Pointing Gestures as Embodied Resources of References, Requests and Directives in the Car

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Spring 2013
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1. Introduction

Carrying a conversation in a moving vehicle is not always the easiest of tasks, especially for the driver. Possible distractions are myriad, both outside and inside the vehicle. Reacting to changing traffic situations, controlling the car, attempting to calm down a crying child in the backseat, all while trying to navigate safely and responsibly from point A to point B, are just some of the challenges faced every day by motorists worldwide. Combined with the unique conversation setting that is the car, participants being physically arranged in a rather curious formation which effectively hinders eye-to-eye contact and other forms of non-verbal communication, the result is a unique form of communication marked with truncated sentences, abandoned topics and sudden silences.

However, where words fail, participants can always rely on gestures to get their message through. While body-language and gestures differ from language to language, or rather from culture to culture, certain aspects are still considered universal. When wishing to point something out in the environment, human beings often resort to pointing gestures, the archetypical example being an outstretched arm culminating in an extended index finger. While certainly, the way in which the pointing is done and what can be pointed at differs around the world, the typical purpose of the gesture seems to remain the same: pointing gestures are embodied renditions of deictic expressions such as “these”, “there”, “that” etc. They are, in a sense, the perfect example of embodied language, the joint effort of verbal and non-verbal means to create meaning. The pointing gesture alone can carry several meanings and be easily misunderstood. The verbal expression, when performed alone, is similarly lacking in meaning. When combined, however, these two elements form a powerful conversational tool, which can be used effectively to locate a physical referent for joint focus.

Naturally, the physical realities of the car interior also hinder gesturing. For example, the driver would be hard-pressed to effectively point out the gas pedal to the passenger sitting directly behind the driver’s seat. Furthermore, operating the vehicle effectively requires both hands, which can often mean that effective non-verbal communication is of secondary importance to the driver attempting to navigate the streets of an unfamiliar city, for example. This is why one does not tend to see long, archetypical pointing gestures from the driver but rather, more subtle and quick gestures timed so that they do not interfere with operating effectively in the traffic. In other words, the driver is forced to multitask, to perform several lines of actions at the same
time. Yet, despite the restrictions of multitasking and the peculiar conversation setting, the pointing gestures can still successfully carry the original meaning, largely because the driver, consciously or unconsciously, builds them in a way which leaves little room for interpretation.

Finding out how the driver manages to get his or her message through to the participants when placed in a challenging conversation setting can open up new vistas for the study of naturally occurring conversations. Traditionally, research has focused on situations where hindrances to the conversation are rather minimal, and the participants are relatively immobile in their relation to the environment. Examining the methods the driver employs to maintain a natural and flowing conversation despite the sometimes severe constrains presented by the ever-changing environment and multitasking will also help to understand which features of embodied interaction are open to modification under duress, and which tend to remain more or less immutable. From a less theoretical point of view, this type of research can also have practical applications in improving traffic safety. Already, car manufacturers have adopted technology which can monitor the driver’s body for signs of fatigue. Finding out the norms of gesturing in the automobile setting can also help to locate the potential risks involved in it. If this knowledge can be combined with the already existent technology the practical applications are not difficult fathom.

This paper will look into the different ways in which the driver manages to build his or her pointing gestures, so that their original purpose is understood, and their delivery unhindered. Claiming that the sole purpose of the pointing gesture is to locate a referent from the environment for joint focus, and that they are simply the physical representations of deictic expressions, would be a crude understatement. Instead, the gestures are divided into three categories in this thesis. The division is made based on different desired outcomes of the gesture. The first category is the traditional search for a physical referent in the environment, the desired outcome here being the joined focus of the participants on the referent. The second category is that of different types of requests the driver presents to the participants through pointing gestures. The desired outcome here is the fulfillment of the request, through being given an object that is being pointed at, for example. The third and final category is that of directives given by the driver to the participant(s), the desired outcome here being the fulfillment of the issued directives by the recipient.

Several examples from all three categories will be examined to locate the differences and similarities between them. Examples are drawn from three corpora of video recordings depicting actual, real-life conversations taking place in cars. The people in the examples are mostly native English speakers or at least speak English. One example also includes Finnish
speakers. The concept of embodied interaction is extremely important in the analysis, and accordingly, the gestures are analyzed in relation to their location within the verbal counterpart, that is, the speech turn or turns during which the gesture takes place. Particular emphasis is placed on the location of the gesture apex. The physical features and dimensions of the gestures will be examined, most importantly, their visibility to the participants and proximity to the target of the gesture and the verbal element. Furthermore, the form of the gesture is examined to discern possible additional symbolic or iconic elements. Finding whether or not the original categorization is both viable and justifiable is the ultimate purpose of this paper.
2. Description of the Corpus

The examples used in this paper come from three different corpora. All three corpora comprise of a collection of digital video recordings of conversations taking place inside cars. These conversations are all examples of naturally occurring talk-in-interaction, meaning that there is no script and that the participants have not been presented a theme for the conversations. Nor are they examples of so-called institutional talk (Drew & Heritage 1992: 3-6), meaning that the participants are not restricted by a specific goal orientation or institution-relevant identities (doctor-patient, student-teacher, etc.), there are no special constraints on what is considered an allowable contribution to the conversation at hand, and finally, the interaction is not associated with inferential frameworks and procedures which are institution (school, church, etc.) context-specific. In other words, the conversation is free-flowing and the topics and themes change accordingly and often derive from the changing environment.

2.1. Habitable Cars

The corpus used most extensively in this paper is called Habitable Cars. It has been collected by researchers Barry Brown, Eric Laurier and Hayden Lorimer from the universities of Glasgow and Edinburgh for the purpose of studying collective car travel and arrangements, and the social situations which emerge from this. One of the goals of the research was to find different ways to support vehicle sharing, but the corpus also brought about several multidisciplinary research topics, such as electronic map design (Brown & Laurier 2005), and the organization of car travel (Laurier et al. 2007).

Originally, the corpus used by the Scottish researchers included approximately 240 hours of video footage and over 650 indexed clips. The corpus used in this paper is noticeably smaller. The material was gathered in a method developed by Lorenzo Mondada in which two camcorders with semi-fish-eye lenses are set up inside the vehicle(Laurier et al. 2007: 4-5). The result is two camera angles: one from the dashboard, facing the driver and front-seat passenger, and one from either the back-seat hat rack, looking towards the front of the vehicle, or from the dashboard facing straight ahead towards the on-coming traffic. To allow easy attachment and removal as well as reduced vibration and background noise, the camcorders were placed inside soft foam cubes.
The length of an individual clip ranges roughly from 30 seconds to 5 minutes and the participants have had an option to edit or remove any material they did not wish to retain in the corpus. For the most part, the participants in this corpus are native English speakers, or in the least, speak English quite well. The participants are family members and co-workers, or otherwise previously know each other. The setting of the conversations is mostly urban, though some recordings also show less congested areas.

It is perhaps important to note that since this is originally a British corpus the cars in these examples will have the steering wheel on right side of the vehicle, in keeping with the country’s rule of the road regarding left-hand traffic.

2.2. Talk&Drive

The second corpus used in this paper is called Talk&Drive. It is a collection of video recordings made by researchers at the University of Oulu, for the purpose of examining conversations taking place inside cars. Different research topics drawn from the corpus include navigation and turn-taking (Haddington 2010), cellphone and audio device use in cars (Haddington & Rauniomaa 2011a; Rauniomaa 2011), requests as situated practice (Rauniomaa & Keisanen 2010), and in-car distractions on driving activities (Nevile & Haddington 2010).

The Talk&Drive corpus utilized in this paper includes 29 video recordings. The length of the recordings ranges from just a couple of minutes to 20 minutes, with the average length around 10 minutes, producing roughly 4-5 hours of video material all-together. As with the Habitable Cars corpus, the Talk&Drive corpus also includes two camera angles, one from the dashboard facing the participants, and one from the backseat hat rack facing towards the on-coming traffic.

For the most part, the participants in these video recordings are not native English speakers, although English, alongside Finnish, is the dominant language in the corpus. The participants, who represent several different nationalities, are co-workers, family members, and friends. Some of the conversations in the corpus are exclusively in Finnish. However, the examples chosen for this paper are all in English. The recordings have been made in, or around, the city of Oulu, and therefore the setting is relatively urban.
2.3. Kokkola

To a lesser extent a smaller corpus collected solely for the purpose of this research is also utilized. Initially this corpus was collected for the purpose of examining how age and driving experience affect the driver’s ability to multitask between driving and talking. However, it quickly became apparent that for such purposes a much more extensive collection would be required. As it stands, this corpus is comprised of recordings ranging from 2 minutes to 36 minutes in duration, and all together the corpus contains roughly one and a half hours of video material. Unlike Talk&Drive and Habitable Cars, this corpus only includes one camera angle, that of the dashboard camera facing towards the participants.

Participants in these video recordings are family members exclusively. The sole language of the conversations is Finnish and therefore translations are provided for the analysis. For the most part, the conversations take place in a less urban setting than in the two previous corpora. While some examples of urban environment can be observed, the recordings are taken mostly from Finnish country roads.
3. Methodology and Theoretical Background

This section will cover previous work in the field of embodied interaction, as well as the main methodological and theoretical approaches. Conversation Analysis, its tools and principles, form the basis of this research and will be utilized as both an important method and a theoretical basis. Video recordings are an important source of material for conversation analysts, and to supplement this data, careful and micro-detailed transcriptions need to be made. Specific methods of transcribing embodied conduct will also be presented. The three categories of pointing gestures that have been in the corpora are seen as resources which are used to fulfill what conversation analysts call social actions. The concepts of social action and activities will be explored in this chapter. Conversation Analysis is not restricted solely to verbal communication. The term embodied interaction is often used to describe the multimodal nature of human communication. Moving to a more specific topic, gestures, and pointing gestures in particular, the work of Charles Goodwin forms a solid basis from which many terms and ideas, used also in this paper, are derived. Finally, the concept of gesture witnessability, as described by Maurice Nevile (2007), is also an important cornerstone of this research.

3.1. Conversation Analysis

Conversation Analysis is a discipline developed in the late 1960s and early 1970s by the sociologist Harvey Sacks. It was later developed further by his associates Gail Jefferson and Emanuel Schegloff. Conversation Analysis is an approach to the study of social interaction, both verbal and non-verbal, with a specific focus on the co-operative nature of human communication. It sees conversations not as a series of monologues, but as collaboration, mutual effort for creating meaning and understanding. Both the speaker and the participant are seen as responsible for the fluent continuation of the conversation. Conversation Analysis remains to this day an invaluable empirical and methodological tool for examining everyday organization of social interaction. Within CA, analysis of these interactions has always been based on recordings of actual conversations, meaning that findings are based on actual empirical data.

The theories and practices of Conversation Analysis have been refined and updated throughout the years but the very basic principles were laid down by Sacks himself. Early on, Sacks became convinced that naturally occurring conversations were not as chaotic and disorganized
by nature as they appear. Instead, an underlying organization could be found in all conversations, some of the aspects of this organization were as follows: only one speaker tends to speak at a time, transitions from one speaker to another tend to happen with a small gap and very little overlap, and certain techniques seem to exist for nominating the next speaker. The basic building block of this natural organization is the turn. Turn-taking is the basic form of organization for conversations, and turn-construction and allocation follow a systematics of constructions and rules (Sacks et al. 1974). Turns are divided into turn-constructional components which carry the actual message, and turn-allocation components which determine so-called transition relevance places and the next speaker. Turn allocation is decided in the transition relevance places, where the current speaker may select the next speaker, or self-selection may occur, depending on the construction of the current turn. By comparing their systematic of constructions and rules against the following factual observations, made on naturally occurring conversations, Sacks, Schegloff and Jefferson proved the functionality of their system and the over-all strength of the conversation analytic approach to interaction:

Turn-taking as the basic form of organization for conversations accounts for the fact that:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>(1)</td>
<td>Speaker change recurs, or at least occurs.</td>
</tr>
<tr>
<td>(2)</td>
<td>Overwhelmingly, one party talks at a time.</td>
</tr>
<tr>
<td>(3)</td>
<td>Occurrences of more than one speaker at a time are common but brief</td>
</tr>
<tr>
<td>(4)</td>
<td>Transitions (from one turn to a next) with no gap and no overlap are common. Together with transitions characterized by slight gap or slight overlap, they make up the vast majority of transitions.</td>
</tr>
<tr>
<td>(5)</td>
<td>Turn order is not fixed, but varies.</td>
</tr>
<tr>
<td>(6)</td>
<td>Turn size is not fixed, but varies.</td>
</tr>
<tr>
<td>(7)</td>
<td>Length of conversation is not specified in advance.</td>
</tr>
<tr>
<td>(8)</td>
<td>What parties say is not specified in advance.</td>
</tr>
<tr>
<td>(9)</td>
<td>Relative distribution of turns is not specified in advance.</td>
</tr>
<tr>
<td>(10)</td>
<td>Number of parties can vary.</td>
</tr>
<tr>
<td>(11)</td>
<td>Talk can be continuous or discontinuous.</td>
</tr>
<tr>
<td>(12)</td>
<td>Turn allocation techniques are obviously used. A current speaker may select the next speaker (as when he addresses a question to another party); or parties may self-select in starting to talk.</td>
</tr>
</tbody>
</table>
Various ‘turn-constructional’ units are used; e.g., turns can be projectedly ‘one word long’, or they can be sentential in length.

Repair mechanisms exist for dealing with turn-taking errors and violations; e.g., if two parties find themselves talking at the same time one of them will stop prematurely thus repairing the trouble.

(Sacks et al. 1974: 700-701)

It is important to note that the factual observations above apply primarily to casual conversations, the initial focus area of CA. Later on, the focus also turned to so called institutional interactions, where these observations may not apply as such; e.g., conversations between a doctor and a patient follow certain conventions when it comes to allocating the next speaker. Similarly, the length of a sermon is often specified in advance, as is the content. However, in the context of this paper, cases of institutional talk are non-existent, as all the conversations adhere to the above fourteen observations, and to the observations of systemacticity of turntaking made by Sacks, Schegloff and Jefferson (1974).

3.1.1. Transcription Methods

To assist in the analysis, specific parts from the video recordings have to be transcribed. There are, of course, several different transcription conventions in use world-wide. The methods and symbols used in this paper follow the Santa Barbara transcription conventions (Du Bois et al. 1993). Full list of specific transcription symbols can be found in the Appendix. For the sake of anonymity, any personal information, such as participant names have been altered, to such an extent that the natural rhythm of the speech is not disturbed, for example: “John” may be changed to “Jake”. Naturally, the need to include renditions of body language, have caused certain modifications in the transcripts. The following fictional example demonstrates how embodied conduct has been transcribed in this thesis.

Extract 1: “Example transcript of embodied conduct”

```
01.DRV:   p   Hey can you see that?
        drv:   p,------
02.PAS:   Yeah very cool.
        drv:   ----...p
```
The first line of the extract represents the verbal element, the speech unit, while the second line, in italics, represents a pointing gesture. The pointing gesture is divided into three sections: the build-up, the apex, and the retraction. The first p represents the beginning of the gesture, the string of comma symbols (,,,) represent the build-up of the gesture, the sequence of hyphens (---) represents the apex, i.e. the culmination point of the gesture, the period symbols (…) represent the retraction phase of the gesture, and finally the last p represents the end of the gesture. Underlining is used to demonstrate the gesture’s relation to the verbal component: the underlined sections of speech take place during the gesture. If the gesture begins before the actual verbal component the p symbol is placed in the line representing the verbal element (line 01 in the extract) as well. In some cases, the pointing gesture may transform to another gesture, or vice versa. For example, the driver may request for a cell phone by first pointing at it, and then turning the palm of the hand upwards. Such instances are transcribed with the double brackets (( )) symbol, as is shown in Extract 2:

**Extract 2: “Example of pointing gesture transformation”**

```
01.DRV: Hey can * you hand me that phone?
    drv:   p,,,--------- ((the driver turns her palm upwards))
```

In addition to the transcripts pictures from the conversation situations are also included. In the transcripts the exact moment of the taken picture relative to talk is represented by the asterisk (*) symbol. In keeping with the idea of anonymity, the pictures are blurred, so that the identity of the participants cannot be discerned. The transcripts used in this paper are not phonetic, meaning that specific phonetic or dialectic features will not be rendered, unless they bear a specific importance for the successful understanding of the example situation.

In the transcripts, the driver will be identified by the DRV tag. The front-seat passenger will be tagged as PAS1. Since some of the examples are taken from vehicles with right-hand steering, and some from vehicles with left-hand steering, it is important to specify the tags of the back-seat passengers. In all examples, the passenger sitting behind the front-seat passenger will be tagged as PAS2 and the passenger sitting behind the driver will be tagged as PAS3. In some cases, the conversations of the back-seat passengers may be omitted if they do not affect the driver’s actions in any visible way. This is done for the sake of keeping the transcripts as tidy and readable as possible.
3.1.2. Social Activity and Action

The most central question for conversation analysts is “why that now?” (Schegloff & Sacks 1973: 299). Why does the speaker produce seemingly irrelevant “uhms” and “uhhs”? Why are certain expression always preceded or followed by others? This question reflects what Conversation Analysis ultimately attempts to describe, the natural sequentiality and organization of social interaction. Organization does not only apply to speaker allocation, to who can speak next. Social interaction can also be understood as a series of actions organized into sequences which fulfill certain social activities (Haddington et al. In press).

The concept of social activity as the basic building block of all human interaction can be thought to derive from Harold Garfinkel’s ethnomethodology. Garfinkel saw everyday life as a series of social activities such as talking, eating together, sharing a car etc. (Garfinkel 1967). These activities do not happen at random, but are organized through so-called “methods”, which, in the context of CA, are known as social actions. Social activities can be layered on top of each other, and several of them can be occurring at the same time. For instance: the social activity of going to work could co-occur with, and be constructed of, activities such as picking up a co-worker, driving, parking, discussing a project, and requesting for directions.

To organize and fulfill social activities people talk to each other. In other words, talk functions as a social action (Nevile & Rendle-Short 2007: 30.1-30.3). The range of social actions that are fulfilled through talk is extensive: people ask questions, accept, decline, greet, demand, and apologize, just to name a few. It is important to note that social actions are always heavily context-dependent. Social actions derive their meanings from the interactional context from which they emerge (Haddington et al. In press). For example, simply uttering “there” by itself can carry several potential meanings. If, however, the context is known, let us say “There.” is preceded by the utterance: “Where do you live?”, the meaning of “There.” can be narrowed down to referring. Here than the question “why that now?” becomes relevant. To have meaning certain social actions may have to be preceded by others, or similarly may have to be followed by others.

When the interactional and physical context of a social action is known, a social activity begins to unfold. For instance, the social activity of navigating could be comprised of such social actions as: questions, responses, directives, assessments and displays of gratitude. Navigating, then, can be part of a larger social activity of carpooling for example. Similarly, in the context of this research, each of the three central social actions, are context-dependent. The social action of requesting for something would naturally be followed by a response of some kind. This kind
of fixed sequence of social actions is known as an adjacency pair (Schegloff & Sacks 1973: 295-299), which can be seen as the most basic level of social activity. Naturally, not all social actions are organized into adjacency pairs. However, action is followed by action, which creates a sequence, and it is this organization in to sequences which allows participants to create meaning and display their understanding of the interaction situation. Ultimately, all social life is structured around the sequential organization of social actions (Haddington et al. In Press). In the context of this paper, the three most essential social actions are requesting, referring and directing.

3.2 Embodied Interaction

Initially, conversation analysis focused mainly on verbal communication. This was largely due to the fact that the available technology, mainly audio recordings, did not allow analysis of the embodied and multimodal features of the language. This does not mean that researchers did not recognize the importance of non-verbal interactional resources for creating meaning. Quite the contrary, Kendon saw non-verbal and verbal communication as inseparable, and argued that theories based solely on the study of speech, would not be sufficient to describe language as a whole (Streeck et al. 2011: 7). After video tapes became widely available in the 1970s, researchers began to be able to conclusively prove the indivisible connection between verbal and other semantic means of communication (Streeck et al. 2011: 7-8). Today, interaction is understood to be comprised of several semantic resources, of which speech, though central, is only one.

When looking at how people produce social actions, one finds a multimodal selection of methods, some of which, when applied alone may create meaning, but more often than not have to be combined with each other to perform a social action. Goodwin argues that these semantic methods, or resources of interaction, when performed together create a whole which is greater than its constituent parts (Streeck et al. 2011: 2). Being able to combine different resources, such as speech, gesture, and gaze, allows the speaker to perform a variety of actions (Streeck, et al. 2011). For example, an embodied reference, as understood in this thesis, comprises of speech and gesture, combined with contextual resources. This combined effort of verbal and non-verbal means to create meaning is called embodied interaction. The multimodality of language is essential for the smooth organization of social interaction, the sequence structure of conversations, as has been shown by Charles Goodwin’s research on how an aphasic speaker
organizes social actions and manages to create meaning, despite serious limitation to the ability to produce speech (Goodwin 2003a; Goodwin 2000).

In addition to speech and embodiment, contextual resources are also important for the understanding of the situation. Charles Goodwin has researched the ways in which the environment and the environmental resources, i.e. different semiotic fields, assist in performing social actions. Participation and activity frameworks (Goodwin 2003b: 221-223) help define the context of the interaction situation. Participation framework describes how the participants orient to each other bodily, and who can be considered a participant. Activity framework is used to describe the setting of the social activity at hand, and creates a “shared world of perception and action” (Streeck et al. 2011: 2). In the context of the car for example, if the driver says “Could you hand me the registration book?” the participants’ internal understanding of the participation and activity frameworks automatically means that the front-seat passenger is understood as the primary recipient, and that he or she is expected to open the glove compartment to locate a specific set of documents.

For the purpose of this thesis, the most important semantic resources, in addition to speech, are gestures. Speech and gesture are typically used in tandem to perform a social action, whether it is a reference, request or a directive. In the field of gesture studies the defining question has been whether gestures should be seen as a separate means of communicating or as an integral, and supporting, component for the verbal semantic resource. The tendency of the earlier research has been to study gestures separate from the interactional context, but with the development of multimodal interaction research, researchers have begun to focus on speech and gestures as co-operational resources of the interaction process (Haddington & Kääntä 2011: 16). Adam Kendon has researched the connection of speech and gesture and categorized different forms of gesture use, based on how mandatory part is speech considered to be for the understanding of the gesture (Kendon 1988). For example, gesticulation is considered to be reliant to large extent on speech, while pantomime is considerably more independent from verbal communication. According to Kendon (1988) gestures can function as separate from the verbal component, but more often than not they are produced alongside speech to supplement meaning. The Kendonian way of studying gestures is criticized for being speaker-centered, meaning that the role of the recipient is often ignored, a criticism expressed by Kendon himself (Haddington & Kääntä 2011: 19). This thesis will attempt to take into account the recipient’s point of view as well, with the help of Maurice Nevile’s theory on gesture witnessability (Nevile 2007).
Gestures can be classified in many ways, for example according to their function (Cadoz & Wanderley 2000) or linguisticity (Kendon 1988). When looking at gestures which function in tandem with speech, David McNeill’s division stands out as practical. McNeill (2000) classifies gestures as iconic, which for example describe the shape of an object; metaphoric, which can replace a verbal sentence element, and which often describe an abstract idea; beat-gestures, which are performed in rhythm with the speech; and finally, as deictic, which can single out targets in the environment. The gestures in the final category are focal point of this thesis.

3.2.1 Pointing Gesture

Pointing gestures have been studied from a wide variety of scientific viewpoints ranging from anthropology and primatology to linguistics and semiotics. While the approaches are fundamentally different, researchers agree that the study of pointing gestures is important for understanding human interaction. Sotaro Kita (2003: 1-2) offers four reasons why pointing is such a foundational building block of human communication. Firstly, pointing is ubiquitous in day-to-day interaction. When establishing a referent in the speech situation, human beings almost inevitably resort to pointing gestures. Secondly, primatological research suggests that pointing is a uniquely human behavior. Thirdly, pointing is one of the first communicational resources learned by infants. Finally, pointing gestures do not merely establish a link between the participants and the referent, but can also contain further, e.g. iconic or metaphoric, meanings.

It is important to note that a pointing gesture can have a wide variety of social functions, such as speaker selection and holding the floor (Mondada 2007) Furthermore, additional iconic and metaphoric features can mean that several different social actions and activities can be happening at the same time, with the same gesture, the deictic feature functions as a resource to one, and the iconic to another for example. The potential additional meanings related to pointing gestures can mean that singling out a single social action which the pointing gesture is used for, such as directing in this thesis, can be difficult. However, even though pointing gestures may have multiple purposes, all of the cases found in the corpora used in this thesis were primarily used either for embodied reference, requesting, or directing, meaning that any additional purposes were of secondary nature for the social action at hand.

The importance of the pointing gesture for social interaction is well established among researchers, as are some of the central features of the gesture. Kendon and Versante (2003: 112) describe pointing gestures as gestures which are “regarded as indicating an object or location
that is discovered by projecting a straight line from the furthest point of the body part that has been extended outward into the environment”. Kita sees the prototypical pointing gesture as a communicative body movement that projects a vector from a body part. This vector indicates a certain direction, location or object.

(Kita 2003: 1)

What can be then considered as universal features of a pointing gesture are that a vector is projected from, a typically extended, body part, and that this vector has a certain target.

Charles Goodwin has looked extensively into the contextual frameworks related to pointing gestures. Goodwin sees participants performing the pointing gestures through a range of semiotic resources (Goodwin 2003b: 221-225). Some of these resources are considered essential for the understanding of the gesture. Firstly, there must always be a visible body performing the act of pointing. Secondly, there has to be talk which elaborates the act of pointing. Vice versa, the pointing gesture can also elaborate the talk, as some of the examples in this thesis show. Thirdly, the properties of the space which functions as the target of the point also have an impact on the interpretation of the situation. Finally, the orientation of the participants towards each other, the target of the point, and the larger social activity at which they are engaged, i.e. the participation and activity frameworks explained earlier, are also essential if the pointing gesture is to be considered a meaningful act (Goodwin 2003b). Goodwin also sees a clear difference between the target of the pointing gesture and the actual area to which the participants focus their joint attention. Goodwin calls this area the domain of scrutiny (Goodwin 2003b: 221). In the context of a lecture for instance, the target of the pointing gesture may be an equation on a chalkboard, while, depending on the contextual resources of the lecturer (laser pointer, postural orientation towards the chalkboard, the quality of eyeglasses etc.) the domain of scrutiny may actually be the entire chalkboard, a section of it, or the target itself. Simply put, the domain of scrutiny is the area where the participants should turn their focus in order to locate the referent.

As mentioned above, earlier research into gestures is often criticized for being subjective i.e. for being too speaker centered. Recent studies on pointing gestures such as Goodwin’s ideas on domain of scrutiny (2003b) do take into account the recipient’s point of view as well. Hindmarsh and Heath (2000) have conducted research on workplace deixis which has shown that speakers do tend to modify their body posture and gesture delivery to better facilitate as unhindered recipiency as possible. Maurice Nevile’s research on embodied interaction between airline pilots (Nevile 2007) is, however, perhaps the first attempt to describe social interaction
primarily, and completely, from the viewpoint of gesture recipiency. Nevile describes pointing gestures according to their witnessability from the point of view of the recipient, and separates three categories of pointing gestures. Not-for-witness gestures are performed far from the actual target of the point, often from “home position” (Sacks & Schegloff 2002), i.e. the rest position. These gestures are not necessarily meant to be seen by the recipient and the social action they serve can be fulfilled without them, primarily with speech alone. Witnessable gestures are performed in the recipient’s likely field of vision, closer to the target, and further from the home position. The role of the gesture as a resource of social action is greater than in not-for-witness gestures. For-witness gestures are performed at the target itself, and they are designed to be seen by the participant. Nevile (2007) suggests that the closer to the target the pointing gesture is performed and the more witnessable it is, the more immediate attention is required from the recipient.

Nevile’s research on interaction in airline cockpits is a continuation of studies related to so-called “professional vision” (Goodwin 1994). The focus is on professionals performing work related tasks. If a pilot points at a button, some kind of response, embodied or purely verbal, is typically expected of the co-pilot as well. This is not the case in the automobile context. While research has shown that driver and passenger can share a certain responsibility for navigation (Haddington 2012, Haddington & Rauniomaa 2011) the passenger is not “professionally” responsible for the smooth continuation of the journey, and is not typically expected to handle the car’s control devices. Furthermore, the environmental surroundings of the airline cockpit are relatively static when compared to that of the car. While an airplane is certainly a great deal more mobile than a car, the airline pilot may not actually receive a wealth of visual stimuli from outside the vehicle to the same extent as the driver. The focus of the pilot is more often on the control devices, while the focus of the driver is also on the traffic. In most cases this confines the potential targets of the airline pilot’s pointing gesture to the inside of the cockpit, while the driver faces new potential targets after every turn of the road. This thesis studies the ways the driver performs pointing gestures in an essentially mobile, stimulus-rich environment, so that they become understood as constituting a social action. A specific focus is on the recipient’s point of view and the role of gesture witnessability in creating meaning.
3.3 Car as a Conversational Setting

Outside the domain of engineering, research conducted on cars and driving can be seen to follow two paths: that of driving safety research, most noticeably through the theories and methods of psychology, and that of social sciences (Haddington et al. 2012: 103-105). While the cognitive approach tends to focus on the individual skills and short-comings of, and distractions to the driver, the sociological approach is more interested in the effects that driving and sharing a car can have on all participants. With the help of new technology, interaction analysts too are becoming more and more interested in examining how conversations are structured in this rather unique setting. The seating arrangements alone hinder face-to-face conversation, and present very physical impediments for embodied interaction in its traditional sense. Mobility and the constant need to multitask between driving and talking is another tangible challenge, especially for the driver. Conversation analytic approaches have looked into the unique ways that participants account for and react to the challenges of the mobile, semiotically-rich, and secluded automobile environment.

Most studies on automobile conversations tend to agree that the greatest differences between face-to-face conversations and those taking place inside a car derive from mobility and the need to multitask. New stimuli are constantly presented to the driver, who has to divide his attention between the interaction and the handling of the car. Mondada has looked into the ways that participants organize multiple simultaneous activities during car journeys (Mondada 2012). Mondada’s research shows how a wide selection of embodied resources, such as gaze and gesture, can be used to display the primary activity or activities that the participant is engaged in, as well as the sequential relation of these activities. Despite the extensive arsenal of resources, multitasking is not always successful. Nevile has studied the disruptive effects of social interaction on driving activities and how the embodied conduct of the driver displays these distractions (Nevile 2012). The effects of mobility, the ever-changing environment, have also been studied to great detail. Haddington, together with his colleagues, has studied the ways in which participants orient to the social activity of navigation and route selection, and how navigation is sequentially initiated and conducted in the spatial framework of a moving car (Haddington 2012, 2010; Haddington & Rauniomaa 2011; Haddington & Keisanen 2009). Goodwin and Goodwin have looked into to the way environmental noticings, derived from changing landscapes, may or may not prompt a new topic for the conversation (Goodwin and Goodwin 2012).

Common for all studies, is the finding that participants strive to maintain the natural sequentiality of the conversation by modifying already existing semiotic resources to best suit
the dynamic environment, or by developing entirely new methods to answer the challenges of automobility. This thesis will look more closely at one of these resources, the pointing gesture, and attempt to describe the different ways the driver applies and modifies it to best fulfill different social actions and thus ensure the smooth continuation of both the conversation and the journey.
4. Analysis

This thesis will look into the linguistic and embodied resources the driver has at his or her disposal, and the way these are used for fulfilling three different social actions: reference, request and directing. Specific focus is on the pointing gesture, and how it is used in cooperation with other resources such as talk, and how it is modified to best suit the confines and challenges of the automobile setting. Features that will be explored include the gesture’s witnessability, physical form, duration, potential additional meanings, and domain of scrutiny.

Perhaps the most archetypical and classic example of a pointing gesture, at least in the context of the Western world, is the outstretched arm and index finger indicating the direction of the point. As might be expected, the confines of the automobile make this gesture, if not nonexistent, then very rare in the least. The purpose of this paper is not to attempt to describe what the typical pointing gesture in a vehicle is like. However, certain features do tend to recur within and, in some cases, across the three categories. Therefore, each section of the analysis begins with examples that best describe the characteristic features of each category. Assuming that conversations always follow these characteristics would naturally be an oversimplification and, accordingly, the sections also include more complex situations where the features do not automatically comply with what may be considered as the established typical characteristics. The reasons for these different cases will be examined and analyzed. Furthermore, the final two sections of the analysis are dedicated solely to examples which do not fall strictly to any of the three categories but display signs from several categories.

4.1 Embodied Reference

The first social action explored will be that of referring. Out of all three categories, this is where the importance of the embodied resources is perhaps the most pronounced, or at least fixed. While in certain cases referring can be performed solely with verbal resources, typically, however, a pointing gesture and a verbal reference are combined to create meaning. Referring can be a part of a multitude of social activities, such as storytelling, finding a new topic for the conversation, or asking a question. In the very least, a response or a reaction is expected from the recipient. In a sense, from the recipient’s point of view this is perhaps the simplest social action of the three. All that is required from the participants is the shifting of the gaze and
perhaps a verbal confirmation of some sort. In short, an adjacency pair of reference –
response/reaction can be expected to occur.

Referring can be described as a situation where the driver attempts to create a joint focus with
one or more participants. The referent can be found from both outside and inside the vehicle, it
can be a physical object, a distinct feature of the environment, or something less concrete such
as a direction.

The very first example is from the Habitable Cars corpus. It features a family driving together in
countryside. The driver comments on the beautiful scenery to which the front-seat passenger
responds with a positive reply. Throughout this conversation the back-seat passengers, the
children of the family, are singing a song which for the purpose of clarity has been omitted from
the transcript.

Extract 3: “Embodied Reference 1”, Habitable Cars.

01.DRV: Look at that scene.
        Drv:                                                               P
02.DRV: Isn’t* that beautiful?
        Drv:  ------------P
03.PAS1: Mmh.
04.DRV: #It’s stunning.

*“Isn’t..”

This is a relatively simple example demonstrating the basic elements of embodied reference.
The most important feature of gestures in this category is that they are relatively unassuming,
meaning that their witnessability (Nevile 2007) is low. In this extract the driver performs the
gesture with his right hand, which in this British example is the peripheral hand from the point
of view of the recipient, the front-seat passenger. Performing the gesture with the left hand
would have made the gesture more witnessable. What is more, the driver performs the gesture
while keeping his right hand very close to the steering wheel, and towards the end of the gesture
actually brings the hand to rest on top of it. Therefore, while the performing hand is
comparatively high, at shoulder height, the gesture itself is not particularly witnessable, and is
actually seamlessly combined with the activities of driving. Accordingly, the gesture does not
draw the recipient’s gaze to itself; instead, the front-seat passenger continues facing straight
forward and simply responds with a rather minimalist verbal “mmh” particle. In this example,
the front seat passenger’s gaze is already on the direction where the driver is pointing at.
Whether or not there is already joint focus on the beautiful scenery, the driver does recognize
that the recipient is already gazing in the desired direction, which may be the reason this gesture
is so inconspicuous. When the recipient’s gaze actually has to be directed to the desired
location, the gesture may become more witnessable, as the examples discussed later in this
thesis will illustrate.

Another aspect of embodied references is that there is typically only one apex, which tends to
coccur with either verbal deictic expressions such as ‘these’, ‘those’, ‘this’, ‘that’, or with the
verbal representation of the target, in this case the word “scene”, on line 01. In this example,
the apex, the culmination point of the gesture, takes place during the words “that scene. Isn’t”,
making this a typical example of embodied reference.

Here, it is perhaps important to again create a distinction between the verbalization of the
referent, the target of the point, and the domain of scrutiny. The verbalization of the referent is
the “target” of the verbal component, often, though not always, the object of the sentence. In
this example, the verbalization of the referent is “that scene” on line 01. The target of the point
is what the gesture is aimed at; in this case, the beautiful scenery acts as the target. Finally, the
domain of scrutiny is the area to which the gesture actually draws the gaze, or the focus of the
recipient. Due to the fast, unassuming nature of the gestures in this category, the domain of
scrutiny is often relatively vague when compared to the verbal element.

Another typical feature of the embodied reference is that the verbalization of the referent and
the target of the point are often the same whereas the area where the domain of scrutiny is
formed may be different. In this example, the domain of scrutiny can be seen as the area in
front of the vehicle in general. It is true that in this particular example the beautiful “scene” can
be understood as “everything right in front of the vehicle” and thus, the domain of scrutiny
would actually be formed very close to the target of the point and the verbalized referent. The
second camera angle reveals, however, that the car is moving down an incline and that the
beautiful scene which prompts the driver’s referring action is actually comprised of a distant
meadow and a tree line, both of which become more visible during the descent. Therefore, while
the verbalization of the referent and the point itself may be targeted at the distant scene, the
unassuming form of the gesture means that the domain of scrutiny is actually the area in front of
the car in general, and therefore off the actual target.
The next extract is from the Kokkola corpus, and it features a father and a son on a fishing trip. The participants are driving to a lake and discussing the advantages and disadvantages of speed cameras when the father notices a group of swans on a nearby field to the right.

*Extract 4: “Embodied Reference 2” Kokkola, tape 2, 19:48 - 20:01*

01. DRV: Se on muuten totta.
   That is true yeah.
02. DRV: Se on semmosta aalto[liikettä tulee] siinä että.
   It is a kind of a wave [movement you get there] that.
03. PAS1:
   [mm:h hh ]
   [mm:h hh ]
04. PAS1: *COUGH*
05. DRV: Talla pohjassa [ja taas] hiljentää ja-
   Pedal to the metal [and again] slow down and-
06. PAS1:
   [ joo. ]
   [yeah ]
   (4.0)
07. DRV: #Katoin onko ne joutsenia* #tuolla?
   drv:
   #Saw are those swans #there?
08. PAS1:
   Yeah.
   *“joutsenia..”*

In this extract the pointing gesture is more pronounced than in extract 3. It performed with the thumb and closed fist of the right hand, which in this Finnish example is the more visible hand to the recipient. It is performed at shoulder height and in the space between the participants, which further increases gesture witnessability. However, since the recipient has fixed his gaze on the target from turn 03 onwards, he misses the actual gesture entirely. Clearly, the driver performs this gesture in the recipient’s field of vision, placing it in the category of witnessable gestures (Nevile 2007). Again, however, the gesture is a quick, single apex, point with the culmination on the actual verbalization of the referent “joutsenia (swans)”, there are also two verbal deictic expressions taking place during the gesture: “ne – tuolla (those – there)”. As in extract 3, the recipient’s gaze is already fixed on the target, and has in fact been for a while
before the driver’s gaze is focused on the swans. This again mitigates the driver’s need to perform such a witnessable gesture to direct the recipient’s gaze. However, the gesture is still performed in a very visible manner. This is perhaps largely due to the fact that the target location is problematic for the driver. The swans are in a field that the car is currently passing, leaving very little time for performing the social action successfully with a not-for-witness gesture (Nevile 2007) and verbal resources. To create meaning in a situation where the referent quickly becomes unavailable, the driver resorts to a rather overt gesture. Later extracts also seem to suggest that when the referent is only available, or can be referred to, for a limited period of time, the tendency is for the driver to perform the pointing gesture more visibly then what would perhaps be considered the norm.

Despite the added witnessability, the gesture in extract 4 is still a very typical case of embodied reference: there is only one apex, which co-occurs with the verbalization of the referent and, to some extent, with deictic expressions, and the gesture in itself is very quick, under one second in duration. The domain of scrutiny is formed vaguely to the right of the moving vehicle, and while the camera does not reveal the actual physical location of the swans in the field, during the apex of the gesture driver’s thumb is pointing slightly upwards making it very unlikely that the domain of scrutiny is very close to the actual target of the gesture i.e. the swans.

The following extract is from the Talk&Drive corpus. This example features three exchange students driving in the city of Oulu. They are discussing the purpose of cobblestone streets, and advantages and disadvantages of them. The driver is a native French speaker, whereas the passenger is a native English speaker. The gesture in this extract is almost an archetypical example of pointing gesture used for embodied reference.

Extract 5: “Embodied Reference 3” Talk&Drive, tape 2_clip2, 06:23 - 06:56

01.DRV: Why did they put this.. stupid things on the floor?
02.DRV: ##
03.PAS1: Cobbles?
04.DRV: Yea.
05.PAS1: Apparently it’s for drainage.
06.PAS1: Like uhhm: .. that’s why it’s all over England--
07.PAS1: And because like the water #instead #of #staying on top of the street it goes into the cracks?
08.DRV: Okay.
09.PAS1: Because when you have like lots of water on the street it gets kinda slippery?
10.DRV: Oh yeahh mnh.
11.PAS1: ..So it’s for.. drainage purposes.
12.DRV: .. We don’t.. use that* kind of stone ## too much
    drv: P,,-----------------------P
because it’s really noisy #with the car.
13.DRV: And people complain.
The driver performs her gesture with the right hand index finger while holding the steering wheel with both hands, which indicates that this gesture is designed as a not-for-witness gesture. Here the pointing gesture targets the cobble stones on the street they are driving on, and the domain of scrutiny is formed to the front of the car. The gesture is quick: roughly one second in duration and it only contains a single apex which occurs during the deictic expression “that kind”.

What makes this gesture even subtler is the fact that the driver does not need to direct the passenger’s attention to the target per se. The conversation is already focused on the cobble stones and their purposes. The deictic expression on line 12, “that kind of stone”, is interesting in that the deictic expression may be related to either the kind of cobble stones they are currently driving on, or to cobble stones in general, which is the topic of the conversation, or more likely to both of them. The need for embodied reference is very low here, and the gesture reflects this. It is worth noting that the driver’s pointing gesture does coincide with the deictic expression, which indicates that in certain level she is still referring to the specific street that they are driving on, and to the cobble stones on this specific street. This may be because she is unfamiliar with the English word ‘cobble stone’ as can be seen earlier in the discourse, on line 01. On line 12, she refrains from using the actual term “cobble stone” and resorts to “that kind of stone”. Perhaps, the driver senses that in order to create full meaning of this expression she needs to use a bodily resource. The driver creates a visual anchor on which the participants can focus their attention in case her less-than-idiomatic verbal re-creation of the referent remains unclear to them. However, the contextual framework of the situation already marks the cobble stones as the topic of the conversation. The design of the driver’s pointing gesture as a non-witnessable gesture seems to reflect this. This example shows how tightly the pointing gesture is
linked with verbal deictic expressions when used for embodied reference. Despite the fact that the context of the situation here makes the use of a pointing gesture for reference practically redundant, the driver still performs the gesture, though in a very subtle way.

The next extract, taken from the Habitable Cars corpus, features two co-workers commuting. On the road ahead, they spot a badger on the road ahead which is hit by a car driving in front of them. While the gesture in this example complies neatly with the established ‘norms’ of the embodied reference the actual target of the gesture is more complicated than the verbalization of the referent might lead to believe.

Extract 6: “Complex target of the embodied reference” Habitable Cars

01.DRV: Dead badger.
02.PAS1: Dead badger- dead wee baby badger.
03.DRV: It wasn’t dead until two seconds ago.
04.PAS1: Alright #?  
05.DRV: p Car* just hit it.  
    drv: P,........,................
06.PAS1: I think it was laying when I saw it on the road already.  
07.DRV: Was it?  
08.PAS1: I was loo- I had a.. look as we went past to see if there was any twitching or anything like that but dead.  
09.PAS1: Looked like a clean kill anyway cause it was hardly damaged.  
10.DRV: Wasn’t it the Volvo that hit it?  
11.PAS1: The Volvo hit it there but it wasn’t the Volvo that killed it.

*”Car..”

This is a typical example of a gesture designed simply to point something out in the environment. It is a quick witnessable left index finger point performed at roughly chest level.
The domain of scrutiny is formed in front of the moving vehicle. The second camera angle reveals that there is indeed another vehicle moving in front of the participants which hits the badger. The apex of the gesture co-occurs with the verbal element “car”. The gesture is a very quick, one turn, single apex point.

What is interesting in this example is that the badger itself does not prompt a pointing gesture from either participant, even though it is a relatively uncommon feature of the environment. Instead, the car in front, which has been there for a while, seems to become the target of the point. Perhaps there is reason to assume that the badger was such a deviant feature of the environment, being located in the road itself and still moving from being hit by the other car that the participants, do not feel that it needs to be physically pointed out.

However, when the passenger questions the driver’s interpretation of the situation, on line 04, the driver is prompted to elaborate both verbally and non-verbally. Later on during in the discourse, it becomes clear that both participants had seen the badger being hit by the Volvo, but their interpretation of the situation differs as to whether the badger was already dead at that time.

As there are several vehicles driving ahead of the participants, the pointing gesture is too vague to specifically isolate any of them as the target of the point. In fact, the second camera angle seems to reveal that the exact target of the pointing gesture would be closer to the car leading the queue instead of the Volvo directly ahead of them. In this case, however, the target of the point is not just the Volvo in front of the participants, but the actual event in which the badger was hit. It has taken place in front of the participants’ vehicle, with the badger moving from left to right in the participants’ point of view. While the verbal element “car” is anchored to a physical referent in the environment still visible to the participants, the pointing gesture is not anchored to a physical target, but rather, roughly to the trajectory of the dead badger, i.e the actual event. Leaving the physical pointing gesture out from line 05 would make the sentence more open to different interpretations, since the driver does not specify the car any further (that car, Volvo, etc.).

This example shows that, even though the act of simply pointing something out from the environment is often accomplished with rather quick, simple and unassuming gestures, the target of the point itself can be more complex, in this case a past event in, and that it can even contradict the referent of the verbal element.

The next extract is from the Habitable Cars corpus and it features another pair of co-workers commuting to work in the morning. They have left for work a bit later than normally, and they
note that the traffic is noticeably lighter than before. This extract shows how the pointing gesture and the accompanied verbal element can be modified by the driver to allow for an easier understanding, and how a recipient-initiated reference can be completed by the second participant.

Extract 7: “Embodied reference 4” Habitable Cars

01.DRV: Traffic’s been light this morning.
02.DRV: Hasn’t it?
03.PAS1: ...Hm?
04.DRV: The traffic.
    drv: P,,,,
05.DRV: There’s not very* much traffic this morning.
    drv: ,------------------------------....--------...
06.PAS1: No.
07.PAS1: Maybe because .. we left u:h --
08.DRV: Ye:ah.
09.DRV: [Maybe we]*. .. #little bit later.
    drv: P,-------------
10.PAS: [later].
11.DRV: or something.

Two gestures can be found from extract 7. The first gesture takes place during turns 04 and 05. This gesture is performed with the right hand, which in this case is the peripheral hand, at
shoul  

d shoulder height. The apex is directed to the back of the car. The witnessability of this gesture is relatively low, and accordingly, the recipient does not shift her gaze towards the gesture. It is also a relatively long gesture with two apices. The first apex does not strictly co-occur with deictic expressions, as the “There’s” on line 05 cannot be considered as a strictly deictic expression, but as more of a syntactic structure which typically does not require a pointing gesture to create meaning. The second apex co-occurs with verbal expressions “traffic” and “this” marking it as a more traditional example of a pointing gesture in line with those on extracts 3 and 4. This time the apex is directed slightly downwards.

The social activity the driver is attempting to fulfill, with the help of the gesture, is that of noting the lighter traffic, and more specifically clarifying his previous statement on line 01, which the passenger did not hear, as indicated by turn 03. It is important to note that the passenger is not a native English speaker, which may mean that the driver interprets the situation as the passenger not understanding the idiomatic “light traffic” expression. His choice of words on lines 04 and 05 would seem to support this reading, as the driver abandons the idiomatic expression in favor of tautology, repeating “traffic” on lines 04 and 05, and the more simple “there’s not very much traffic” construction. The driver’s gesture is also used to clarify his previous statement, and as mentioned previously does not feature many of the more typical features of pointing gestures used for embodied reference i.e. short duration, single apex and co-occurrence with deictic expressions or the verbalization of the referent. In fact, it resembles closely the category of beat gestures (McNeill 2000), which are used to create rhythm for the speech, making it easier to follow, and typically include several apices. The gesture is very dynamic, and pinning down exact apices is difficult as the driver moves his hand back and forth. Furthermore, discerning a target for the point becomes very difficult: it could be the cars driving behind them, or the road they are driving on. More likely both of these constitute to the concept of ‘traffic’ as something which cannot be pinned down with a simple single-apex gesture. For these reasons, identifying this first gesture on extract 7 as a purely pointing gesture is problematic. More likely, it is a gesture which combines elements from several gesture classes, namely: deictic, as there is a clear index finger vector projection (Kita 2003: 1) and some co-occurrence of gesture apex and deictic expression/verbalization of the referent (“traffic this” on line 05); beat gesture, as the dynamic nature of the gesture and several apices would seem to suggest; and perhaps even certain iconic features, as the driver retracts his finger from the initial apex (projected behind them) to the second apex (projected inside the car), in keeping with the idea that they have come across light traffic during their journey to this point, from ‘there’ to ‘here’ as it were. Even though the embodied resource used here is a mixture of several different types of gestures, the social action for which it is used is still that of embodied reference. The
gesture has been modified alongside the verbal element to allow for a more painless interpretation of the situation. The reason for this revision derives from the fact that the recipient does not hear or understand the initial statement.

The second gesture in extract 7 takes place during turn 09. It is performed with the left hand, at roughly the pelvis level. It only features one apex which co-occurs with the verbal expression “we”. The target of the point is the car’s clock, located in the dashboard. The domain of scrutiny is formed around the dashboard. Interestingly, there is no clear verbalization of the referent in this example, although the expression “later” does allude to the clock as the referent. Due to the location of the target the witnessability of the gesture is relatively high, as the gesture is performed in the recipient’s field of vision, making it a witnessable gesture (Nevile 2007). It is important to note that the passenger’s gaze has been fixed on the car’s clock from turn 07 onwards, and that the driver notices this and follows her gaze to the clock before performing the gesture. The passenger’s slow verbal delivery on line 07 may reflect her status as a non-native English speaker, or it may simply reflect reluctance to complete a sentence which could be interpreted as a criticism towards the driver. In either case, the driver notices the passenger’s slower delivery, turns his head and begins to follow her gaze towards the car’s clock.

The driver fulfills two social actions, acknowledgement and reference, simultaneously with the help of a single gesture. The driver recognizes the passenger’s explanation for the lighter traffic that morning, and whether or not he understands this as a critique, he acknowledges the fact that they have left for work a bit later than normally by pointing towards the car’s clock and completing the passenger’s verbal expression. In this way, the driver expresses his ultimate responsibility for the journey. The driver also fulfills the reference social action. In a sense, he helps the passenger finalize her turn by first following her gaze to the target, and completes it by referring both bodily and verbally to the car’s clock. This example has shown that the referent does not always have to be established by the driver. Here, the target of the point and the verbalization of the referent have been pre-established by the passenger’s gaze, and the social action of referring is performed in co-operation by both participants.

The next extract, taken from the Habitable Cars corpus, features two women driving to an intersection with traffic lights. This example introduces a phenomenon called multitasking, and the effect it can have on embodied reference. Multitasking, or multiactivity, is the simultaneous performing of two or more activities, such as talking and driving. It could be argued that the driver is always engaged in multitasking when talking in a car. In certain situations, however, one of the activity sequences gains ‘dominance’ i.e. becomes more pressing, which may reflect on the second activity in different ways. For instance, Nevile (2012) has studied the disruptive
effects social interaction can have on driving activities. The following extract displays what happens to embodied reference when driving gains dominance over interaction as the primary activity.

*Extract 8: “Effects of multitasking on embodied reference” Habitable Cars*

01.DRV: Oo:h nobody coming through on the green now that makes a big #change. (4.0)

02.DRV: I feel quite sorry* for the people coming- turning right from- from that* direction

03.PAS: Yeah.

04.DRV: Because uhh: it’s a very difficult ...(1.0) turning to make.

In the beginning of this example, the car is stopped in a crossing with traffic lights. In line02, after the word “coming”, the light turns green, and the driver has to focus on the driving and turn the car right. The angle of the camera does not reveal for certain whether a right handed pointing gesture takes place in the beginning of turn 02 (“feel – turning”). However, the driver does elevate her right arm in manner which suggests a pointing gesture taking place. If this is
the case, it is not a very witnessable gesture, being performed, from the passenger’s point of view, with the peripheral right hand. The hand remains close to the steering wheel, and there is no noticeable body torque suggesting that the passenger is requested to shift her gaze towards the indicated direction.

The effects of being forced to multitask become very visible as soon as the light turns green. The driver has to react to the new situation and divide her attention between the conversation at hand and navigating through the crossing area. This divided attention can be witnessed in both the verbal and embodied reactions of the driver. Firstly, the truncated nature of the speech in turn 02 is a clear indication that the driver is now more focused on driving than before. There is a lot of self-repair and repetition in turn 02, and this continues on to turn 04, where a relatively long pause further displays the effects of multitasking.

What is interesting in this extract is the driver’s embodied reaction to the light turning green. The possible initial gesture is being performed rather peripherally and subtly by the right hand but as soon as the light changes, the driver retracts the gesture and takes hold of the steering wheel with the right hand. During the first gesture, the left hand is resting on, or near, the gear stick but as it becomes evident that the car has to be brought to movement again, the driver first changes the gear, then brings the left hand to rest briefly on the steering wheel, and from there, almost instantly, she performs the quick pointing gesture. The gesture is a quick, but surprisingly witnessable, single apex, index finger point, culminating on the deictic expression “that”. The retraction phase brings the left hand to the gear stick which she then, a brief moment later, operates again.

What prompts this interesting change of hands is most likely the fact that the driver may wish to maintain at least one hand on the steering wheel, and as the left hand is needed to change the gear, the right hand has to be brought back to the home position on the steering wheel. Furthermore, the driver’s difficulty to finalize her sentence also forces her to look for alternative ways to complete her turn. After several attempts at self-repair, the driver resolves to complete the utterance with the simple “that direction” expression. To make sense of this expression, she is also forced to include a pointing gesture. The urgency of the situation turns this gesture, which under more relaxed circumstances might have been more unassuming, very witnessable. The driver attempts to complete her turn before she has to turn the steering wheel but she cannot seem to find the correct expression. Therefore she performs a clearly witnessable gesture accompanied with a verbal expression which without an embodied component would be meaningless. To make sure that the meaning is transferred, she uses the more visible, left, hand
and performs the gesture at almost shoulder level. A similar example of limited timeframe for reference prompting a more witnessable gesture can be found in extract 4.

This example has shown that while the archetypical embodied reference is not necessarily meant to be especially visible, certain circumstances may prompt the driver to perform the gesture in a manner which makes it more visible. In the beginning of line 02 the driver is clearly more relaxed and focused on the conversation, as indicated by the fluent verbal expression and the subtle nature of the potential right handed pointing gesture. As the traffic situation changes, the verbal expressions become more faltering and the driver has to complete her turn with the aid of a relatively visible pointing gesture. This gesture is still a rather typical embodied reference, in that it is very quick, performed with an outstretched index finger, and it culminates almost perfectly with a verbal deictic expression.

In the following two extracts the pointing gestures are performed in a very witnessable manner. What is common for both extracts is that the pointing gestures are performed together with sensory expressions, such as “see” and “look”. The first example features the two co-workers from extract 6. They are driving past a field with hay bales when the driver begins a story about a house being demolished by a hay bale rolling down a hill.

Extract 9: “Sensory expression and embodied reference 1” Habitable Cars

01.DRV: I #had to talk to Chad- is that ## name?
02.PAS1: Which Chad?
03.DRV: The one- the one.. that you know from work #
04.PAS1: Adam.
05.DRV: Alright.
06.DRV: You see these*?
    driv: P,,,,,,,,,,,,,,,,,,---------
    07.DRV: He just moved in the house up-
    driv: ....p
(1.5)
08.DRV: You know these houses up- back of the hill at Wind Street.
09.DRV: Same sort of side.. as me but.
10.PAS1: Mmh: hnno:
11.DRV: You know when you- you know the wee shop up- [back] on the Wind Street?
12.PAS1: [Yeap.]
13.DRV: Just after that there’s a turn off to the left-
    [it was up in there.]
14.PAS1: [Oh yeah uhh].. #Balinakill.
15.DRV: He’s got a house.. up there somewhere.
16.PAS1: Has he?
17.DRV: And he was saying that uh--
    (1.5)
18.DRV: About two years ago or year- last year.
19.DRV: Next door neighbor... (1.0) their conservatory and whole wall of the house.
20.DRV: Was eh comp- completely.. like uhn..
The first gesture, on lines 06-07, is a very witnessable gesture, performed by the left hand, at shoulder level. Furthermore, the driver also includes an up-and-down, shaking movement for the apex, which also increases the visibility of the gesture. The gesture is also relatively long in duration, almost 2.5 seconds, with the apex occurring alongside the deictic expression “these”. The targets of the point are the hay bales located in the field to the left of the vehicle. The domain of scrutiny is formed to the left of the vehicle, to the field. Interestingly, the hay bales are not mentioned explicitly during the extract, meaning that the participant has to deduce the referent entirely from the pointing gesture and the contextual framework. In this case, the hay bales are a very dominant aspect of the landscape, and the driver’s choice of words hints that the referent is something that can be seen if the passenger were to look to the left, and accordingly, after the passenger has turned his head to the left, during turn 07, and requested no further assistance in acquiring the referent, the driver feels that social action of reference has been completed successfully and continues with the story.
The second gesture, on lines 20-21, is even more witnessable than the first, being performed further to the left, in the space directly in front of the passenger’s head. Here the targets are still the same hay bales, with the domain of scrutiny still in the field to the left of the vehicle. Again, there is no clear verbalization of the referent, and instead the driver again uses a deictic expression “one of them”, which also functions as the location for the gesture apex.

The first pointing gesture, on lines 06-07, is related to the social activity of storytelling, and more specifically to a pre-beginning for the actual story. In a sense, it foreshadows the actual story which begins in earnest as late as in turn 18. The gesture has to be made visible in order for the participant to fully appreciate the story, but as extract 10 shows, the added witnessability may also be due to the inclusion of the sensory expression, in this case “see”. The gesture on lines 20-21 takes place during the culmination point of the whole story, and thus needs to be explicitly visible, especially since the driver has chosen the deictic expression “one of them” instead of a more idiomatic expression such as ‘a hay bale’, for instance.

The next extract, from the Habitable Cars corpus, features a mother and a daughter driving. The mother comments on the car driving in front of them.

Extract 10: “Sensory expression and embodied reference 2” Habitable Cars

01.DRV:  Look what he’s doing*.
  drv:  P,-----------------
02.DRV:  He’s gone around* there and he’s #shot at #up there-
  drv:  '--------------',--------------------------------------------
       look.*
  drv:  -------.......p
03.DRV:  ..See him?
04.DRV:  With the #England #flag?
05.PAS1:  Ye:ah.  

*“doing..”
This extract features several deictic as well as sensory expressions. The pointing gesture itself is very long, over 5 seconds in duration, and features a total of three apices with three different targets. The first apex co-occurs with the verbalization of the referent “he’s” on line 01, meaning the car driving in front of them. The second apex is iconic by nature as the driver is tracing the path the other driver has taken earlier. The third and final apex co-occurs alongside two deictic expressions “there-there”. The entire gesture is performed with the outstretched left arm and index finger at shoulder-height, making the gesture extremely witnessable. The target of the point during the first apex is the car driving in front of them. The target of the second apex is the route of the car, recreated through an iconic-deictic tracing of the index finger and arm. The target of the third apex is the final location of the car “up there”. The domains of scrutiny for each apex are formed relatively near the target, at least when compared to those in previous extracts.

There are several explanations for such an overtly witnessable pointing gesture. Firstly, the gesture does have certain iconic features to it. The driver’s arm and index finger follow the route of the car, making the gesture more dynamic and visible. Secondly, the imperative syntactic structure of line 01, and to a lesser extent line 02 (the second “look”), would seem to
suggest that the gesture is also used, to some extent, as a resource for the social action of directive which, as later examples will show, tend to performed in a more witnessable manner. Thirdly, there is an abundance of sensory expressions in this extract: “look” on lines 01 and 02, and “see” on line 03. Extracts 9 and 10 would seem to suggest that when combined with words denoting visual perception the pointing gesture is more witnessable than what can be considered as the established norm.

In conclusion, the pointing gestures used as a resource of embodied reference, tend to be short in duration, contain only one apex, which tends to co-occur alongside deictic expressions or the actual verbalization of the referent. Their domain of scrutiny is not typically formed very close to the actual target of the point. They are typically constructed as not-for-witness gestures. However, the driver can modify the gesture to better suit different conversational and driving situations. For example, when the target is only available for referring to a limited period of time, due to multitasking as in extract 8, or other reasons as in extract 4, the gesture can be more witnessable, as is the case when combined with expressions of visual perception (extracts 9 and 10). In certain situations the pointing gesture can also include several apices, as in the case of multiple targets during a single gesture (extract 10), or in the case of pointing gesture displaying features of multiple gesture types (extract 7).
4.2 Embodied Request

The physical constrictions of a car, the seating arrangements and seat belts, limit the participants’ mobility in a very noticeable way. These restrictions to personal mobility are even more pronounced in the case of the driver who is required to maintain the control of the vehicle at all times. Sometimes, however, the successful continuation of the journey or the conversation may depend on the driver acquiring something with the help of the passengers, be that a physical item such as a fuel card or a mobile phone, or assistance, related for example to navigation and route selection. To pursue the social activity of asking for directions for example, the driver often resorts to the social action of requesting.

From the recipient’s point of view, requests are more demanding than references. Firstly, the request has to be assessed, and a decision made, whether or not it can be granted. Should the situation force the recipient to decline the request, he or she is expected to at least give an explanation for this. This is related to a conversation analytic structure called preference organization which dictates that when a participant is forced to provide a dispreferred, disagreeing action to the initial action, an rejecting answer to a request for instance, the action tends to be produced less straightforward than in the case of a ‘preferred’ response (Pomerantz 1984). If the request can be met, the recipient is expected to carry out the requested action without too much delay.

It is important to discern the difference between a requesting and a directing action. Goodwin’s (2003b: 221-223) participation and activity frameworks help understand the difference. In the directing action, the participant providing the directives or directions has an “expert” status, through which he or she has gained authority over other participants. This authority has to be recognized by the other participants in order for the directives to be effective. The authority can be based on perceived expertise, regarding for instance navigation, GPS devices and car entertainment systems, or on inter-personal relations or social hierarchy, such as mother-daughter, manager-employee and senior-junior. Whatever the source, once the expert status has been accepted by the participants, directives can be presented naturally. When engaged in the social action of request, however, the participants are more or less ‘equal’, and in a sense requesting for something is admitting the need for help from others. For this reason the requesting action tends to often include an interrogative element to it, making, in theory, a rejecting action more viable option for the recipient, at least more so than in the case of directives. Participation and activity frameworks can help to explain the inter-personal status and expertise hierarchy but, as some of the later extracts will show, discerning the difference between a request and a directive is not always as straightforward.
The first example in the category of embodied requests comes from the Habitable Cars corpus, and it features the two co-workers from extract 7. In this extract the participants have switched places and the non-native English speaker passenger is now the driver. They are discussing a political scandal where a Member of Parliament was found accepting a bribe from a newspaper. During the conversation the driver, who is not familiar with the car, is attempting to adjust the car’s heating system. She eventually gives up, points at the dashboard and request for assistance.

Extract 11: “Request 1” Habitable Cars

01.DRV:  Which one?
02.DRV:  ..[who went to prison?]
03.PAS1:  [uuhm: ] Neil.. uhh what’s his name?
04.PAS1:  ...(1.5) uhh.. him and his wife.
05.PAS1:  Was it Neil [and something blah blah blah.]
06.DRV:  [Oh yeah.
07.DRV:  What he did- this one?]
08.PAS1:  Uhm I think he ...(1.0) uhh he was accused by newspaper of- of taking cash
drv:  ((left hand attempts to adjust the heating
   ..for questions ..in the pa- in the house of parliament.
   turns in to a pointing gesture:  P ,,,,,
09.PAS1:   (and--
10.DRV:  Don’t* know what to do* with it ..pity @@
drv:  ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,P
11.PAS1:  Yeah.. well let’s have just a bit less of that
pas1:  (( adjusts the heating
12.PAS1:  and maybe a bit of this .. like this.
})
13.PAS1:  that might help out.
14.PAS1:  Uhm:  .. uhh can’t think of their surnames yeah.
"Don’t.."
After unsuccessfully trying to adjust the heating system, the driver abandons the attempt and requests the passenger for help. Here, almost all of the meaning of the request is transferred with the help of the gesture. The passenger’s gaze has clearly followed the driver’s left arm during turn 08, and the verbal component on line 10 seems to function as a more of a clarification of the situation. However, when combined with the gesture, turn 10 becomes an unmistakable request for assistance, and accordingly, the passenger responds both verbally and by actually adjusting the heating himself.

When looking at some of the typical features of pointing gestures used for requesting, perhaps the most immediate observation is that they are more witnessable than gestures used for referring. Since the natural sequentiality of the embodied request often includes locating an object as the follow-up action, the gesture has to be performed in a manner and in a location in which the recipient is certain to see it, meaning that in all cases of embodied request found in the three corpora, the pointing gesture is at least in the category of witnessable, or for-witness gestures. The domain of scrutiny is also created closer to the actual target of the point. Here, the driver’s left hand is already located on the target, and for the purpose of requesting, she simply retracts her hand to the space between the participants, and turns the palm of her hand upwards. Upwards facing palm not only increases the witnessability of the gesture, but also seems to include certain symbolic elements pertaining to requesting. Upwards facing palm used for requesting can be found from extracts 12 and 13 as well, suggesting that this may be a unique feature of embodied requests.

When looking at the gesture’s location in relation with speech, another difference can be found between referring and requesting. While the apex of the referring point often coincides with deictic expressions or verbalizations of the target, the apex of the requesting point does not seem to co-occur with any fixed set of expressions. While turn 10 does include a deictic expression “it”, the actual gesture is already concluded before it is reached. In this extract, the
driver begins her gesture during the passenger’s turn, which again seems to confirm the unchained nature of the pointing gesture used in this way. In fact, as extract 12 shows, in certain cases the embodied element of the request can function almost without any verbal expressions at all.

Similarly to referring points, requesting points also seem to include only one apex. The gesture duration tends to be longer than in the cases of embodied reference, although this difference is not substantially remarkable. Another common feature is that the gestures in both categories can also include additional meanings. In extract 11, the driver also removes her right hand from the steering wheel and lifts the palm of the hand upwards, adding a symbolic element of “acknowledging powerlessness” or “giving up” to the gesture. The gesture is still markedly deictic, since it manages to direct the passenger’s gaze to the target. The social activity the driver is pursuing in this example is asking the passenger to adjust the heating. To achieve this she employs two social actions. First of these is requesting, which she performs with the help of the embodied resource, the witnessable, upwards facing palm directed at the heating controls. The second action the driver performs is explaining why she requires assistance, and in order to achieve this, she employs both verbal and embodied resources: the verbal component on line 10 is a clear admittance of uncertainty, while the embodied element is introduced by the additional symbolic features of the pointing gesture aka the inclusion of the right hand upward facing palm. This provides another interesting observation regarding embodied requests: the verbal element of the request does not necessarily need to be directly interrogative by nature. By contrast, embodied directives tend to include an imperative syntactic structure.

The next extract, taken from the Habitable Cars corpus, features three non-native English speakers driving when the driver notes that he needs to fill the tank. They drive to a petrol station, and the driver requests that the front-seat passenger open the glove compartment and to hand him a fuel card. At the very end of the extract, the driver is stepping out of the vehicle to pump gas.

**Extract 12: “Request 2” Habitable Cars**

01.DRV: Oh this thing needs petrol.
02.DRV: Oh we’ll go there.
03.PAS1: More points.
04.PAS1: Should you actually pay money [but you feel] that you
       drv: P------------------------
05.PAS1: [no no umm*]
06.PAS1: are willing?
       drv: ..................P
07.DRV: Nah yes.
08.PAS1: [ #Not this card.]
09.DRV: [There’s credit card.
10.DRV: There.
11.PAS1: No no.
12.PAS1: It’s like uhm: it’s like rent-a-cars.
(3.5)
13.PAS1: Actually I was telling Hanna about this.. uhm scheme.
14.PAS1: I’ll tell Alice.
15.DRV: About this city car?
   drv: 
16.PAS1: Oyh.

*"ummm."

The first gesture, on line 4, is a clear for-witness gesture performed by the left hand extending towards the glove compartment. Despite missing the verbal component, this gesture is easily understood as a request for the passenger to open the compartment and hand the fuel card to the driver. The driver performs the gesture palm facing upwards, which, as seen in extract 11, may carry with it the meaning of literally requesting something to be handed to him. The domain of scrutiny is formed very close to the glove compartment. The apex of the gesture coincides with the “ummm” particle which is used here as a turn allocation unit displaying the driver’s intention to continue his turn. Majority of the gesture, however, takes place during the front-seat passenger’s turn, in lines 04 and 06, again displaying the requesting pointing gesture’s independency from the verbalization of the referent, and in fact from any specific set of verbal
expressions. Here again the social activity of requesting for something is performed via two social actions. In this extract, the driver is both requesting for something and rejecting something. The driver requests the fuel card solely with embodied resources, and rejects the front-seat passenger’s suggestion on line 04 with verbal resources: “no no umm”.

Everything about the situation suggests that the driver and the passenger have gone through this routine before, from the way the passenger understands what is required from the pointing gesture alone to the way the passenger is holding and referring to the card as: “about this”, on line 13. As the car is approaching the fuel station it becomes more and more relevant to have hold of the fuel card. Interestingly, as the participants are not native English speakers they seem to have difficulties verbalizing the target. The driver suggests “credit card” on line 10. This, however, is rejected by the passenger (line 11), who apparently has more experience regarding fuel cards. This becomes evident as he expresses his intention to explain to the back-seat passenger how they are used on line 14.

This difficulty to verbalize the target, combined with the passenger’s question on line 4 regarding the payment method, the quickly approaching fuel station, and the front-seat passenger’s apparent familiarity of the situation and close vicinity to the target, make it sensible to rely on a clear for-witness gesture, which cannot be missed or misunderstood. Had the passenger not been aware of the fuel card in the glove compartment, the gesture would have to have been accompanied by a much more extensive verbal component.

The gesture on line 15 is a case of embodied reference. It is a quick downwards pointing gesture culminating on the words “about this”. It is a not-for-witness / witnessable gesture performed by the driver at the same time as he is getting out of the car. It is not necessarily meant to be seen by the participants, and is performed while the driver is preparing to exit the vehicle to actually pump the gas. Interestingly, the target of the point is the car, and hence, supposedly, the driver could have pointed virtually anywhere within the vehicle. The chosen domain of scrutiny in this example, however, becomes the space between the driver and the front-seat passenger, the area around the gear stick and the hand break. It is perhaps the area most readily associated solely with cars and driving that the driver can isolate by a pointing gesture during the limited timeframe he has before leaving the vehicle.

The crucial difference between the two gestures in this example is their necessity. While the pointing gesture on line 15 is a functional embodied addition to the verbal component, it is not necessary in order to get the message through. The gesture, beginning on line 4, however, is performed, in a sense, under pressure and carries with it the entire request. Here, the verbal
component is actually less important than the embodied action, as it simply rejects the passenger’s payment method suggestion but offers no alternatives.

Extract 13, also taken from the Habitable Cars corpus, features two co-workers commuting. They are discussing their shifts during Saint Patrick’s Day when the driver mentions that she has a picture of a past event they had both attended earlier. She mentions that it is in the back, after which the passenger proceeds to pick it up.

Extract 13: “Request 3” Habitable Cars

1. PAS1: I have to work either that day or work the day after Saint [Patrick’s day ## ## ## #].
2. DRV: [Ye know I got one of the pictures] home by the way.
3. DRV: The one with Jake.*
4. DRV: It’s in the [ back.]
5. PAS1: [O: h did] ye?
6. DRV: Mm hnh.
7. PAS1: Jake’s in it?
8. DRV: Yep.

*“Jake...”

Judging from the verbal elements alone on lines 02-04, it seems that the driver is simply stating that she has a picture from a past event in which both participants had been present, making this a case of reference. However, the accompanying gesture makes it apparent that the driver wishes that the passenger reaches out and takes the picture from her bag in the backseat.

The gesture itself is interestingly formed. It is performed at roughly the pelvis level, and would not be particularly witnessable if it did not also have a rhythmic beating element attached to the apex, and if the awkward position did not raise the driver’s elbow relatively high. The driver brings her left hand downwards between the participants and points to the backseat with the index finger, the palm facing up, as in extracts 11 and 12. What is important to note is that this
would be the route she would most likely use if she were trying to reach for the picture herself. Extract 12 features the driver reaching for the glove compartment, as if to acquire the fuel card himself. In extract 11, the driver’s hand has been on the target for an extended period of time before it is pulled slightly back to perform the gesture. It may be that in cases where the driver is requesting either some physical object, as in extracts 13 and 12, or that the recipient physically performs a certain action, as in extract 11, the actual gesture also functions as a model according to which the target action can be performed. In other words, the gesture draws a vector which the recipient can follow to more easily acquire the target.

If the driver had chosen a more comfortable and quicker gesture (perhaps with the thumb and a closed fist performed at shoulder level) the additional meaning of a request may not have been transferred. Stating that “it’s in the back” and performing a vague gesture to the back could have been interpreted as meaning that the picture is in the trunk or otherwise unavailable at the moment. By performing the gesture lower and with a reaching motion the driver manages to narrow down the domain of scrutiny from the simple “the back” to the more accurate ‘the bag in the back, behind the driver’s seat’. With this gesture the driver has not only given a request but also, in a sense, given very practical and physical instructions on how to actually acquire the picture. The domain of scrutiny is formed to the space behind the driver’s seat, very close to the actual target of the point.

As mentioned earlier, the verbal resources in this extract, most importantly the indicative mood on line 04, would seem to suggest a case of embodied reference. Similarly, the apex of the gesture does, to a certain extent coincide with the verbalization of the referent “it’s”, also displaying signs of embodied reference. However, as seen in the two previous extracts, the requesting pointing gesture’s apex location is not restricted to a specific set of expressions or syntactic structures. When examining closer the social activity the driver is pursuing, the choice of the indicative mood becomes clear. The driver is not in fact requesting the picture for herself but rather for the passenger to examine it. By not using an interrogative or imperative syntax structure, the driver has given the initiative to the recipient. The requesting nature of the embodied resource, however, is used to display that the passenger is expected to acquire the picture, in order for the conversation to successfully proceed to the new topic: the picture and the past event. The driver has introduced a new topic for the conversation rather abruptly, overlapping the passenger’s turn on line 01. Perhaps to soften this perceived impoliteness she constructs her request in a manner which gives the initiative to the original speaker, the passenger.
4.2.1 Navigation Assistance Request

Requests for navigation assistance form a separate group of embodied requests. In these cases the verbal component tends to be in the interrogative mood, and the target of the request is not tangible. Instead, the driver is requesting navigation assistance or acknowledgement for the route selection already made.

The next extract, taken from the Talk&Drive corpus, features the three exchange students from extract 5. The participants are driving around in the outskirts of the city of Oulu when the driver spots two signs, both saying ‘Oulu’, after which she asks the front-seat passenger for navigation assistance. Again, the driver is a non-native English speaker.

Extract 14: “Requesting for navigation assistance” Talk&Drive, tape 2_clip 1, 09:26 – 09:36

01. PAS1: So do we want some radio on this situation?
02. DRV: Yess:
03. DRV: ..Okay which Oulu- p
drv: p,,,,,,,,,---
04. DRV: This* one or this* one?
drv: ---------------p
05. PAS1: Pff: ..you- you got me beat.

“this..”

“this..”
Requesting for navigation assistance differs from the previous three examples in that a physical activity is not necessarily expected from the recipient. The response can be purely verbal, as is the case in this particular extract. The gesture itself is a witnessable/for-witness point, performed very high, at face level, in front of the driver. It features two apices, as the driver moves her hand from one target to the next. The apices perfectly coincide with deictic expressions, marking this gesture as a combination of embodied reference and request. The domain of scrutiny is formed quite accurately in front of and above the vehicle, where the road signs are actually located.

The verbal resource is clearly interrogative by nature, and very crucial for the successful interpretation of the request. Unlike in the previous examples, the gesture itself does disclose many signs of requesting. In fact it is very similar to the embodied resources used for cases of reference. Here, the social activity of requesting for navigation assistance is fulfilled primarily with verbal resources, with the embodied resource having an auxiliary role, supporting the understanding of the situation. There are, however, certain signs which indicate that the gesture is meant to be construed as a part of a requesting social action, and not as a case of referring. Firstly, the gesture is relatively long in duration. Secondly, it performed in a very witnessable manner. Increased duration and witnessability allow for a more accurate scrutiny of the situation from the recipient.

The next extract, taken from the Habitable Cars corpus, is also an example of a joined effort for navigation. It features a family driving in a city center. The father of the family is the driver, the mother is sitting in the front seat and the daughter is seated behind the driver.

*Extract 15: “Requesting for acknowledgement” Habitable Cars*

01.DRV: So what should I do try and stick around the
drv: corner and* #wait about--
drv: ----------------------
02.PAS1: Ye[ah and just wa ]it there.
drv: ---turns in to a self-groom))
03.DRV: [Let's do that:]
04.PAS1: Yeah I mean you can only park there #at this time.
The social activity the driver is attempting to fulfill here is that of asking for acknowledgement for his navigation suggestion. Although the verbal resource is in the interrogative mood, the driver immediately continues with the "Let's do that" component, clearly indicating that the decision regarding the route choice has already been made. What he is in fact requesting for is the acknowledgement for his decision. The gesture is relatively witnessable, being performed at the chest level. The gesture is performed with the peripheral hand, and although the driver also incorporates an iconic element to his gesture, spinning his hand around during the verbal expression "around the corner" and thus increasing gesture witnessability, over all the gesture is much less visible than in the previous example. The duration of the gesture is long, and rather than including a retraction phase, the driver transforms the gesture into a self-grooming manoeuvre where he rubs his lips with the index finger of the right hand. During this self-groom, the index finger remains outstretched towards the target for the entire duration of the extract. The target of the point is the corner, which also functions as the verbalization of the referent. To some extent then the apex of the gesture co-occurs with the referent verbalization. However, when compared to the previous example, the apex is clearly not limited to deictic expressions or the verbalization of the referent in the same extent.

It seems that when considering navigation, the driver's gesture is affected by his or her knowledge of the route. When the driver has already made a navigation decision, he or she is essentially requesting for acknowledgment, which does not carry with it the sense of urgency and uncertainty as the activity of requesting assistance. This can be seen in the apex locations, domains of scrutiny and the witnessability of the gestures. When the decision has already been made, the apex is not as limited to deictic expressions or the verbalization of the referent, and instead can be in virtually any location. Comparing extracts 15 and 14 show that the witnessability of the gesture is lower when the route decision has been made; this also leads to the domain of scrutiny being established less accurately. When, however, the driver is uncertain
of the route, and has to ask for assistance, the tendency seems to be to resort to clear, witnessable gestures which coincide with deictic expressions or the actual verbalization of the referent, as extract 14 has shown. The domain of scrutiny has to be established much more accurately in order to assist the recipient in acquiring the route options. The result is a gesture which is harder for the recipient to misinterpret or miss altogether. This stems from the uncertainty and urgency of the situation. The driver requires the information to ensure smooth continuation of the journey.

In the next extract, taken from the Talk&Drive corpus, the driver first requests for navigation assistance, and afterwards repeats her request, this time armed with information acquired from the front-seat passenger’s response to the initial request. The changes in the two gestures further demonstrate the effect that added information has on the driver’s embodied resources. This extract features the three exchange students from extracts 5 and 14. They are driving in the city center of Oulu and searching for the route to the sea. The driver is a non-native English speaker.

Extract 16: “Request for assistance and acknowledgement” Talk&Drive, tape 2_clip 2, 08:53 – 09:32

01.PAS1: Let's try going down here and then go left.
02.PAS1: .. uh: right.
03.DRV: Right?
04.PAS1: Right.
05.DRV: ..Right.
06.PAS1: My way.
07.DRV: p This* way?
drv: p,---------------
08.PAS1: Yeah.
drv: -----------p
09.DRV: Okay.
drv: (Flips the indicator)
10.PAS1: But not- not yet.
11.PAS1: Not yet.
12.DRV: <@okay@>
13.PAS2: @
14.PAS1: At the end of the road.
15.DRV: Okay,
16.PAS1: ...(2.5) or that... street light.
  ..................(20.0)..................
drv: ((flips the indicator))
17.DRV: Okay.
18.DRV: p Right* he[re?] 
drv: p,----------
19.PAS1: [Yeah] right here.
drv: ............p
The first gesture, on lines 07-08, is related to a request for navigation assistance. The driver displays her uncertainty regarding route selection, and performs the request with a lengthy gesture which, despite being performed while holding the steering wheel, is clearly witnessable. The ensuing confusion stems from a misunderstanding regarding the target of the point and the verbalization of the referent. The driver is actually pointing at and referring to the direction she intends to turn at an upcoming junction, whereas the front-seat passenger understands the gesture as a continuation to turns 01-06 where the direction "right" is established for the first time. The front-seat passenger understands the driver's status as a non-native English speaker and verbalizes the direction quite simply as "my way", and when the driver then performs the gesture, it is understood by the front-seat passenger as a further inquiry as to which direction "right" is. For the recipient, then, the target of the point is understood as the direction "right" in general, which also functions as the perceived domain of scrutiny. After all, the driver's gesture is clearly aimed to the right. The driver is affected by a sense of urgency regarding the upcoming junction and performs a clear, witnessable gesture where the apex is reached long before the deictic expression, and maintained for a while even after reaching it. After receiving what she believes to be confirmation for the selected route, she begins the process of turning by flipping the indicator. At this point, the front-seat passenger becomes aware of the misunderstanding, rejects the selected route and provides further navigation instructions on lines 10-16.
After receiving additional information, the driver displays increased confidence in the next junction. She flips the indicator before actually requesting acknowledgment on line 18, showing that she has already made the route selection. This gesture is shorter in duration than the first one, and the domain of scrutiny is not formed as close to the target, which in the case of this second gesture, is also the direction "right". She begins turning the steering wheel directly after her verbal delivery on line 18. The apex of the gesture is also shorter in duration, decreasing the witnessability. It is also important to note that in the first gesture the apex is already established by the time the driver provides the verbal component, while in the second gesture the apex co-occurs with the verbal resource. This leaves the recipient with much less time to actually discern the target.

To ensure smooth continuation of the conversation, as well as successful operation of the vehicle, the driver often resorts to requests. As seen above, the object of the request can be an item (extracts 12 and 13), a physical course of action (extract 11) or something less tangible, such as navigation assistance (extracts 14-16), and the driver modifies the pointing gesture accordingly. In the case of requesting a physical item or a course of action, the gesture is very witnessable, with the domain of scrutiny formed close to the actual target of the point. The apex is not limited to co-occur with verbal deictic expressions or the referent. A unique feature of the requesting pointing gesture appears to be that when requesting a physical object the palm of the pointing hand tends face upwards, carrying with it an additional iconic meaning. Also, the driver performs these gestures in a manner which creates a model vector for the recipient to follow. In other words, they appear to be reaching for the physical object or course of action themselves, and thus give the recipient clear instructions regarding target location. When requesting for something less tangible, such navigation assistance for instance, the driver’s knowledge of the potential options, route choices for instance, affects the gesture. If the driver is not familiar with the options, the tendency is to resort to clear and witnessable gestures where the apex co-occurs with deictic expressions, and the domain of scrutiny is accurately formed close to the target. If, however, the driver is more familiar with the options, i.e. the decision regarding navigation has already been made, he or she is requesting for acknowledgment of this decision. In these cases, the gesture is not as witnessable and the domain of scrutiny is not as accurate as in cases where the driver is uncertain of the route. Furthermore, the apex of the gesture is not limited to verbal deictic expressions in these situations.
4.3 Embodied Directive

As mentioned earlier, embodied directives differ from embodied requests in that they are presented by what could be considered an established authority in that specific conversation setting. In other words, when a directive is issued, the driver expects the recipient to comply. Nonetheless, the line between a request and a directive can seem quite blurry. The activity framework can often help understand the difference between these two gesture categories. In cases of directives the recipient has already accepted the driver’s expert status regarding the in which they are currently engaged. This expert status provides the driver the authority and ability to issue direct commands. This authority can be simply derived from the driver’s status as the one primarily responsible for driving, as the case of parking assistance requests illustrates in extract 19. The authority can also be derived from social hierarchy or inter-familiar relations, such as parent-child; as illustrated in extract 20. Additionally, the recipient may simply acknowledge the driver’s superior, and often technical, insight regarding a specific topic, such as GPS devices for instance.

As regard to the resources employed for embodied directives, the most obvious and unique is the tendency to resort to the imperative mood and sentence structure. The embodied resources also reflect this imperative mood. Cases of embodied directives are what could be considered as the traditional examples of issued commands where the follow-up action demanded from the recipient is expected to be immediate.

Choosing between requests and directives is not a simple case of politeness and established authority, however. Again, the aspects of mobility and the ensued need to multitask have an effect on the decision. Already, previous extracts have shown that when the target is only available for reference for a limited timeframe, the driver performs the gesture in a more witnessable manner. Furthermore, extract 8 has shown how multitasking can have a similar effect in the driver’s gestures. Multiple activity sequences tend to increase the importance of the pointing gesture as a resource for social action. In order to get the message through quickly, it is often better to resort to clear, unmistakable gestures, than to attempt to resolve the situation with words alone. When comparing the situations where the driver has to choose between a request and a directive, what seems to affect the outcome, besides the inter-personal authority relations mentioned above, is the urgency of the situation, the need to multitask, and the shared familiarity regarding the situation. In short, when the driver is more pressed for time, i.e. the recipient’s follow-up action has to be provided immediately, or the location of the referent is unclear to the recipient, the tendency is for the driver to resort to directives.
The very first example of an embodied directive is from the habitable cars corpus. It features four people: the driver is the same as in extract 15 and one of the back-seat passengers is his wife. A friend of the driver's is sitting in the front seat. The driver asks the front-seat passenger to open the glove compartment and hand him a CD case, which contains multiple discs and can be opened from several different places.

Extract 17: “Embodied Directive 1” Habitable Cars

1. DRV: Open the thingy* for me #.  

2. PAS1: \textit{This?}  

The first clearly visible feature of embodied directives is that the gesture apex can span entire turns, as is the case in extract 17. Embodied directives are typically for-witness gestures, with the domain of scrutiny formed, if not directly on the target, than at least extremely close to it. The reason for increased witnessability and duration is that the front-seat passenger is not aware of the location of the CD case, or indeed of the existence of it. By contrast, the recipient in extract 12, is clearly aware of the fuel card in the glove compartment, and has apparently gone through the same routine before. This is why the driver does not have to make his gesture explicitly for-witness. The lack of a constructed verbal component on the driver’s part also reflects this shared familiarity with the subject. In extract 17, however, the location of the target has to be made clear for the recipient, even more so since the driver does not locate the correct verbal expression and uses, instead, a relatively vague “thingy” as the verbalization of the referent. The witnessability and length of the gesture apex, nonetheless, make the target location apparent to the recipient, who then proceeds to open the glove compartment, while at the same time producing an acknowledgment in the interrogative mood.
The following extract will show the effect of increased shared familiarity with the situation involving the pointing gesture. During the same journey, the front-seat passenger took out the CD case, handed it to the driver, who, after failing to open it, handed it back to the passenger, who took out a CD and placed it in the car’s audio equipment. Later during the same drive, the driver indicates that he wishes to switch to another CD from the same case which has been placed back inside the glove compartment.

*Extract 18: “Shared Familiarity with the Referent” Habitable Cars*

```
01.DRV: You know what?
02.DRV: p If you* get the box out?
drv: P,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,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In this extract the referents of all three apices are already familiar to the recipient, and therefore the gesture does not need to be as explicit as before. The referent of the first gesture (turn 01) is the CD case inside the glove compartment. The driver realizes that the recipient is already familiar with the location, and therefore instead of an embodied directive, he employs an embodied request, as indicated by the shorter duration of the apex, its location regarding the referent, the decreased witnessability, and the interrogative mood of the verbal resource. The second gesture, on turn 03, is an embodied directive, as indicated by the imperative mood, and the length of the gesture. The target, and the referent, of the first apex is the CD case, and more specifically, the first “page” which can be opened from the case. The second apex is related to the CD which is still inside the player, and which the driver proceeds to take out after his turn. The witnessability of the second gesture is noticeably smaller than in extract 17, for example. The apex durations are also shorter than in extract 17. In fact, the gesture resembles those used
in cases of embodied references, as the two apices co-occur with the verbalization of the referent and a deictic expression.

Extracts 17 and 18 have shown that the driver does take into account the recipient’s familiarity with the situation. When the recipient is unaware of the location of the referent the driver resorts to clear, witnessable directives which cannot be missed. When the recipient and the driver share a familiarity regarding the target, the gesture does not necessarily have to be as explicit, and the driver can resort to embodied requests or shorten the duration of the gesture apex and lower the witnessability of the gesture.

Even though the verbal element of the embodied directive is often in the imperative mood, this is not always the case. Interrogative mood is also used, often blurring the line between a request and a directive. The following extract, taken from the Talk&Drive corpus, presents one such situation. The extract features two German-speaking exchange students driving in the city of Oulu. The driver is about to park the car and decides to attempt to reverse into the parking square. It would appear that she has not driven a car for a while and asks the front-seat passenger for assistance.

Extract 19: “Embodied Directive and the Interrogative Mood” Talk&Drive, tape 3_clip 6, 01:13 – 01:41

01.DRV: Shall I try to inside backwards heh heh heh?
02.PAS1: Tssch.[if you’re brave.] <@COUGH@>
03.DRV: [That would be ##]
04.DRV: Ye:s.
05.PAS1: Oh you are?
06.DRV: #I #am.
07.PAS1: <@Okay@> * let’s go.
     pas1: *((Claps her hands))
08.PAS1: I’ve not– I’ve– I haven’t done that in--
09.DRV: I’m [not sure] if I am too close.
    drv: [years. ]
10.PAS1: [years. ]
11.DRV: Can you have* a look?
    drv: [years. ]
12. DRV: Just* look out of the window.
    drv: [years. ]
13. DRV: Is it too [close?]
14. PAS1: [Ich ] kann das nichs- umm [I haven’t d-]
    drv: [years. ]
15. DRV: [Just open* ]
    drv: [years. ]
16. DRV: Just have a look.
17. PAS1: You’re too close.
18. DRV: I’m too close?
19. DRV: Are you sure?
The first gesture, beginning in turn 09, is combined with an interrogative sentence structure. The first apex of this gesture is relatively difficult discern. The driver shakes her right hand in front of the recipient’s face, forming, in a sense, a multitude of mini-apices. The location where the apex is reached marks it as for-witness. The target of the point is difficult to pinpoint as the referent is not clearly verbalized. The word “window” on turn 12 provides a clue as to what the target may be. In any case, the domain of scrutiny is formed directly to the right of the recipient, suggesting that the target of the point may simply be that specific direction. The first apex takes place during turns 09-11, actually encompassing turn 11 entirely. Despite the interrogative
sentence structure, the first apex is clearly related to the social action of embodied directive, as indicated by the long apex, and the high witnessability. The shaking motion of the hand further reinforces the sense of urgency regarding the situation: if the parking maneuver is to be successful, the passenger has to take a look immediately.

The second apex of the first gesture takes place during turn 12. This apex is noticeably less visible than the first, and it is retracted relatively fast, leaving very little time for discerning the domain of scrutiny. During the entirety of turn 11 the passenger’s head is turned towards the driver. This prompts the driver to renew and reformulate her request. This time she uses a more distinct imperative mood. The actual gesture apex, however, is more subtle than the first one. The reason for this may be that the driver wishes the recipient to shift her gaze immediately to the right. This second apex could simply be a continuation and an elongated version of the mini-apices of the first apex. On turn 12, the referent is clearly verbalized and the target of the point is established “out of the window”.

The gesture on lines 14-15 is a very vague beating-pointing gesture. The gesture apex does not culminate in a clear pointing finger. Though still a witnessable gesture, it is not as visible as the first one. An additional purpose of this gesture is to ensure that the passenger maintains her focus on the action of looking, as she is about to turn back towards the driver during line 14. The referent and the target of point is “the door”.

Immediately, the most noticeable feature of the apices on turns 12 and 14 is that they do not comply with the features of the more typical embodied directives, despite the traditional imperative syntactic structure. They are not built as for-witness, they are very quick, and the domain of scrutiny is not as accurate as in the first apex on turns 09-11. Perhaps the apices are vague because the driver does not wish the passenger to focus her attention on the door or the window as such, but rather on the physical location of the car itself, which cannot be easily pointed out physically but which can be discerned by looking out of the window and door. Only the first, lengthy, apex is used to actually discern the target and provide the directive. The social activity the driver is pursuing is that of demanding the recipient to look out of the window/door and provide instructions. The apices on turns 12 and 14 are used to provide additional, supporting, information, and to ensure that the recipient’s gaze remains fixed on the desired direction. Therefore, they do not have to be as witnessable or lengthy as the first apex. The first apex has already established the domain of scrutiny, and when the driver verbally refers to the window and the door, she does not need to physically point them out.
Throughout extract 19, a very real sense of urgency can be perceived, from the shaking nature of the gestures to the passenger resorting to her native German on turn 14. Reflecting this urgency, the driver performs an embodied directive, and attempts to verbalize it as a request. When the recipient fails to immediately provide a follow-up action, to turn facing to the right direction, the driver reverbalizes the directive in the imperative mood and provides clear verbalizations of the referents. The apices related to these verbalized referents are less witnessable than the initial apex, which actually carries the weight of the directive. The location of the window and the door does not need to be specified.

The next extract illustrates another important aspect of the pointing gesture used for embodied directive: the point can also function as a way to hold the floor (Mondada 2007). In extract 20, taken from the Habitable Cars, corpus, a woman is driving with three children, talking on the phone at the same time with a hands-free device. She is asking for an address on the phone, and asks the front-seat passenger, presumably her daughter, to write it down on a piece of paper.

**Extract 20: “Holding the Floor” Habitable Cars**

1. DRV: One one nine Stapleton Hall Road.
2. DRV: I might have to ring you back when I’m not driving
   that might be @ better @.
3. DRV: [1Thank you very much cheers.1]
4. PAS1: [1I have got a pen 1] [2I’ve got one2]
5. DRV: [20h have we2] got- we got- we got one hang on one you- she
could write it down.
6. DRV: What is it six oh two oh?
7. PAS3: Oh two oh right.
8. DRV: Oh two oh eight.
9. DRV: Eight Susie.
10. PAS1: So I wrote oh tw-
11. DRV: “eight”. ((gestures the number 8))
12. DRV: [1Three-1]
13. PAS1: [10h 1] [2two oh-2]
   drv: p,, ,-------------------
14. DRV: [2Just write eight2]- just write eight
   drv: --------------------------
   Susie.
   drv: -------

15. PAS1: Eight.
   drv: -------
16. DRV: Three four eight.*
   drv: -----------------------
17. PAS1: Should I write three four?*
   drv: -----------------------
   --------. . . . . . . . . . . . . . . . . . . .
18. DRV: Seven.
19. PAS1: Three.. four.
20. DRV: Seven five- [seven five five one.]
21. PAS1: [seven.. ##.]
22. DRV: Thank you very very much thank you.. bye.
23. DRV: Can you write--
   ((Car goes over a bump and the passenger's paper is moved))
24. PAS1: Ooh:
25. DRV: Can you write one one nine.
   drv: ((adjusts the paper with the left hand))
26. PAS1: One.
27. DRV: One one nine.. yeah.
28. PAS1: One.
29. DRV: There's- there's separate line.
   drv: ((holds her left hand on the paper
30. DRV: One [one nine.]
31. PAS: [one ] one nine.
32. DRV: Stapleton Hall--
33. DRV: Seh teh aeh.
34. PAS1: Seh.. teh.. aeh.
   drv: removes the hand))

   "eight..."

   "four?.."
The gesture, beginning on turn 13, is a clear for-witness gesture. The domain of scrutiny is formed in the paper the passenger is holding on her lap. The driver holds her finger on the paper until turn 17 when she lifts it for a short period of time before performing another quick apex towards the left. This time, however, her hand is not in direct contact with the paper. In this example, the driver is forced to multitask between driving activities, talking on the phone, and giving directions to her daughter. This need to multitask makes using directives a more sensible choice for the driver. Increased visibility and duration, combined with the imperative mood ensure that the recipient can successfully follow the driver’s instructions.

On turn 23, the car goes over a bump and the paper on the passenger’s lap is moved. On turn 25, the driver moves her hand to quickly adjust the paper. This action has also a pointing element to it, as it takes place during a turn where a request is given to the passenger. A similar situation occurs again on turns 29-34 where the driver seems to be both holding the paper in place and giving instructions. This embodied action seems to fulfill two functions. Firstly, it keeps the papers in check and secondly, it allows the driver to hold the floor, which allows her to give further instructions to the passenger. The hand is held in contact with the paper until turn 34 where the passenger begins to repeat the driver’s spelling instructions. Evidently, the driver is holding on to the paper until she is convinced that the passenger has understood her instructions.

It would appear that the primary function of the actions on turns 25 and 29-34 is to hold the floor for the driver. In this sense, they function similarly to the gesture on lines 13-17. They, however, are not pointing gestures per se. It is interesting to note that since the driver is also engaged in a phone call, right until turn 22, there seems to be a greater urgency in getting her instructions through to the passenger. The passenger seems to be confused about the instructions, as indicated by turns 10 and 13, where she seems to be spelling the wrong numbers (see turn 11 where the driver makes the desired number very explicit). The backseat passenger’s comment on turn 07 may add to, or create, this confusion. Therefore, the driver performs the explicit pointing gesture which is certain to grasp the front seat passenger’s attention. On turn 14 this explicit gesture is accompanied by explicit verbal instructions.

The passenger is still confused on turn 17, asking for confirmation. The driver’s focus at this point seems to be on the phone call as she does not respond verbally but instead performs the confirmation with a hasty gesture. At first, the driver seems to be grappling the pen from the passenger’s hand but, instead, moves her hand away and upwards where she performs the witnessable pointing apex to the left. At the same time, the driver also nods her head in confirmation. The gesture apex on turn 17 also seems to have another function: it is employed to silence the passenger as the driver is receiving further instructions from the phone.
The driver employs embodied directives in situations where the recipient’s follow-up action is immediately necessary. To reflect this urgency, the verbal resource of the directive is typically in the imperative mood. The actual pointing gesture, and it’s apex in particular, are typically very long in duration. In fact, the apex can span entire turns. The domain of scrutiny is formed very accurately, either directly on the target or very near it. Especially in longer directive sequences, the pointing gesture can also employed to hold the floor, allowing the driver to continue with the directives. Shared information between the driver and the recipient regarding the referent can influence the gesture by reducing the witnessability and gesture duration. For example, when the target of the point is already known by the recipient, the gesture does not need to be as visible. When choosing between a request and directive, the driver is affected by factors such as the urgency of the situation, the need to multitask, and the inter-personal authority relations.
4.4 Embodied Guidance

The final two sections of analysis includes examples of situations where the pointing gesture cannot be clearly placed in any of the three previous categories. The gesture either displays features from several categories, or it is performed in a way which allows multiple, differing interpretations from the recipient.

The first group of problematic gestures is related to the social activity of giving directions. In these examples, the driver is guiding the recipient through a long and often complicated sequence of physical actions. In extract 21, this sequence is related to placing a CD into the car’s CD-player, and later switching it to another one. In extract 22, the sequence is that of operating a GPS device. In this thesis, this type of directing social activity will be called embodied guidance, in order to distinguish it from the social action of directive.

The first example is taken from the Habitable Cars corpus, and it features the couple from extract 15 as well as two of their friends. This extract is an expansion of extracts 17 and 18, and features the same group of participants. During the extract, the two women in the back seat are involved in a separate conversation which, for the sake of clarity, has been omitted from the extract. The extract begins with the driver asking the front-seat passenger to open the glove compartment and hand him a multilayer CD case which can be opened from several locations. He then attempts to open it one-handedly but eventually hands the case back to the front-seat passenger to whom he proceeds to give directions. The passenger places the CD into the player and later on in the extract, the driver asks the recipient to the switch the CD in the player to another one from the same box.

Extract 21: "Embodied Guidance 1" Habitable Cars

01.DRV:  
   drv: Open the thingy for me ##.
02.PAS1:  
   drv: This?
03.DRV:  
   drv: And that- what’s that?
04.DRV:  
   drv: That’s triple… (1.0) CD.
05.DRV:  
   drv: point turns into an open palm receiving the CD case   from PAS1))
   (Until turn 08 the driver is attempting to open
   the CD case on his lap with one hand
06.DRV:  
   drv: This is spare it’s just a-
   (4.0)
07.DRV:  
   drv: If I can open it.
07.DRV:  
   drv: No.. I #can’t.
08.DRV: Try and open it.
drv: ... hands over the box))p,,,,,,,,
09.DRV: But be careful it could open different ways-
drv: ...........................
10.DRV: Do the ## one- that’s it.
drv: ,,,,,,,,,,,
11.DRV: Gimme that* one- that [there.]
drv: ........................
12. PAS1: (Number] one?
drv: ...............................p
13.DRV: Yeah.
drv: ..........p
14.DRV: Just slide it* in there.. thank you ##.
drv: P,------.............p
15.DRV: Push .. there you go.

......((Later during the same drive the driver wishes the
front-seat passenger to swap a different cd inside the
player)).....
16.DRV: You know what?
17.DRV: If you get the box out?
drv: p,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,p
18.DRV: Open up the front one for this one
    drv: P,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,(driver
         begins to remove the cd from the player while the
         passenger opens the cd box
   (3.0)
19.DRV: Yeah.
(1.5)
20.DRV: Click that on- they fall of a bit sometimes.
drv: hands over the cd to PAS1)) p,,,--
21.DRV: Close that.
drv: ...........................
22.DRV: And then you have to open it from middle* section
    drv: ...........................
23.DRV: But be careful because there’s two there and they
    drv: ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,... often fall out.
drv: ........................
24.DRV: See that one should be on this* side and I want
    that
    drv: ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,... left* on first ##.
drv: ...........................
(1.0)
25.DRV: Excellent.
"different..."
"that...
"it...
"middle..."
Between turns 01-04, the driver is pursuing a social activity where he asks the recipient to take out the CD case out of the glove compartment and hand it to him. Between turns 08-15, the social activity is that of asking the recipient to take out a specific disc and place it into the player. Relaying solely on verbal resources would no doubt have made fulfilling these activities extremely cumbersome. Instead, the driver employs a multitude of gestures to achieve the desired outcome. Turns 01-02 include the first case of embodied directive. What is typical for pointing gestures of this category is that their duration is very long, they are built as for-witness, and the domain of scrutiny is formed, if not directly on the target, then very close to it. The apex of the gesture can co-occur with entire turns, as is the case in the first gesture. The second gesture, on line 03, is understood by the recipient as an embodied request. Looking solely at the verbal resources, line 03 seems to be a case of reference, though the increased witnessability and duration of the gesture mark this as a request for the recipient, who proceeds to hand the cd-box over to the driver. The driver acknowledges this interpretation by turning his hand and forming a receiving palm to which the box is then placed.

The pointing gesture on turns 08-13 is a case of the driver providing embodied guidance. What is typical for these gestures is that their duration is often extremely long, they have multiple
apices, and the domain of scrutiny is formed directly on the target, marking them as for-witness gestures. The gesture on turns 08-13 has three apices in total, and each of these gestures is performed very close to the actual target of the point, marking them all as part of a for-witness gesture. Despite the semi-imperative syntactic structure on turn 09, the social action related to the two apices here is most likely a case of embodied reference, as indicated by the short duration of the apices and the fact that the first one co-occurs with the verbalization of the referent “it”. The apex on turn 10-12, however, is more related to the social action of directive, as the long duration of the apex and imperative syntactic structure suggest. Embodied guidances are social activities which are divided into social actions, which can in turn be directives, requests or references. What is unique about embodied guidance is that a single gesture can encompass several social actions. For example, the embodied guiding sequence, beginning on turn 09, includes embodied references and an embodied directive.

Breaking down the two social activities reveals that the driver does not rely only on straight directives. Instead, he begins with an embodied directive (turn 01-02), and follows with a request (turn 03) to fulfill the first social activity of asking for the CD case. Next, after failing to acquire the CD from the case, he provides an embodied guidance sequence (turns 08-13), and finally ends the sequence with an embodied directive on turn 14. This last gesture is not very witnessable, and the domain of scrutiny is not formed as accurately as before. This is largely due to the fact that the front-seat passenger has already begun the physical action of placing the cd in to the player before the driver’s turn, making this last directive redundant.

Later during the same drive, the driver wishes to switch the CD inside the player to another one from the same box, now placed back inside the glove compartment. This time the driver begins with an embodied request on turn 17. The gesture is witnessable, and relatively short in duration. The reason why the driver does not resort to a more witnessable gesture, is that this time the location of the CD case is already known to the recipient who has taken it out once before. For the same reason, the embodied directive on turn 18 is also less witnessable. In fact, the two apices here are performed as not-for-witness. The recipient has already opened the “front one” once before to take out the original CD. The driver realizes this, and relies more on verbal resources than on pointing gestures, as the exact location of the target does not need to be specified. The second apex on turn 18 relates to the original CD which is still inside the player, and not the immediate concern of the recipient. The driver takes out the CD inside the player and hands it to the front-seat passenger. What follows on turns 20-24 is the driver providing embodied guidance regarding the opening of the case. The gesture duration is very long and
there are a total of six apices. All of the apices are performed as for-witness and the domain of scrutiny is formed on the actual target itself. The first apex, on turns 20-22, is related to the social action of embodied directive, spanning entire turns, combined with an imperative syntactic structure. The next apex, on turn 23, co-occurs with the verbal element “be careful”, and is most likely a case of embodied reference. The last remaining apices all co-occur with deictic expressions related to the multiple CDs inside the case: “there-they”, “that one”, “this” and “that” respectively. This marks them as cases of embodied reference.

Extract 17 shows that in order to fulfill a complex social activity which requires a multi-phased physical action from the recipient, the drive has to resort to a multitude of embodied social actions. The simple use of directive is not feasible, since the physical action sequence has to be broken down into sub-actions which in turn can be references, requests or directives. Each sub-action of the embodied guidance can also have its own gesture apex, and by looking at the apex location, duration and witnessability, the social action behind each apex can be discerned. For instance, in cases of directives the apex can occupy entire turns, as is the case on turns 20-22, whereas in cases of reference, the apex tends to co-occur with deictic expression, for instance on turn 24.

The next extract, taken from the Habitable Cars corpus, features four co-workers. The front seat passenger is attempting to save landmarks on a GPS device and asks the driver for assistance.

Extract 22: "Embodied Guidance 2" Habitable Cars

01.PAS1: I- how did you put these in again?
02.DRV: Umm: ask Mike.  

03.DRV: I think it’s- that one is* [- that] one.  

drv:  

04.PAS1: [yea ]
05.DRV: That one should landmark.  

drv:  

06.DRV: That gives you [# lan]dmark.  

drv:  

07.PAS1: [yea. ]  

08.PAS1: and then [you just press the book?]  

drv:  

09.DRV: [And then you just * ]- then that one.  

drv:  

10.PAS1: And then that.  

drv:  

11.DRV: Apparently so.
drv: ...............p
12.PAS1: And then.. the book?
drv: ((Driver shrugs))
13.DRV: I don’t know what the book’s for.

Extract 22 includes two lengthy gestures, both related to the overall social activity of guidance. In both gestures, the domain of scrutiny is formed directly on the target, the different buttons on the GPS device. They are both for-witness gestures that cannot be missed by the recipient, whose gaze remains on the device itself. The first gesture, taking place between turns 02 and 06, is comprised of two apices. The length of the first apex, occurring between turns 03 and 05, would seem to suggest an embodied directive, despite lacking the typical imperative sentence structure. Having given the directive to press the indicated button, the driver builds the second apex on turn 06. This time, the apex co-occurs with a deictic expression "that", and the apex duration is noticeably shorter, suggesting that this apex is related to a case of embodied reference. The purpose of this second apex is simply to repeat and confirm the driver's preliminary supposition regarding the landmarking button. On turns 03 and 05, the driver employs verbal resources which still carry with them a certain sense of hesitation: "I think it’s-" and "should", respectively. Turn 06 simply confirms these suppositions with a definitive
sentence structure combined with a referring pointing gesture. Moving on in the embodied guidance sequence, the driver rejects the front-seat passenger's suggestion for the next action: the "book" button, on turn 08, and provides the next action in the sequence with an embodied directive on turns 08-10. The apex of this gesture spans two turns, and the domain of scrutiny remains fixed on the related buttons on the GPS device.

In this extract, the embodied guidance sequence is performed with the help of two pointing gestures, comprised of embodied directives and references, and thus complicating the categorization of the two gestures. The second gesture, beginning in turn 09, is simpler as it only includes a single embodied action, that of directive. It only has one gesture apex, which is very long in duration, spanning entire turns. The first gesture, beginning in turn 02, on the other hand, has two apices, one related to a directive and another related to a reference.

The previous two extracts show that in certain scenarios a single pointing gesture can fulfil several social actions; it can be used to refer, request and direct. One such scenario is that of giving embodied guidance. These guidance sequences can be comprised of one or more pointing gestures with multiple apices. These apices are typically sequentially related to different tasks that the recipient must perform. Therefore, the target of the apex and the referent of the verbal component can change throughout the gesture. It seems that the most typical embodied social action used for guidance is that of directive and arguably in certain cases, it may be entirely possible to guide the recipient with directives alone. However, the more lengthy and complex the guidance sequence becomes, the more likely it is that the driver will have to resort to embodied references and requests as well. For example, in extract 21, the driver needs to specify which CD he wants to listen to first. To accomplish this, he resorts to embodied references on turn 24 to distinguish the target disc.
4.5 Conflicting Resources of Social Action

Sometimes the recipient may misinterpret the driver’s intended social action. This may be due to a mixed delivery of embodied and verbal resources. For example, the driver may produce an embodied reference but perform the gesture in a manner which allows the recipient to interpret it as an embodied request. The following extract, taken from the Talk&Drive corpus, illustrates one such situation. The participants are exchange students, neither of them native English speakers. The driver is referring to the car’s heating system.

*Extract 23: “Mixed Delivery of Social Action” Talk&Drive, Tape 1_ clip 1, 04:40 – 04:58*

01. DRV: I probably shouldn't say when was the last time I drove a car uhh.
02. PAS: @@[@@@ @@@]
03. DRV: [@ @ @] no don't worry @@
04. PAS: @@@ @
05. DRV: p You can put the.. heat* on.. or something. *#
    drv: """""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""""
    #(the driver places her right hand palm near the heater blower)
06. DRV: Or does it #work--
07: DRV: Okay where do we go actually?
08: PAS: Uhh just take uhh: right# here.. I guess.
    # ((the driver removes her right hand from the heater blower))

**“heat..”**
In this example, the length and witnessability of the gesture seem to indicate that the driver requests that the passenger turns the heating system on. It is important to note that the car is a new one to both participants; in fact, the driver has been driving it for just a few minutes all together, which means that operating the heating system is not as straightforward as may be expected when the car is more familiar.

Closer inspection of the example reveals certain contradicting elements to the initial interpretation of the situation. Firstly, the verbal element is more of a statement rather than an enquiry or a polite request as might be expected if the driver wishes the passenger to turn the heat on. However, it is also important to note that neither of the participants is a native English speaker, and the deviant syntax structure may simply reflect this.

The actual gesture is definitely more witnessable than what is expected from a simple case of referring to the heating system. Based on this notion, this example could be placed in the category of requests. The gesture becomes even more witnessable when the driver begins shaking her hand back and forth near the heater blower, which is the domain of scrutiny in this example. This motion can, however, be explained by the pauses on turn 05. The driver is not a native English speaker and she seems to be struggling to find words for the heating system. When words fail, she resorts to a clearly witnessable gesture directed towards the target.

The gesture succeeds in capturing the passenger's focus, her body language reflecting this. After turn 05, she leans increasingly closer to the domain of scrutiny, where her gaze is also fixed on, and after turn 06, she begins to move her left hand to actually operate the heating system. The driver however stops this action by presenting the passenger a new request -- that of navigation on line 07. In fact, this new request is produced in a manner which truncates the driver's previous turn.
It seems that the driver's unusually witnessable gesture has prompted a misunderstanding. The passenger interprets it as a request, while the driver simply means it as a reference. The driver apparently understands that the situation can have several interpretations and she attempts to address this by giving several verbal and non-verbal hints to the passenger. First of these hints is the "or something" particle on line 05. This kind of structure is typically used to soften or downplay a request and, in this context, it carries the meaning ‘if you want to’. Line 06 in its entirety is another hint and in fact, in this turn, the driver in a sense negates entirely the message of the previous turn: if the heater is actually already working then there is no need to use it. Finally, right after turn 05, the driver also places her right hand to the heater. To certain effect she both physically blocks the passenger from operating the heating system and at the same time holds the floor by showing that she is not yet finished examining the heating system.

Throughout turns 05-07, the passenger leans closer to the domain of scrutiny and finally begins the action of adjusting the heating. As the driver notices that her gesture was misunderstood despite the hints and the passenger is about to begin a potentially pointless action, she quickly presents her with a new task on line 07. The passenger responds by withdrawing her body torque and gaze from the original domain of scrutiny and shifting her focus to the approaching junction. The driver keeps her hand near the heating system right until she perceives that the passenger has engaged in the navigation task.

This example shows that the participants typically have an assumption on how visible certain gestures tend to be. In this case, presenting the passenger with a verbal reference but combining it with a deviating gesture -- usually associated with requests or directives -- causes confusion and misunderstanding. The driver immediately notices and reacts to this by attempting to verbally downplay and negate the request, and by creating a barrier near the domain of scrutiny which, both physically and symbolically, prevents the passenger from manipulating the heating system.
5. Conclusion

This thesis set out to explore the different ways the driver can employ pointing gestures to fulfil three different social actions: references, requests and directives. Pointing gestures were considered as embodied resources which, alongside other resources such as spoken language and contextual or inter-personal frameworks, can be used to transfer meaning to the recipient. The restricted physical realities of the car as a conversation setting, as well as the quickly changing environment and the ensuing need to multitask between driving and talking activities force the driver to modify the way embodied resources are used to best suit the dynamic situation. The relationship between the verbal and the embodied resources was closely examined to understand how these modifications are made. Specific focus was on the pointing gesture’s duration, domain of scrutiny, apex location, and witnessability to the recipient, as well as on the gesture’s physical form, and the possible additional meanings it can carry.

Conversation analytic methods were used to observe the differences and similarities between the three gesture categories. Most important of these methods was the use of real-life data as a source of analysis. Three corpora of naturally-occurring spoken language were used to draw examples. The Habitable Cars corpus contains mostly native English-speakers, and provides the largest amount of examples used in this thesis. The Talk&Drive corpus contains participants of several nationalities and languages, with the language used in the chosen examples being English. One example was taken from the Kokkola corpus which contains only native Finns speaking Finnish. Detailed transcriptions were produced of the conversation situations for the purpose of analysis.

The first category of pointing gestures examined was related to the social action of embodied reference. In these cases the driver is attempting to create a joint focus of attention around the target of the pointing gesture. The recipient is expected to shift his or her focus to the indicated location. Pointing gestures used for this purpose are typically short in duration, and their apex, the culmination point of the gesture, co-occurs with deictic expressions such as: “this”, “that”, “those”, “there” and “these” to name a few. Alternatively, the gesture apex can also occur during the verbalization of the referent. Typically, pointing gestures used for embodied references only contain a single apex. The witnessability of the gesture from the recipient’s point of view, of these gestures is typically low: they tend to be what Nevile (2007) describes as not-for-witness gestures, being performed in a location which is not in the recipient’s likely field of vision. Due to the unassuming and fast nature of these gestures the
domain of scrutiny, the area where the gesture draws the recipients focus, is not typically formed very close to the target of the point.

The driver can, however, modify these features to tailor the gesture to different situations. For instance, when the target of the pointing gesture is only available for referring for a limited timeframe, the gesture tends to be more witnessable. Increased pressure to multitask between driving and talking activities can have a similar effect on the gesture, increasing the witnessability of the gesture. Furthermore, when combined with sensory expressions such as “see” and “look” the overall witnessability of the gesture increases. The apex structure of the pointing gesture is also subject to change in certain situations. If the gesture has multiple targets more than one apex may be constructed, the location of each apex still limited to the aforementioned deictic expressions or to the verbalizations of the referent. If the gesture displays signs from multiple gesture types (MacNeill 2000) the structure may reflect this by having several apices.

Pointing gestures can also be used to fulfil the social action of requesting. In these cases the driver may ask the recipient for something tangible, such as a physical object, or that the recipient performs a certain physical sequence of actions, for example adjusts the car’s heating. On the other hand, the object of the request may be less tangible. For instance, the driver may request navigation assistance. The requesting pointing gesture is far more witnessable than the referring, they are either witnessable or for-witness gestures (Nevile 2007). The domain of scrutiny is formed closer to the actual target of the point. The duration of the gesture is also greater than in cases of embodied reference. Similar to embodied requests, pointing gestures used for requesting tend to only include a single apex. A unique feature related to the form of the requesting pointing gesture is that when asking for a physical object or a sequence of actions from the recipient, the palm of the pointing hand tends to be facing upwards, carrying with it an additional symbolic meaning of request. Furthermore, the driver performs these requests in a manner which draws an imaginary vector which the recipient can follow to fulfil the request. They are performed as if the driver himself or herself is reaching for the desired object, and thus leave a path for the recipient to follow.

Embodied requests for navigation assistance form a special sub-group of pointing gestures. When requesting for navigation assistance, the driver’s knowledge of the potential routes affects the forming of the gesture. If the driver is uncertain of the route, the tendency is to resort to more witnessable gestures, with the domain of scrutiny formed more accurately near the target of the point. In these cases the apex of the gesture co-occurs with deictic expressions or the verbalization of the referent, in a similar manner to the gestures used for embodied reference. If
the driver is simply requesting acknowledgement for the route selection already made, the
gesture witnessability is lower and the domain of scrutiny is formed less accurately in relation to
the target of the point. In these cases the location of the gesture apex in relation to the verbal
component is not restricted deictic expressions, and more closely resembles the typical
requesting pointing gesture.

The third category of pointing gestures is related to embodied directives. Embodied directives
are typically fulfilled with the help of the imperative syntactic structure combined with a clear,
for-witness gesture. Here, the domain of scrutiny is formed directly around the target of the
point. The gesture duration is very long, and the apex of the gesture can span entire speech
turns. If the directing sequence is especially long, the pointing gesture can also function as a
way to hold the floor. What seems to affect gesture witnessability and duration is the
participant’s shared knowledge regarding the referent and its location. If the recipient has seen,
handled or is otherwise familiar with the referent, and the driver is aware of this, the pointing
gesture tends to be shorter in duration and less witnessable. When choosing between a request
and a directive, the driver is influenced by more than just a sense of politeness and inter-
personal authority relations. Often the same outcome can be reached with both embodied
directives and embodied requests, somewhat blurring the line between the two. There is a
tendency, however, to resort to clear for-witness directives when the driver is more pressed for
time or forced to multitask. Embodied request tend to be favoured when the situation is more
relaxed.

Additionally, a pointing gesture may be display signs from all three categories of social action.
During the same gesture, the driver can request and refer for instance. One specific social
activity is especially prone to including such gestures: that of embodied guidance. In these cases
the driver is guiding the recipient through a complex, multi-phased sequence of actions which
cannot be resolved with embodied directives alone. What is typical for embodied guidance is
that pointing gesture employed is a for-witness gesture, with the domain of scrutiny formed
directly on the target. This gesture can have multiple apices, which in turn can be references,
requests and directives.

Overall, within all three categories, there is a tendency for the driver to resort to more
witnessable and longer gestures when there is a real sense of urgency or uncertainty related to
the conversation setting: either the referent is quickly becoming unavailable for scrutiny or the
increased need to multitask forces the driver to resort to gestures which cannot be missed, and
which successfully transfer the original meaning even when words fail. All pointing gestures,
regardless of their classification, have the potential for decreased or increased witnessability and
duration depending on the specific situation. In a certain sense, this challenges the justification of the initial gesture categorization. However, as the final example has shown, the recipient does have a certain innate understanding on what kind of gestures are typically connected with the social action being pursued by the driver. It is therefore safe to say that gesture witnessability and duration increase when moving from embodied references to requests and directives. The more immediate and physical the response expected from recipient is, the more witnessable the gesture tends to be.

This thesis shares Nevile’s (2007) focus on the pointing gesture’s witnessability and its importance regarding prioritization of potential points of joint focus. According to Nevile, gesture witnessability has an effect on how worthy of examination the target of the point is considered to be by the pilot and the co-pilot of an airplane. Nevile sees witnessability as comprising mainly of how and where the gesture is formed in relation to the recipient’s field of vision. This thesis develops the concept of witnessability further, by including the element of gesture duration. The extracts have shown that longer gestures also tend to be more witnessable, and that one way to affect the gesture’s witnessability is to alter the duration of the gesture. A great deal of additional research can be conducted on the relationship between gesture duration and witnessability. Studying gesture witnessability and duration and their relation to the verbal resources has been one of the focus areas of this thesis and it is safe to say that several interesting research topics may be found by further examining this relationship.
Appendix

Transcription symbols used in this thesis:

[   ]  The beginning and end of overlapping speech
@  Laughter
<@ @>  Laughing tone of voice
##  Uncertain hearing, with one symbol representing a single syllable.
#almost  Uncertain hearing with potential interpretation
(() )  Comments regarding the participants' actions or the environment
.  Falling intonation
?  Rising intonation
..  Slight pause
...  Longer pause
*  Location of the picture provided from the situation
-  Truncated word or sentence
--  Truncated turn
:  Lengthened pronunciation
ULLET  Lowered volume or 'mouthing' of the word

Symbols used to describe pointing gestures specifically:

pp  Gesture beginning and end
",",  Gesture build-up phase
---  Gesture apex
...  Gesture retraction phase
References


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