Influence of regional features on Map-Task dialogues

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Abstract

In this paper Map Task dialogues collected in different regions of Italy are compared and some differences in the interaction styles are highlighted and discussed, especially under the point of view of *considerateness* and *involvemente*. The impact of the recognised regional features on the model of dialogue is stressed.

1 Introduction

Dialogue modelling has been often carried in the assumption that people interact almost in the same way and according to the same schemata. A difference has been made between task-oriented dialogues (see Allen et al., 2001), where the structure of the task dictates the structure of the dialogue, and casual conversation, where the structure is often unpredictable.
In this paper we will show that even in task oriented dialogues there may be different ways of carrying on co-operation between participants. In particular, there exist different approaches to communication and they are certainly related to the anthropological and cultural background of the dialogue participants.
The background of the participants affects the dialogue in many ways, ranging from turn-taking strategies (overlap) to the use of pronouns, or the problem-solving strategy itself. Here we will focus the interaction style according to Tannen's approach, and we will draw some consequences on the length of dialogue, as well as on the nature of some dialogue moves.
We are not advocating for the design of culture-sensitive dialogue (computational) models, but we want to stress the fact that we still know very few of the different aspects that may more or less deeply affect the way how people interact with one another, and that may make a communicative style look more or less coherent with the partecipants anthropological profiles. [1]

2 A task-oriented dialogue: Map Task and the Italian MapTask

MapTask (Brown et al., 1984) has become a sort of standard for the collection of task-oriented dialogues. The best known and more extensively studied corpus of MapTask dialogues is the one collected first in Glasgow around 1991 (Anderson et al., 1991). Map Task dialogues are unscripted but are elicited according to a well defined task schema and they respond, implicitly, to the assumption that a relatively uniform solution strategy and a uniform communication style would be used by dialogue participants facing a common and neatly identified goal.

A collection of Map Task dialogues has been carried in Italy, since 2000, by a consortium of Universities funded by the Ministry of Education (the project AVIP). The research centres involved in the collection of dialogues have been the Laboratorio di Linguistica of Scuola Normale Superiore, Pisa, the CIRASS (Centro Interdipartimentale di Ricerca per l'Analisi e la Sintesi del Segnale) of the Università Federico II, Naples, the Laboratorio di fonetica of Istituto Universitario Orientale, Naples, the Dipartimento di Elettrotecnica ed Elettronica of Politecnico, Bari, and the Dipartimento di Studi Umanistici of the Università del Piemonte Orientale, Vercelli. Thus dialogues have been collected in Naples, Bari, Pisa and, less extensively, Vercelli. For those who are not familiar with Italian geography, each collection area is located in a different area of Italy, namely: Vercelli (in Piemonte region, North-Western Italy), Bari (regional capital of Puglia region, South-Eastern Italy), Pisa (in Toscana region, Central Western Italy) and Napoli

[1] Section 3 and section 4.2 are totally due to Marina Castagneto, while the rest of the paper has been written in cooperation

(regional capital of Campania region, South-Western Italy).
The main focus of research of AVIP has been the carrying of studies on the regional varieties of Italian. Unlike other languages, the impact of regional features on standard Italian is so strong as to allow researchers to clearly distinguish regional varieties of language with their own characteristics and a wide range of use (Berruto, 1987). Regional features affect, mainly, the phonetic and the prosodic level; thus research has been carried in depth on these aspects of the dialogues.
However, a pragmatic analysis of the dialogues, though superficial, allows the hypothesis that even at this level, regional features affect at least the communicative style.

3 Communicative styles through regional areas

The first striking property of Italian dialogues is the variation in length; there are dialogues of even 25 or 30 minutes, face to relatively average lengths of the Scottish dialogues. In addition the Scottish dialogues seem to be exactly how we expect a map-task dialogue should be at least in four ways:

- as the interlocutors have a shared knowledge and the very same task, no conflict about *face* (Goffman, 1955) arise between them. As their reciprocal roles are previously established, the use of some linguistic forms (ex. the imperative mood) cannot be considered a *face threatening act* (Brown and Levinson, 1987), as it may be in other situations
- Scottish givers and followers are inclined to observe strictly the Grice co-operation principles "Make your contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged", as well as the *four maxims*
- according to the theoretical paradigm of Tannen (1984), we'd say that Scottish dialogues are all in a *high-considerateness style*, that is to say they focus on message rather than on the relationship among the speakers, who show distance between them
- in addition they follow the Rule of Rapport *don't impose* , as proposed by Lakoff(1979). The speakers feel clearly detached from what they say and from each other.

The pragmatic situation of Italian dialogues is far more intricate and not homogeneous at all. There are many dialogues that parallel the style of the Scottish ones, but also a good number of them exhibit uncommon interaction styles, with high rate of overlap and, above all, a number of utterances that cannot be assigned a move label in the traditinal Map Task tag-set.
In a deeper analysis, we can take two dimensions to be relevant: *considerateness* and *involvement*. This last property applies to both the giver-follower and the subject-researcher relation.
However we should not consider the depicted conversational style, the *high-considerateness style*, defined by distance, and its opposite conversational style, the *high-involvement style* (accepting again the terminology of Tannen, 1989) as discrete notions. Rather, we will consider them as the extreme points of a continuous scale about conversational styles on which we could place the sub-corpora of dialogues from Vercelli, Bari, Pisa, Napoli. In order to make an evaluation, we have taken as evidence the metaphors used to transform a Map Task into a personal adventure, the expressions of anxiety and doubt about the results of the experiments, face-threatening acts, negotiation subdialogues even where there is nothing to negotiate (beginning and end of dialogue).

3.1 Vercelli

Thus Vercelli dialogues show a lot of pragmatic similarities with HCRC dialogues, falling into the *high-considerateness* style area, except for a certain degree of anxiety about making a good impression on researchers (so we have a first little step of involvement on our scale). Exactly as in HCRC dialogues, the one who starts the dialogue is the giver (as it is expected to be) and we have a sudden start with a *giver instruct*, coming directly to the point. In the same way the dialogues tend to end abruptly, as in dialogue D06_v:

G196: e quello l'arrivo
and that is the arrival
F197: ah OK <sussurro> va bene
ah OK <whisper> all right
G198: quindi sei arrivata all'arrivo,
so you have come to the arrival,
praticamente
as a matter of fact
F199: OK
OK

As there is no involvement with the subject-matter, the story is not dramatized, so we lack style figures of speech, metaphors and imageries, narration, i.e. the features considered by Tannen (1989) among the strategies signalling high-involvement. Neither we could find in these dialogues any of the linguistic signals of involvement (in the term of the authors *immediacy*) listed by Wiener and Mehrabian (1968): use of inclusive first person plural pronouns, high frequency of deictic particles, high degree of specificity in denotation, etc. Also, there are very few overlaps, and they are not so much extended: this is a very important parameter to check, maybe the strongest marker of a lack of involvement. The rare cases in which we can find a certain degree of involvement are the ones in which giver and follower were already friends with each other.

3.2 Bari

Bari dialogues are still in a *high-considerateness* style area, as they lack the most peculiar parameters of *high-involvement* style too: there are very few deictic particles used as demonstratives or first person pronoun with inclusive value, while the language-level is still formal, without dialectal and slang words to show *camaraderie* (according to Lakoff, 1979). Yet, in Bari dialogues we can recognize a certain amount of anxiety and uncertainty about the fulfilment of the task, betraying a first step of involvement on our scale. In most of them, when the participants come to the arrival, they psychologically refuse to stop, starting again the whole map-task in order to check if everything is OK. The extreme case is represented by dialogue D02_b, in which the task is accomplished four times: after the first time the follower asks the giver to do it again in order to look for the landmarks she was not able to find yet (F080), so the giver repeats everything. Then the follower, not yet satisfied, declares that now it's her turn to try (F229), and they perform the map task once again. But the game is not over yet. At the very end the follower asks to her giver "do you want me to do it again?" and the giver answers "as you like" (F369-G370).
Another piece of evidence for involvement in Bari dialogues is that the reciprocal attitude between givers and followers is not properly neutral, but there is a little amount of aggressiveness showing in some face threatening acts, with or without redressive actions (as chuckles). Being aggressive is just a possible way to express that you care. In particular, in these dialogues the follower tends to be more aggressive than in the rest of the dialogues in the Italian corpus, as if he couldn't accept the temporary inferiority given by his role. So he pushes his giver to obtain all the information lacking to him without saying anything in turn on the difference of landmarks between the two maps. He simply doesn't change his behaviour until he obtains a "global view" taking the lead over his giver. That's why most of Bari dialogues are started by the follower, and we find very often (false) questions like "so?", "and then?", "now what?", a sort of lightly aggressive way to push the giver to offer new instructions and information. All D01_b dialogue is built up in this way, as in:

G003:	il tuo punto di pa+ *your point of st+*
F004:	allora dai Ivo *go on, Ivo*
G005:	volevo sapere il tuo punto di *I wanted to know if your starting* partenza coincide con il mio, *point corresponds with mine* cioè
F006:	c'è scritto "aia" al mio punto di *there is "farmyard" written on* partenza *my point of departure*
G007:	okay *okay*
F008:	quindi *so what*

Moreover, and this is crucial, in Vercelli and Bari dialogues there is no emotional involvement at all with what dialogue acts expresses.

3.3 Pisa

The presence of features of emotional involvement allows us to consider Pisa dialogues already in *high-involvement style* dialogue area. In dialogue A03_p, for example, the follower behaves as if the landmarks were real places, as if he went there living an adventure. Asked to go toward a river (but he has no river on his map) he answers with a new question on whether he could use boats (as he has got boats on his map); then he wants to know, when hungry, if there is a pastry shop somewhere, and so on.

3.4 Naples

The last group of dialogues is from Naples. These dialogues are in a *high-involvement* conversational style, and, indeed, they represent a prototypical *high-involvement style*, with all its set of features. Beyond the identification with the text, here we find a strong "metamessage" of rapport between the communicators, who thereby experience that they share communicative conventions and inhabit the same world of discourse" (see Tannen, 1989). Here both the beginnings and the ends of dialogues tend to be negotiated, as in dialogue C04_n:

G001: allora tu stai a partenza, giusto?
so you are at "start", are you?
F002: io sto a partenza, mo' dobbiamo
yes, I am at "start", now we have
trovare l'arrivo
to find the arrival

The negotiation in the beginning of a dialogue is not aimed at solving the task, obviously, but at establishing a communicative relationship between the giver and the follower. This is the way in which the same dialogue ends:

G329: prima calcola un pollice,
first calculate a thumb,
schiattaci l'arrivo e hai finito
squash the arrival down and you
can put an end on it
F330: diciamo che dovrebbe essere aspe'
(*let's say it should be...wait*
G331: mamma mia! (risata)
goodness gracious! (laugh)
F332: aspe'
wait
G333: è stata una battaglia
it has been a real battle
F334: (risata) è stata è stato bello però!
(laugh) and still it has been great!
aspetta, quindi diciamo che un pollice
wait, a thumb should be
dovrebbe essere
...let's say
G335: noi abbiamo finito, tu sei arrivato
game's over, you arrived
F336: ah! (risata)
ah! (laugh)
G337: sano e salvo
safe and sound
F338: e su per giù, okay, a posto?
more or less, okay, it's alright?
G339: allora che dobbiamo fare mo'?
What else should we do?
Abbiamo finito!
we've arrived!
F340: noi penso che abbiamo finito oo
I suppose we've arrived...
ho trovatooo penso che ho trovato
I found the.. yes I suppose I found
l'arrivo si penso
the arrival I suppose

This dialogue ending section lasts twelve moves, it has a lot of (false) interrogative and exclamatory sentences, there is a repeated use of inclusive first person plural pronoun, a structural metaphor ("it has been a battle" -the very same metaphor discussed by Lakoff and Johnson, 1980), an idiomatic syntagm ("safe and sound") and so on. Moreover, in Naples dialogues there are frequent comments and narrations built up on the names of landmarks with a certain degree of imagination. see, for example, the dialogue C04_n:

F292: l'ho accerchiato il leone
I've surrounded him, the lion
G293: hai accerchiato il leone, bravo!
You've surrounded the lion,
sparalo (risata)
congratulation! Shoot him (laugh)
F294: si (risata) m'ha morso/
sure (laugh) he bit me/
m'ha mors 'o leone
he bit me, the lion
G295: sparagli
shoot at him

The position of the aforesaid sub-corpora of dialogues on this scale is justified by the presence or absence of some linguistic and pragmatic markers or set of markers signalling the greater or smaller proximity or distance from the two polarized opposite styles:

from	*high considerateness*	HCRC samples
		Vercelli
		Bari
		Pisa
to	*high involvement*	Napoli

4 Regional features

It turns out that *high involvement* substantially affects the communicative style and the dialogue structure itself. We assume that these consequencies affect at least three levels, the syntax of utterances, the turn-taking strategies and the dialogue structure itself.

4.1 Syntactic level

As we have remarked in different sections, there are some syntactic features that seems to be typical of the *involvement* style. These are the use of inclusive first person plural pronouns instead of first person singular and, more significantly, imperatives or directives. This is not a grammatical variant of a directive, but just a way of saying *we'll do it together*.

4.2 Turn-taking

In *high-involvement* style dialogues, especially in the Neapolitan ones, givers and followers continuously overlap and interrupt each other; this atti-

tude is not a sign of aggressiveness, but, on the contrary, it's a sign of co-operation. Many researchers consider overlapping sentences in which the interrupting speaker integrates or accomplishes his interlocutor's sentence as a marker of involvement. Tannen (1984) includes them in a so-called "enthusiasm strategy", Jefferson (1973) considers them a type of "collaborative sentences", while for Duncan (1974) they must be classified among the "backchannels behaviours" and Ervin-Tripp (1987) states that "groups which emphasize solidarity and 'positive politeness' are likely to look for evidence of closeness through the production of joint text, proxy completion and simultaneity". Actually this kind of sentences created a hard problem of pragmatic annotation, so we decided to create a new label for this move, [continue], integrating the HCRC system; for ex. (dial.C04_n):
G025: devi scendere # F026 [continue] e devi andare a # sinistra
G025: you have to go down # F026 [continue]: and you have to go towards # left
In case the interrupted speaker regains the conversational turn and leads to an end the sentence, we have to face two possibilities:
1) if the follower makes the right guessing about the intention of the giver, as it is the case of the previous monorhematic sentence "left", we assign the label [acknowledge] to this very last move.
2) if the follower fails in guessing, the giver must correct the target of the textual communication. For this class of cases too we created a new label: [correct].
For other problems of labelling in Italian dialogue, see the Proceedings of API Conference, Naples 13-15 / 2 / 2003 (to be issued on web-site).

4.3 Dialogue structure

From the point of view of the structure of dialogue, the following two features seem to dominate *involvement* dialogues:

- the high number of unnecessary utterances. These, in general, are difficult to relate to the main topic of the dialogue as they are based on some sort of metaphor *over* such topic.
- widely spread negotiation subdialogues, even in those sections, such as the end of the Map Task where there is nothing to negotiate.

4.4 Length of dialogues

The general consequence of the above features is the indefinite temporal lengthening of dialogues. This parameter correlates very well with *involvement*: the more involvement is in a dialogue, the more time it takes. So, we'll not be surprised to discover that the shortest Italian dialogues are Vercelli's, while the longest are in Naples. The average length in Vercelli dialogues is 5min25sec, and it could have been even less if it was not for only one dialogue of 10min15sec. Half dialogues of Vercelli sub-corpus last less than 3min30sec. They are really very short dialogues, even shorter than HCRC's, where the average length in time is 7min45sec. Bari and Pisa dialogues have approximately the same length (Bari dialogues: approx. 11min vs. Pisa dialogues: 10min49sec), so, in this situation, no inference about involvement degree can be drawn. As we expected, Neapolitan dialogues are the longest: the average length is 15min50sec. The longest Italian dialogue (D02_o), lasting 26min., is, of course, Neapolitan.

5 Conclusions

There may be different sociological/anthropological explanations of the distribution of these features. One could hypothesise that the more industrialised a society is (the more it is a *Gesellschaft*, in the terms of sociologist Tönnies), the more we find a *high-considerateness* conversational style of dialogue. On the other hand, the more a society preserves archaic features and it is structured as a collectivity (i.e. *Gemeinschaft*, for Tönnies), the more we meet a *high-involvement* conversational style. Italian data, at least, are in this direction, considering that Vercelli is in the industrialized Northern Italy and Bari, in Puglia, is an industrial enclave in Southern Italy, while Pisa was an independent town since the Middle Ages, a maritime republic and later on a city-state, full of local pride and Naples, due to its history, has had (and it's still having) a very late industrial development.

5.1 Consequencies for computational dialogue models

Whatever the explanation for this distribution, it is a fact that different ways of interaction exist and should, probably, be taken into account in the development of (computational) dialogue models. The above mentioned aspects have the following consequencies:

- there is a large number of utterances whose semantic interpretation is inconsistent with the dialogue domain; even in practical spoken dialogue systems for Italian, there are interaction during which users introduce a number of personal and private (unnenecessary) accounts in order to reinforce or motivate their queries. A dialogue system aiming at naturality shall at least include the ability of skipping large portions of utterance as not relevant

- the large extension of utterance completions or overlap may cause serious problems to speech recognisers
- a dialogue is more "costly" in terms of time length and "useless" subdialogues. These have no use to the dialogue domain, but have the only impact of "making people feel at ease".

5.2 Future work

In order to clarify the impact of regional features, further research is being carried in the following domains:

- identify different problem-solving strategies and there distribution through the analysed geographic areas
- extend the geographic area to be inspected; all the Mediterranean area is expected to behave in a *high-involvement* style.
- quantify the impact of each of these features on a more extended sample
- verify the actual impact of these features in practical dialogues like those used in transaction systems

References

ALLEN, J.F., BYRON, D.K., DZIKOVSKA, M., FERGUSON, G., GALESCU, L. and STENT, A.(2001): "Toward conversational human-computer interaction", in *AI Magazine*, 22(4):27-37, 2001.

ANDERSON, A., BADER, M., BARD, E., BOYLE, E., DOHERTY, G.M., GARROD, S., ISARD, S., KOWTKO, J., McALLISTER, J., MILLER, J., SOTILLO, C., THOMPSON, H. and WEINERT, R. (1991), "The HCRC Map Task Corpus", in *Language and Speech*, 34 , pp. 351-366.

BERRUTO, G. (1987), *Sociolinguistica dell'Italiano contemporaneo*, NIS-La Nuova Italia, Firenze, 1987.

BROWN, G., ANDERSON, A. , YULE, G. and SHILLOCK, R. (1984), *Teaching talk*, Cambridge: Cambridge University Press.

BROWN, P.; LEVINSON, S.C.(1987) *Politeness. Some universals in language usage.* Cambridge, Cambridge University Press.

DUNCAN, S. (1974), "On the structure of speaker-auditor interaction during speaking turns", in *Language in society* 3 , pp. 161-180.

ERVINTRIPP, S. (1987), "Cross-cultural and developmental sources of pragmatic generalization", in J.Verschueren, M. Bertuccelli-Papi (eds.) *The pragmatic perspective*, Amsetrdam/Philadeplphia: Benjamins, pp. 47-60.

GOFFMAN, E. (1955), "On face work: an analysis of ritual elements in social interaction", in *Psychiatry*18, pp.213-231.

GRICE, H.P. *Logic and conversation.* William James Lectures, Harvard University

JEFFRSON, G. (1973), "A case of precision timing in ordinary conversation: overlapped tag-positioned address terms in closing sequences", in *Semiotica* 9.

LAKOFF, R.(1979) "Stylistic strategies within a grammar of style", in J.Orasanu, M.Slater, L.Adler (eds.) *Language, Sex and Gender.* Annals of the New York Academy of Science, number 327, pp. 53-78.

LAKOFF, G., JOHNSON, M. (1980), *Metaphors we live by*, The University of Chicago, Ill. University of Chicago Pess.

TANNEN, D.(1984), *Conversational Style: Analyzing Talk among Friends.* Ablex, Norwood NJ.

TANNEN, D (1989). *Talking voices. Repetition, dialogue and imagery in conversational discourse.* Cambridge, Cambridge University Press.

TöNNIES, F. (1963), *Comunità e società.* Milano, Comunità.

WIENER, M., MEHRABIAN, A. (1968), *A Language within a Language*, New York, Appleton.