Chapter 4

Interactional Representation

1. Micro-Representation of Interaction

Interactional representation views the text as part of the interaction between participants in a social event. We thus need to view the text in relation to the producer of the text (speaker or writer), and also in relation to the recipient (hearer or reader). We also need to view the text in relation to the interaction itself -- how it functions to keep the interaction going.

1.1 Exchanges and Moves

One important reason for people entering into an interaction is because it offers a medium for exchange[1]: some participants have something to offer (information, goods or services), and others have need of such. Through the interaction, the commodities may be exchanged. Part of the interactional representation thus concerned what the participants have to offer, and what they need. The interactional resources represent the strategies which exist to achieve the exchange. In example 4.1, we see a small section of a dialogic interaction, in which information is exchanged.

> 4.1   a   *A: What time is it?*
>   b   *B: Ten o'clock.*
>   c   *A: Thanks.*

Participant A has voiced a need for information - the time of day. Participant B has provided that information. Participant A then acknowledges acceptance of the information in the final turn. This unit of interaction, in which a single piece of information or action is negotiated, is called an *exchange* (cf. Coulthard & Brazil 1981; Berry 1981; Martin 1992).

An exchange is constructed co-operatively through a series of contributions from both participants. The individual contributions are termed *moves.* The above exchange consists of three moves. Each move has a single *speech-function* - signaling what the speaker is trying to achieve with the move. The speech-functions of the three moves above are, respectively: *elicit-content, propose,* and *support.* These categories will be explained in more detail below.

A move is generally realised by a sentence,[2] and since this thesis is focusing on sentence processing, a discussion of moves and their representation is worthwhile. I will discuss the types of moves, and the types of roles which moves can have.

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[1]This is not to downplay other reasons for interaction -- interacting for pleasure, to strengthen phatic bonds, and to negotiate social roles.

[2]More correctly, a move is usually realised by a clause or clause complex (lexico-grammar) which is in turn realised by a (graphological) sentence. Note that many moves are realised as minor clauses and fragments, both treated as sub-types of clauses in the Systemic framework. Martin (1992, pp42-43) recognises three types of

In monologue (which includes most written language), speech-function has not been a great concern, since typically the only speech-function is the giving of information (realised as declarative sentences). This chapter is thus of more concern for dialogic representation and processing. However, if giving information is seen as simply a subset of the total range of speech-function, one model applies for both dialogue and monologue.

The interactional semantics often also includes resources for the expression of comment, attitude and evaluation (see Halliday 1973, p106). I will not touch upon these areas of interactional semantics in this thesis. For extensive work in this area, see Martin (1992).

The work in this chapter has largely grown out of the work of Margaret Berry (1981), Jim Martin (1981, 1985, 1992) and Eija Ventola (1987). They have developed a theory of Exchange Structure which has proven of immense value to many people analysing conversation. Other contributors to this Exchange model include Amie Tsui (1989), Suzy Eggins (1990), Gillian Perret (1990), O'Donnell (1990), Anne Thwaite (1994), and Imagen Hunt (unpublished).

While this chapter focuses on moves in isolation, this work represents only one module in a wider model of dialogue. For further information as to how the speech-acts, as specified here, function in Exchange structure, see O'Donnell (1986, 1990). This exchange model has also been implemented as a module of a prototype machine-human interface, within the Yellow Pages Project at Telecom Research Labs (Australia) - see Rowles *et al.* (1992a, 1992b, 1993a, 1993b).

1.2 Interactional Representation in Sentence Processing

The generation of sentences draws upon three types of information:

1) <u>What to say</u>: a specification of the proposition (ideational content) to be expressed (discussed in chapter 3).

2) <u>What the speaker requires the listener to do in regard to the encoded proposition</u>: This is called in Systemics the *speech-function:* Is the listener supposed to accept the content as a fact? Or are they supposed to complete the proposition in some way? Or perform some action in response to the utterance?

3) <u>How to Say</u>: a specification of how the content and speech-function are to be encoded lexico-grammatically. In Systemic terms, this is a specification of the textual semantics of the sentence (see chapter 5).

This chapter provides a model for the specification of the second aspect of the semantic specification of an utterance. I need to consider two questions relating to speech-function: what speech-functions are available to a speaker, and how are they encoded into the utterance. Note that in many monologic generation systems, speech-functional information is left unspecified, since the system allows only statements to be generated.

For analysis, also, speech-function is important. To fully understand a sentence, it is necessary to understand whether the speaker is asking for information or action, or is offering such. The output of WAG's analysis process includes the move structure, including the speech-functional features.

It is thus clear that semantic representations need to include speech-functional information. This chapter describes the nature of speech-functional representation as used in the WAG system.

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minor-clauses: calls: *John!*; greetings: *hello.*; and exclamations: *golly!*. In some moves the speaker provides only the portion of the proposition which was elicited, resulting in a clause *fragment*, for instance where interactant B provides only *ten o'clock* in the example above, rather than a full clause: *It is ten o'clock.*

2. Move Structure

I have introduced above the move - an element in the interaction structure. My model distinguishes two types of moves - *verbal moves:* elements of the interaction realised through speech or writing, and *non-verbal moves*: interaction elements which are realised through non-verbal action, typically material actions, e.g., passing the salt in response to a request to do so. Verbal and non-verbal moves make up the behaviour potential known to the system. If the system was to be extended to interact with other entities (human or computer), then this potential would represent both what the computer can do, and also serve as a basis for the interpretation of the behaviour of other interactants.

I will only talk about verbal moves here. Verbal moves are also called *speech-acts* (cf. Grice 1975; Martin 1981). A speech-act is an interactional unit, consisting of a speech-functional specification, and usually (but not always) expressing propositional content. A speech-act is typically realised lexico-grammatically by a clause or clause-complex, although this is not always the case. However, for this implementation, I make this assumption to simplify the model. I will first discuss the structure of the move, and later discuss the speech-functional network which details the various types of moves.

2.1 Move Structures

In the WAG system, moves are represented formally the same as lexico-grammatical and ideational units. The move potential is represented as a system network, with associated realisation statements. A move is a systemic structures produced from this potential. A move specification consists of:

- **A set of features**: a selection expression from the move network.,
- **A set of structural roles**: Specification of the speaker, listener, proposition, etc., of the move.

Figure 4.1 shows a typical move structure, representing the utterance "I would like information about some panel beaters". Note the move has a feature-bundle of three features. Four roles are shown: Speaker, Hearer, Proposition, and Speaking-Time.
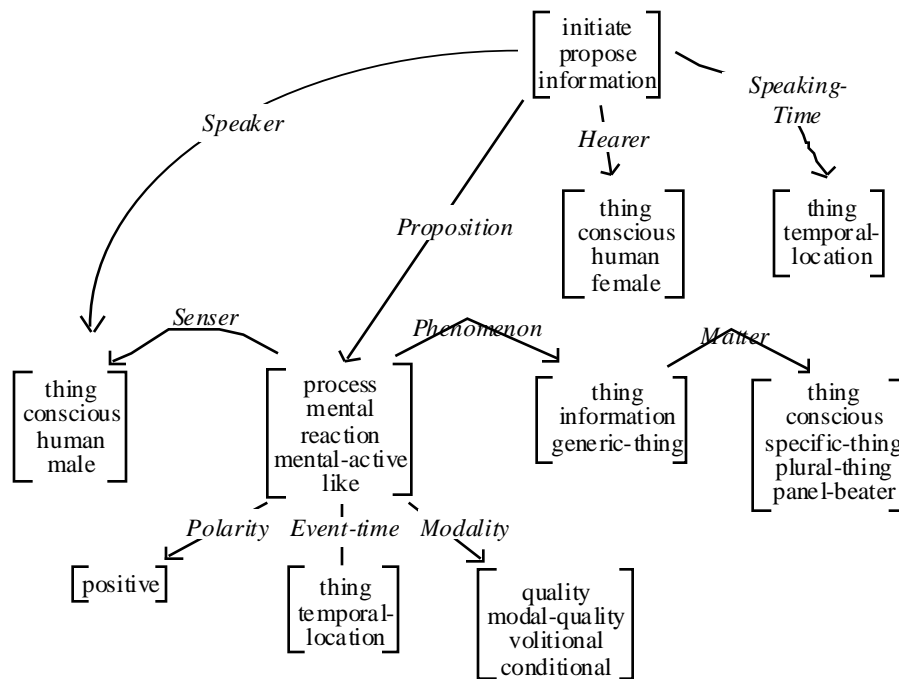

Figure 4.1: The Move Structure for:
"I would like information about some panel beaters."

While figure 4.1 presents a move as a single structure, it is perhaps more usefully viewed as three structures -- ideational, interpersonal and textual -- melded together. Figure 4.2 shows another move specification -- for *Can I help you?* -- this time, with the ideational and interaction structures separated out (textual specification will be introduced in the next chapter). A move structure can thus be seen as a conflation of the interactional and ideational specifications (and textual). The conflation of the structures occurs because some of the roles of the interactional structure point to elements of the ideational structure, for instance, the filler of the Speaker role in the interaction structure is the Actor element of the ideational structure. The Actor is thus realised as "I". This merging of interactional and ideation structures used in figure 4.1 is possible only because the same formalism is used for representing both types of information. The Required role, shown in this figure, will be introduced below.
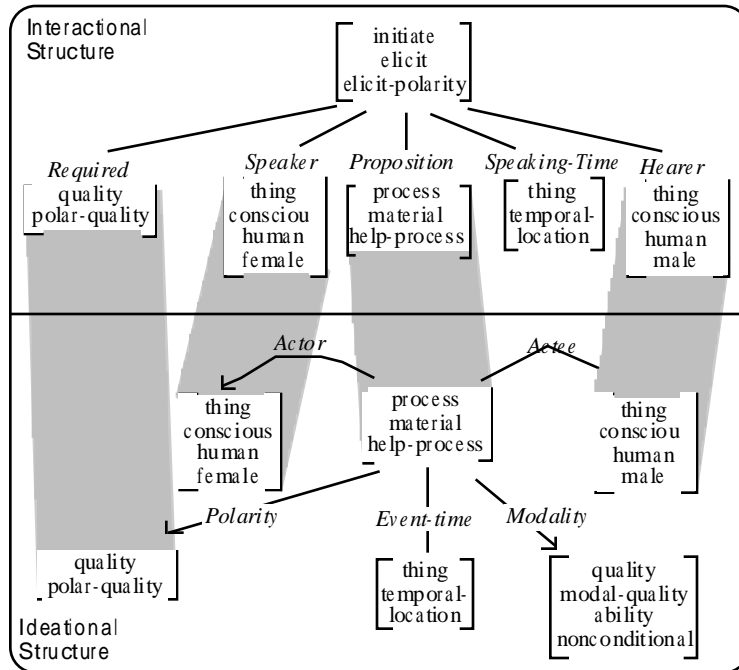

Figure 4.2: Conflating Ideational and Interactional Specifications for"Can I help you?"

2.2 Move Potential

The types of moves available, and their structural potential, are described by a system network. Figure 4.3 shows a simplified move network (some simultaneous systems have been removed, as have some more delicate ones).
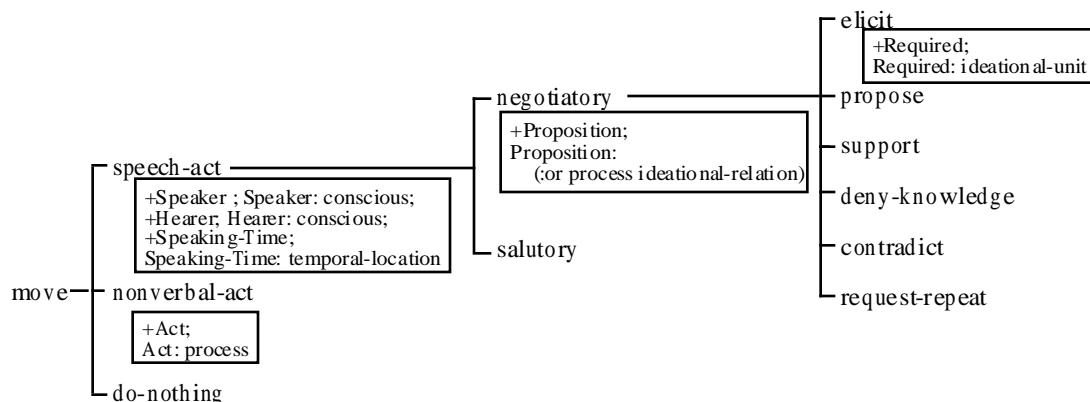

Figure 4.3: A Simplified Move Network with Realisations

A speech-act has three inherent roles:

- SPEAKER: the conscious being who utters the speech-act.
- HEARER: the conscious being(s) to whom the utterance is addressed.
- SPEAKING-TIME: the temporal-location of the speech-act (used for tense).

Negotiatory speech-acts (those negotiating information or action) require an additional slot:

- PROPOSITION: the ideational content of the move.

2.3 Relating Ideational Content and the Speech-Act

Systemic Linguistics has said little about the relation between speech-acts and ideational content. They are seen perhaps as two simultaneous systemic potentials for describing the semantics of an utterance. For formal work, however, we need to specify the structural relationship between ideational structure and the speech-act.

2.3.1 Speech Act as a Role of the Ideation Structure

In the Penman system, ideational structure is considered central, and speech-function is represented as a role of the ideational structure. For instance, the semantic specification to generate "Does the Knox sail?" would be:

```
(S1 / sail
   :actor (S2 / ship  :name KNOX)
   :speechact QUESTION))
```

S1 and S2 are arbitrary names given to the sailing process and the ship, so they can be referred to later. *sail* and *ship* are ideational features from a naval domain model, the ideational type of the units. The *speechact* role is filled by a speech-act type, such as *question, answer, command.*[3] Penman thus embeds speech-act information inside the ideational specification. Tense, aspect and modality are similarly embedded.

2.3.2 Ideation as a Role of the Speech-Act

The resource model of the WAG system takes interaction, rather than ideation, as central. A sentence is not a re-representation of ideational content, it is an action. The speaker, as a step towards achieving some goal or goals, decides upon a particular verbal action, and performs the action: an utterance is produced. The selection of ideational content is an important part of the formation of this utterance, but it is important to remember that the utterance is foremost social action.

Taking this view, the relation between the speech-act and the ideational representation involves the speech-act as the top-most object, and the ideation contained as a role of the speech-act. This is the approach I have taken, as can be seen in figures 4.1 and 4.3.

If the Penman approach is taken, then it is difficult to represent those moves which contain no ideation. In dialogue, there are many moves which serve only a salutory function, such as greetings or thank-yous. These moves do not contain any ideational content, and there would thus be no ideational framework to which the speech-functional information could be attached. The speech-function itself constitutes the semantic specification of the move.

Also, I intend to extend the system so it is capable of performing non-verbal actions as well as verbal actions. This could include, for instance, moving files, reading information from data-bases, ejecting disks, etc. A system which deals with *actions* rather than

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[3]This is the simplest of Penman's methods for specifying speech-function. The argument is not materially affected if the other forms are used.
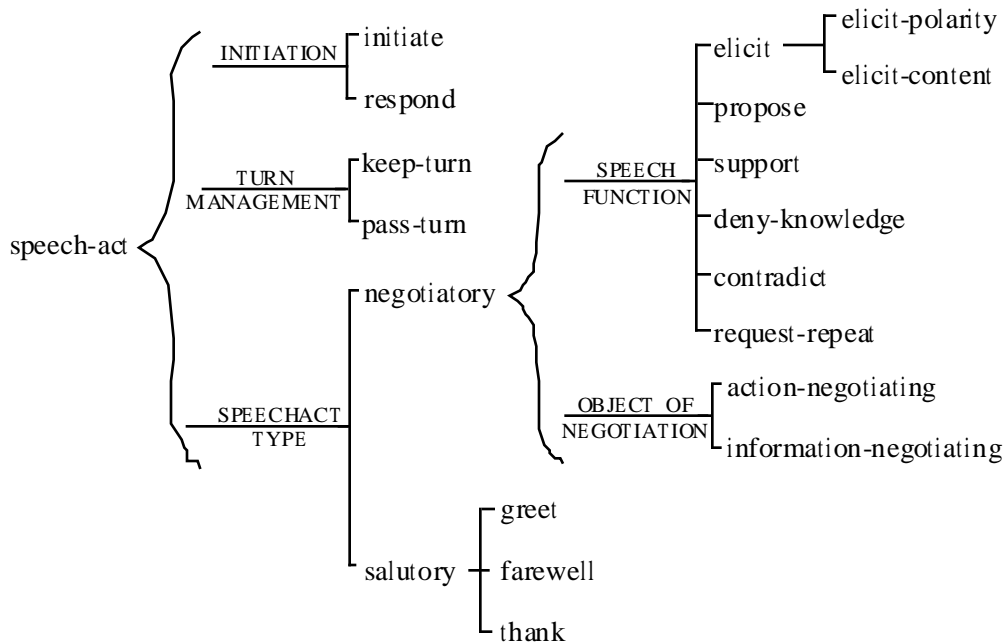
Figure 4.4: The Speech-act Network

propositions is an advantage for such an application, since a single architecture can be used for verbal and non-verbal action.

In summary, the centrality of interaction in the design of the WAG resource model has lead me to represent ideation as a sub-role of the move, rather that the reverse, as is done in the Penman system.

3. The Speech-Act Network

This section will introduce the speech-act sub-network, and describe the least delicate systems of that network. The network is shown in Figure 4.4. Each system will be discussed in turn below, except for the negotiatory speech-acts, which will be discussed in section 4.

3.1 Speech-Act Type

The WAG system distinguished between the following two types of speech-acts:

1. **Negotiatory Speech-Acts**: Negotiatory speech-acts contribute towards the construction of an ideational proposition.

2. **Salutory Speech-Acts**: Salutory moves do not construct ideation, but rather serve a phatic function, for instance, greetings, farewells, and thank-yous. These moves may be seen as a means of solidifying the relation between the participants. People are considered rude if these moves are not provided appropriately. The salutory moves presently handled in WAG are:

   • Greeting & Farewell: Apart from their phatic function, greeting and farewell moves serve an organisational function within the discourse. Greetings mark the opening of communications, and farewells mark the completion of the interaction. The initiation and response in these types of salutations are usually of the same kind -- a *hi* is responded to with another *hi*, or perhaps a *hello.*

- - Thank-you: Thank-you performs a phatic function but forms a slightly different class from the other salutory moves. In a thank you, one participant marks their appreciation of some service (verbal or non-verbal) done for them by the other. Typically, some acknowledgment of the thank-you will follow (*Don't mention it* or *You're welcome).*

While many approaches treat a thank-you as part of the action-negotiating exchange which triggers it, I treat the thank-you as a separate exchange. The action-negotiating exchange is negotiating whether a particular action will take place, while the thank-you exchange expresses gratitude for the acceptance to perform the action. While these two exchanges are linked, I do not see the link as a link at the exchange level, but rather a rhetorical link: the action-negotiating exchange is linked through a rhetorical relation to a dependent express-gratitude exchange. This relation is thus handled in the rhetorical structuring, not the exchange structure.

3.2 Initiation

An important choice in the speech-functional network is between *initiating* a new exchange, or *responding* to an already open exchange. In a negotiatory exchange, an *initiating* move introduces a new proposition for negotiation, while a *responding* move further develops an existing proposition. Looking at the realisation of these categories into the grammar, *responding* moves demonstrate a fairly high degree of ellipsis (e.g., *I am.*), while ellipsis in *initiating* moves is rarer.

Salutory exchanges also usually allow initiating and responding moves, although rarely more than one responding move. For instance, a greeting is typically met with a greeting in return. A thank-you, is often met by a "You're welcome". Often, however, the reply is not forthcoming, left implicit. The reply to initiating salutations is thus optional.

3.3 Turn Management

When a speaker utters a move, they often indicate, through tone and pause-length, whether they intend to continue speaking (*keep-turn*), or whether they expect the other participant to take a turn (*pass-turn).*

4. Negotiatory Moves

This speech-functional model is based on a negotiatory model -- that an exchange is the unit in which some proposition (or proposition-complex) is negotiated between the participants -- cf. Coulthard & Brazil (1981, p10): "the exchange is the unit concerned with negotiating the transmission of information"; Berry (1981, p139): "the minimum amount of information for an exchange is a completed proposition"; Perret (1990, p174): "[an exchange is] a series of two or more moves which together realise and support one, possibly complex, proposition"[4].

Berry (1981) offers one model of exchange structure based on three exchange slots:

proposition base -- the move that provides "a basis for the completed proposition by predicting the form of the completed proposition" (Berry 1981, p140). In such a slot, one participant offers a partially completed proposition, with some

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[4]While accepting Perret's account in general, I drop her requirement of an exchange having at least two moves. I would claim that a simple stating sentence, such as the present one, is an exchange by itself, communicating a proposition complex.

indication (e.g., wh- words) of the missing content. These moves are typically realised by a question.

proposition completion -- the move that completes the proposition. Typically a statement, but often an answer to a question.

proposition support -- once the proposition is completed, the participant who did not complete it may show their agreement with the proposition by supporting it. For instance, "I agree", "oh", "okay" and "yes".

In my model, I am looking at *types* of moves, not functional slots. I will thus use the following terms in place of Berry's:

elicit	proposition base
propose	proposition completion
support	proposition support

Berry's categories are based on a *polite-consensus* assumption -- where it is assumed that the expectations set up by the prior speaker's move are always met by the following speaker. Thus an elicitation is met by an answer, and an answer by support. However (as she notes) the polite-consensus model does not fit the real world too well. I thus add three speech-functional options to the model:

deny-knowledge	proposition completion refused
contradict	proposition support refused
request-repeat	The addressee requests that the speaker repeats the prior move

Figure 4.5 shows the negotiatory systems of the move network. The speech-functional categories of this network are explained below:

elicit: the speaker asks the listener to complete the specification of a partly specified proposition. Either polarity or content is left unspecified. The eliciting move must thus set up the structure of the proposition, and include an indication of the part(s) of the proposition yet to be provided.

For instance, the question "Where are you going?" corresponds to the following partial proposition (the question marks in the destination field indicates that this is the field being negotiated):
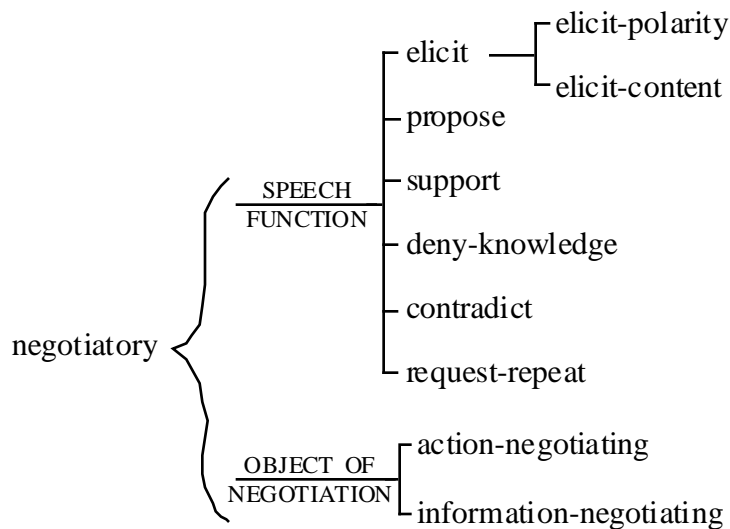

Figure 4.5: The Negotiatory Systems

Process:	[material: non-directed: motion-process: go]
Actor:	HEARER
Event-Time:	future
Polarity:	positive
Destination:	???

This type of elicitation is termed a *content* elicitation. Another sort of move attempts to elicit just the polarity of a proposition, e.g., *Are you going to Sydney?*.

Process:	[material: non-directed: motion-process: go]
Actor:	HEARER
Event-Time:	future
Polarity:	???
Destination:	Sydney

propose: the speaker completes a proposition. The proposition is thus completed but not mutually supported. This may be an initiating move (a statement, e.g., *I am going to Newtown*) or may be in response to an elicitation, in which case some ellipsis may be present, as in example 4.2:

> 4.2   A: *Where are you going?*   [initiate: elicit: content]
>   B   *To Newtown.*   [respond: propose: content]

Proposals provide either content and/or polarity. An initiating proposal provides both content and polarity. A responding proposal provides either, depending on the question it is responding to.

deny-knowledge**:** Following an elicitation, a participant is expected to complete the proposition. Often, however, if the participant doesn't know the answer to the question (and is unable or unwilling to guess), then they can just deny knowledge, e.g.,

> 4.3   A: *Is Caringbah in the Sutherland Shire?*   [initiate: elicit: polarity]
>   B. *I don't know.*   [respond: deny-knowledge]

support**:** The speaker agrees with the proposition. The proposition is thus mutually supported. The proposition thus enters the shared knowledge base of the participants. Only the person who did not complete the proposition can provide the *support* move. Typical supporting moves are *uhuh, right, okay, yes, yeah, yep, oh, hmm*. Note that these categories can be further distinguished into 'agreeing' types (*true* -- 'I know that') and 'accepting' types (*oh* -- 'I didn't know that, but I will accept it'). Many are fairly neutral between these extremes.

Support is often given implicitly: rather than providing a supporting move, a participant can imply support by not challenging the proposition, and continuing on, e.g.,

> 4.4   A: *I'm going out now.*   [initiate: propose: content]
>   B.   *What time will you be back?*   [initiate: elicit: content]

contradict: One participants *contradicts* the prior speaker's proposition completion. The option to contradict is thus an alternative to *support*. Care should be taken in the coding of *contradict* moves, properly distinguishing moves which contradict, from moves which offer an alternative completion. A *contradict* move is taken to be only a move which denies the proposition. Note the coding of the following exchanges:

> 4.5   A: *George is coming on Tuesday*   [initiate: propose]
>   B.   *No, he is not*   [respond: contradict]

4.6	A:	*George is coming on Tuesday*	[initiate: propose]
	B.	*No,...*	[respond: contradict]
		...he's coming on Wednesday	[respond: propose]

(*B has attempted an alternate completion*)

4.7	A:	*George is coming on Tuesday*	[initiate: propose]
	B.	*No,...*	[respond: contradict]
		...You're an idiot	[initiate: propose]

(*B has started a new exchange*)

> request-repeat: When an utterance is not properly understood, the addressee can request for it to be repeated, e.g., *Sorry?*.

Negotiatory options do not freely mix with the choices of *initiate* and *respond* -- one can only *elicit* as an *initiating* move, and only *support*, *contradict*, *deny-knowledge* or *request-repeat* as a responding move. *Propose* is available both as an initiating or responding move.

5. The Object of Negotiation: Information or Action

The matter being negotiated in an exchange may be either information (*let's agree that this is true*) or action (*let's agree that this should be done*). It is an important distinction, because it controls what results from the negotiation. As an example, note the following:

> *Will you go to the store?*

This move can be interpreted in two ways: as *[elicit: information-negotiating]*: *I want to know whether you are going to the store,* or as *[propose: action-negotiating]*: *I want you to go to the store*. The speaker's intention can only be interpreted when we know whether the domain of the question is *information* or *action*. The context will normally allow the listener to interpret the correct intention.

Halliday (1984) uses the term *proposal* rather than *proposition* to describe the ideational component of an action-negotiating exchange. I will use this term in the following discussion.

5.1 Separating Negotiation and Performance of Actions

In some exchange models, physical actions are treated as alternative means of fulfilling exchange turns (see, for instance, Berry 1981; Martin 1992, p48); Ventola 1987), e.g.,

4.8	A:	*Pass the salt, please*	[initiate: elicit: action]
	B.	*<passes salt shaker>*	[respond: perform: action]
	A:.	*Thanks*	[respond: support]

However, according to Hasan (1987, p24):

 "the physical action itself is not a speech-act, ... any more than a life being lived is a
  biography"

I also follow this approach -- action-negotiating exchanges are purely for negotiating whether or not an action takes place: *let's agree that this action should take place*. Any action is to be seen as a consequence of the negotiation. If someone says "pass the salt" and the addressee does so, it is only because (s)he has implicitly accepted the proposal.

In example 4.9, the verbal behavior is taken to be a single exchange -- the negotiation as to whether the action will take place. B then goes on to perform the action he has

agreed to do. This is a separate action-unit, indicated by the box bracketing separating the exchange from the action.

4.9	A: *Pass the salt, please?*	[propose: action-negotiating]
	B: *Sure!*	[support: action-negotiating]
	<passes the salt shaker>	[act]

A supporting move in an action exchange is often <u>not</u> verbalised -- acceptance of the proposal is implied by the performance of the action. In such a case I reject the usual assumption that the action is fulfilling the *support* role. Rather, the *support* role is unrealised, implied by the action.

In summary, an *[action-negotiating]* exchange is treated as a unit for <u>negotiating</u> the performance of action, and does not include the actual performance of the action. This stems from the premise that the exchange (except for salutory ones) is a unit for the negotiation of propositions/proposals. The execution of the proposal merely results from the mutual agreement that the act is to be performed.

5.2 Linguistic Services

This approach avoids a problem brought up in the exchange analysis literature, concerning *linguistic services* (cf. Ventola 1987). Suppose someone asks *tell me about your holiday*? Under Ventola's model, the ensuing holiday description must be treated as the filler of the *completing* slot. The exchange model thus needs to allow whole texts to fill slots of the exchange, as shown in example 4.10 below (a1, a2 and k1 are notations in Berry's model). This complicates the whole notion of exchange structure.

4.10 A: a2   *Tell me about your holiday?*
      B.   a1 | k1   *It started well,*
                    | k1   *Then everything went wrong.*
                    | k1   *The hotel was invaded by Martians,*
                    | k1   *...and the service was lousy.*

If, on the other hand, we make the assumption that exchanges only negotiate action, and do not include the resulting action, then the problem is resolved. We have an initial exchange which negotiates whether or not the addressee will describe their holiday, and the resulting description of the holiday is to be modeled in its own right, as a series of exchanges, as show in example 4.11.

4.11   A: a2   *Tell me about your holiday?*
       B.   a1   *<support is ellipsed - but implied by the ensuing dialog>*
                     k1   *It started well,*
                     k1   *Then everything went wrong.*
                     k1   *The hotel was invaded by Martians,*
                     k1   *..and the service was lousy.*

One motivation for Ventola's approach is the desire to show that the description of the holiday serves a single function. However, the moves of this description are not bound together at the exchange level, but rather at a rhetorical level -- they together serve one rhetorical function -- a recount. One should not try to explain too much in the exchange model.

5.3 Alternative Glossing for Action-negotiating Moves

Because action-negotiating moves are interpreted slightly differently from the information-negotiating moves, I re-gloss the negotiation functions more specifically.

elicit: action-negotiating: the speaker asks the listener to complete the specification of a partly specified action-proposal. Either polarity or content is left unspecified. In the polarity type, the speaker's question does not imply either the acceptance or rejection of the action.

propose: action-negotiating: the speaker completes a proposal for action. In so doing, the speaker states their position on the proposal. The proposal is thus completed but not mutually supported.

support: action-negotiating: the speaker agrees with the proposed action. The proposal is thus mutually supported.

6. The Object of Elicitation: The 'Required' element

When we ask a question, we expect the addressee to tell us something[5]. I take the approach that a question is a template, with some element missing. It is up to the addressee to supply the missing element.

Take the question: *Where is John?*. This can be seen as a propositional template:

Actor: John
Process: existential-process
Polarity: positive
Location: ??

In asking the question, the speaker created this propositional template, with an indication of the element (sometimes elements) which needs to be supplied by the addressee. Yes-no questions can be treated in the same way, except that the missing element is the polarity, e.g., for "Is John in London?"

Actor: John
Process: existential-process
Polarity: ??
Location: London

I call the wh- element the *required* element of the ideational representation -- the element which the asker requires the addressee to supply. Note that in replies to questions, the speaker often supplies only the required element, using an elliptical form:

4.12   A: *Where are you going?*   [initiate: elicit-content]
        B.   *London.*   [respond: propose: required-only]

When eliciting, the speaker provides a partial ideational specification, and indicates which additional ideation is to be provided by the listener. The representation of an eliciting speech-act thus requires some means to indicate which role of the proposition is to be provided[6]. Lexico-grammatically, the element marked as required is realised by a wh-element, as in *Where are you going?*, or in the case where polarity is required, by ordering the finite before subject, or intonationally.

For this reason, I introduce another role to the speech-function structure: the *Required* role. This role points at one of the elements of the proposition, the one which is to be provided. Consider figure 4.6, which shows two roles of the move: the Proposition role

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[5]I am ignoring rhetorical questions, and indirect speech acts (e.g., commands voiced as questions).

[6]Sometimes multiple elements are required by an elicitation, e.g., *When and where are you going?*.
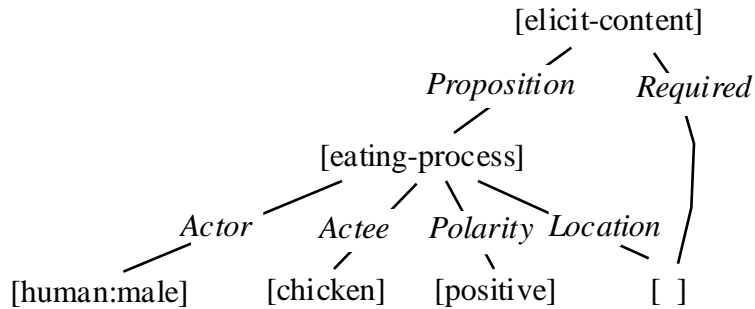
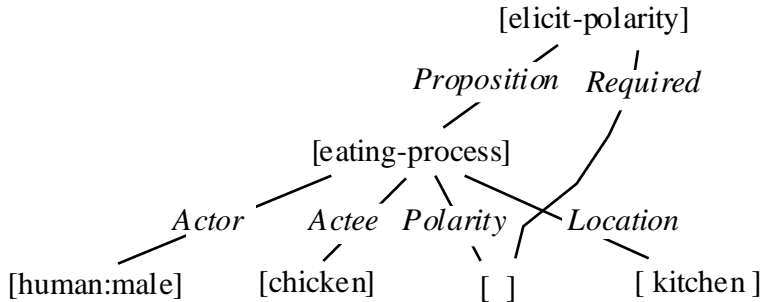Figure 4.6: Move Specification of "Where did the man eat the chicken?"

Figure 4.7 Move specification of "Did the man eat the chicken in the kitchen?"

and the Required role. The filler of the required role is shown to be the same item which fills the Location role of the process. Figure 4.7 shows another move specification, this time for a yes-no question.

Almost any element of an ideational structure can be required, not only the top-most entities (e.g., Actor, Actee, Polarity and Location in the examples above). For instance, in *The man from which company came today?* the speaker is eliciting the Origin role of the Actor. For this reason, it is impossible to enumerate the various role possibilities for the Required element. Because of this, the possible conflations between the Required role and elements of the ideational structure are not enumerated paradigmatically (i.e., in the speech-act network). Rather, this conflation is specified syntagmatically: in sentence generation, the specification of an eliciting move will include a specification of which ideational entity fills the Required role. In sentence analysis, this information will be provided as part of the move analysis provided y the system.

Formal specification of the required element of the move is important for controlling the lexico-grammatical realisation. It tells the grammar which element is to be the wh-element (or whether to use a finite-subject form for polar questions).

7. Summary

This chapter has made the following significant points:

- Speech-acts are presented as a subset of the more general behaviour potential -- verbal action, as opposed to non-verbal action, or inaction. The resource model thus facilitates the integration of verbal and non-verbal interaction potentials.

- I have presented the syntagmatic structuring of moves. A move is a unit which has several roles, including Speaker and Hearer, Proposition, Speaking-time, and Required roles.

- The ideational content is attached to the move structure through a Proposition role. Structurally relating moves to their ideational content is an important extension to the Systemic approach to conversation theory. Previously it has been difficult to relate speech-function and ideation to each other.

- A negotiatory model of the exchange has been proposed, mainly as an extension of earlier work. The exchange is seen as the unit of negotiation of a proposition/proposal.

- Where the object of the negotiation is action, the performance of the action is not seen as part of the exchange (Hasan also takes this approach).

- In a similar manner, when a recount is elicited, the body of the recount is not seen as part of the exchange which elicits the recount.

- I have provided means of specifying the wh- element of the move, via a Required role of the move.