Keeping Spatial Concepts on Track in Text Production. A Comparative Analysis of the Use of the Concept Path in Descriptions and Instructions in German

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Abstract

Using the concept PATH as a basis of comparison, the present study deals with the way information is organised for expression and mapped into linguistic form in text production, depending on the type of communicative task in which it occurs. The concept of path is used to test one of the set of constraints defined by the "quaestio" model of information organisation - the specification as to what holds as main or side structure information (foreground/background) in descriptions versus instructions. The analysis also investigates the status assigned to path-related information, depending on whether it belongs to the type of information which is "at issue" in the task, or is used as a strategy in presenting the information to be expressed, that is, to ensure that the text produced forms a coherent body of information (linearisation). The results show to what extent the mapping of linguistic information into form is determined by global principles of information organisation in text production.

Zusammenfassung

Am Beispiel des Weg-Konzeptes wird in dieser Untersuchung die Frage behandelt, in welcher Weise in der Textproduktion Information für die Darstellung organisiert wird und welche sprachlichen Ausdrücke für die Realisierung gebraucht werden. Das Weg-Konzept wird hier herangezogen, um eine der im Quaestio-Modell postulierten Vorgaben zu prüfen; es wird untersucht, wie Information über Wege, die jeweils als Haupt- oder Nebenstruktur in Beschreibungen und Instruktionen spezifiziert wird, in Texten gekennzeichnet wird. Der Status der Information als Haupt- oder Nebenstruktur hängt davon ab, ob sie zu denjenigen Informationen zählt, die mit der kommunikativen Aufgabe "erfragt" sind, oder ob sie als Strategie genutzt wird, um die Kohärenzherstellung im Text zu bewirken. Die Ergebnisse zeigen, in welcher Weise solche globalen Prinzipien der Informationsorganisation im Text den Einsatz sprachlicher Mittel steuern.

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1. Introduction

Taking information relating to the spatial concept PATH, the present study investigates how this concept is used in tasks which require a description of a particular place, as opposed to an instruction on how to find one's way through a place. In instructions of this kind paths define the course an individual must take in order to get from one place to another, that is, from a defined starting point a) to a defined end point b), while in descriptions paths can be used to describe a state of affairs from the viewpoint of a figure following a particular course through the place in question (Linde & Labov 1975; Ehrich & Koster 1983). As opposed to route directions, the path leading from one place to another is not at issue when describing a particular place, however.

In the "quaestio" model of information organisation, the task definition or text "quaestio" determines what is at issue and sets constraints on the way information can be organised for expression in text production (see von Stutterheim & Klein 1989). With route directions, for example, the text produced is seen as providing a structured answer to the question "how does one do x" where x involves "get from a to b?". When the communicative task is viewed as best resolved by providing a description of the state of affairs, the text is structured as an answer to the question "what is x like?"- where x is the entity under description. Given this task definition, a description of a particular place calls for a specific organisation of the information to be expressed which facilitates the presentation of its features to form a picture of the place as a whole. An instruction on how to find one's way through a place, on the other hand, requires a form of representation which breaks down the information to be expressed into step-like units, falling in line with a "how to" mode of representation which is typically organised in temporal terms (Kohlmann 1992). With the formulation of the task in hand, information relating to the same entity, in this case a place,

is thus represented in different terms for the text production process, depending on whether it figures in an instruction or a description.

The task definition thus sets global constraints on the format chosen in organising information for on-line presentation in a text. In this model of information organisation, information relevant to the communicative goal is not mapped directly from memory into linguistic form during the text production process. Retrieval from memory is mediated at a linguistic level of representation by a specific format generated for the task in hand. Similar proposals are found in Garrod & Sanford 1988.

The present analysis focuses on the way information related to the concept PATH is organised for expression and mapped into linguistic form, depending on the status assigned to this category of information in the communicative task. Before investigating the actual role of this concept in these two tasks, we will first introduce some of its basic aspects and then relate these to the constraints set on information organisation by the task definition or quaestio for the concept PATH, depending on whether it involves a description or instruction.

2. The Concept of Path

The places through which an entity passes when in motion can be perceived as forming a sequence by linking the places to points in time, beginning with a starting point t0, t+1, t+2, etc., and finishing with some endpoint tn, so that a path can be defined by associating the locations traversed with a time index (see Bennett 1975, Miller & Johnson Laird 1976, Jackendoff 1983, Bierwisch 1987, Wunderlich & Herweg 1991). The movement of a figure through space can be represented by stating the beginning and endpoint of the path, and some of the successive points between the two. These three parts of the course followed are typically termed the source, intermediate and goal sections of

the path (e.g."they drove out of the building, across the road and into the back of a van").

In order to function as a reference point or "relatum" in locating other entities the path itself must be locatable. This is crucial when using paths in descriptions. The path traced by an entity (fictive or otherwise) can be located
(i) either by other entities which lie along the path ("the crack runs right across the square and under the building") or
(ii) by the direction of motion ("the reporter ran straight on").

In (i) the path traced by the crack is located in terms of objects which take up a fixed place in the scene. In (ii), on the other hand, the relatum is given by the entity defining the path (the reporter) and the direction taken. In other words, the relatum used to locate the path is not an entity in the scene, but the entity defining the path. In this case we have information on the direction the path takes, but the location of the path with respect to the place through which it is traced is left implicit. As these examples show, the information to be expressed when paths are used in descriptions and instructions covers two aspects (i) the direction taken, which can be defined in terms of the figure tracing the path, and (ii) the location of at least one section of the path with respect to the place through which it is traced.

Once the location of a path or one of its sections is known it can be used as relatum to locate an object. In the following example, a location is defined in terms of the path which leads to it: "there is a cafe up the street and across the bridge" (Bennett 1975). Implicit here is the assumption that if one takes this way it will lead to the place in question. The location of the object "the cafe" thus coincides with the destination or goal point of the path. In Jackendoff (1983:166) locations defined in this way are categorised as giving "a class

of place-concepts that appear to be based on reference paths".

2.1. Defining main and side structure information in descriptions and instructions: The quaestio model

Main structure information (foreground) is defined as the type of information which must be specified in order to provide an answer to the quaestio. The task definition thus specifies which aspect of the same conceptual structure PATH is at issue and must be expressed given a description or instruction.

Given the definition of the task as an OBJECT description, and a formulation of the quaestio as "what is x (x: OBJECT) like?", the subject matter at issue is the object's features, as mentioned above. When a path is used as a frame of reference to describe the spatial relations which hold between parts of the object, for example, the features presented relate to what a figure on tour sees or locates on its way through the place in question. Information which serves solely to locate this figure, however, (as opposed to features of the scene/object) forms "side structure" information. Information which locates the figure tracing the path is merely a means to the defined end, so to speak.

If the task is defined as requiring an instruction on how to find one's way through the place, on the other hand, the information at issue is the location and orientation of the figure who wants to get from one place to another, and the location of the route to be followed. The information given with the task definition is the starting-point, and the end-point which the individual receiving the instructions wants to reach. At issue is the location of the intermediate section of the path. As opposed to object descriptions, information which locates the figure/path thus forms main structure information in route directions.

The distinction between deciding on the type of information at

issue in the task - "what must be said" - and "how to say it"- is basic to many models of language production and language generation (Thompson 1977; McKeown 1985; Appelt 1985; Herrmann 1986; Danlos 1987; Herrmann et al. 1989/1992). Within the quaestio model of information organisation, the definition as to the type of information which must be said is given by the way the communicative task in hand is formulated.

The other means adopted to achieve the goal defined in the task, though indispensable, need not belong to the category which forms main structure information. As mentioned already, the essential part of the task in route directions is to locate the route. This task is often carried out without providing information which locates the entities that locate the route (such as the telephone booth in the following example: "heading north you come to a side entrance. You can't miss it, there is a telephone booth just beside it"). While "the side entrance" locates a specific section of the route, and thus forms main structure information, the telephone booth does not (it serves to identify an object - "the entrance") and therefore forms side structure information. The extent to which side structures of this kind are necessary or not in a specific context in a route direction is open to assessment by the speaker. But if the information produced does not at least locate the route to be followed, however inadequatly, it is not a route direction, but something else. Task definitions and designations as to what counts as main structure information are minimalistic in this sense.

In the following we will attempt to show, with the concept PATH, how the quaestio model provides a means of systematically deciding what categories of information count as main or side structure (foreground or background) in descriptions and instructions.

In discourse studies to date, work on this topic has focused mainly on narrative texts. In Labov (1972), what holds as a

"narrative clause" is defined by a specific kind of temporal ordering of the events related (see also Kamp & Rohrer (1983); Partee (1984). The proposals put forward as to why a narrative order of a particular kind should be categorised as "foreground" information in a text, range from "importance" (Hopper & Thompson 1980) to general principles governing the organisation of information into figure and ground components. The type of information which forms the figure in a narrative involves the set of events ordered (by the speaker) on the same time axis (Reinhart 1984).

In the quaestio model the set of temporal relations on which information must be provided in the text is defined in the question (what happened to x at time t0, t1, t2, etc?). The utterances which provide an answer to these questions, using the specified time intervals, form main structure information (see, in detail, von Stutterheim and Klein (1989).

Applying this model to descriptions and instructions, the first section of the analysis focuses on how information is used and mapped into linguistic form, depending on whether it is defined as main versus side structure information for the task. This will be followed by a section which investigates how information which is selected by the speaker in organising the task, but is not "given" with the formulation of the quaestio, is marked in the text. This applies to the concept PATH in descriptions of an OBJECT with static part whole relations, for example. The question is in how far does the status of a concept differ depending on whether it belongs to the categories of information given with the formulation of the quaestio, or is introduced by the speaker when selecting a strategy to present information in coherent form in the text (e.g. linearisation). This relates to the question as to whether different types of "givenness" are reflected in this model of information organisation: since the information given with the definition of the task is more topical than that selected by the speaker to present this information in a coherent way, is the distinction between "what

should be said" as opposed to "how to say it", reflected in the way information is treated in the text.

3. The Data

Descriptions: 2 different models of a village were used which varied with respect to the prominence of path-like structures.

a) a model of a village with no visible streets

b) a model with streets

c) a video tour of model b), which took the viewers along the streets

In a) the model of the village was surrounded by a rectangular fence with an entrance bordered by trees on one side only (see picture in appendix). The speaker was seated close to the entrance and had a full view of all the buildings. These formed an L-shape leading along the right and top side, while the left side was dominated by the town hall and a small cluster of objects around it.

In the model used in b), streets are a prominent feature compared to the first model. The speaker was again seated at one side (the lower right hand side) and had an overview of the entire model.

In the case of c) the speakers had the option of defining the task as a description of the actual route seen in the video, or as a description of the entity - the village. This allowed us to compare how a description of an entity such as a ROUTE, with an inherently temporal structure, differs from descriptions in which the entity is an OBJECT with static part/whole relations.

In order to obtain comparable texts with an emphasis on spatial features across all descriptions, the speakers were asked to

describe the layout of the village and to focus on the relative location of the buildings. The addressee was a research assistant.

Instructions. The descriptions were compared with instructions on how to get from one place to another in the village, using b) as model. The starting point was a bus stop located at the lower right hand side of the model. The speakers gave directions on how to get from there to a fountain (located in the top right hand corner) and then on to a Gasthaus on the lower left hand side.

20 speakers were analysed in model a) and 19 in b), giving a data base of 39 descriptions and 20 instructions.[1]

4. Data Analysis

4.1. Use of the concept of path to structure information in descriptions

The role played by paths in the object descriptions (model a) and b) of the village) depends on the frame of reference used to specify the relative location of objects. The frames can be divided into the following groups:

a) a global frame of reference where a spatial structure is projected so as to cover the entire region of space under description. The system of reference used is typically the set of coordinate axes, as defined by the orientation of the speaker or some observer (front, back, top, bottom, left and right). The region of space under description is thereby divided into specific sub-regions, and objects are located relative to the regions thus generated (e.g. "oben"/upper section (of the

[1] The data were collected by members of an associated research project "Partnerbezogene Raumreferenz", Th. Herrmann et al., at the University of Mannheim.

village), "unten"/ lower section, "links"/left section, "rechts"/right section, or "im Norden" (in the north), "im Süden" (in the south") etc. Regions of space established in this way are termed second order references since two reference points or relata are involved: the source of the coordinates (origo), and the object/region of space onto which the axes are projected (in this case, the village).
If the front, back, left and right spaces relate to the origo only, these are termed first order references (e.g. "on my/your right").

The structure used by speakers of German in the village descriptions is typically the system of coordinate axes projected from a global viewing point defined by the speaker (see, in detail, Graf et al. 1991; Carroll 1993).

b) a point by point frame of reference in which spatial structures are anchored so as to delimit regions of space at individual parts/objects which make up the object described ("at the bus stop"/"in front of the town hall"). If the subject-based system of coordinates is used to structure space, for example, they are projected onto regions of space at single objects, and not onto the object under description as a whole.

c) a linear frame of reference where objects are located in terms of paths drawn through the space in question. Objects are located as encountered on the path traced by a fictive figure touring the scene. The way in which the system of coordinates is used by the figure on tour to locate objects in model b) of the village is reported in Engelbert, Herrmann & Haury (1992).

As will be shown in the following section, use of the concept of path is not confined to linear frames alone.

4.2. Use of paths in global frames of reference

8 of the 39 speakers use the concept of path in conjunction with a global frame. The pattern of use described below holds for all 8 speakers.

In this frame of reference the fictive figure tracing the path is used to establish the starting point and to link the sub-regions, e.g. "vorne", "hinten", (in front, in back) "auf der linken/rechten/oberen Seite" (the left/right/upper side) which were defined globally for the region of space under description. The mobile figure is not used as relatum to describe the location of objects within a sub-region, however. It remains implicit and objects are located relative to one another, or in terms of spatial relations defined from the global viewing point:

(1) also ich komme von einer Allee
wenn ich nach rechts gehe ist zuerst rechts vorne eine Baeckerei
neben der Bäckerei ist ein Wohnhaus
und neben dem Wohnhaus ist eine Kirche
vor dem Wohnhaus ist eine Bushaltestelle
wenn ich dann noch weiter nach hinten laufe ist ein/ noch ein Wohnhaus
und neben dem Wohnhaus steht eine Garage
und neben der Garage ist eine Tankstelle (..)
schräg links hinter der Tankstelle ist ein Friedhof
wenn ich von der Allee komme
und nach links gehe ist dort wieder so ein Wohnhaus"

The figure does not locate an object within the region denoted by "rechts vorne" by heading in its direction ("ich komme auf x zu"), for example. Figures go to the sub-regions set up globally in the frame of reference ("wenn ich nach rechts gehe") but the relative position of objects within these regions of space are

represented either in static terms ("rechts vorne ist ein x"/ "dort ist..."), or "COME" after one another. Another example is given in the following text.

(2) "da steht wenn ich direkt davor stehe auf der linken Seite
das Rathaus (...)
wenn man dann weiter geht/
in der Ecke vorm Friedhof die ist auch wieder leer gehalten
auf der Seite geht es dann weiter mit einer Tankstelle
(..)
dann kommt eine Garage und ein Wohnhaus (..)
dann kam wieder auf der rechten Seite ein Haus (..)

There is no explicit reference to the figure on tour ("man") when locating objects in terms of the path followed. Explicit reference to the figure occurs in subordinate clauses which locate the figure only ("wenn man dann weiter geht"), but not an object.

4.2.1. Viewing point on path

The global division of the entire space into sub-regions and the original viewing point this entails is maintained, no matter what direction the figure on tour takes when going from one sub-region to the next. When the figure starts the description at the front end of the village, for example, and continues on, within the rectangle, to describe the state of affairs on the right hand side and then at the far end, what counts as "left"/"links" on the way back, so to speak, is still the sub-region defined as "the left" from the global viewing point, even though this is then on the figure's right returning from the far end back to the entrance of the village.

Use of the figure to link global sub-regions is optional. It can remain at the entrance once the viewing point has been established (e.g., "ich komme rein; rechts vorne ist...").

A comparable pattern of use is found with the second model of the village (b), where the axes are used in the frame of reference to set up left and right sides and upper and lower sub-regions of **streets**, but not to structure the entire region of space under description (e.g. the village as a whole). Streets can be assigned left and right sides, defined in relation to the location/orientation of the figure on entering the street, so that objects situated along the street can be located in relation to one of these sides ("auf der linken Seite ist ein Haus"). As with global frames, a figure on tour is not used to locate objects within regions of space which are defined in this way. Within such regions objects are located by means of static concepts, or "COME" after one another in series.

(3) "dann biegste wieder rechts ab
wobei linkerhand auch wieder die Kirche liegt
dann kommt noch auf der linken Seite/ ganz am Ende
kommt ne Bushaltestelle und nochmal ein Wohnhaus"

(4) "wenn man die Strasse runtergeht
ist ganz unten eine Kirche"

(5) "und wenn man nach diesem Haus die Strasse
abbiegt nach links
befindet sich auf der linken Seite weiter hinten (..)
so 'n grosses Haus"

Descriptions such as the following are not observed in this frame of reference:

wenn man die Strasse runtergeht
geht man /kommt man ganz unten auf eine Kirche zu

The only dynamic concept which is observed in contexts of this kind is that of a series. It is noteworthy, however, that objects are conceptualised as "coming" after one another, as opposed to a more neutral "after x there is ..".

(6) "okay links ist ein Rohbau
dann kommt Metzgerei Koch auf der linken Seite
danach ein Sägewerk (..)
dann biegste wieder rechts ab (..)
dann kommt noch auf der linken Seite/
ganz am Ende kommt ne Bushaltestelle
und nochmal 'n Wohnhaus"

A viewing point on the path leading to an object is encoded by means of the verb "kommen" (come) so that the figure on tour is still present in this sense.

To summarise the observation so far: The patterns of use indicate that when the coordinate axes have been projected from the standpoint of a "fixed origo" onto a region of space, there is a constraint on the way the figure on tour, as a "mobile origo", can be used to structure such regions further.

A possible constraint in the use of the mobile origo within the regions of space which are defined from a global viewing point may therefore lie in the possible conflicts which could arise with these two reference points. The mobile origo is present in an implicit sense within these regions, however. In using the verb "kommen" to locate objects in series, the speaker locates the origo at the destination of the path and thus adopts a viewing point on the path at the object being located. (The verb "gehen", on the other hand, locates the origo at the starting point of the path of motion, that is, at the figure tracing the path (Fillmore 1966.) Although objects can "COME" after one another within these regions, there is no scope for a mobile origo.

We shall now see how this constraint on the use of the figure on tour does not arise in linear frames where the coordinates are used to structure space at individual objects along the way, but are not projected from a fixed viewing point to structure larger

regions of space (streets/ the entire village).

4.3. Use of path in linear frames

As mentioned above, this frame of reference is organised in terms of a path. Unlike the other frames, the mobile origo can locate objects by walking towards them or passing them them by along the way.

(7) "also dann fahr ich oder lauf ich ins Dorf rein
dann komm ich an einen/ an einem Einfamilienhaus vorbei
(..)
dann komm ich wenn ich geradeaus weiter lauf auf eine Kirche zu mit einem Dorfbrunnen (..)
dann links von der Kirche befindet sich ..."

4.3.1. Viewing point on path

Although objects can be located by means of the path leading to them, there are constraints on the location of the viewing point adopted with respect to the path. As in the other frames of reference, the viewing point on the path is always located at the end-point when the path serves to locate an object.

(8) "wenn du nach rechts gehst
kommst du auf eine Baeckerei zu"

(9) "also dann fahr ich oder lauf ins Dorf rein
dann komm ich direkt/
dann komm ich an einen Haus/ an einem Einfamilienhaus vorbei (..)
dann komm ich
wenn ich gradaus weiterlauf
auf eine Kirche zu mit einem Dorfbrunnen"

(10) "also wenn ich an dem Einfamilienhaus vor der Kirche

links weiterfahr
oder weitergeh
dann komm ich wieder auf 'n Einfamilienhaus zu"

Even when objects are located by "passing them by" along the way, the viewpoint on the path of motion is still located at the objects which are being passed by, or which the path on the set trajectory passes by.

(11) "wenn man das Dorf von hinten betritt (..) kommt man (an) einer Muehle vorbei"

Similarly objects do not FOLLOW one another, they COME after one another when located in series, as shown in the examples above

(12) "nach der Bäckerei kommt ein Einfamilienhaus"

In sum, the comparison of the different frames of reference show how the use of the mobile origo to locate objects is constrained once the coordinates have been projected from a fixed viewing point to structure regions of space. The mobile origo is not used as relatum to locate objects within the regions established. Constraints on the use of the figure on tour in this way are not observed in linear frames of reference. As mentioned above, this may be attributable to the fact that the system of coordinates carried around by the mobile origo cannot come into conflict with other divisions of space projected from a fixed viewing point, since these are absent in frames based entirely on a tour. This constraint on the use of the mobile origo may be interpreted as a concession to consistency in the use of spatial concepts in frames of reference (see, also, Carroll, 1993).

The mobile origo is still present, however, albeit as a shadowy existence, in the sense that a viewpoint on the path is specified. The objects located do not FOLLOW one another but COME after one another. Even though there is no explicit

reference to the figure on tour, a viewpoint on the path followed is still encoded in German. The location of the viewpoint is constrained, however, in that it is always located at the goal. Figures do not "GO" towards the objects they locate, they "COME" to them. The viewpoint on the path leading to the object is thus fixed at the object which is being located and not at the figure setting out along the path. This may be interpreted as a reflection of the informational status assigned to objects in a task where the objects and their features are at issue.

The observed constraint on the use of the mobile origo, given a fixed viewing point from which the axes have been projected, may explain the frequent use of a "gaze tour" in descriptions (see Linde & Labov 1975; Ehrich & Koster 1983). With this form of tour the global viewing point can be maintained while the description "moves" from one object to the next ("nach x kommt y"/ "und dann ist..").

If the space under description has not been structured from a single viewing point, objects can be located by the path leading to them, as with linear frames.

Although these observation show that frames of reference are organised so as to avoid certain confliciting sources of information, the accomodation of the different reference points used to structure space, and the constraints on certain categories of information which hold in a description, can hardly be noted for its simplicity: there is the initial reference point -an origo oriented towards the entire region of space, another reference point in the form of the figure on tour, which under certain conditions takes on a ghost-like existence and must somehow be "moved" from object to object, and another reference point locating the viewpoint on the path traced at the object being located (as encoded in "kommen" (come) or at the source ("gehen"). Keeping track of all these factors, by both speaker and addressee, is no mean task.

4.4. Mapping path-related information into linguistic form in descriptions

The options given in packaging main and side structure information relating to the concept path are main or subordinate clauses. The information which locates the figure and the path can be mapped into a simple main clause ("dann gehst Du weiter") or into a subordinate clause ("wenn Du weiter gehst ist ganz unten das Rathaus"). The factors which determine the choice of one or the other option will be presented in the following.

4.4.1. Global frames of reference

Information which locates the figure/ path is encoded in a subordinate clause when it occurs in utterances which locate objects.

13) "wenn man reinkommt ist rechts vorne eine Bäckerei"

14) "wenn man reinkommt ist rechts hinten eine Kirche"

15) "wenn man weiter nach hinten läuft...."

Side structure information on the location of the figure is thus mapped into a subordinate clause when it co-occurs with main structure information.

Table 1. Mapping information on location of figure/path in global frames

Refs to Path	Subordinate Clause	Main Clause
Village a) (12)	9	3
Village b) (8)	8	-

Information on the location of the figure/path is packaged in a main clause when the figure only is located. In texts with a global frame of reference this typically occurs at the beginning and end of the description.

16) "ich komme rein (dynamic/locates figure)

17) "dann kommt man auf das Dorf zu" (dynamic/locates figure)

18) "dann bin ich wieder bei der Allee angekommen .." (dynamic/locates figure)

The figure on tour is used to "move" the description from one global region of space to the next. Its function in locating objects is thus indirect, as described above.

If the axes are projected onto parts of the scene under description such as streets, similar mapping constraints are observed. Information on the location of the figure tracing the path is mapped into a subordinate clause when it co-occurs with information which locates objects.

4.4.2. Linear frames of reference

When an object is located in terms of a path leading to it, or past it, information which locates the viewpoint on the path from the perspective of the figure is encoded in a subordinate clause.

(19) "wenn man dann rechts geht
und dann gleich wieder links in so nen kleineren Pfad
dann kommt man zur Kirche"

In other words, information with a figure-based viewing point ("gehen") locates the path and is subordinated. The object-based viewpoint on the path ("kommen"), which is used when locating an

object (main structure), is mapped into a main clause.

Table 2. Mapping information on path in linear frames

Refs to Path	Subordinate Clause	Main Clause
(49)	25	24

4.4.2.1. Selectivity in the mapping process

In descriptions information relating to the figure/path is not conflated into a single event in which the figure is conceptualised as moving **towards** an object on its path in order to locate it. Mapping patterns such as "ich laufe hoch zum Sägewerk" are not observed in OBJECT descriptions. The patterns which occur are illustrated again in the following sequence:

(20) "also wenn ich links hochlauf
ist das Sägewerk"
(locates figure and then object / subordination)

ich lauf aber links herum"
(locates figure only / no subordination)

That there are no semantic or syntactic constraints on the selection of one or the other an option in German goes without saying. The mapping pattern found across the different frames of reference shows that side structure information on the location of the figure on tour is mapped into a subordinate clause when it co-occurs with main structure information.

These observations correspond to mapping patterns reported for background information (side structure) in narratives (Hopper &

Thompson 1980; Reinhart 1984; Tomlin 1985).

4.5. Factors underlying mapping patterns

The relevance of the quaestio in determining the mapping patterns observed in descriptions will be demonstrated by first comparing the OBJECT descriptions analysed above, where the figure on tour does not form main structure information, to ROUTE descriptions where the location of a PATH and the figure tracing it are "at issue", and thus belong to the type of information which holds as main structure and must be specified in order to answer the question formulated for the task.

4.5.1. Mapping main and side structure into form in route descriptions

As mentioned above, route descriptions answer the quaestio "what is x (x: ROUTE) like?, where x is the route followed through the village between the time intervals t0, t1, ... tn. In a route description, the path taken through a scene is not optional but follows a fixed course. Since there are only 6 speakers who chose to describe the ROUTE followed, having seen a video of the streets of the village, the results are tentative. The patterns described hold for all six speakers, however.

As opposed to object descriptions, information on the location of the figure and the path followed is always mapped into main clauses in the route descriptions (see underlined utterances). The tense used in the text can be a past or present:

(21) "also wir sind reingekommen
äh da war links von der Strasse dieses/(..) so n kleines Häuschen
äh geradeaus dann im Hintergrund hinter Bäumen n Haus

dann sind wir rechts abgebogen"

As the examples show, information relating to the location of the figure/path is not subordinated in ROUTE descriptions.

Categories of information which are subordinated in this task relate to the time line for the route followed.

(22) "dann geht die Strasse rechts rechtsum
dann biegst du ab
(..)
ganz am Ende vom Dorf ist der Friedhof
wenn du von dort aus rechts abgebogen bist
am Friedhof wieder links"

As in narratives, only answers which supply information for the temporal sequence specified in the quaestio form main structure information.

The two categories of information - location of route versus location of object are mapped into separate utterances in ROUTE descriptions, as illustrated again in the following example:

(23) "wir gehen jetzt wieder links (loc. route)
schwenken also links auf die Strasse ein (loc. route)
dort ist auf der rechten Seite so n Lebensmittelgeschäft" (loc. object)

Unlike OBJECT descriptions, mapping patterns in which these categories co-occur in the one utterance (with a subordinated clause) are not observed in ROUTE descriptions: "wenn wir jetzt wieder links gehen ist auf der rechten Seite ein Lebensmittelgeschäft".

In summary, the comparison between object and route descriptions shows how the same categories of information are used and mapped into linguistic form depending on the nature of the task.

The next section provides a comparison between descriptions and instructions and shows how path-related information is used and mapped into linguistic form, given the quaestio formulated for directions on how to find ones way through the village (model b).

4.6. Mapping information into form in instructions

Instructions answer the quaestio "how does one do x" (Stutterheim & Klein 1989; Kohlmann 1992). In a situation requiring a route direction (as in "wie kommt man von der Bushaltestelle zum Brunnen und dann zum Gasthaus?") information already specified in the domain of discourse via the quaestio is the individual tracing the path, the point of departure, and the place he or she wants to reach. Information which has to be specified in the instruction in order to answer the quaestio thus involves specification of the intermediate sections of the path between a and b.

As discussed in the introduction above, spatial information which locates the figure and the intermediate section of the path forms main structure information, and must be distinguished from information locating the figure with respect to the surroundings through which the path leads. Although the location and orientation of the figure with respect to objects/landmarks is inexpendable when giving route directions, this nevertheless forms side structure information (see section 2.1. above).

The mapping patterns correspond to those found in the other tasks. Main structure information which locates the figure with respect to the path is mapped into matrix clauses while side structure information which locates the figure with respect to objects along the way is subordinated.

(24) "wenn der Brunnen hinter Dir ist
dann gehst Du nach rechts am Friedhof vorbei"

(25) "wenn Du auf die Kirche blickst
links die Strasse weiter"

(26) "wenn Du vor der Kirche stehst
biegst Du wieder nach links ab

(28) "wenn Sie dann wieder zurück über die Strasse
und sich umdrehen so dass Sie also wieder direkt auf die Kirche schauen
dann links
die nächste rechts"

A further category of side structure information which is subordinated relates to features of the landmarks used.

(29) "also von der Bushaltestelle die sich linker Hand befindet
ahm biegst Du ab nach rechts"

Landmarks which are used to locate the path/direction the addressee must take belong to main structure information. But the specification of features which allow their identification, though indispensable to the success of the task, forms side structure information, since they describe features of an OBJECT. The principle underlying the mapping pattern is the same as that described in the other cases above. When different aspects of the same concept is assigned to two different categories of information (e.g. main and side structure) and both are required in the same context, side structure information is subordinated.

4.6.1. Viewing point on path in instructions

When the information provided in an utterance locates the path, the viewpoint on the path is located at the figure and not at the object which serves to locate it. The verb form used is

"gehen".

(30) "also von der Bushaltestelle an der nächsten ja Kreuzung rechts gehe ich auf die Kirche zu"

(31) "also Du stehst an der Bushaltestelle
und gehst auf der grossen Strasse bis auf ne Mauer
dann biegst Du rechts ab"

4.6.2. Changes in viewing point

A switch in viewing point from "gehen" to "kommen" is observed when the section of the path specified leads to one place/object and nowhere else.

(32) "vor dem Rathaus gehe ich rechts
und die nächste wieder links
dann komm ich auf nen Laden zu/ ne Metzgerei
und dann nochmal links"

(33) "vor dem Friedhof gehts nach links
(..)
und da geh ich durch
und da kommt so n so n Krämerladen
glaub ne Metzgerei ist das"

The street in question leads to a T-junction. The shop described is at the centre of the junction facing the individual moving along what would be the vertical bar of the T toward the shop. Once this route is taken there are no other options but to end up facing the shop (apart from retracing one's steps).

In summary, "kommen" is apparently used when one section of the path to be followed is already defined ("du gehst nach links") and there is then only one goal point to be considered, given the layout of the place. An object-based viewpoint on the path

thus seems to occur when features of the scene through which the figure is moving are taken into account when specifying the goal point.

We shall now take a brief look at some linguistic features which indicate that information encoded with an object-based viewpoint on the path ("kommen") is treated by the speaker as side structure. The linguistic means in question are as follows:

- use of anaphora in reference maintenance across utterances with a figure- versus object-based viewpoint

- use of definite and indefinite articles in locative phrases

4.6.3. Reference maintenance across utterances with figure- versus object-based viewing points

When the viewing point changes in a route direction from "gehen" to "kommen", reference maintenance in terms of zero anaphora is not observed, even though the same referent (the figure following the path) is maintained. Zero anaphora occurs across utterances with a figure-based viewpoint, however, (main structure) even when utterances with an object-based viewpoint intervene:

(38) "vor dem Rathaus gehe ich rechts
(figure-based /locates route)
und die nächste wieder links
(figure-based / referent maintained / zero anaphora)
dann komm ich auf nen Laden zu ähm ne Metzgerei
(viewpoint changes to object / switch to pronoun)
und dann nochmal links"
(viewpoint changes to figure / referent maintained / zero anaphora)

(39) "wenn man vor der Kirche steht ist wie gesagt links der Brunnen

von da aus dann weiter nach links
(figure-based / referent maintained / zero anaphora)
dann kommt man am Friedhof vorbei
(object-based / switch to pronoun)
dann noch weiter kommt man an so nem Haus mit so ner Terrasse vorbei
und dann wieder nach links"
(figure-based / referent maintained / zero anaphora)

Even though conditions for the use of zero anaphora are given with object-based viewing points (maintenance of referent) this form is not used across adjacent utterances with the viewpoint "kommen". Use of zero anaphora occurs across utterances with figure-based viewing points only.

Numerous studies of reference maintenance show that zero anaphora is used with referents which have a high state of "givenness" or topicality in the domain of discourse. The different patterns of use in the present data show how "givenness" differs for the same referent, depending on the viewpoint encoded for the event (figure- versus object-based as encoded in "gehen" versus "kommen"). This discrepancy in the use of zero anaphora supports the view that the two viewpoints on the path of motion do not share the same status in instructions, and points to the status of an object-based viewpoint ("kommen") as a side structure in instructions.

4.6.4. Use of definite and indefinite noun phrases

The use of definite and indefinite articles in the route directions corresponds to patterns reported in Kohlmann (1992) and v. Stutterheim et al (in press) which show that definite articles are use to denote referents in instructions, and indefinite articles are used in descriptions. In utterances which show a figure-based viewpoint on the path (e.g. instructions), the objects which locate sections of the path are

referred to by means of definite articles.

This pattern of use in route directions can be interpreted as follows: the instructor takes the path which leads from a) to b) as an identified "given", and the addressee in a task of this kind is required to adopt this perspective also.

(34) "also Du läufst die Strasse bis es nicht mehr weitergeht
dann vor dem Haus rechts abbiegen (...)
(Du) musst dann der Strasse nach rechts folgen"

"dann geh ich rechts die Strasse runter bis zum Sägewerk oder was das war
dann links hoch"

(35) "dann am Gebäude das aussieht als wär ein Stall drangebaut musst Du links abbiegen"

If the relatum (e.g."am Gebäude") does not possess properties which facilitate identification (uniqueness at the specific point on the path, for example), features are supplied in a relative clause.

As opposed to this pattern of use, indefinite noun phrases occur in utterances which have an object-based viewing point on the path taken ("kommt auf x zu"):

(36) und die nächste wieder links
dann komm ich auf nen Laden zu/ne Metzgerei"

(37) "dann biegste rechts ab
und kommst auf eine Kirche"

As described above, this viewpoint is adopted in defining the goal section of a path which, by virtue of the state of affairs

given at that point, is the only place the figure can end up in. As discussed above, the context of use indicates that the speaker takes into account features of the scene through which the path leads when locating the goal section of the path. If this interpretation is correct the speaker then adopts a 'descriptive' perspective by taking features of the entity, in this case the scene, into account when locating the goal.

The patterns of use show that "givenness" for the addressee is clearly not the central factor in these tasks in the selection of forms such as definite and indefinite articles. The addressee's knowledge base does not vary with respect to the objects which locate the route to be followed. The use of definite or indefinite articles is thus contingent on the viewpoint selected by the speaker on the information to be expressed with the definition of the quaestio (see, in detail, Stutterheim et al, in press). The addressee is required to adopt the conventional perspective set for the task.

In summary, both linguistic features (use of articles / zero anaphora) point to the categorisation of utterances with an object-based viewpoint as side structure information in instructions.

5. The status of information introduced via the strategy chosen by the speaker

The final section of the analysis deals with object descriptions where the figure/path is not introduced to the domain of discourse with the specification of the quaestio, but forms an extrinsic concept in that it belongs to the strategy selected by the speaker in organising the information to be expressed (e.g. description based on what is seen by a figure on tour). The analysis focuses on the way subordinate clauses are integrated into the text in OBJECT descriptions when the information they encode relates to the location of the figure.

The way in which figure-based information is integrated into utterances in order to locate an object in these descriptions is as follows:

- If the relatum used to locate an object is the figure only, information which first locates the figure/path is mapped into a left-dislocated constituent. This is then linked into the main clause (which serves to locate an object) via a pro-adverbial copy.

When the concept used in the matrix clause is static, the pro-adverbial copy is spatial:

(38) "wenn man dann bei der Kirche links geht
da ist so 'n grosses altes Haus

When the concept used in the matrix clause is dynamic the pro-adverbial copy is the temporal "dann":

(39) "wenn ich dann weiterlauf
dann kommt nochmal so 'n Neubau"

(40) "also wenn ich an dem Einfamilienhaus vor der Kirche links weiterfahr
dann komm ich wieder auf ein Einfamilienhaus zu"

(41) "wenn man jetzt eben diese Strasse weiter geradeaus geht
dann kommt man auf den Friedhof"

Regardless of whether the spatial concept used is static or dynamic, information on the location of the figure/path is dislocated, and a pro-adverbial copy is required in linking it in, when the figure is the primary relatum used.

If the relatum used to describe a location is an object, however, (in other words the coordinate axes are projected by

the figure onto the secondary relatum from a point along the path) the subordinate clause which locates the figure with respect to the relatum is integrated as a constituent and there is no left dislocation:

(42) "wenn man nach diesem Haus die Strasse abbiegt nach links
befindet sich auf der linken Seite weiter hinten/
was war denn das/ so 'n grosses Haus"

These differing patterns occur even though maintenance relations are comparable across the utterances in question. The relatum "the street" is implicitly maintained in (41) and (42), but this does not affect the use of the left dislocations.

In sum, left dislocations occur in frames of reference in OBJECT descriptions in which an external category of information, the mobile figure and associated paths, is used as primary relatum to locate an object. Left dislocations are not observed when spatial concepts associated with the figure are anchored via an OBJECT (second order reference). The occurrence of left dislocations thus shows how the informational status of certain categories of information differs in OBJECT descriptions. The subject matter "at issue" is a thing (such as a village) with a static part/whole structure and a set of features which have to be specified. The use of left dislocations shows that the extrinsic figure on tour has to be recurrently "topicalised" in the domain of discourse. This is not required when the relatum used to describe relative locations is an object and thus belongs, in general terms, to the category of information specified in the quaestio.

6. **Overall Summary**

The analysis shows how the concept PATH is used and mapped into linguistic form depending on its status as defined in the

communicative task. Mapping patterns differ, depending on whether information is categorised as main or side structure information via the quaestio. The path followed through a place forms information which has to be expressed in ROUTE descriptions and route directions, for example, while in OBJECT descriptions PATH is not specified in the task definition but is chosen by the speaker to structure space and organise the order in which information is selected for mention in the text. In addition to mapping constraints which relate to main and side structure information, various other constraints on the use of PATH in OBJECT descriptions are reflected in the data: its role in the frame of reference shows how objects, as opposed to the figure on tour, form the primary relata when describing where entities are located. Furthermore, the informational status of the figure tracing the path versus objects is reflected in the viewing point which can be adopted on the path followed through the object/scene. Sections of the path which lead to an object are viewed from a point which is anchored at the object being located, and not at the figure tracing the path. This constraint is observed in OBJECT descriptions but not in ROUTE descriptions or ROUTE directions. The viewing point is located at the figure tracing the path when the speaker is required to locate the path followed. Differences in informational status are also reflected in the way references to the figure have to be "topicalised" via left dislocations in OBJECT descriptions when the figure is used as relatum in describing spatial relations. Topicalisation is not required, however, when figure-related concepts (coordinate axes) are projected onto an <u>object</u> from some point along the path followed.

These observations show that irrespective of their role in organising information, path-related concepts differ in status depending on whether they are introduced with the quaestio defined for the task or not. Categories of information are thus treated differently in text production, depending on whether they belong to the type of information which "must be said" as opposed to categories selected by the speaker in deciding "how

to say it".

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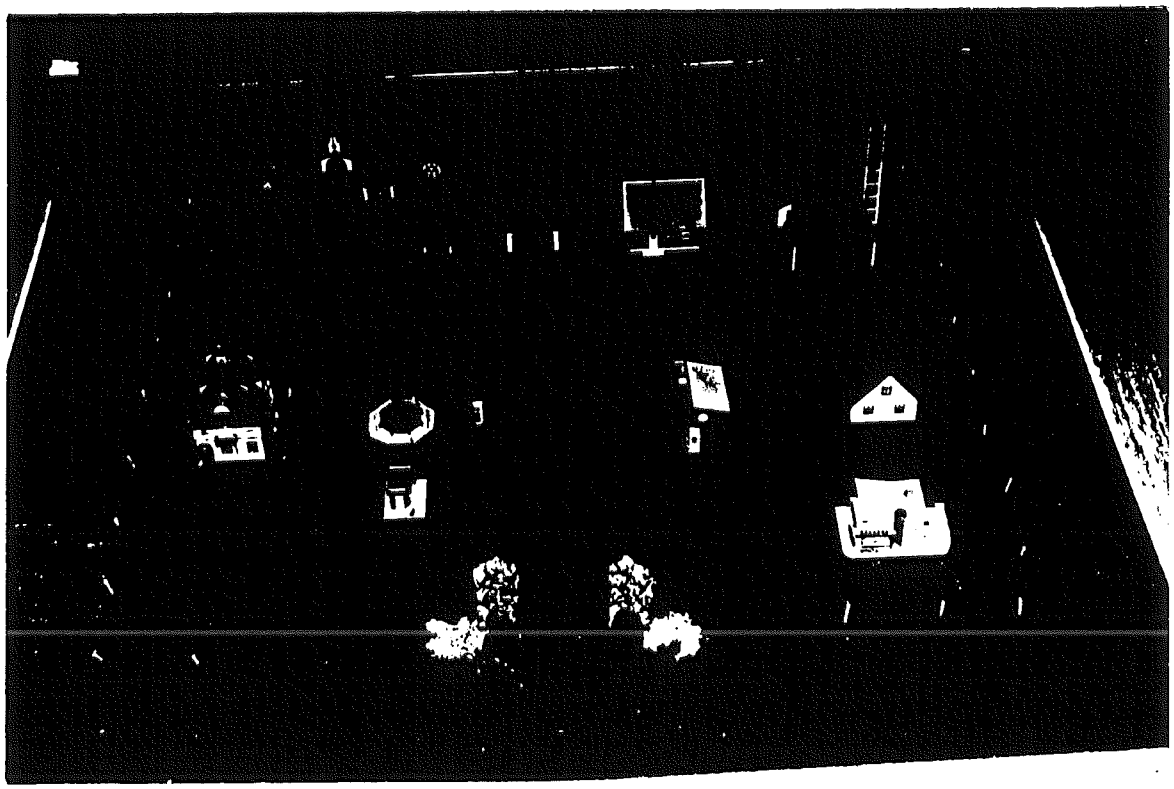

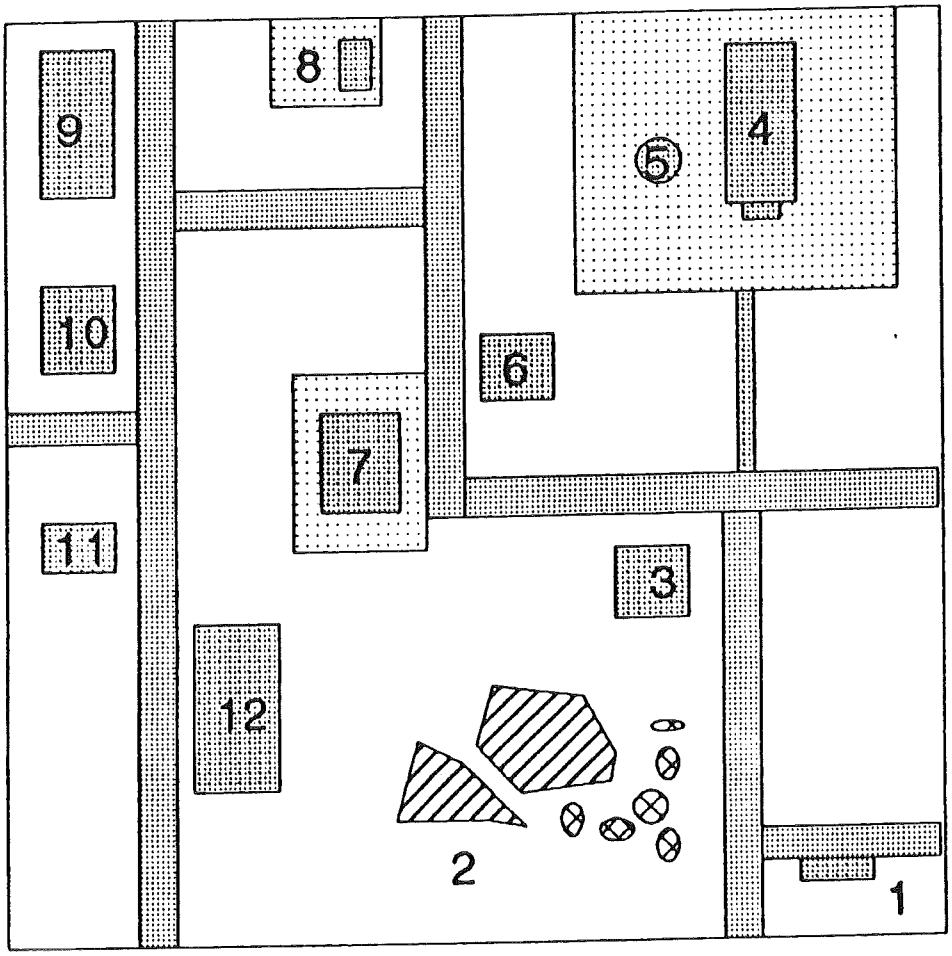

1 = Bushaltestelle
2 = Felsen
3 = Fachwerkhaus
4 = Kirche
5 = Brunnen
6 = rotes Haus
7 = Rathaus
8 = Friedhof
9 = Sägewerk
10 = Geschäftshaus
11 = Haus in Bau
12 = Gasthaus

= Felsen

= Baum

N
W O
S

Modell Maßstab 1:70

Verzeichnis der Arbeiten aus dem Sonderforschungsbereich 245

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