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The Interpretation of Business Communication

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The Interpretation of Business Communication: The Application of Functional Grammar and the Transaction Process Model

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Abstract

The unambiguous interpretation of the propositional and illocutionary act is of extreme importance in understanding linguistic coordination of business activities. In the interpretation of actual realizations of business conversations it can not always be determined unambiguously what kind of communication act the speaker is making. In this paper we focus on the interpretation of utterances in business communication. We propose two techniques to trace the structure of business conversations: Functional Grammar and the Transaction Process Model. The analysis is illustrated with a recorded conversation taken from a larger case study in a Dutch hotel.

1 Introduction

The Language/Action Perspective is a suitable viewpoint for understanding linguistic coordination of business activities [13, 20, 35, 48, 52, 54]. According to Kensing and Winograd [29] cooperative work is coordinated by the performance of language actions, in which parties become mutually committed to the performance of future actions and in which they make declarations creating social structures in which those acts are generated and interpreted. This view has had a significant impact within various information systems design and office communication analysis methods: SAMPO [2-4], ActionWorkflow approach [35], DEMO [10, 13]. Next to this it has resulted in computer based applications: The Coordinator [54], Domino [30], and UTUCS [1].

Nevertheless, there has been criticism to both the theoretical foundations and The Coordinator and this has led to a passionate debate for almost ten years [9, 14] (see also the Suchman-Winograd Debate in CSCW Vol. 3, 1995). In this paper we pay attention to one important point of criticism; the mapping between real life conversations and the taxonomy of speech acts. The dimensions of speech acts in the language/action perspective are based on the taxonomy developed by Searle [43] in the Speech Act Theory. However, in real life conversations the meaning of the speaker's utterance and the meaning of the sentence come apart in various ways. An example of this is the case in which one illocutionary act is performed indirectly by way of performing another:

'I need a reservation for a double room for the second of May'

This illocutionary act is of a declarative form but in the conversation between an employee of the reservation department and a client it is an indirect request for the reservation of a double room for the second of May. An appropriate interpretation of the propositional and illocutionary act depends on the actual communicative situation [6].

In this paper we consider the aspect of interpretation of separate expressions in a specific communicative situation. If we want to understand linguistic coordination of business activities, the unambiguous interpretation of the propositional and illocutionary act is of extreme importance. The DEMO, SAMPO and the ActionWorkflow approaches are based on the assumption that there is an unambiguous interpretation of speech acts, that mark specific phases in business activities. It is, however, not always unambiguous what kind of communicative action the speaker makes [32, 55].

We illustrate the interpretation problem by considering an example of a business conversation involving a hotel reservation. The example is taken from a larger case study in a Dutch hotel in which recordings of telephone calls are made. These telephone calls concern conversations between an employee of the reservation department and a Client.

The example conversation is analyzed with two techniques to trace the internal structure and coherence of utterances in business conversations. The first technique is a functional linguistic one, namely the Theory of Functional Grammar (FG) [15]. The second technique is the Transaction Process Model [50, 51]. We argue that

a linguistic analysis of the utterances with FG and the analysis of the communication moves with the Transaction Process Model can supplement each other in an improved interpretation of business conversations.

Before introducing these two techniques we discuss the relevant elements of the Speech Act Theory in section 2. Both techniques are introduced in section 3 and 4. In section 5 we introduce an example conversation and give an interpretation with the help of the two techniques. Finally we will give some conclusions in section 6.

2 Speech act theory

According to Searle [43] a speaker is performing three kinds of acts when uttering a sentence, namely:

- the speaker is performing an utterance act by uttering of words.
- the speaker is performing a propositional act by referring and predicating.
- the speaker is performing an illocutionary act by making a promise, asking a question, etc.

So, by communicating people are not only exchanging information, which is the common viewpoint among members of the information systems profession (e.g. [8, 38, 46]). By communicating people perform certain kinds of language acts. The logical form of an illocutionary act has two elements:

1. the indicator of the illocutionary force (F).
2. the indicator of the propositional content (P).

The propositional content (P) represents a particular state of affairs in some world. The illocutionary force (F) represents the illocutionary component of the sentence. The illocution part concerns what is expressed about the proposition. The distinction between illocutionary force and propositional content can in fact be found in another philosophical tradition stemming from Frege, who placed considerable emphasis on the distinction between 'thought' or proposition, and its assertion or 'judgment' [18].

One of the components of illocutionary force is illocutionary point. The illocutionary point is defined as the purpose of the illocution, for example the point of a promise is to commit the speaker to do something [45].

- Searle [44] distinguishes five kinds or categories of illocutionary acts along the dimension of social commitment, namely:
- Assertives: the illocutionary point is to commit the speaker to the truth of the expressed proposition.
- Commissives: the illocutionary point is to commit the speaker to some future course of action.
- Directives: the illocutionary point is an attempt by the speaker to get the addressee to do something.
- Declaratives: the illocutionary point is that its successful performance guarantees the correspondence between the proposition (P) and the world.
- Expressives: the illocutionary point is to express the speaker's attitude about the state of affairs specified in the propositional content.

These elements of the Speech Act Theory form important starting points for the two techniques that are introduced in the next sections.

3 Theory of Functional Grammar

Functional Grammar (FG) intends to be a general, typologically adequate theory concerning the grammatical organization of natural languages [15]. It offers a coherent and explicit model of grammar which aims to provide a complete account of sentence structure from the underlying semantic representation to the surface phonetic form [47]. In the functional paradigm language is in the first place conceptualized as an instrument of social interaction between human beings used with the primary aim of establishing communicative relations between speakers and addressees. Within this paradigm the attempt is to reveal the instrumentality of language with respect to what people do and achieve with it in social interaction. The theory of FG intends to fulfill the requirements of the functional paradigm which means the application of two principles of functional explanation:

1. a theory of language should explain the rules and principles underlying the construction of linguistic expressions in terms of their functionality with respect to the ways in which these expressions are used.
2. a theory of language, which is in itself a theory of linguistic expressions, should be easily and realistically incorporated into a wider pragmatic theory of verbal interaction.

This forces us to think of linguistic expressions not as isolated objects, but as instruments used by a speaker in order to achieve some intended interpretation by the addressee. This takes place within a context which is defined by preceding expressions and within a setting which is defined by the essential parameters of the actual speech situation.

On the contrary in the formal paradigm language is conceived as an abstract formal object, as a set of sentences. In this paradigm a grammar is in the first place an attempt at characterizing language in terms of rules

of formal syntax to be applied independently of the meanings and uses of the described constructions. In this paradigm syntax is given methodological priority over semantics and pragmatics. The traditional domain of linguistic analysis consists of semantic, syntactic, morphological and phonological rules governing the patterns of verbal interaction. However, the communicative perspective, as in FG, includes the complex and often ill-understood pragmatic principles. According to this perspective it is only possible to get a complete understanding of linguistic expressions when one perceives these expressions within the context in which they are expressed.

To correspond with the functional view of language the rule system is, as far as possible, be described in terms of functional notions. The structure of the clause is built around the semantic relation of predicate and argument to which three kind of functions may be assigned: semantic, syntactic and pragmatic. The *semantic functions* correspond to what in other grammatical frameworks are called semantic or thematic roles or relations, for example: agent, goal, recipient, beneficiary, instrument, etc. The *syntactic functions* are subject and object. The *pragmatic functions* in conclusion specify the informational status of language expressions and include the Topic, Focus, Theme and Tail (for an extensive description see [15]).

In FG each clause can be described in terms of an abstract underlying clause structure (UCS) which is mapped onto actual linguistic expressions by a set of expression rules. These expression rules specify form, order and intonation. The UCS is a complex abstract structure in which several layers, represented by different variables, have to be distinguished. There are two reasons why each layer is provided with its own variable:

- each layer can serve as an antecedent for anaphoric reference
- the nature of the difference between the layers can be understood in terms of the kinds of entity they designate. We describe (following [26]) the term (x_i), predication (e_i), proposition (X_i) and the clause (E_i) which represent the different levels. For the general format of this multi-layered hierarchical clause model see figure 1.

Figure 1: The hierarchical clause model

An important feature of this structure, inspired by Foley and Van Valin (1984), is that layers of lower complexity are fully contained within layers of higher complexity. The highest level of the UCS is the interpersonal level (following [23, 24]) and represents the speech act (E_1). It is structured on the basis of an illocutionary frame which stresses the relational nature of speech acts and has the Speaker (S), the Addressee (A) and the propositional content (X_i) as its arguments.

The theory of Functional Grammar endorses the claim made by Austin [5] and Searle [43] that we do not communicate by displaying propositions, but by performing speech acts. Speech acts are interpreted as instructions from the Speaker to Addressee to perform certain mental actions with respect to the content of the proposition [15]. In FG the grammatically coded illocutionary force in the linguistic expression takes a central position: only the illocutionary force which is somehow formally coded is to be represented in the UCS of the sentence [39]. This approach considers sentence types that are found in all languages (declarative, imperative and interrogative) as basic illocutions distinguished in natural languages. Only these 'basic' illocutions have been grammaticalized but all possible illocutionary forces can be expressed lexically. Several proposals with respect to the representation of illocutions discussed various ways of expressing more than just the basic illocutions [15, 25, 27, 36, 53]. Two distinct types of processes are mentioned, namely 'illocutionary conversion' (mainly discussed by [15]) and 'modification' (discussed most extensively by [26]). An example of grammatical illocutionary

conversion is the expression *please* or the expression *will you* in combination with an imperative sentence. The Dutch particle *even* is an example of a modifier of a request illocution and can be used both in imperative sentences and in *can you* requests. Expressions like for example *can you* and *will you* are conventionally used for a request illocution and therefore we represent them in the UCS.

4 Transaction Process Model

Founded in the Speech Act Theory, Habermas proposes an alternative theory of communication, called the Theory of Communicative Action [21, 22], a theory that expands in more detail on the linguistic coordination of action in social systems.

Central in Habermas' Theory of Communicative Action is the distinction between strategic and communicative coordination of action. When engaged in strategic action the participants strive after their own private goals. When involved in communicative action, the participants are oriented towards mutual agreement, this means that their motivation is rational: people respond to e.g., requests because they presuppose that these requests can be justified when asked for. In case of strategic action the motivation is empirical: if people use this type of action, they try to maximise their own profit and minimise their own losses.

The basic aim of communicative action is that at least two participants achieve a common definition of the situation in which they find themselves. This common definition is reached by negotiations about three validity claims: truth, justice and sincerity. These claims are raised in the exchange of any communication act.¹

Next to this discussion about validity claims, Habermas identifies discourse. The purpose of a discourse is to develop or to restore the background conditions. It requires that the participants in the conversation suspend their immediate objectives in order to search for good reasons to justify or to disprove the claims that are under debate.

The surplus value of Habermas' theory is located in the fact that it allows to differentiate between empirical and rational orientation of communication [14]. This means that imperatives can be distinguished from polite requests that are open to discussion. The Theory of Communicative Action also distinguishes that there are background conditions to communication that can be changed or altered. For a more thorough discussion of the Theory of Communicative Action and its advantages with regard to business communication see: [14, 51].

Habermas' extension to the Speech Act Theory forms the basis for a model for the analysis of business conversations. The model is composed of two elements, a notation system for communication acts and a communication process model, called the Transaction Process Model. Following Murray [37] and Kroon [31], both the notation system and the process model focus on the modeling of conversational moves in a business communication. It is hypothesized that coherence in business communication is to be found in a restricted number of (initiating and reactive) conversational moves.

The notation system of communication acts is based on the basic structure $F(p)$ as proposed by Searle [44]. The proposition of an utterance is represented by two parts: a predication and a time-for-completion. The predication is a description of the desired result of an utterance. A predication is, by definition, valid within a certain period of time, like a perishable. Therefore the time-for-completion forms an essential part of a proposition. The proposition is stated in the form of a true statement. For example, the proposition of an utterance requesting to deliver 10 sparking plugs before 2 AM is "10 sparking plugs are delivered, before 14.00 hours".

The interpretation of a proposition is affected by, what Searle calls the illocution, and what in the Transaction Process Model is called an action-coordinating indicator. These indicators determine how a proposition has to be taken, whether it is e.g., a declaration or a promise, or a request or an order. Habermas' evaluation of the speech act theory reveals that the distinctive power of the mere illocution is not strong enough. The classifications of illocutionary verbs into illocutionary categories of e.g., Janson and Woo [28], and Vanderveken [49] clearly show the difficulty with indicating an intention of a speaker unequivocally.

As an alternative we propose an action-coordinating indicator composed of two elements. The first element is borrowed from the speech act theory and contains the verb of the utterance extended with the illocutionary class to which it belongs in the particular utterance. The second element is the action-type as proposed by the theory of communicative action. This means that we distinguish strategic, communicative and discursive action-types. When communicative action enters a discussion of validity claims, the claim under debate is added in subscript to the action type.

Two ways of representing the elements of a communication act and their relationship are displayed in figure 2. The upper model shows the hierarchical relations; the interpretation of the element(s) of the inner box is

¹ To avoid confusion with the Speech Act theory, the units of communication, when referred to Habermas' theory, are called communication acts.

determined by the element of the surrounding box. The formula in the bottom represents the same as the boxes, however, for convenience the formula has been used in the research to represent communication acts.

Figure 2: The elements of a communication act and their relationship.

To illustrate the notation for communication acts, consider the utterance:

“Sam, can you deliver the order for DoDo’s Engineering Works this afternoon, please?”

On the basis of the politeness expressed by ‘can you’ and ‘please’, the sentence is interpreted as having a communicative action orientation. This means that the sentence is represented in the formula as follows:

Communicative[request(directive)<the order for DoDo Engineering Works is delivered, afternoon+date_today>]

According to Dietz [11-13] communication acts in business communication are related to each other according to a specific pattern, called the *transaction pattern*. This pattern consists of a communication part and an action part (see: fig. 3). The transaction starts with a request of the initiator A (t1). The participants involved in the transaction, called actors, reach a commitment for a future action (t2). The result of this, so-called, actagenic conversation is an agendum (thing-to-do) that is added to already existing agenda for the actor involved. Next, the action agreed upon is executed by the executor (t2-t3). Finally, the factagenic conversation starts. In this phase the parties try to reach an agreement about the result of the action. When the initiator of the transaction accepts the result of the execution of the action as in accordance with the initial request, the transaction succeeds and a fact stating the completion of a transaction is created (t4). The fact corresponds with the predication of the communication act as mentioned above. According to Dietz, the essence of the behavior of an organization consists of the continuous accomplishment of transactions between actors.

Figure 3: The pattern of a transaction between the actor A and the actor B (Dietz, 1992, pp. 83)

The Transaction Process Model is a business conversation process model that is founded in the language/action perspective and extended Theory of Communicative Action and the transaction pattern. The model presents the possible communication moves in a business conversation process. It consists of two partial models, one representing the conversation structure of communicative action and the other representing strategic action. The models are represented using the state transition diagram (STD) technique that is used for modeling dynamic processes [16, 40]. The states represent transaction states (1-12) and the transitions are caused by conversation acts (CA_{1...n}) exhibiting the structure of communication acts as presented above. The TPM and its elements are discussed in detail in [50-52].

Figure 4: The transaction process model of business communication

The communicative oriented TPM is divided into three layers: the success-layer, the discussion and failure-layer and the discourse-layer. The *success-layer* locates the successful transaction process resulting in the creation of a fact. The content of the *discussion and failure-layer* is formed by the discussion about validity claims and unsuccessful transaction processes. The *discourse-layer* locates the discourse with the purpose to restore the background conditions. The TPM and its three layers is displayed in fig. 4. A stripped version of the Transaction Process Model, representing the strategic action, is integrated in the communicative oriented TPM in figure 4. The allowed behavioral possibilities of strategic oriented action are represented by the bold arrows.

5 Actual realization of a business conversation

In this paper we consider an example of a business conversation taken from a larger case study in a Dutch hotel. This hotel is situated in the neighborhood of a conference center and is attractive for both conference guests and tourists. In the case study we made recordings of telephone calls concerning conversations between an employee of the reservation department of the hotel (H) and a client (C). These conversations occur in the performance of a reservation transaction. To illustrate the application of both techniques, the following conversation is considered:

- 1 H: Good morning; reservation department, with Ann.
- 2 C: Good morning; REM Slochteren, with mister Peters.
- 3 H: Hello.
- 4 C: I would like to make a reservation of a hotel room for March the 2nd, please.
- 5 H: Yes, for one night only?
- 6 C: For one night.
- 7 H: Could you give me the name of the guest?
- 8 C: Tom Wilkinson.
- 9 H: Okay, will the guest pay the bill in our hotel?
- 10 C: Just one moment..... No, but send the bill to REM Slochteren, please.
- 11 H: Okay, could you give me a fax number?
- 12 C: 78.
- 13 H: Yes.
- 14 C: 9208
- 15 H: Okay, thanks. You will receive a fax for confirmation.
- 16 C: Thanks, bye bye.
- 17 H: Bye bye.

Before we trace the internal structure of business conversations in the next paragraphs, we first notice some universals about the conversations in the case study. These conversations concerned telephone calls which are a class of verbal interchanges with specific features. They tend to have clear beginnings and carefully organized closings. We can recognize an opening section with identification and recognition (especially relevant in business calls) and the immediate relevance for calling (for an extended description see [42]). Some kinds of telephone calls have an expectable overall organization that admits just one topic. These, so called monotopical calls, being typical of routine business calls or service inquiries [33].

5.1. Representing business communication in Functional Grammar

To elicit the internal linguistic structure of the presented example we use the formal representation of this conversation by means of the abstract Underlying Clause Structure. We use the multi-layered hierarchical clause model as presented in figure 1.

Line 1,2 and 3 in our example is an opening section, meant as an introduction phase. In this phase the introduction of the participants of the transaction takes place: the client (P1) is the initiator and the hotel (P2) (in particular the employee which is authorized to grant reservations) is the executor. Sentence 1-3 are not interesting linguistically so these sentences are omitted in the analysis.

Sentence 4 can be marked as an announcement, made by the caller, of the reason for calling. We will represent this sentence in the UCS and for the explanation of the representation we consider the framework in figure 5.

E₄: [REQ (P1)(P2) (X₁:[Pres e₁: make_reservation_v (d1x₁:P1 (x₁))_{Ag} (i1x₂:hotel room (x₂))_{Go} (d1x₃:march,2 (x₃))_{Temp} (e₁)](X₁)](E₄)

E ₄ :	Illocution:	REQuest
	Speaker:	P1 (cliënt)
	Addressee:	P2 (hotel)
	Temporal:	Present
	Verb:	make_reservation
	Entity_1:	P1 definite singular (semantic function: Agent)
	Entity_2:	hotel room indefinite singular (semantic function: Goal)
	Entity_3:	March,2 definite singular (semantic function: Temp)

After the request of the client to make a reservation the hotel needs some information. Line 5-14 are four question-answer pairs (so called adjacency pairs, see [7, 19, 41]). We discuss these pairs and give a representation in the UCS:

5. H: Yes, for one night only?

6. C: For one night.

E₅: [EXCL (P2)(P1) Yes](E₅)

E₆: [INT (P2)(P1) (Indet X₂:[e₂:(d1x₄:night (x₄))_{TempFoc} (e₂)](X₂)](E₆)

E₇: [DECL (P1)(P2) (X₃:[e₃:(d1x₄:night (x₄))_{Temp} (e₃)](X₃)](E₇)

Line 5 is represented as two separated speech acts. In the context of this business conversation 'Yes' can be perceived as an expression of politeness. E₆ is an interrogative with the pragmatic function of Focus on the temporality. The information gap on the part of the speaker concerns the exact duration of the residence (for an extensive description of pragmatic functions, see [15]). The truth value of the proposition (X₂), which is not further modified in this case, is indeterminate (Indet) and has to be specified by the addressee. Line 6 is an answer to the first question of the hotel in line 5.

We can establish the connection between the question in line 5 and the declaration in line 6 by the indexation of the variable of the term 'night' (x₄).

Line 7-8 is another pair:

7. H: Could you give me the name of the guest?

8. C: Tom Wilkinson.

E₈: [REQ (P2)(P1) (X₄: [Pres e₄: give_v (d1x₁: P1 (x₁))_{Ag} (d1x₅: P2 (x₅))_{Rec}
 ((d1x₆: name (x₆)_{Zero} (d1x₇: guest (x₇)_{Ref})_{Go} (e₄)) (X₄)) (E₈)

E₉: [DECL (P1)(P2) (X₅: [e₅: (d1x₆: 'Tom Wilkinson' (x₆)) (e₅)) (X₅)) (E₉)

The speech act in line 7 is a request for information, expressed by the hotel. The client (P1) is the agent: the entity controlling an action, in this case the supplier of the requested information. This information is the name of the guest which has the semantic function of goal: the entity affected or effected by the operation of some controller.

The connection between line 7 and 8 is represented by the variable x₆. In line 7 this is the variable of the entity 'name' and in line 8 an instantiation of this entity is given. In fact the two variables do not necessarily refer to the same object. In E₉ there is no anaphoric reference to the antecedent utterance. However, we suppose that there is a connection because, as we stated before, the functional paradigm forces us to think of linguistic expressions not as isolated objects. Conversations are not organized into single sentences or utterances. Conversation is a collaborative activity: the response of a participant is based on the analysis and understanding of the prior turn of another participant.

9. H: Okay, will the guest pay the bill in our hotel?
 10. C: Just one moment. No, but send the bill to REM Slochteren, please.

E₁₀: [EXCL (P2)(P1) Okay] (E₁₀)
 E₁₁: [INT (P2)(P1) (Indet X₆: [Fut e₆: pay_v (d1x₇: guest (x₇))_{Ag} (d1x₈: bill (x₈))_{Go}
 (d1x₉: hotel (x₉): {(d1x₅: P1 (x₅)) Poss} (x₉))_{Loc}

E₁₂: [EXCL (P1)(P2) Just one moment] (E₁₂)
 E₁₃: [REQ (P1)(P2) (X₇: [Pres e₇: send_v (d1x₈: bill (x₈))_{Go} (d1x₁₀: REM Slochteren (x₁₀))_{Rec} (e₇)) (X₇)) (E₁₃)

Line 9 is represented as two separated speech acts. 'Okay' can be perceived as an expression of appreciation for answering the questions and an indication that the information (given in line 8) suffices the speaker. In E₁₁ there is an adjectival form of a possessive predicate, namely 'our hotel' (For an extensive description see [15, 34]). In this case P1 is the possessor of the hotel. Our hotel has the semantic function location which means the place where something is located. Line 10 are two separated speech acts. The first one is a polite expression of desire to hold on. The second speech act is a request to the hotel to send the bill to REM Slochteren which means that the guest does not pay in the hotel. The connection between the question in E₁₁ and the response in E₁₃ is established by the variable of 'the bill' (x₈).

Line 11-14 is another question-answer pair which is similar to line 7-8. The expression 'Yes' in line 13 can be perceived as a sign of attention and an encouragement to continue. In this pair the connection between the question and the answer is also represented by the variable of the entity 'fax number', similar to line 7-8.

15 H: Okay, thanks. You will receive a fax for confirmation.
 E₁₉: [EXCL (P2)(P1) Okay, thanks] (E₁₉)
 E₂₀: [DECL (P2)(P1) [X₁₁: [Fut e₁₁: receive_v (d1x₁: P1 (x₁))_{Proc} (i1x₁₂: fax (x₁₂))_{Go} (i1x₁₃: confirmation (x₁₃))_{Purpose}
 (e₁₁)) (X₁₁)) (E₂₀)

Line 15 are also two separated speech acts. The first one is an expression of comprehension and gratitude for answering the questions. The linguistic structure of the second speech act is a declarative about an action performed in the future by the hotel. We don't mark this act as a promise because there is no (direct) reference to the speaker. In E₂₀ the semantic function of P1 is: Processed which means the entity that undergoes a process (= dynamism or change).

Line 16-17 is the closing section of the conversation. Line 16: 'thanks' is an expression of gratitude by the client in all probability in response to the declaration in line 15 and the reservation of a hotel room for march the 2nd.

5.2. Analyzing business conversation with the Transaction Process Model

With FG technique the business communication is analyzed at the sentence level, when applying the Transaction Process Model, the communication is interpreted as a transaction process that take place between participating actors.

When a business conversation is analyzed, we first determine the purpose of the conversation. This purpose is expressed in a type of transaction. In the case of the example conversation, the transaction that is supposed to take place is a reservation transaction. The client (C) likes to make a hotel reservation for a particular date in the hotel. The employee (H) is authorized to grant this reservation. The client is the initiator of the transaction and the employee is the executor of the transaction.

The next step in the analysis is the determination of the structure of the communication acts that are used in the conversation. Therefore the communication acts, numbered from 1 to 17 are expressed in the formula as introduced in section 4. This transformation shows that the sentences in lines 1-3 are not related to the transaction that is at stake in the conversation. Therefore these sentences are omitted in the analysis.

Based on the politeness that can be recognized in the conversation and the lack of hierarchical relationship between C and H, we decide that the action type is communicative. In the conversation there is no explicit time-of-completion mentioned by C, therefore the time-of-completion is set to 'Now', indicating immediately.

The transformation of lines 4-6 results in the following formulae:

- 4 C Communicative[request(directive)<a hotel room is reserved for March 2nd, now>]
- 5 H Communicative[reformulate request(directive)<a hotel room is reserved for one night starting March 2nd, now>]?
- 6 C Communicative[request(directive)<a hotel room is reserved for one night starting March 2nd, now>]

In these three lines we observe an initial request for action by C to start a transaction, a request for more information by H, and an answer to this request by C. H considers this additional information to be necessary information for the execution of the transaction. Therefore H asks in 5 for extra information on the duration of the stay. As a response, C requests in 6 a hotel room *for one night*. The last two sentences have the characteristics of an adjacency pair 'question - answer'. These pairs of reformulate request and a reformulated request is observed throughout lines 5-14.

In line 14 the proposition formulation is completed. This sentence has the following structure:

- 14 C Communicative[request(directive)<a hotel room is reserved for Mr. T. Wilkinson of REM Slochteren (fax: 789208) for one night starting March 2nd, now>]

The fact that the proposition formulation is completed is deduced from the commissive communication act in the first part of line 15:

- 15 C Communicative[promise(commitment)<a hotel room is reserved for Mr. T. Wilkinson of REM Slochteren (fax: 789208) for one night starting March 2nd, now>]

With the communicative act in line 15 the actagenic conversation of the transaction is finished, and the transaction moves on to the execution of the objective action. The actual execution of the objective action is not observed, but in the second part of line 15 there is an indicator of the statutive communicative act stating that the action is executed: "You will receive a fax for confirmation". As soon as C receives the fax, he will check the reservation information, and reply when he is not content with the reservation.²

Like the sentences in lines 1-3, the sentences in lines 16 and 17 do not belong to the transaction, but are related to rules of politeness.

On the basis of the analysis of the communicative acts constituting the business conversation, a transaction process diagram is made. This diagram is a reflection of the conversation structure of transaction process. The diagram is based on the transaction process model as presented in section 4, figure 4, but only displays the conversation steps in the transaction. The transaction process diagram of the example conversation is presented in figure 5.

² This additional information is obtained from interviews

Figure 5: The transaction process diagram of the reservation conversation.

The transaction process diagram of the reservation conversation starts with the communicative act starting the transaction (4) which takes the transaction process from an initial (empty) state 0 to the state 1, in which a some objective action is requested. The transaction process then proceeds to the proposition formulation loop. So, we observe that the communicative act requesting a reformulation of the request (5) takes the transaction process back to the initial state. After a modified request, the transaction process proceeds to transaction state 1. This loop is repeated another 5 times before the proposition of the transaction is formulated completely. Then, by means of 15, the transaction process proceeds to the transaction state 2, where H promises to execute the reservation for C.

The remaining part of the transaction process at the success-layer is hidden behind a gray field. This indicates that this remaining part is expected, but not observed in the actual business conversation.

6 Conclusions

In this paper we have presented two speech act related approaches for the interpretation of utterances in real life business conversations. The first approach, Functional Grammar, offers a coherent and explicit model of grammar which aims at providing a complete account of the linguistic structure of an utterance. The second approach considers the structure of conversations as inter-related communication acts appearing in a transactional pattern. Both approaches were applied to an example conversation concerning the reservation of a hotel room. This example was taken from a larger case study performed in a Dutch hotel.

The analysis of the conversation with FG enabled a detailed description of the structure of the utterances by means of the UCS. The variables corresponding to each of the levels provide the means of both identifying and distinguishing the different types of entities designated at that particular level of clause structure. Consequently FG has proven to be very helpful in the distinction and determination of the propositional content and illocutionary force of an utterance. The analysis allowed a detailed understanding of the structure of the proposition which contains a predication and its constituting entities and verbs. By means of indexing the variables of the entities in the underlying structure it has been possible to represent an assumed relation between the different utterances in the conversation. This relation concerns the appearance of the same entities in different utterances. On the basis of this observation it can be supposed that the utterances in which the same entity appears belong to the same conversation. In addition to this detailed understanding of the utterance at the proposition level and the predication level, the analysis of the utterances at the clause (interpersonal) level revealed the Speaker and the Addressee (in the example conversation P1 and P2). In some of the utterances the role of either P1 or P2 in the context of the speech act could be determined by means of the semantic functions (see e.g., line 7).

The analysis with the Transaction Process Model enabled an understanding of the relationship between the different communication acts constituting a conversation. The transformation of utterances into the formula for the representation of communication acts provides a simple way to represent the illocution and proposition. By means of locating the transformed utterances as communication moves in the Transaction Process Model the structure of the conversation becomes visible. In the analysis of the example conversation this has resulted in the identification of multiple proposition formulation loops necessary for the formulation of a proposition that is acceptable to both parties involved in the transaction process. Unfortunately, the conversation did not proceed into the discussion and failure-layer or the discourse-layer of the model, which only showed a limited potential of the model.

On the basis of the example conversation it can be concluded that the two analyses describe a different level, but they both refer to linguistic expressions as the performance of certain kinds of language acts. In other words both approaches distinguish illocutionary force and propositional content in an expressed utterance. For FG the speech act is the highest unit of analysis while the Transaction Process Model takes the speech act as the smallest unit because these are the (initiating or reactive) moves in the conversation. The analysis with FG, on the one hand, restricts itself to the determination of the linguistic structure of the utterances, and therewith fails to take into consideration the function of the different speech acts in the conversation. The analysis with the Transaction Process Model focuses on the determination of the function of the utterances in a conversation; whether the utterance is an initiating move or a reactive move. However, the TPM contains very little indicators

for the determination of the linguistic structure of the proposition. On top of this, the representation in the UCS with FG is a direct reflection of the structure encountered in the utterance, while the representation of the utterances with the Transaction Process Model is based on the transformation in the context of a conversation with a transaction pattern. On the basis of the reasons mentioned above we also conclude that both approaches are supplemental for the analysis of business transactions. The analysis with FG provides detailed information about the structure of the individual utterances, while the Transaction process model provides information about the function of the individual utterances in a business conversation and consequently it provides clearness about the coherence in business conversations. Combined, the two approaches provide a detailed understanding of the structure of business communication and their constituting utterances.

If the analysis that is presented in this paper is compared with the current approaches to the analysis and interpretation of business communication in the Language/Action perspective (i.e., DEMO, SAMPO and ActionWorkflow), it is concluded that it provides a richer understanding. By using FG a more detailed analysis of the linguistic structure of utterances is established. This allows an improved understanding of the elements of a proposition and illocution in utterances. When FG is supplemented by an analysis with the Transaction Process Model this improved understanding is extended with an interpretation of the function of the utterances in business communication. This allows a more detailed and more precise characterization of utterances in business transactions, and as such a better understanding of communication in organizations in general.

Additional research will focus on a further integration of the two approaches into one approach that takes into account both the linguistic structure and the conversation structure of communication in general.

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