, driving and flying, for example, can be distinguished by their involving two and three dimensions, respectively, which has an effect on the kinds of positions that participants may adopt and on the kinds of movement and possible trajectories that they have to take into account. Nevertheless, based on observations made in previous studies by ourselves and others and based on the fact that we find cases of parsing mobile tasks in real time across our five different data sets (three on driving, one on flying and one on skiing), and involving four different languages (English, Finnish, Italian

and Swedish), we wish to propose that parsing is an interactional practice commonly employed in a range of instructional settings.

Parsing mobile tasks with reference to space and time

Mobile actions, or tasks, can be considered to be composed of multiple sub-actions that competent drivers, pilots and skiers accomplish in an organised, seamless way in order to move forward smoothly. Experienced car drivers, for instance, do not need to distinguish between stepping on the clutch, moving the gearstick to the second gear by pulling it towards the left and backwards, releasing the clutch until the biting point, and coordinating the clutch release with stepping on the gas pedal (see Broth et al., 2017). For an experienced driver, these sub-actions together correspond to the single task of 'changing to the second gear'. For instructional purposes, however, a mobile task can be broken down into its sub-actions, and made explicit through talk. In the following, we will examine three different contexts for parsing. First, we will explore how parsing is used to explicitly formulate a sequence of sub-actions involved in accomplishing a mobile task. Second, focus will be on how instructors adjust the parsing in a way that is responsive to the learner's actions, orienting to the absence or quality of an action and to the order of actions. Third, in mobile settings situations may arise when immediate action is required (e.g. in order to avoid an accident), and we will examine an example in which parsing does not occur since there is no time to instruct the learner.

In the first section, we present two extracts in which parsing is used simply to highlight the many sub-actions that an ongoing, complex mobile task involves, without treating any aspect of the learner's performance as problematic. Extract 1 comes from a car-driving lesson, and the student is to turn left at a junction. Extract 1 represents a prototypical example of parsing in which the instructor talks the student through a manoeuvre, telling the student what to do and when, while the student is engaged in accomplishing the manoeuvre (see Gazin, 2015).

Extract 1.1. Turning left at a junction (driving instruction; Italian; sg2 _26:37)

```
01      (7.2)*(0.4)*#(0.2) *
   ins       *.....*point front->*
   fig              #1(a)
```

Figure 1(a)

```
02 INS:  *in ci*ma\ vedi che c'è un dare prece↑denza
          at the top  you see that  there is a  give way sign
   ins  >*,,,,,*
03      (1.7)
04 INS: <andremo> verso si+nis+tra\>
         we will go   to    the left
   ins                     +...+gaze left>

((13 lines omitted))

17 INS: +con+trolla col+ ↑fre+no vai giù con la fri+↑zione+
          check       with the brake go   down with   the clutch
   ins  +...+gaze L dwn+,,,,,+                      +.......->+
18      +(0.3)
   ins  +gz L dwn>
19 INS: +metti+ la+ prima\
          put     the first
   ins  +,,,,,+
20      *(0.3)       *(0.8)  *(0.5)
   stu  *RH to grstck*ch.gear*RH to strwhl->*
   stu             +gazes left+->
   ins             +gazes left+->
21 INS: possiamo^an*↑da:re
         can we    go
   stu             ->*
22 STU: +no
          no
   stu  +gz left->+
```

The instructor sets a new mobile task in lines 1–4 by making a place reference with a pointing gesture (Figure 1a), by referring to a location at some distance (*in cima vedi che c'è un dare precedenza* 'at the top you see that there is a give way sign'), and by producing a direction indication (*andremo verso sinistra* 'we will go to the left'). As they then come closer to the junction, the instructor begins to parse the task of turning at a junction into smaller steps, thereby guiding the student and assuring the timely accomplishment of those crucial steps.

First, the instructor tells the student to *controlla col freno* 'check with the brake' and *vai giù con la frizione* 'go down with the clutch' (line 17), referring to two steps that have to be accomplished successively when slowing a car down to stop at a junction. As he produces the two instructions, the instructor monitors whether, and how, the student executes them. Treating the student's conduct appropriate, the instructor then tells the student to change gears (*metti la prima* 'put the first', line 19), and the student does accordingly. While the student is changing gears, both he and the instructor turn to look through the left side window (Figure 1b) and thus orient to the next relevant step in turning at the junction, i.e. checking whether it is possible for them to proceed into the junction (lines 21–22).

Extract 1.2. Turning left at a junction (driving instruction; Italian; sg2 _26:37)

```
23      #(1.2)
   fig  #1(b)

24 INS: vien↑i su+ fino^al punto fri+↑zione vieni su fino^al punto fri↑zione#+
        come    up   until the biting point      come   up until the  biting point
   ins          >+gaze down left-----------------------------------------------+
   stu                              >+
```

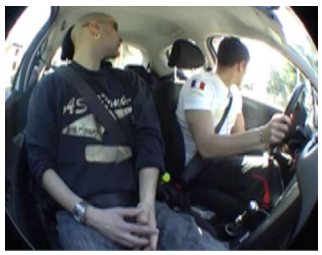

Figure 1(b)

```
25      +(0.4)
   ins  +gaze left->+
26 INS: occhei\ +adesso vai a dare un po' ↑di ↑gas+
        okay      now     go   to give a bit    of   gas
   ins                                          >+
   stu           +gazes left+->
27      (0.7)+(0.9)
   ins       +gazes left->+
28 INS: un po' di più ↑gas+ *occhei +cer*ca la #↑stra*da +passa↑mano+ (0.2) e andia*mo\
        a bit   more gas       okay    look for  the road     hand over hand and we/let's go
   ins                      *..........*point left-*,,,,,,,,,,,,,,,,,,,,,,,,,,,,*
   ins                  >+                              +gaze left+
   stu                           >+
   fig                                      #1(d)
```

Figure 1(d)

```
29      (1.1)*(1.2)
   stu       *starts to straighten the steerwheel
30 INS: o:cchei (0.2) +mettiamo bene+ la se↓conda giù *frizione via* ↑gas*:
        okay           let's put  well   the second  down the clutch  away   gas
   ins                 +gazes down---+
   stu                                                *RH to grstck**ch.gear*->
31      (0.3)*(0.4)
   stu      >*RH back to strwhl>
32 INS: sali al ↑pu*nto
        come up to the point
   ins             >*
33      (0.9)+(0.3)
   ins       +....>
34 INS: +molto bene
         very well
   ins  +gazes at STU->+
35      (0.4)+(2.2)
   ins      >+
```

Once it is possible for them to proceed, the instructor continues to parse the ongoing mobile task: *vieni su finoal punto frizione* 'come up until the biting point' (line 24) and, after acknowledging the student to have done so, *adesso vai a dare un po' di gas* 'now give a bit of gas' (line 26). Again, the instructor acknowledges the student's actions as appropriate and sufficient with *occhei* 'okay', before he goes on to talk the student through the next steps, *cerca la strada*, *passamano* 'look for the road, hand over hand' and *andiamo* 'and let's go' (line 28, Fig 1d), and the student driving into the junction.

Turning at a junction involves a few more steps before it can be said to be fully accomplished: *mettiamo bene la seconda giù frizione via gas* 'let's put well the second, down the clutch, away gas' (line 30) and, finally, *sali al punto* 'come up to the point' (line 32), to change gears and begin to speed up again. By then looking at the student and producing a positive assessment (*molto bene* 'very well', line 34), the instructor treats the entire task of 'turning at a junction' as having been brought to a successful completion. In Extract 1, then, the

instructor employs parsing as a routine practice to highlight to this student in this traffic setting the individual sub-actions that the student needs to carry out to accomplish the mobile task that has been set.

In Extract 2, the setting and task are different from those in Extract 1, but we can nevertheless see the instructor first set the task while still some distance away from the relevant location and then parse the task in a routine manner as the student reaches that location. Here, a parent (instructor) is instructing an eight-year-old child (student) to ski cross-country style.[2] The setting is a makeshift practice skiing track they have made that loops around a playground (see Figure 2a). Extract 2 begins at location 1 where the parent is in a stationary position in the track behind the child, who is busy fitting her gloves through the loops of the ski poles.

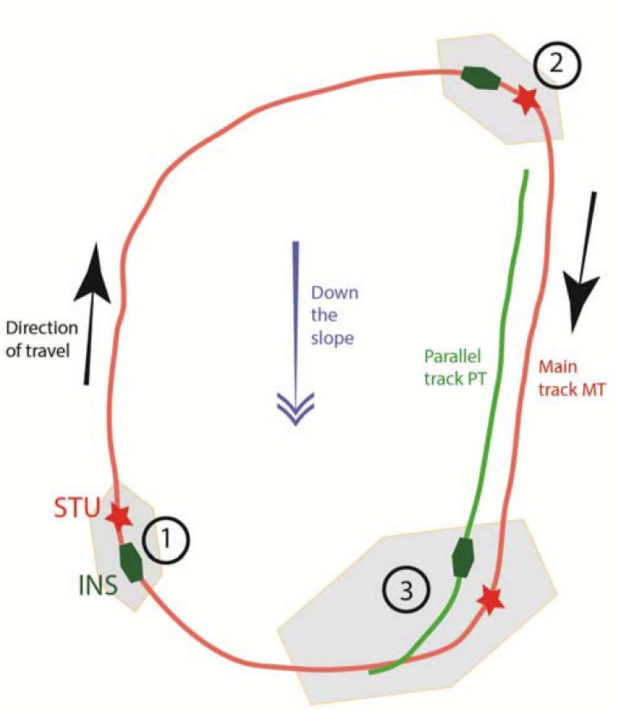

Figure 2(a): Map of track and key locations

Extract 2. Practising turns (skiing instruction; English)

```
01 INS:   now you can't get your sticks=so put your sticks o:n
02        (0.5) and we'll see how fa:st we can go:
03        shall we?
04 STU:   yes
05 INS:   mary wil-=*be from he:re,*
```

[2] "Mary" (line 5) is a third person who is filming but not skiing.

```
   ins              *point down----*
06 INS:   *a:ll the way rou:nd,
   ins    *point in a circle->*
07 INS:   and back to *he:re.*
   ins             -->*point down*
08        (1.0)
09 INS:   *so that means when you get to the bottom
   ins    *point with R-stick-->
10 INS:   of +the hi:ll you've gotta tu:rn
   stu       +gaze right towards location 3-->
11 INS:   and then come back+ onto thi:s* so
   ins                                 -->*
   stu                    -->+

((Lines omitted: INS and STU ski to location 2))

26        ((STU reaches the first turning point at location 2))
27 INS:   +# that's it+ right left, right [left]+, woo +right +left,
28 STU:                                        [woah]+
   stu    +step R ski+step L and loses balance +step R +step L+
   fig     #2(b)
```

Figure 2(b)

```
29 INS:   and on to the track,
   stu    starts down the slope in track MT
   ins    INS follows in parallel track PT
30 INS:   and off we go::
```

The parent initiates the activity by telling the child what they will do on the next loop (lines 5–11), highlighting the turn that will need to be made at the bottom of the inclined section (location 3), but he does not specify exactly how this turn will be negotiated: *so that means when you get to the bottom of the hill you've gotta turn and then come back onto this* (lines 9–11). The parent uses his ski pole to point out the relevant features, and the child turns to look as the parent specifies "the bottom of the hill".

In line 26, they reach the top of the inclined section (location 2), and the parent orients to the child's initiation of the turn on the skis (*that's it,* line 27, and Figure 2b) and then begins to instruct the child in situ as she accomplishes the turn by parsing it into sub-actions. He does this by sequencing and timing the set of movements during the turn with the martial directive "left right" or "right left", according to the turn.[3] Importantly, since this is a right turn when traversing the loop clockwise, it is imperative that the skier first perform a right ski movement followed by a left, otherwise the skis will cross at the front and the skier will fall. There is a short window of opportunity to make the embodied movements, which is also dependent upon the speed of the skier and the curve and extent/steepness of the curve of the track. The rhythm, stress and repetition of the directive "right left" (line 27) are therefore resources for signalling the timing, pace and urgency of this shuffling manoeuvre. The parent is monitoring closely the child's attempts to complete the manoeuvre, both attending to an inadvertent slip and recovery (*woo*, line 27) and moving on in the sequence to successful completion – *and on to the track* (line 28) – followed by the smooth shift into the descent: *and off we go* (line 31).

Extracts 1 and 2 show the general design of the parsing practice: when instructing a student to accomplish a mobile task, instructors actively parse the task – for example, driving left at a junction or turning right on skis – into sub-actions as these become relevant and are to be carried out. The instructor's verbal instructions of the sub-actions are progressively aligned with and sensitive to the evolving spatial situation and the learner's mobile actions. First, this is evident in how each instruction for a sub-action is produced sequentially so that the instruction is followed by the student's action, which in turn is followed by the next instruction, and so on. Second, the instructor's turns are designed with respect to the unfolding situation: in Extract 1, the instructor's 'a bit more gas' (line 28) recognises that the student driver is already giving gas; and in Extract 2, the instructor's *woo* (line 27) orients to the student skier's slip on the skis. It is worth noting, however, that instructors verbalise only a selection of the infinite range of possible sub-actions required for accomplishing a particular mobile task. In Extract 1, for example, the instructor does not mention the movement of the gearstick or the need to step on gas after changing gears. This shows that while parsing a mobile task into sub-actions is a regular and routine practice, the practice itself is always

[3] Martial phrases are useful for coordinating the synchronised movements of soldiers on parade or marching. They provide a regular beat and tempo for footfall, as well as for the correct leg advance.

sensitive to the circumstances of the situation and its contingencies. We shall attend to this in more detail in the next section.

Adjusted parsing with respect to learner's actions

In this section, we show how the way in which instructors parse mobile tasks into sub-actions is evidently sensitive to the learner's actions and local contingencies, such as emerging trouble. We focus on how the instructors orient to the *absence*, *quality* and *order* of sub-actions in a mobile task by adjusting the parsing 1) when an instructed sub-action is evidently missing, 2) when it does not qualify for what has been instructed and 3) when it is produced in an incorrect position, respectively.

Extract 3 continues on from Extract 2 as the child and the parent approach location 3 at the bottom of the slope (Figure 2a). As the two skiers approach the end of the downslope, the parent verbally orients the child to prepare for the turn (line 45).

Extract 3. Turning at the bottom of a hill (skiing instruction; English)

```
45 INS:  +now t- +(1.0) +
   stu   +loses balance +
   stu   +scream +scream+
46 INS:  at the bottom #you're gonna do:::
   fig                  #3(a)
47       #+        (0.5)          +
   stu    +leans forward and glides+
   fig   #3(b)
```

Figure 3(a)

Figure 3(b)

```
48 INS:  right, (.) left right le:ft,
49       #+        (1.5)               +
   stu    +turns R-ski in to slowplough+
   fig   #3(c)
50 INS:  +right left,          +
   stu   +raises poles and stops+
51       #+   (0.5)   +
```

ins +lifts R-ski+

stu +lifts R-ski+

fig #3(d)

Figure 3(c)

Figure 3(d)

52 ***(0.5)***

ins *turns*

53 **+ (0.5) +**

stu +steps to R+

Figure 3(e)

54 **INS: #turn,**

fig #3(e)

55 **((INS continues on track))**

56 **((INS steps out of the track))**

57 **STU: ( )**

58 **((STU walks up to INS over the track))**

After an aborted start, with an ill-timed temporal adverb (line 45), the parent specifies a location (*at the bottom*, line 46) for the child's upcoming mobile action, which was anticipated earlier, and then begins a description of the action. However, the expectable noun phrase to characterise the mobile action (e.g. 'the turn') after the 'you are going to do' construction is delayed by the prolongation of the vowel in *do:::* (line 46). The prolongation postpones the actual instruction or prompt until the child is getting closer to turn and, in effect, gives the child an opportunity to pre-empt the instruction. The prolongation is finally released when the parent directs the child to move her skis because, although she is leaning forward and gliding closer to the appropriate location where she should turn, the child has not yet initiated a turn (line 47, Figures 3a–b). The parent initiates the turn manoeuvre with the martial phrase: "right" (line 48), after a slight delay "left", and then repeats it in quick succession. Similarly to Extracts 1 and 2, this demonstrates an adjustment of the timing of the phrase to the unfolding (in)action as well as an orientation to the aptness and timeliness of the mobile actions to be performed here and now. Thus, as in Extracts 1 and 2, this sequence

comprises parsing in real time of the actionable steps necessary to complete the mobile task that the parent has earlier set as their objective (at location 1 in Extract 2, lines 9–11). However, the child does not at this point follow the parent's instruction and undertake the correct ski movement. That is, the instructed sub-action, the move of the right ski, is missing. Instead, the child moves the right ski into a snowplough position to slow down (line 49, Figure 3c), thus initiating an alternative course of action and, in a sense, abandoning the mobile task set by the parent. The parent, who is monitoring while gliding, hesitates and then repeats "right left" (line 50) to restart the mobile action that was earlier projected and is now noticeably absent. The child comes to a halt, but since the parent is moving and must also either stop or make a turn, the parent passes the child and initiates a turn to the right on the parallel track (line 52, Figures 3d–e). At this point, simultaneously, the child initiates the correct step to the right (line 53). Finally, without any clear view of the child, the parent directs the child to "turn" (line 54). The child steps towards the parent, who instructs the child to re-join the track.

In Extract 4, from another car-driving lesson, the instructor adjusts the parsing in response to the student driver not carrying out a sub-action of the ongoing mobile task to a sufficient or adequate degree; that is, the instructor orients to the quality of the sub-action. Additionally, the extract shows how the instructor and student orient to and act upon a set of locally anchored contingencies. The extract comes from a situation in which the student is practicing a right turn (Figure 4a; see Extract 1; see Haddington, 2010; Liberman, 2013: 11–43). This driving session takes place in a residential area, and the transcript starts as the driver has just completed a right turn at a junction:

Figure 4(a): The junction where the learner is instructed to turn right.

Extract 4. Turning right at a junction (driving instruction; Swedish; ts1_4_k1_23m_57s_24m_23s_Fully_clutch)

01 INS: **tar vi höger här¿**
we make a right here

02 **(0.8)+ (0.8) bl+inkar vi +hö:ger,**
we indicate right
ins +gaze indicator+ +gaze ->+

03 INS: **(1.1)+& (0.4) & >bromsa lite<,**
brake a little
ins >+
stu &indct snd&

04 INS: **(0.6) ne:+r me kopplingen,**
down with the clutch
ins +gaze stus feet->+

05 INS: **(0.5)+(1.7)+e: de ↑fr#itt dä+rifr&ån?#+**
is it clear from over there
ins >+ +....R index point left,,,,+
stu &leans fwd looks lft->&
fig #4(b) #4(c)

Figure 4(b)

06 INS: **(0.4) >NEr& me kopplingen# HE&lt.<**
down with the clutch all the way
ins >&leans back looks strght&
fig #4(d)

Figure 4(c)

Figure 4(d)

07 INS: **å så rattar vi& (2.4) *mm↑* +höj bromsen+ å höj**
and then we turn mm let the brake up and let

```
stu                    &turns SW R ->
INS                                  +RH up     ->+down->
```

The upcoming mobile, navigational task – a right turn – is announced through the instructor's directive *tar vi höger här* 'we make a right here' (line 1). The directive makes relevant a certain set of actions that the student should but does not immediately begin to accomplish. Similarly to Extract 3, the instructor here orients to the student's lack of action and begins to parse the task of turning right into sub-actions by formulating them as instructions to indicate right (line 2), to reduce speed (line 3), to press the clutch (line 4), and to check for approaching traffic in the junction (line 5). Prompted by the instructor's query (line 5) and pointing (Figure 4b), the student is checking for traffic from the left (Figure 4c). At this point, the instructor identifies a problem – that they are approaching the junction too fast – and he repeats that the student must bring the clutch down, this time adding all the way, so as to reduce the speed: *ner me kopplingen helt* 'down with the clutch all the way' (line 6). The instructor's corrective instruction displays his precise orientation to a qualitative problem in the learner's performance to the earlier instruction to press the clutch (line 4), and serves to remind her of the previously identified sub-action (Deppermann, 2015; see also Levin et al., 2017).[4] The prosodic design of the directive (including the fast-pacing of the turn-constructional unit, high amplitude at turn beginning and emphatic stress on 'all the way') displays his orientation – and alerts the trainee driver, who shifts her gaze forward (Figure 4d) – towards the urgency of the situation.

The urgent need for reducing speed, and thus the modification of the instruction of a particular sub-action, is related to the constraints imposed by the environmental configuration: in contrast with Extract 1, in which the parties were acting on a mobile contingency (car approaching from the left), in Extract 4, the participants are dealing with a static contingency – a hedge, which obstructs vision to the left at the junction (Figure 4a). This means that, rather than stopping until the danger is over (Extract 1), the car has to move forward, almost into the junction, before any assessment of the traffic situation can be made. However, it is imperative to approach the point of unobstructed vision at very low speed (known as "crawling speed") so that the driver is able to come to a halt instantly, should she find out that there is a car approaching from the left. Hence, by modifying the instruction and

[4] Similar modifications of parsing occur also in Extract 1: *vieni su finoal punto frizioine,* 'come up until the biting point' (line 24) and *un po' di più gas*, 'a bit more gas' (line 28).

designing it as an urgent command, the instructor is addressing both the spatial and temporal features of the situation, particularly orienting to the student's delayed accomplishment of speed reduction.

The last extract in this section shows how an instructor adjusts the parsing in order to guide the student driver to carry out the steps of a mobile task, that of turning at a circular junction, in the appropriate order. Extract 5 comes from data in which older (59–70 years) drivers are taking part in voluntary post-license training. In the extract, the participants (driver and instructor) arrive at and begin to proceed through a roundabout (Figure 5a). Over the course of the extract, the driver displays some hesitation about what is the appropriate next move and the instructor becomes increasingly involved in spelling out the specifics of roundabouts. It is relevant to note here that while the student – as a road user in present-day Finland – is familiar with roundabouts, she – as a driver who had her most active period of driving a car before roundabouts were introduced in Finland – has relatively little experience of driving through them (the participants discuss this elsewhere; data not shown).

Figure 5(a). The car arrives at a roundabout and eventually the driver takes the third exit. (Orthophoto © Real Estate Department, Helsinki)

Extract 5.1. Driving through a roundabout (driving instruction; Finnish; TRU 2010061522-1 (00:26:49))

01 INS: **tullaan liikenneympyrään hh, eli,**
we're coming to a roundabout so
02 **(.) [meil on kolmio,**

```
                we have the give-way sign
03 STU:        [.mt kierretäänks me nyt ±se.#
                    are we going to go round it now
   stu                     >>LH on wheel±...->±
   fig                                      #5(b)
04 INS:    j:±oo, # meil on kolmio,± #
           yes      we have the give-way sign
   stu     ->±LH fingers on indicator±
   fig            #5(c)              #5(d)
```

Figure 5(b) **Figure 5(c)** **Figure 5(d)**

```
05 INS:    ±väistetään tietysti ×+jo y+mpyrä±ssä [kiertävät,
           we of course give way to those already going round in the roundabout
   stu     ±,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,±
   stu                    >>ahead+left-->
   stu                          ×slows down car->×
06 STU:                                          [joo:,
                                                  yes
07 INS:    °joita ei oo°,×+
           of which there are none
   stu                  ->+
   stu                 ->×
```

Up until the beginning of the extract, the driver has been driving straight down a street. In line 1, similarly with the extracts above, the instructor sets the next mobile task by orienting to an upcoming junction: *tullaan liikenneympyrään* ‘we’re coming to a roundabout’. The instructor’s turn is produced as a noticing which alerts the driver to a change in the traffic environment and foregrounds some features in that environment (line 2). At this point, the instructor does not give any specific directions on which exit to take at the junction or instructions on how to manoeuvre the vehicle through the junction. He also does not begin to parse the mobile task into sub-actions in the same level of detail as in the above cases. This may indicate that the instructor expects the learner driver to have the necessary experience and knowledge for driving in a roundabout, and this turns out to cause trouble.

The driver responds with a request for confirmation about the implications of the instructor's noticing, *kierretäänks me nyt se* ‘are we going to go round it now’ (line 3). This implies a possibly emergent problem and misalignment between the instructor and the driver in terms of what is relevant here and now. Furthermore, towards the end of her verbal turn, the driver straightens the fingers of her left hand so that they lightly touch the indicator, suggesting that she is preparing to use it (Figures 5b–c). The driver thus seems to be dealing with a topical and practical problem: what to do in order to enter the roundabout and/or which exit to take at the junction. Both of the issues remain unresolved as the instructor only confirms that they are to enter the roundabout (*joo* ‘yes’, line 4). The instructor continues to point out a key feature of the traffic environment (*meil on kolmio* ‘we have the give-way sign’, line 4) and further to specify how the sign should be interpreted on this occasion (*väistetään tietysti jo ympyrässä kiertävät* ‘we of course give way to those already going round in the roundabout’, line 5). The use of *tietysti* ‘of course’ in this context suggests that the driver is expected to know how to enter a roundabout and how to interpret a give-way sign. During the instructor’s verbal turn, the driver lifts her fingers from the indicator (Figure 5d) and curls them back around the wheel (Figure 5e). This turns out to occasion the teacher’s increased involvement in the instruction: in line 8, he begins to parse relevant sub-actions involved in turning at a circular junction.

Extract 5.2. Driving through a roundabout (driving instruction; Finnish; TRU 2010061522-1 (00:26:49))

```
08          ×+.hhh ja si+tten vain,
                   and then only
    stu     ×stops car->
    stu      +ahead-----+left+->
09          (0.6)
10 STU:     no nyt [mä voin,
                    so now I can
11 INS:            [lähde+#ttäes×sä (.) käy+tetään v±il+k±#(.)k±+ua,×±#
                    when leaving          do we use the indicator
    stu                ->+ahead------------+left-------+ahead--+left->+
    stu                      ->×drives on--------------------------×
    stu                                              ±....±LH on indicator
                                                               ±,,,,,±
    fig                  #5(e)                              #5(f)      #5(g)
```

Figure 5(e)

Figure 5(f)

Figure 5(g)

12 STU: **×a[:±:,±×+**
stu ×stops car×
stu ±..±
stu ->+ahead+->>
13 INS: **[EI #×±ei ei #siis tultaessa käytetä vilkkua mihinkään vaan,**
NO no we don't use the indicator for anything when entering but
stu ×drives on-->>
stu ±LH fingers on indicator-->
fig #5(h) #5(i)
14 INS: **läthetä#än tähän kiertämään,± [ympyrää,**
let's start going round here the roundabout
stu -->±,,,,,,,,,,,,,,,,,,,,,,,,,,,±
fig #5(j)
15 STU: **[nii?**
yes

Figure 5(h)

Figure 5(i)

Figure 5(j)

16 INS: **.hh ja: kolmannesta [liittymästä po:is,**
and off on the third exit
17 STU: **[(nyt men-)**
(now go-)

While they are still waiting to enter the roundabout and, it appears, in response to the driver's having touched the indicator (line 4, Figures 5b–d), the instructor begins to advise the driver on when exactly to use the indicator: *ja sitten vain* (…) *lähdettäessä käytetään vilkkua* 'and

then only (…) when leaving do we use the indicator' (lines 8 and 11).[5] While the instructor's turn is still under way, an opportunity arises for the driver to enter the roundabout (i.e. there are no vehicles that they should give way to), and the driver lets the car move forward slowly. When the instructor utters *vilkkua* 'the indicator', however, the driver again brings the fingers of her left hand to the indicator (Figure 5f). She lets out a lengthened sound that can be heard as signalling some hesitation or uncertainty (*a::*, line 12), hits the brakes and again brings her fingers back towards the steering wheel (Figure 5g). At this point, the instructor clarifies that *EI ei ei siis tultaessa käytetä vilkkua mihinkään vaan* 'NO no no we don't use the indicator for anything when entering but' (line 13; see Mondada, 2017; Stivers, 2004). The instruction initiates correction on the inappropriate indicator use that the student is visibly anticipating. The parsing thus orients to the incorrect order of the sub-actions in the task of driving through a roundabout (the correct order being slowing down, yielding if necessary, entering, indicating, exiting and speeding up).[6] The driver responds immediately by straightening the fingers of her left hand towards the indicator but does not switch the indicator on (Figures 5h–i). The teacher continues the parsing of the task by producing a directive (*lähetään tähän kiertämään, ympyrää* 'let's start going round here, the roundabout', line 14), during which the driver brings her left hand back to the steering wheel (Figure 5j) in order to turn it. The driver treats entering the roundabout only as one step in a longer sequence of actions by producing a continuer, *nii* 'yes' (line 15), and the instructor continues with another directive, *ja kolmannesta liittymästä pois* 'and off on the third exit' (line 16).

In this section, we have shown how instructors' parsing is sensitive to the local circumstances of the unfolding learning situation. For example, the way in which parsing is achieved displays the instructor's sensitivity to the learner's actions, and in particular to the *absence*, *quality* and *order* of the sub-actions in a mobile task, all of which are essential in instructing-on-the-move. Extract 5 also showed how parsing can be contingent on what the instructor expects the learner to know and master: the instructor started to parse the mobile task into individual steps when it became clear that the learner needed support. In the next section, we

[5] It is worth noting that *lähdettäessä* is ambiguous here in the sense that it could refer to either entering or exiting the roundabout.

[6] Note that turning at a circular junction offers more possibilities for consideration and correction than other kinds of junction: if not certain about which exit to take, a driver may drive around a roundabout several times before exiting. It is therefore possible to consider, for example, entering and exiting as two separate tasks rather than two steps within one mobile task. However, according to common traffic rules in Finland, drivers are expected to use the indicator when exiting a roundabout, not when entering one. In Extract 5, then, the instructor treats the student driver's anticipated indicator use as a step to be carried out later in the task.

discuss a case in which the instructor expects the learner to be able to accomplish the instructed mobile task without parsing. When problems occur, modification is not possible because of spatial and temporal constraints, and the instructor intervenes to take control.

When there is no time to parse

As we have shown in the second section of the paper, instructors may modify how mobile tasks are parsed in relation to a learner's actions or some emerging trouble. As our last extract, we present a case in which a problematic situation arises but there is no time for parsing. In mobile situations it is sometimes not possible to halt or reverse the task in order to clarify or provide further instructions, and manoeuvring is then prioritised over instructing. In Extract 6, a pilot student is practising to touch-and-go on a short runway with a heavy airplane. A touch-and-go is a manoeuvre in which the pilot is required to land and take off within the same traffic pattern and without stopping on the runway. In the case presented here, the manoeuvre does not proceed as expected, and as the analysis will show the participants find themselves in a situation in which there is no time for the instructor to parse the task to guide the student through the manoeuvre. This is due to the fact that they are landing on a short runway and flying a heavy airplane, which means that the margins for landing and taking off are narrow and that decisions have to be made quickly. Consequently, the instructor intervenes by taking control of the airplane and accomplishes the manoeuvre himself, postponing instructions until after the plane has taken off.

Moreover, similarly to Extract 5, this case shows how instructors sometimes expect learners to know how to accomplish a mobile task and thus do not provide any instructions. In Extract 6, the student knows how to land and take off, whereas the specifics of the situation (a short runway and a heavy airplane) are something that he is not used to. When approaching the airfield, the instructor has told the student that the student is going to be responsible for planning the manoeuvre on his own. As in Extract 5, where the student driver was expected to know how to drive through a roundabout, the student pilot here is expected to know how to perform the touch-and-go.

The runway has an evident material shape, stretching over a limited area, thus constraining the pilots' actions and requiring that they carefully plan the trajectory of the airplane in relation to the runway (Figure 6a). When the runway ends, it is necessary to either have taken off or to have reached a full stop. In order to secure that there is time to both land and take off on the restricted area that is available, the pilots identify so-called decision points: one aiming and one go-around/full stop point.

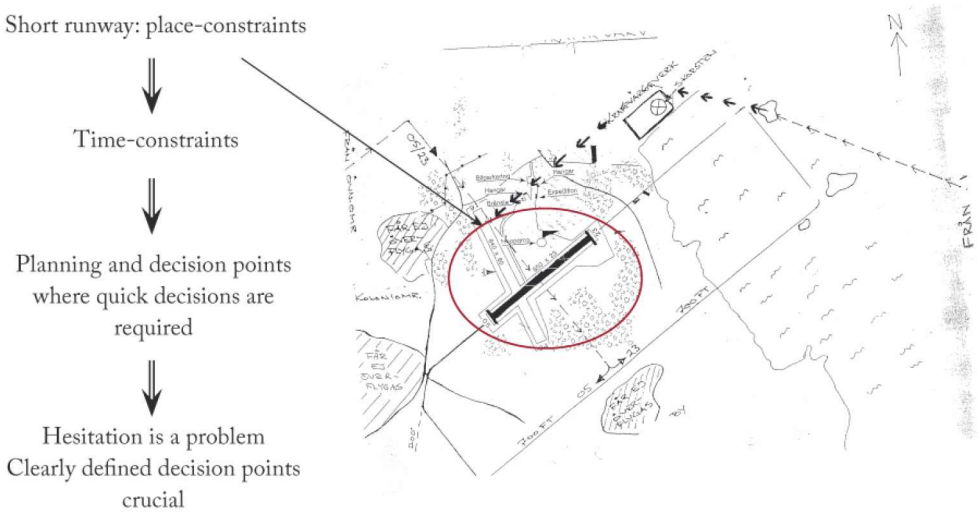

Figure 6(a): Overview of the runway

When deciding on the aiming and go-around points, the participants in Extract 6 are flying parallel to the runway, looking down at it for reference points. The student has already practised one touch-and-go and he is now preparing to do a second. That the student and the instructor both orient to the task as the student's responsibility can be seen in lines 1–2: without being prompted by the instructor, the student pilot initiates the landing procedure by identifying the aiming point and the go-around point.

Extract 6. Landing (flight instruction; Swedish; F2-060509-2.flightlesson2 15.49-18.18)

```
01 STU:   sättningspunkt nura vid siffrena. (.)
          aiming point now then at the numbers. (.)
02        å på*dragspunkt* (1.8)# på taxibanan.
          and go around point (1.8) on the taxiway.
     stu       *.........*gaze right at runway ->*
     fig                        #6(b)
```

Figure 6(b)

03 **(2.0)***

stu >*

((1 min 53 sec omitted))

04 INS: **#*+då så.=va har vi för på å avdragspunkter.**

all right. what do we have as go-around and full stop points.

stu *gaze ahead at runway*->>

ins +gaze ahead at runway+->>

fig #6(c)

Figure 6(c)

05 **(1.2)**

06 STU: **lite lite bortanför (.) taxibanan.**

a little bit beyond (.) the taxiway.

07 **(26.6)**

In lines 1–2, the student identifies an aiming point referring to numbers that are written on the runway and a go-around point on the taxiway. He thus uses what is visually available to the participants when seeing the runway from above (see Figure 6b). At this time, the instructor does not respond to the identification of decision points; instead, he instructs the student to not use flaps when landing and they talk about what the consequences are (lines of transcript omitted). In short, the glide ratio will change so that the student has to start the descent earlier in order to make his aiming point because the glide trajectory will be flatter. When they are approaching the runway preparing to land, the instructor asks for the go-around and full-stop

points, that is the spot where they have to have decided whether to continue and take off or to make a full stop (line 4; Figure 6c). By asking the student about information that he has already provided a moment before, the importance of the identification of decision points is reinforced. The student repeats the 'taxiway' but makes the place reference more ambiguous with *lite lite bortanför taxibanan* 'a little bit beyond the taxiway' (line 6). The instructor does not verbally or visually respond to the student's proposed go-around and full stop point, and they proceed to accomplish the touch-and-go.

Extract 7 begins as the student lands the airplane. The landing is somewhat bumpy because the student forces down the airplane on the runway. This is due to the fact that the student attempts to target the aiming point but the airplane has too much lift power. Three seconds later he adds power (line 1). Adding power turns out to be a problematic action, as they have landed slightly beyond their full stop point. This means that they run the risk of not having enough runway left in order to have the space required for take off.

Extract 7. Taking off (flight instruction; Swedish; F2-060509-2.flightlesson2 18.19-18.40)

```
01          *(3.0)*(1.2)
   stu      *lands the aeroplane slightly beyond their agreed-upon full stop point
   stu            *adds power->*
02 INS:     *av*+#bryter där. avbryt där.+
            abort there. abort there.
   stu      *retracts RH from gas*
   ins          +puts LH on gas+->>
   ins                                    +reduces power->+
   fig       #7(a)
```

Figure 7(a)

```
03          (1.1)
04 INS:     a vi fortsätter da.+(.) du har dragi på redan.=
            a we'll continue then. (.) you've already added power.=
   ins                          >+adds power
05 INS:     =mina roder,
            =my controls,
```

```
06 STU:  dina roder,
         your controls,
07       (14.8)
```

In response to the added power, the instructor produces the imperative *avbryter där. avbryt där* ‘abort there. abort there’ (line 2). It is delivered in a very crisp voice, which together with the repetition of the imperative underscores the seriousness of the situation at hand (see Mondada, 2017). The student immediately retracts his hand from the power lever, as the instructor simultaneously stretches his left hand toward it, indicating that he will take over the control of the airplane. Once his hand is on the lever (Figure 7a), the instructor reduces power but then judges that they have too much speed to be able to stop before the runway ends. He first comments *a vi fortsätter da* ‘a we’ll continue then’ and then provides an account for why he has changed his mind, arguing that the student has already added power: *du har dragi på redan* ‘you’ve already added power’ (line 4). Between the two turn-constructional units, the instructor switches from ‘we’ to ‘you’, thus holding the student accountable for the problematic action of adding power. The instructor then also verbally assumes the position of the flying pilot through the formulaic directive *mina roder* ‘my controls’ that is followed by the student confirming that he is no longer the pilot who is responsible for flying the airplane (lines 5–6; see Melander & Sahlström, 2009: 157). Once the airplane is safely in the air again, the instructor begins to talk about the importance of sticking to your decision points (data not shown).

As we have shown, parsing in real time is an interactional practice in which the instructed and oftentimes embodied activity is formulated verbally. It is a useful practice for instructors in providing them means to instruct or correct the learner in just those moments when such instruction or correction is required – but only when they are not also pressed for time. When in a situation that is highly constrained by spatial and temporal factors, as we have shown in this last section, instructors may employ more direct means of guiding the learner's actions or, indeed, take control and bring the ongoing mobile task to completion themselves. The practice may under such circumstances be used to guide the learner to orient to particular aspects of the situation and setting at hand and, possibly, to take appropriate action immediately. As the analysis of Extracts 6–7 (and, to some extent, Extract 5) shows, in situations that require urgent interference and modification, other actions are required and instructed actions may be withheld until the critical phase has passed.

Conclusion

Drawing on video recordings in which mobile novices are instructed to ski, drive a car or fly a plane, we have examined how ongoing tasks may be parsed into sub-actions in real time, while on the move. Byrne (2006) argues that skilled participants are able to recognise the elements of a complex action that is generally perceived as seamless movement. In other words, they are able to parse a complex action into its constitutive and smaller sub-actions. As to instructional settings in particular, studies focusing on the sequential and temporal details of interaction have shown how instructors can teach tasks to novices by parsing the instructed action, step by step, into its sub-actions (Lindwall & Ekström, 2012; Melander & Sahlström, 2009). These studies have also highlighted the possible advantages of instructional parsing: it can help the learner to recognise and manage the steps of a task (Lindwall & Ekström, 2012); it can help develop a sense of how performing the task is tied to the local contingencies of a particular case at hand (Sanchez Svensson et al. 2009); it makes possible for the learner to stop and request help before it is too late to backtrack the action (Heinemann & Möller, 2016; Mondada 2014; Ekström & Lindwall, 2014).

The present paper complements the research on parsing in interactional situations by showing that to guide the mobile novice in discerning and following the individual steps that eventually constitute a complex mobile task – such as driving a car through a junction, landing an airplane or making a turn on skis – the instructor spells these out as the participants move through relevant points in space and time. The significance of parsing in the above cases arises from the fact that the participants are mobile and thus continuously have to deal with local contingencies, including various spatial and temporal constraints. At times (as in Extracts 1–2), parsing may be responsive to the student's appropriate carrying out of a set task and constitute a means for the instructor to keep the student "on track" on the progress of the task. At other times (as in Extracts 3–5), the instructor may employ and adjust parsing in order to attend to a local contingency, such as the student's not producing relevant sub-actions at all (*absence*), not producing them in an appropriate way (*quality*) or in the correct order (*order*). Finally, in certain circumstances (as in Extracts 6–7), there may be a conflict between the amount of time available and the level of parsing needed. The instructor may deal with

such a practical problem, not by parsing, but by employing more direct, and perhaps invasive, means of instruction.

Parsing as an interactional practice is dependent on the instructor's constantly monitoring the student's actions, or lack thereof, and the instructor's timing and designing consequent instructions and corrections in specific ways (see, e.g. Deppermann, 2015; Ekström & Lindwall, 2014; Levin et al., 2017). By parsing in real time, at exactly the moments when the student is expected to produce particular sub-actions, the instructor is able to do instructing in a focused, condensed and efficient manner. Parsing in real time is a form of instruction that concerns action as it happens and, in this way, it throws into relief the instructor's analysis of what in effect needs to be instructed for this student, on this occasion. Relatedly, in being sensitive to the ongoing production of instructed actions, parsing reveals the instructor's analysis of how, through both verbal and embodied conduct, the student either claims or displays their understanding of what is expected of them in carrying out a task (see, e.g. Hindmarsh et al. 2011; Mondada, 2011; Mori & Yanagimachi, 2015). That is, the ways in which parsing unfolds – if at all – show the instructor's orientation to what the student may be competent enough to accomplish at this stage of the training.

In showing how parsing is adapted to various spatial and temporal constraints as well as to quick emergent actions, our study highlights, on the one hand, the importance for us researchers to examine the instruction of mobile and other practical actions and, on the other hand, the relevance for mobile and other novices to gain real-world experience in practising particular manoeuvres and tasks. Namely, our observations have concerned the artful methods through which the instructor guides the student to deal with the real-world consequences of their actions and to accomplish set tasks in ways that secure the safety of both the instructor–student pair and possible others. For example, the parent attempts to prevent the child from falling in Extract 3 and the driving instructor prompt the student driver to pay attention to other road users in Extract 5. The practice of parsing can be flexibly adjusted – abbreviated, extended, hastened, postponed, etc. – to the local contingencies of a mobile situation as each single sub-action provides an opportunity for the participants to ensure the appropriate progression of the overall, time-sensitive mobile task.

Furthermore, through an examination of instructing-on-the-move, our study serves as a reminder of the multiple sequentialities possibly at play in mobile situations. The students in

our cases are learning to and are being taught to carry out complex mobile actions that are composed of smaller, often sequentially ordered sub-actions. However, these actions and sub-actions have to be adapted to a dynamic, ever-changing world in which participants can only rely on their own anticipation and others' projection of what is to happen next. What is more, different vehicular or mobile units have their own paces, velocities and trajectories that need to be taken into account when mobile and fitted together during any encounters (see McIlvenny et al., 2014). It would therefore be relevant for future studies on instructing-on-the-move also to examine the differences between instructional settings in which the instructor and student share a vehicle, such as a car or a plane, and instructional settings in which the instructor and student move autonomously, such as skiers and motorcyclists. In the latter, instructions are attentive to the relative autonomy of the student as well as to the independent movements of the instructor. With two or more autonomous vehicular units, there is more opportunity for 1) gaining alternative vantage points on the student's action, and therefore better opportunities for adjusted parsing, and 2) modelling or demonstrating the action, rather than verbally dissecting it, for the student as the action unfolds.

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Appendix A. Transcription conventions

Verbal aspects of talk have been transcribed according to conventions developed by Gail Jefferson (see Jefferson, 2004). An indicative translation is provided line per line, in italics. The transcriptions for multimodal analysis follow the conventions developed by Lorenza Mondada and colleagues (see, e.g. Haddington et al., 2013; McIlvenny et al., 2009; Mondada, 2007). The following conventions are used:

ΔΔ	delimit descriptions of one speaker's actions
++	delimit descriptions of another speaker's action
etc.	for each participant, a specific symbol is used
*->	action described continues across subsequent lines
*->>	action described continues until and after the end of the extract
->*	action described continues until the same symbol is reached
>>-	action described begins before the beginning of the extract
….	preparation of the action
,,,,	retraction of the action
cha	participant doing the action is identified in small characters
fig	figure; frame grab

#	indicates the exact moment at which the frame grab was recorded
LH	left hand
RH	right hand