

# Pr.A.T.I.D: a coding scheme for pragmatic annotation of dialogues.

Renata Savy

Department of Linguistic and Literary Studies  
University of Salerno, Fisciano (Salerno), Italy  
E-mail: rsavy@unisa.it

Our purpose is to propose and discuss the latest version of an integrated method for dialogue analysis, annotation and evaluation, using a set of different pragmatic parameters. The annotation scheme Pr.A.Ti.D was built up on *task-oriented* dialogues. Dialogues are part of the CLIPS corpus of spoken Italian, which consists of spoken material stratified as regard as the diatopic variation. A description of the multilevel annotation scheme is provided, discussing some problems of its design and formalisation in a DTD for Xml mark-up. A further goal was to extend the use of Pr.A.Ti.D to other typologies of task-oriented texts and to verify the necessity and the amount of possible changes to the scheme, in order to make it more general and less oriented to specific purposes: a test on map task dialogues and consequent modifications of the scheme are presented. The application of the scheme allowed us to extract pragmatic indexes, typical of each kind of text types, and to perform both a qualitative and quantitative analysis of texts. Finally, in a linguistic perspective, a comparative analyses of conversational and communicative styles in dialogues performed by speakers belonging to different linguistic cultures and areas is proposed.

## 1. Introduction and goals

This work aims at proposing a coding scheme for pragmatic annotation, Pr.A.T.I.D (Pragmatic Annotation Tool for Italian Dialogues)<sup>1</sup>, built up on *task-oriented* dialogues. The scheme was specifically designed for pragmatic analysis of “spot the difference” dialogues (Pean *et al.*, 1993); nevertheless, in our opinion and on the base of our experience, it can be applied to a wider type of task-oriented text (i.e. *map-task* dialogues and other typologies).

We start from the discussion of the development method of the scheme itself (§3): from the earlier formulation of its conceptual structure, to a latest version formalised as a DTD for Xml mark-up, suitable for tagging and querying a corpus of dialogues.

From a methodological point of view, our main goal was to set up a structured database, derived from a wide corpus of dialogic texts, allowing us to validate the annotation scheme and to improve it in succeeding steps. A further goal was to extend the use of Pr.A.T.I.D to other text types and to verify, having this proof, the necessity and the amount of possible changes to the scheme, in order to make it more general and less oriented to specific purposes.

As far as application is concerned, our first step was to extract pragmatic indexes, typical of each kind of text types (§4.1), and to perform both a qualitative and quantitative analysis of texts, as it is required by corpus linguistics, focussing on their occurrence.

Finally, in a linguistic perspective, our latest goal was to support comparative analyses of conversational and communicative styles (§4.2) in dialogues performed by different speakers, belonging to different linguistic cultures and areas.

As it will be shown in the next sections all these goals have been reached, even if only in preliminary studies.

<sup>1</sup> Pr.A.T.I.D corpus (and its extension to four European languages) is publicly available at the website [www.parlaritaliano.it](http://www.parlaritaliano.it).

## 2. Background

Many schemes for pragmatic annotation have been proposed within specific international projects; their main aim is to identify the pragmatic function assumed by each ‘dialogue act’<sup>2</sup> in communicative context. Some of these schemes are multidimensional<sup>3</sup>, since they concurrently encode different dimensions of the communicative act. Other schemes<sup>4</sup>, designed for special purposes, are, on the contrary, mono-dimensional.

A multidimensional annotation scheme presents the advantage to be widely and generally applicable. Among these, in particular, the DAMSL<sup>5</sup> (Allen & Core, 1997) and its extension SWBD<sup>6</sup>-Damsl (Jurafsky *et al.*, 1997, Leech & Weisser 2003), using its multidimensional structure, aims at the encoding of any dialogue interaction. Its aim is to mark particular aspects of the utterance units (i.e. speech act) ‘summarizing the intentions of the speaker [...] and the content of utterance’<sup>7</sup>. Annotation involves making choice about four functional dimensions corresponding to four different categories:

- *Communicative status* (recording the intelligibility and completeness of the utterance);
- *Information level* (characterising the semantic content of the utterance);
- *Forward Looking Function* (coding how the utterance affects the actions of the participants

<sup>2</sup> Several authors refer to this notion by quite different technical terms: ‘dialogue move’ (Carlson, 1983); ‘dialogue object’ (Jonsson, 1995); ‘communicative action’ (Allen & Core, 1997), ‘communicative act’ (Allwood, 1995; Traum, 1996).

<sup>3</sup> for example, the TRAINS project (Allen & Schubert, 1991; Traum, 1996), and its successor, TRIPS (Ferguson & Allen, 1998); the CHAT system (MacWhinney, 1998).

<sup>4</sup> for example VERBMOBIL (Alexandersson *et al.*, 1998); COCONUT (di Eugenio *et al.*, 1997); LINLIN (Ahrenberg, 1987); ALPARON (van Vark *et al.*, 1996), Flammia’s Coding Scheme (Flammia, 1998).

<sup>5</sup> <http://www.cs.rochester.edu/research/speech/damsl>

<sup>6</sup> <http://www.colorado.edu/ling/jurafsky/manual.august1.html>

<sup>7</sup> Website (see note 5) RevisedManual/node3

and the development of the dialogue);

- *Backward Looking Function* (coding how the utterance relates to previous discourse and context).

For each category, different features are marked by numerous tags, which constitute the final product of annotation.

Due to its complex structure, the DAMSL system results very powerful but, at the same time, it suffers of a high heaviness and of an extreme sparseness of the tag-set. It is not a matter of chance that inter-annotator agreement for this system reaches a degree of only 56%.

In particular, the hierarchical organization of the Forward-Looking Function (recalling Searle's classification of linguistic acts) is, in some cases, redundant (e.g. in the reduplicative presence of tags like 'assert' and 're-assert'). In other cases, a certain under-specification appears (as for the 'info-request' category, which condenses all *question* values in a single tag; see Larsson, 1998; Soria & Pirelli, 2003).

On the contrary, the use of a light mono-dimensional scheme shows, as a drawback, a significant limitation both in expression power and applicability on different texts. The most noticeable among these schemes is the Map-task Dialogue System, used in the HCRC-corpus at Edinburgh (Anderson *et al.*, 1991; Carletta *et al.*, 1996)<sup>8</sup>. This system is based on a tripartite structure<sup>9</sup> of *Transaction*, *Games* and *Moves* levels of analysis. The last one is specifically dedicated to signalling dialogue acts by means of twelve tags, distributed in *Initiating* and *Response* moves. Due to the limited tag-set, the extent of inter-annotator agreement is obviously very high (83%), but twelve tags are really few to cover all functional aspects of the interaction and/or speaker communicative intentions.

Furthermore, the HCRC Map-task Dialogue System, even in its extended version (Castagneto & Ferrari, 2004), is specifically designed for a particular dominion (i.e. *Instruction-giving* dialogues) and its application is limited to the text types for which it was conceived (see Popescu Belis 2003). The application of the scheme to other task-oriented dialogues fails, indeed, because of its internal organization in *instruct-acknowledgment* adjacent pairs.

The scheme proposed in this work constitutes an attempt of combining some properties of the two systems discussed above: it aims at maintaining the tag-set simplicity and weightlessness of the Map-task Dialogue System, integrating it with some DAMSL tags. Presently, it preserves a mono-dimensional structure, in order to avoid the exponential combination of tags and functions (Soria & Pirelli, 2003); nevertheless, its formal architecture allows for future possible changes towards a multidimensional structure, taking into account the intrinsic multifunctional nature of dialogue acts (see discussion in §5).

The integration of the tag-set was explicitly designed to annotate dialogic interactions different from the ones the scheme was built on.

### 3. The coding scheme Pr.A.Ti.D

#### 3.1 Pr.A.Ti.D structure

As stated above, our proposal consists a mono-dimensional coding scheme conceived for pragmatic analysis and annotation of task-oriented dialogues based on the "spot the difference" elicitation method. This peculiar kind of dialogues is not so rigidly structured as other types of task-oriented dialogues are, as participants were not previously assigned their conversational roles (contrarily, i.e. to *Instruction Giver/Follower* in Map-task dialogues).

However, similarly to the case of Map-task Dialogue System, our scheme considers the *Transactions/Games/Moves* articulation of the dialogue, as well as the essential distinction of moves in two main classes, as a grounding. The innovation we propose lies in the hierarchical *multi-level* structure of the scheme (see Fig. 1); each level encodes a different *status* of the dialogue act, (De Leo & Savy, 2007). Tags on one level are embedded in the higher level ones.

The first level marks the textual and contextual function of the dialogue act and its relation with the future development of the interaction. *Independent Moves* (moves that do not branch out) and *Opening/Closing Moves* are encoded; the former ones are not conditioned by the course of the dialogue and they do not influence its semantic developing; the latter ones open and close transactions (TR\_begin/closure) and Games (Open/End). At the second level, subtypes of Opening (*Influencing*, *Question*) and Closing Moves (*Understanding*, *Answer*) are encoded: they consist of macro-categories of tags, identifying the main communicative functions in the dialogue act and the type of contribution asked for or provided from each speaker.

At the third level, *Final Moves* are encoded: they are narrow categories of moves, signalling communicative functions more closely linked to the speaker's intentions. The final tag-set is shown in Table 1. In the first three columns, the modular tag classification is reported; fourth column presents a brief and synthetic explanation of the primary function of the tag; finally, fifth column indicates if the label belongs to the DAMSL or Map-Task coding system or it is new.

The definition of each categorical label is obviously not easy. First of all, theoretical problems arise in identifying discrete categories and segmenting the elusive continuum of communicative functions. Furthermore, in the practice of analysis and annotation, other troubles are encountered in the *reductio ad unum* of the several values a dialogue act can assume, and in considering the complex relation between form and function. In the design of the scheme and its improvement, we chose to limit the coding at the main role of the move and to privilege its function upon its form. As we can see in Table 1, some degree of

<sup>8</sup> <http://www.hcrc.ed.ac.uk/maptask>

<sup>9</sup> derived from the Sinclair & Coulthard (1975) propose

correspondence is stated, if possible: in certain cases, for example an interrogative form is definitely determined (e.g. for a QUERY\_W or QUERY\_Y), while in other cases

(e.g. for CHECK or ALIGN) it constitutes the most probable and/or frequent (not unique) realisation.

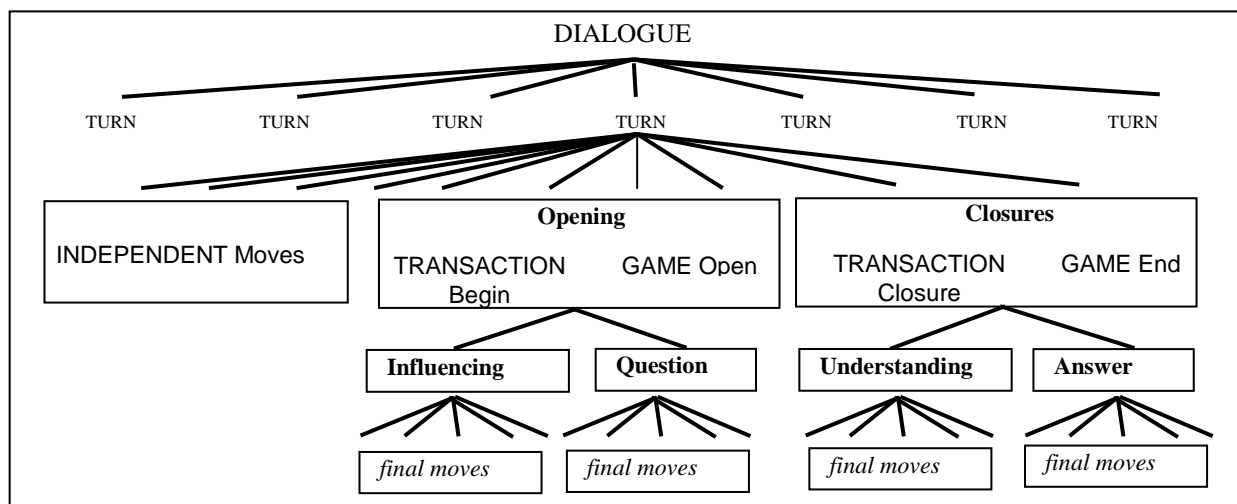


Figure 1: Pr.A.T.I.D multilevel structure.

tag level 1	tag level 2	tag level 3	Move function	Set
Independ. Moves	<i>Not conditioning nor conditioned</i>	Ready	<i>statement: preparation, ready to start</i>	MT
		Interruption	<i>explicit interruption of own or other speaker's utterance</i>	MT
		Self-Talk	<i>self-talk speech utterance (performed with a low-level voice)</i>	DAMSL
		Comment	<i>joking or extra-task comment</i>	
		Unprocessed	<i>unclear or trunked utterance</i>	
TR_begin / Open	<i>Influencing (eliciting a contribute in action)</i>	Explain	<i>assertion, explanation, description</i>	MT
		Instruct	<i>command, instruction, exhortation</i>	MT
		Open_Option	<i>proposal</i>	DAMSL
	<i>Question (eliciting a contribute in communication)</i>	Query_wh	<i>question introduced by an interrogative pronoun (focussed on a specific topic)</i>	MT
		Query_Y	<i>yes/not question (focussed on a specific topic)</i>	MT
		Info_Request	<i>generic question (not focussed on a specific topic); or question</i>	DAMSL
		Check	<i>(explicit or covert) request of confirmation/verification</i>	MT
	Align	<i>question or verification of alignment</i>	MT	
TR_Closure / End	<i>Understanding (providing a meta-communicative contribute)</i>	Acknowledgment	<i>specific signal of acknowledgment of other speaker's utterance</i>	MT
		Repeat_Rephrase	<i>repetition or rephrasing of own or other speaker's utterance</i>	DAMSL
		Continue	<i>continuation of other speaker's utterance</i>	MT
		Over	<i>specific signal of understanding and closing exchange</i>	
		Fatic	<i>maintenance of channel through non-lexical signals</i>	
	<i>Answer (providing a contribute in communication)</i>	Not_Ready	<i>signal of hesitation, difficulty; requesting a pause</i>	MT
		Reply_W	<i>reply to 'wh query'</i>	MT
		Reply_Y	<i>positive reply to yes/no question</i>	MT
		Reply_N	<i>negative reply to yes/no question</i>	MT
		Reply	<i>generic and or complex reply to a query</i>	
		Clarify	<i>additional information to own previous or other speaker's utterance</i>	MT
		Object	<i>explicit objection to other speaker's statement</i>	MT
		Hold	<i>signal of confusion, perplexity, requiring clarification</i>	DAMSL
Correct	<i>correction to own previous or other speaker's utterance</i>	DAMSL		

Table 1: Pr.A.T.I.D functional labels.

## 3.2 Development and improvement steps of Pr.A.T.iD

### 3.2.1. The DTD *Pratid*

In the second step of our work, this hierarchic structure was formalised as a DTD<sup>10</sup> for Xml mark-up. The three levels were defined as Elements or relative Attributes. Fatally, other problems and remarks come from the conversion of a free scheme of analysis in a rigid structure of representation. The setting up process of a DTD, as a matter of fact, implies an accurate decision about the status of element or attribute to each defined category. Further difficulties were faced and solved as far as the definition of attributes and the relation among attributes on different levels s concerned.

- 1<sup>st</sup> level categories correspond to DTD **Elements**: Independent Moves have no attributes (but an ID), while Opening/Closing Moves present two kinds of **Attributes**:
- “**move\_types**”, which correspond to the 2<sup>nd</sup> level broad classes of moves;
- “**move\_spec**”, which correspond to the 3<sup>rd</sup> level Final moves.

The following table reports the basic scheme of the DTD structure:

ELEMENT	ATTRIBUTE	VALUE
Dialogue	dialogue ID	<i>data</i>
Turn	turn ID	<i>data</i>
Independent M.	move ID	<i>data</i>
Tr_Begin	move_type	Influencing / Question
	move_spec	<i>move tag</i>
Tr_Closure	move_type	Understanding / Answer
	move_spec	<i>move tag</i>
(Game) Open	move_type	Influencing / Question
	move_spec	<i>move tag</i>
(Game) End	move_type	Understanding / Answer
	move_spec	<i>move tag</i>

Table 2: Outline of Pr.A.T.I.D DTD scheme.

Attributes entail inclusion and implicational relations: each *move\_type* includes some specific *move\_spec*, while a *move\_spec* implies a definite *move\_type*. A given attribute *move\_spec* value corresponds univocally to a precise *move\_type* value, as in the example in Fig.2

```

<!ELEMENT SelfTalk (#PCDATA)>
<!ATTLIST SelfTalk
  move_id CDATA #REQUIRED

<!ELEMENT Open (#PCDATA)>
<!ATTLIST Open
  move_id CDATA #REQUIRED
  move_type (influencing | question) #REQUIRED
  move_spec (action_dir | open_option | explain | align /

```

Figure 2: An example of DTD lines.

<sup>10</sup> Available at <http://www.parlaritaliano.it>, Area STRUMENTI, sez. PrATID (file *pratid.dtd*).

### 3.2.2. Scheme revision and integrations

In order to verify the adequacy of both the entire system and of each category/tag (corresponding to pragmatic functions) we tested the scheme itself by tagging a pilot corpus of six ‘spot the difference’ dialogues, belonging to six different regional varieties of Italian. The dialogues belong to the CLIPS corpus (Savy&Cutugno, 2010; Albano Leoni et. al., 1998).

This preliminary implementation required some changes to the proposed scheme, including:

- *Re-definition of values accepted for some tags;*
- *Tag displacements across categories;*
- *Insertion and/or deletion of some tags.*

These changes made the system more accurate and flexible.

The most relevant revision is the creation of a new 1<sup>st</sup> level category: a (Game-)Management class of moves, in addition to Opening and Closing moves. Some of move tags were displaced from the previous category to the new one, because of their basic textual function of *managing* the interaction in course, rather than initiating or closing the game. They are essentially *fillers* (FATIC) and moves of ‘*taking time*’ (NOT\_READY, HOLD), with poor semantic content; moves of ‘*obstacle*’ with negative semantic content (OBJECT, CORRECT); moves of ‘*addition*’ (CLARIFY); moves of ‘*attention*’ with pure interactional value (ALIGN). The innovation is resumed in Table 3.

tag level 1	tag level 3	value
Management	Fatic	<i>fillers, taking time</i>
	Not_Ready	
	Hold	
	Object	<i>obstacle</i>
	Correct	
	Clarify	<i>addition</i>
	Align	<i>attention</i>

Table 3: Integration of 1<sup>st</sup> level Management class.

Two new 1<sup>st</sup> level elements were introduced (in the categories of Opening and Closing), taking into account the possibility for the speakers of diverging for a while from the task management: a *Shift\_begin* tag marks the activation of a new Transaction concerning a brief interaction extra-task, while a *Shift\_closure* ends it. A new Independent Move element (EXTRA) was inserted too, in order to define an extra-task isolated utterance or comment. Consequently, three attributes for the element <turn> were required (see Table 4): *Change\_on/Change\_off* signalling the starting and ending points of the shift; and *Skipped* indicating the (possible) turn utterance ignored by the listener.

turn	move
change_on	Shift_begin
	Extra
change_off	Shift_closure
skipped	<i>everyone</i>

Table 4: Integration of turn attributes.

At the 2<sup>nd</sup> level, since Tr\_begin are not only *Influencing* or *Question*, we introduce a new move\_type ‘Null’, indicating a function of pure alignment in speaker’s opening a new Transaction.

No new tags were created at 3<sup>rd</sup> level, but the value and function of the move CHECK was restricted to a indicate canonical form of explicit ‘request of confirmation’. This change was required in order to avoid the overuse of this tag, due to the inherent implicit value of ‘check’ (as a secondary function) of all dialogue acts of this type of text (Savy & Castagneto, 2007).

### 3.2.3. Testing Pr.A.T.I.D. on Map-task dialogues

The second testing phase consisted in the application of our scheme to four Map task dialogues (always belonging to the CLIPS corpus). These dialogues present a different textual and interactional structure, as we already stated in §3.1. Only some irrelevant changes to the scheme derived from this test: the main differences in the analysis of this type of dialogues consisted in the variation of frequency for each tag, more than in the expressiveness of the required tag-set. In particular, the typical map task exchange (based on *Instruction Giving*), affects the frequency of the TR\_begin tag: i.e. transaction segments have a greater duration and consist of a higher number of games and turns in these texts compared to ‘spot the difference’ ones, which are characterised by a higher degree of turn-taking alternation (see Table 5). However, this kind of discrepancy does not entail a substantial revision of the coding system.

	<i>Map task</i>	<i>Spot the difference</i>
n. of Transactions	13	65
duration (sec)	60”	14”
n. of games	~ 9	~ 3
n. of turns	~ 20	~ 10

Table 4: Transactions in CLIPS dialogues.

Moreover, a different status of TR\_begin was registered, dealing with its relation with a new dialogue topic: while in ‘Spot the difference’ dialogues a new transaction always introduces a new topic (De Leo, 2008), in Map task dialogues a change of topic can occur without a Transaction closure, i.e. in an independent way. This lack of biunique correspondence, necessarily requires a new attribute tag <topic\_change> for an element <turn>, marking an event not otherwise retrievable.

In this way, it has been possible to verify the adequacy of the scheme to the encoding of texts (even if pragmatically oriented) differing from the ones for which it was originally conceived and, in conclusion, to reach the final release.

## 4. Linguistic applications of the scheme

In our intention, Pr.A.T.I.D. should constitute an integrated method for spoken dialogue annotation, analysis and evaluation, using a set of different pragmatic parameters. As we will show in the next sections, we tried to set up a a prototype of a standard procedure for

‘measuring texts’, based on statistical indexes, and comparing strategic and conversational chooses in different languages and varieties.

### 4.1 Pragmatic indexes and tags range for quantitative analyses

In order to perform a quantitative analysis of the annotated texts, starting from the Xml coding, we extracted frequency indexes of Elements and Attributes, aiming at pointing out:

- Structural similarities among dialogues of the same kind;*
- Different communication strategies adopted by speakers in different geographic areas;*
- Stability / variability indexes of dependent communicative functions.*

A first screening of annotated “spot the difference” dialogues, coming from the CLIPS corpus, was performed. These dialogues were elicited in 6 geographical areas of South and Central Italy (Rome, Naples, Lecce, Bari, Catanzaro, Palermo). All together we have extensively analysed up to now almost 2000 conversational turns, that is approximately 3000 moves.

As it is required by corpus linguistics, our analysis is both qualitative and quantitative, focussing on percentage of occurrences for each category and attribute defined in the DTD (Savy & Castagneto, 2010). Results can be summarised as follows.

The relevant presence of some peculiar tags (ranging between 20% and 40% of total) is actually due to the dialogue type and, in particular, to its task.

As we are dealing with dialogues, it is not surprising that *Independent Moves* slightly exceed 10%, with almost the same percentage for each category. *Closing Moves* are statistically more frequent than *Opening Moves*. This result, apparently in contradiction with the “adjacency pairs” theory, is due to the textual fragmentation of closure turns, consisting in several moves (ex. 1).

Ex. 1: [sì sì            *tre lineette*    *okay*]  
           <Reply\_y>    <Clarify>    <Acknowledgment>

The more frequent pair is *Question/Answer* (but there are some differences among dialogues, see §4.2.1), that is to say the pair with an openly informative function is preferred to directive/descriptive moves.

In all dialogues there is a high statistical presence of the same tags of third level:

- *Opening*: <CHECK, EXPLAIN, ALIGN>
- *Closing*: <ACKNOWLEDGEMENT, REPLY\_Y, CLARIFY>

All together, these tags range between 60% and 80% of the grand total. Such a strong stability is obviously due to the typology of the dialogue and, in particular, to its task: in “spot the difference” dialogues of our corpus, CHECK moves range around 30%, being by far placed first in our list of tags frequency. CHECK moves are then a specific hallmark of this kind of dialogues, which require a strong control strategies on play-ground.

The high frequency of EXPLAIN and ALIGN moves is also

due to this typology of dialogue; in order to accomplish the task, participants continuously need asking for explanations and verifying reciprocal comprehension and cooperation.

In parallel, the high frequency of REPLY\_Y and ACKNOWLEDGEMENT moves guarantees a regular development of dialogue; in fact they signal to the participants that they have achieved a reciprocal comprehension and that they share the same planning of conversation.

Last but not least, CLARIFY moves allow the participant who has not conversational dominance in that particular moment of a game to add new information, cooperating to accomplish the task.

In comparing the frequency of moves in the dialogues elicited in the different areas, we notice that high-frequency moves stability (range 10-40%) presents a rate of standard deviation not exceeding 15% (see Fig.3).

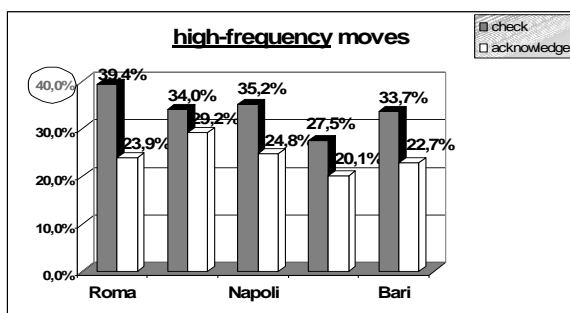


Figure 3: An example of high frequency moves.

On the opposite side we can observe that there are some low-frequency moves ( $\leq 2\%$ ). Their functions are all different, but they are all secondary regarding to the development of the communicative exchange: filler (FATIC), obstacle (OBJECT, CORRECT), postponement (HOLD NOT\_READY), with negative semantic content (Fig. 4).

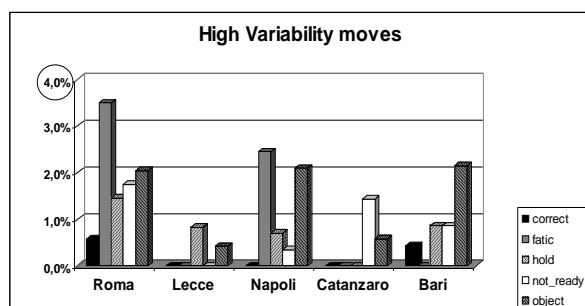


Figure 4: An example of high variability moves.

In the intermediate positions on moves frequency scale (range 3-10%) it is worthwhile to notice some statistic variation that should encourage some interesting hypotheses on the different communicative styles among different Italian areas. INFO\_REQUEST pair, for instance, shows a variability index ranging about 50%.

## 4.2 Pragmatics functions and conversational styles in comparative/interlinguistic analyses

### 4.2.1. Pragmatics strategies in different Italian varieties

We have extensively use this analysis procedure in order to investigate similarities and differences among conversational styles adopted by speakers of different Italian regions (Savy & Castagneto 2010) and reflecting in:

- procedural choices for task resolution;
- degree of involvement of the speaker and cooperation;
- degree of emotive involvement in the interaction.

Using these metrics, we were able to depict a scenario in which there is an opposition, on the **performative** level among:

- *Check-task* dialogues (with a prevalence of move pairs EXPLAIN-CHECK),
- *Question-task* dialogues (with prevalence of QUERY\_Y and QUERY\_W moves)
- *Instruction-Giving* dialogues (whose pattern is governed by the co-occurrence of EXPLAIN-ALIGN-ACTION\_DIRECTIVE moves).

On the **communicative involvement** level, the high number of *Question moves* indicates speaker's attitude to involve the interlocutor, and to ask for her/his participation in the task, eliciting communicative contributions; at the same time, the prevalence of EXPLAIN, CHECK and ACTION\_DIRECTIVE denotes a more egocentric management of the interaction, which is based, in this case, on the control of the task and it is prevalently mono-logic.

Finally, the **emotive and interactional involvement** dimension has been measured observing the frequency of occurrence of distractive moves such as COMMENTS (Castagneto&Ferrari, 2003).

This procedure leads us to the classification of conversational styles in relation to the speakers' geographic origin. For example, if we compare the dialogues elicited in Napoli and Bari, the different frequency of question and answer moves is evident. The question-type moves QUERY\_Y, QUERY\_W, INFO\_REQUEST, as well as the answer-type moves REPLY, REPLY\_N, REPLY\_W, are almost absent in Bari, Vice versa, in the Neapolitan dialogue, QUERY\_W and INFO\_REQ, moves are very frequent.

The co-variation in the frequency scale of homogeneous groups of moves could be explained as dependent on particular communicative strategy adopted. In Bari dialogue, participants use few questions to ask for information, preferring to give orders, instructions, or to offer explanations. This peculiar communicative style leaves to the other participant the conversational charge to interrupt and reveal disagreement. That is: who is leading a transaction and has a temporary interactional and strategic dominance refuses to give it up to her/his interlocutor. So the pragmatic and textual development of

dialogue tends to be mono-logic. On the contrary, Neapolitan participants show a highly involved communicative style, signalled by fast pacing, much overlapping, fast interchange of roles and conversational dominance as well as by a prevalence of question and answer moves with an open informative function. Moreover, the very low frequency of ACTION\_DIRECTIVE moves (1,1%) shows how they feel highly involved not only in the task, but also as far as their interpersonal relation is concerned. A countercheck of the conversational high-involvement is given by the very high number, in Neapolitan dialogue, of COMMENT moves (mostly with playful and humorous tone and content). On the contrary, COMMENT moves are quite rare in Bari dialogue, while there are frequent ready and interruption moves, signalling the participants competition for the conversational dominance in a new transaction. For these reasons, Bari dialogue communicative style is high-considerate.

#### 4.2.2. Pragmatic strategies in European languages (work in progress)

An extension of this investigation consisted of an inter-linguistic comparison between Italian and Spanish languages (Savy & Solís, 2008; Solís & Savy, 2010). Measuring pragmatic function indexes in a multilingual corpus of ‘Spot the difference dialogues’, the existence of cultural-dependent aspects is furthermore evidenced. The preferred strategy for Italian speakers is centred around the talker position: he leads the interlocutor toward the resolution of the task using mainly EXPLAIN-QUERY\_Y, CHECK moves. On the contrary, in Spanish dialogues, the interlocutor involvement is realised through an increase in the frequency of QUERY\_W and INFO-REQUEST moves: these moves, as stated above, promote the factual and communicative cooperation leaving the turn and the interaction management to the second speaker. As a downside, an increment of filler and postponement moves (FATIC, HOLD, NOT\_READY) reveals a sort of difficulty in the progression of interaction and in the accomplishment of task.

Presently, the extension of the analysis sample to other languages of the multilingual corpus (English, German, French and Portuguese), is in progress<sup>11</sup>. Some works aim at investigating different strategies of ‘Request’ in Italian compared with Spanish (Alfano, in press), English and German language, which lead to different uses and frequency of *Question* moves.

## 5. Discussion

As we proposed, Pr.A.T.I.D. can be considered as an annotation scheme as well as a system for evaluating and characterising annotated texts, due to its DTD architecture.

Presently, as far as its internal structure is concerned, the tests carried out on two different types of dialogues encourage us in considering it as a good intermediate

solution between the complexity of a multidimensional scheme (like DAMSL) and the ease of a mono-dimensional one (like Map-Task System). Its multilevel organization takes into account for several functions of dialogue acts: although move tags code an unique (primary) value of speech act, they represent a specific coding level, being embedded in classes and macro-classes of communicative functions which all together operate in dialogue interaction. *Opening, Closing and Management* levels and *Independent Moves* represent textual functions in which the communicative strategies of the speakers are inserted; the last ones are realised by move-utterances which encode the speakers’ intentions.

Different dimensions (communicative, meta-communicative, interactional and propositional) of dialogue acts can be therefore analysed by the present release of the system. However, some modifications can be made to it, in order to enhance its expression power. On the base of our experience, a multidimensional tagging can be proposed, without sacrificing the simplicity of the scheme: this purpose could be achieved by pre-setting some possible combinations of tag’s values and decreasing of the rigidity of the DTD structure (e.g. introducing Boolean values for each move\_spec attribute).

As far as the corpus-based analysis of annotated dialogues is concerned, we proposed a method of measuring texts based on the frequency of occurrence of each tag or category, that allows us to characterize them and to highlight the main differences and similarities among them. On this base, we made some hypotheses about conversational style and speakers’ attitudes: the degree of emotive involvement, cooperation, performative effort in accomplishing the task was put in relation to cultural-dependent linguistic and pragmatic features.

Nevertheless, we cautiously consider this method of analysis as an attempt rather than a standard procedure, thinking that the quantitative analysis performed can be only a preliminary step toward a qualitative deeper one.

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