

**IN-BETWEEN DISCOURSE AND GENRE: DOCTOR-PATIENT INTERACTION IN
ONLINE COMMUNICATION.**

FORMAL AND INFORMAL FEATURES IN CMC

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***Abstract:** This paper presents the results of a corpus-based study which investigates the genre of medical e-exchanges between doctors and medical website users. Three conversational routines (greetings, politeness, formal and informal linguistic features) are analyzed. The framework of the study is what some researchers refer to as net linguistics (Posteguillo 2003), consisting of the linguistic study of Computer Mediated Communication (CMC). The findings indicate that health posts are a relatively informal type of d/p interaction which is largely influenced by e-mails and chat conventions.*

***Keywords:** CMC, genre, medical discourse, written speech*

1. Introduction

A new way to talk about medical and health issues is represented by online services sites run by institutions (health organizations, hospitals etc.) or by health professional insiders who run simple blogs or collaborate with other specialists in order to offer online medical help. These sites basically give information on medical topics, news and statistical data, and very often have a “doctor-answers” section in which users can ask directly for details concerning personal issues, second opinions on treatments and diagnosis or even actual treatments. This new mode of communication arouses linguistic curiosity as it posits itself alongside written communication on health issues and oral doctor/patient interaction.

1.1. Computer Mediated Medical Communication

Interactive written language represents a (new) variety of genre and language with features drawn from written and spoken discourses.

Popular claims which held that CMC is anonymous, impersonal, egalitarian, fragmented and spoken-like are debated and contrasted by scholars. In particular, one of the most prominent contributions to the study of net communication is Herring's studies on CMC (2004, 2001) in

which she defines Computer Mediated Discourse (CMD) as an umbrella term for a plurality of genres in which technology, social and cultural factors contribute to this differentiation. She underlines that most errors (i.e.: “yr” instead of year, “mo” instead of month) are deliberate choices made to economize typing space and effort or to mimic spoken language (Herring 2001).

Stein (2006, online) views the new language and style characterized by the internet as an “evolutionary stage of the evolution towards a medially appropriate style”. The internet has undoubtedly created a new genre, or has at least transformed traditional genres. Studies on websites have traditionally been based on language issues from the point of view of the linguistic quality of websites and language use in various domains. However, the dynamic dimension of the web also involves new genre issues.

Health medical service sites are the answer to a relatively new practice that seems to be emerging. One of the main reasons for their success is related to their expediency. Users may be more informal, more direct and may access information more readily. Doctor/patient interaction evokes the spoken word, a face-to-face interaction. However, as suggested by Herring (1999) for other contexts, CMC feels like a spoken conversation despite being produced by written means. Asynchronous CMC is usually closer to the written end of the written-spoken continuum as it potentially requires more time to edit messages. Most of the researchers working with asynchronous CMC modes conclude that their data are substantially conversation-like in discourse strategies, management of interactions and dynamics. However, a problem arises with some features as “turn-taking [that] is a point of difference as CMC produces disrupted turn adjacency and overlapping exchanges” (Herring 1999). In asynchronous electronic communication Radić–Bojanić (2006) focuses on two opposite characteristics attributed to written and oral languages: detachment versus involvement and integration versus fragmentation. Most entries are characterized by fragmentation, which is considered one of the main features in chat room discourse. Baron (1998) concluded that CMC was essentially a mixed form between face-to-face speech and paradigmatic written language, therefore one expects medical online exchanges to fall within these parameters.

Traditional doctor/patient interactions are basically orally mediated; however, they always retain some kind of conventional separation of roles and power attributions (Cordella 2004), even when they sound very informal. Communication is affected by the social constructions of roles but displays closeness (from the doctor’s side) in order to acquire information and show sensibility. The doctor is in fact the “silent listener” (Ribeiro 2002) and the expert translator of personal emotions and subjective realities (Guido 2006). In doctor/patient interactions the speakers know one other and discourse analysts are able to study both the contexts and the speakers themselves. The first potential issue when analyzing online

communication is that speakers' data are not available or, worse, speakers are treated as a collective community (and sometimes they are not).

1.1. The Community

Analyzing media communication does not mean analyzing a virtual community's language. The real meaning of virtual community has in fact been abused in media studies, diverging from the original definition of an online group brought together and centred around a shared professional focus (community of practice; Bergs 2006; Wenger 1998). Health service site users are not a virtual community as they are not regular participants; values are not necessarily shared and they certainly don't have a self-awareness of their group as an entity distinct from other groups (see the six criteria identified from literature on virtual community; Herring 2004). Not being a community in strict terms, there is not a common style of written form but a composition of different styles according to the author or the site. Users are interested in satisfying their own need (of knowledge, of sharing or of treatment prescription) and only in forums do forms of participation and exchange occur. Leimeister and Krcmar (2005) describe an evaluation of the design elements of a virtual community for German cancer patients. They examine design features that support trust development among participants and that determine the success of that site. However, forums and service sites are quite different as participants and goals are not the same as in the forums. Exchanges occur between a health professional and a user-patient and often the online conversation is akin to doctor/patient interaction in examinations. The relationship model is help-seeker/help-giver. These two roles are not interchangeable and have different social positions.

1.2. Aim of the Study

This paper attempts to understand what the nature of this dialogue is, whether it is a written speech or whether it displays the style of written forms.

In particular, the aim of the paper is an analysis of formal and informal features based on health related online exchanges. The study is based on a corpus formed by 805 comment entries dealing with health issues in which the following features (Perez-Sabater, Turney and Montero-Fleta 2008) were analyzed for each entry:

- greetings and farewells;
- politeness indicators;
- contractions and non-standard linguistic features.

The initial hypotheses were based on the assumption that CMC involves a low degree of formality and directness (Harvey 2008) whilst still taking into account the different roles among

interlocutors. Accordingly, high levels of contractions and non-standard linguistic features were expected (emphasizing CMC features), a form similar to e-mail structure (implying a formality of greetings and farewells) and high levels of politeness markers. The study focuses on the formal and informal aspects of online health discourse.

2. Methodology

The analysis is based on a corpus of 805 comment entries exchanged by net users seeking medical advice and counselling and doctors working on medical service sites. The corpus is made up of 400 questions and 405 medical answers (124,807 total words, see Table 1).

TABLE 1. Dimension of the Corpus (see Annex 1), number of total words and comment entries for each site, mean word count for each comment entry

CORPUS	TYPE	N. WORDS (124.807 tot)	N. COMMENT ENTRIES (805 tot)	MEAN (IN WORDS) PER C.E.
DRJ	Question	27453	153	179,43
	Answer	34545	153	225,78
AMD	Question	5630	52	98,77
	Answer	7582	57	133,02
ADD	Question	11265	116	97,11
	Answer	17066	116	147,12
NETDOC	Question	5426	79	68,68
	Answer	15840	79	200,51

The service sites were all chosen according to the following criteria:

- availability without registration to the sites;
- the first to appear on the first page of a common search engine at the time of collection;
- service sites that were not linked to Institutional organizations.

When the users introduce themselves and their health issue, they produce messages containing between 68.68 and 225.77 words. The length of messages varies considerably according to the goal of the message: simple issue-related question or narration, or attention seeking message.

Data concerning age and gender were not always available for every comment entry, therefore results cannot be analyzed from this perspective. In the examples, names (real or fictional) of all the users and doctors involved were omitted because of ethical issues. Each post was first read, hand-tagged and analyzed following the parameters of formality and informality established by Perez-Sabater, Turney and Montero Fleta (2008). Greetings and farewells were examined taking into account assigned values according the criteria shown in Table 2.

TABLE 2. Assignment of formality degree

Formality of greetings and farewells	
Very formal	5
Formal	4
Informal	3
Very informal	2
No greetings or farewell	1

Moreover, the number of steps involved was analyzed assuming that the shorter the greeting/farewell, the more informal the move was. Contractions (“doesn’t” instead of “does not”, “pls” instead of “please”), misspelling (“therepy”), homophonic features (“nite” (night), “isent” (isn't), “its” (it's/it is)) as well as politeness markers (please, appreciate, thank you etc.) and paralinguistic cues (emojicons) were counted per message.

This paper has one important limitation related to the size of the corpus, the representativeness of data samples and the kind and amount of contextual information that is necessary (age, sex etc., which are very difficult to investigate without concern regarding ethical issues such as privacy protection).

3. Findings and Discussion

3.1. Greetings and Farewells

Far from being a mere formula, greetings and farewells have been defined as part of “epistolary conventions” (Herring 1996) and studied for their important role in setting the tone in email exchanges. More than lexical politeness markers such as “thank you” and “appreciate”, greetings and closings belong to structural politeness markers and increase the perception of politeness thus resulting of a more refined nature.

In this study, salutations and farewells were valued for formality along a scale of 1 to 5 (1 being the least formal value and 5 being the most formal value) and by examining the number of steps involved. This means that, for example, a pre-closing step was calculated as a two-step closing. The results for formality in the corpus are shown in Table 3; the number of steps involved in greetings and farewells is represented in Table 4.

TABLE 3. Structural politeness markers: Greeting and Farewells in the corpus

			QUESTION				ANSWER			
			DRJ	AMD	ADD	NET DOC	DRJ	AMD	ADD	NET DOC
Greetings	5	Dear Mr/ Dr+name	3,9%	-	0,9%	-	-	5,3%	-	-

	4	Dear doc/ Welcome	5,3%	-	-	-	-	8,7%	1,7%	-
	3	Hello+ name	2%	-	0,9%	-	0,7%	19,3%	3,4%	-
	2	Hi/hello	8,5%	7,7%	9,5%	-	12,4%	56,1%	91,5%	-
	1	No greetings	80,3%	92,3%	88,7%	100%	86,9%	10,6%	3,4%	100%
Farewell	5	Your sincerely	-	-	-	-	-	-	-	100%
	4	Best wishes/ Regards	-	-	-	-	0,6%	40,3%	18,1%	-
	3	Best/bye	-	-	-	-	-	1,7%	18,1%	-
	2	Take care/thanks	13,7%	17,3%	21,6%	-	9,1%	38,6%	31,9%	-
	1	No farewell	86,3%	82,7%	78,4%	100%	90,3%	19,4%	31,9%	-

TABLE 4. Number of steps involved in greetings and farewells. Values are expressed by percentage.

	DRJ		AMD		ADD		NETDOC	
	Q	A	Q	A	Q	A	Q	A
Total n. Greetings	30/153 (19,6%)	20/153 (13,1%)	1/52 (1,9%)	51/57 (89,5%)	13/116 (11,2%)	112/116 (96,5%)	-	-
1 step	100%	95%	100%	86%	100%	98%	-	-
2 steps	-	5%	-	11,8%	-	2%	-	-
3 steps	-	-	-	2,2%	-	-	-	-
Total n. Farewell (percentage)	20/153 (13,1%)	15/153 (9,8%)	8/52 (15,4%)	46/57 (80,7%)	25/116 (21,5%)	79/116 (68,1%)	-	79/79 (100%)
1 step	100%	100%	100%	58,7%	100%	74,7%	-	100%
2 steps	-	-	-	23,9%	-	25,3%	-	-
3 steps	-	-	-	17,4%	-	-	-	-

The results largely appear as expected but they also offer interesting variations. It is evident that greetings and farewells are used according to the habit of any single site. As regards the Netdoc corpus, openings are very informal both in the patient's and doctor's posts (no salutation). Conversely, closing is very different in questions and answers: while the questions maintain an informal style, in answers doctors tend to close with what appears to be a formula "Yours sincerely + name". The AMD corpus shows results indicating that on this site doctors tend to be more formal for all categories, even when answering posts that contain no greetings or farewells. This asymmetry may have a tentative explanation in the use and habits imposed by the site and the role expressed by doctors who use formality in order to keep social distance.

Assuming that the most polite entry is also the most formal, results indicate that when differences between doctors' and users' styles arise, medical posts always tend to be more formal than those of the users, at least for the formulae of farewells. On the doctors' part, the need to keep back distinctions and roles is more evident when doctors answer to posts urging medical help and feedbacks. In general, Table 3 shows that the style used on medical sites is very informal with no greetings – or very informal ones – used both by doctors and users, a tendency that is similar for closings that can be very informal or highly formulaic (at least in the doctors' case). Opening and closing the post almost always involves one step (“hi!/ regards/ take care/ yours sincerely”). The differences between the openings and closings on the sites could be explained by a tendency of the newcomers to adapt their own style so that their posts conform to those used by other users on the site. Consequently, the exchange between users and doctors on medical sites results in a very direct question and a very direct answer, with no greetings and a formulaic package for the medical closing, as in Example 1.

Example 1. Q/A model for NETDOC

Q: Is there an alternative treatment for cluster headaches/migraines?

A: The most effective are – acupuncture and homeopathy, though cranial sacral therapy (which is a kind of osteopathy) can also help.

Problem comes in finding a reliable and good practitioner – ask around, ask your GP or your local pharmacist if they know any good acupuncturists or cranial sacral therapists.

If you want to try homeopathy ask for a referral to an NHS homeopathic doctor.

If there are none in your area have a look at [x] or a list of qualified doctors practising privately in your area.

Yours sincerely
[xxx]

3.2. Contractions

The contraction is a clear marker of informality. Results in Table 5 show very low values for contractions, which seems to indicate a stylistic concern. This seems to go against the findings for greetings and farewells, which marked a certain laziness, and to make the posts more similar to edited e-mails. The most used contractions are employed to express time (yr [year], mo [month], mnths [months], wks [weeks], hrs [hours]), where the spelling is similar to the

conventions of mobile text messages. Other forms involve pertinent words (dr or doc [doctor], op [operation], dx [diagnosed], neg [negative], meds [medicines], appt [appointment]), and, surprisingly, only rarely verbs (I've [I have], I'm [I am], don't [do not], doesn't [does not]). In the analysis it is important to note that contractions are less used in medical answers. Concerning contractions, both users and doctors tend to be more formal, a result that seems to be significant in terms of style. This finding seems to go against common electronic stylistic features, rendering contractions one of the most outstanding stylistic features of CMD. Perhaps users from each side have decided to avoid reductions in order to be as clear as possible and to give the impression of an attentive care in posting the question or the answer.

TABLE 5. Contractions: percentage of contracted forms and full forms for each corpus

Contractions %	DRJ		AMD		ADD		NETDOC	
	Q	A	Q	A	Q	A	Q	A
Contracted form	7,98	0	11,76	26,67	17,19	22	2	0
Full form	92,02	0	88,24	73,34	82,81	78	98	0

3.3. Politeness Indicators

One of the most prominent studies on virtual politeness is Bunz and Campbell's Accommodating Politeness Indicators in Personal Electronic Mail Messages (2002), where they studied politeness accommodation in e-mails. In particular they addressed the issue of the level of politeness expressed in written questions. Starting from Bunz and Campbell's analysis, some politeness markers (both verbal and non verbal) were established and measured for each post as expressions of true gratitude or as established formulae. Some modal verbs were included (could and would) because they were used as hedging devices for non-threatening acts (Kranich 2009). Results (see Table 6) show striking differences among the sites: some results indicate that messages containing politeness indicators elicited polite response (corpus DRJ, AMD and ADD), but on one site the number of politeness indicators used in questions is considerably superior to the number used in doctors' answers (Netdoc, Q: 8,96 vs Netdoc, A: 3,45). Differences are also noted among sites for number of politeness markers both for questions and answers but it seems that results for Q and A vary according to the site.

TABLE 6. Politeness Indicator per message per thousand words

Verbal Politeness	DRJ	AMD	ADD	NETDOC
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Indicators								
	Q	A	Q	A	Q	A	Q	A
Appreciate	0,22	-	0,05	-	0,26	0,05	0,07	-
Thank you	1,05	0,63	1,77	0,65	2,21	0,46	0,37	0,12
Please	1,09	0,98	1,06	2,37	0,88	1,64	1,51	-
Grateful	0,03	-	-	-	-	-	-	-
Kind	0,10	-	-	0,26	0,08	-	-	-
Could	1,09	1,56	2,66	0,79	0,97	0,64	3,22	1,13
Would	1,85	1,24	1,95	1,97	1,86	4,21	3,79	2,20
TOTAL	5,43	4,41	7,49	6,04	6,26	7	8,96	3,45

Findings also indicate that generally doctors tend to use politeness indicator “would”, probably as a softening device in the expression of certainty in their utterances.

3.4. Non-standard Linguistic Features

The inclusion of non-standard linguistic features makes the text more informal and shows the ability of users to adapt the medium to their expressive needs (Herring 2006). Among the most common feature, emoticons, features on spelling (misspelling, homophonic spelling, false contractions), and punctuation have been analyzed for each post. Emoticons (':)', ':(' etc.) are used to fill some of the prosodic or kinetic functions of spoken exchanges (Baron 1998). Misspelled words can be seen as lexical deviations or neographic forms consisting in misspelled words based on homophony but not corresponding to other words or formed by truncations (“nite” [night], “thru” [through]) or technical mistakes due to quick typing (“nd” [and], “caus” [cause], “therepy” [therapy]). Homophone words are those with the same pronunciation but a different grammatical function and spelling (“its” [it’s], “high” [hi]). A false contraction is a word that has been contracted and taken as one word (“im” [I’m], “cant” [can’t], “doesnt” [doesn’t]). Table 6 shows results for each typology of non-standard linguistic feature that has been analyzed for each post, including omitted capital letters or occurrence of informal punctuation. Results indicate that the score for misspellings, homophonic and visual features, such as emoticons, is low. This result seems to go against the common habit that non-standard features are an important characteristic of CMC (Perez-Sabater, Turney and Montero-Fleta 2008). Some posts contained many orthographic deviations. The most frequent deviation is the omission of the capital letter – for the first singular person in particular (“i” [I]) – and it seems to be common on each site but one. The corpus named Netdoc in fact seems not to show any non-standard linguistic feature, which implies a higher tone of formality. This result, however, is striking in that it goes against findings of formality for greetings and farewells for which this particular site turned out to be the most informal.

TABLE 7. Non-standard linguistic features: occurrences per thousand words

		Lousy Punctuation	Capital Letters omission	False contractions	Mispellings	Homophonic Spelling	Emoticons
DRJ	Q	1,20	4,22	0,55	0,55	0,07	0,07
	A	0,02	0	0	0	0	0
AMD	Q	4,08	8,52	2,13	0,53	0,71	0
	A	0,39	0	0	0	0	0
ADD	Q	4,79	4,97	0,97	0,79	0,62	0,08
	A	0,52	0	0	0,11	0	0
NETDOC	Q	0	0	0	0	0	0
	A	0	0	0	0	0	0

4. Conclusions

In this paper patterns typical of oral and written discourse in electronic investigation were investigated on four medical service sites, by examining a range of linguistic and textual features that appeared in posts and that evoked oral and written discourse. Exchanges occurred between health professionals and user-patients often using online conversations that remind of doctor/patient interaction in examinations. The relationship model is help-seeker/help-giver. These two roles are not interchangeable and have different social positions (see the difference in style for greetings and farewells). The help-seeker asks for help and displays feelings of uncertainty/insecurity more in the virtual world than in the real one (“I don’t trust my doc, I need to know what you think, I need a second opinion”).

Doctor/patient interaction on service sites is characterized by colloquial personal styles, even potentially rude if occurring in real life (no greetings, no farewell etc), which increases confidence. However, doctor/patient online interactions differ from traditional ones in that the online exchange is written. Findings reveal typical written-style features, the first being the possibility to edit and re-shape the message before sending it. Visual representations such as smileys and emoticons are generally used to improve understanding in verbal sentences. They are used very rarely in the groups analyzed (appearing in fact only 4 times in three messages) and their use is supposed to depend on the age of the user (although this datum is not verifiable). Specifically, homophonic spelling, contractions, and orthographic faux pas (etc) reflected informality. Messages also evoked formal wording and structure closer to written formats. The informality of the word choice and syntax makes them seem closer to casual speech than to written genres. In some posts, the language and the style are affected by an amount of chat shorthands. Baron (1998) suggests that virtual communication (e-mail in particular) looks like speech because of durability assumptions (senders seem to pay no attention to letters that will not

last through time), fast response time, unspecified audience identity and the language style that is often more informal than face-to-face speech (avoidance of salutation, use of contractions, sometimes slang). More interestingly, one group does not display any form of politeness, which in a way supports informal exchanges but seems to go further than simple informality (it verges on rudeness). One of the possible reasons for such linguistic behaviour could be found in Stein's conclusions (2006) in which the problem of distance between written and spoken forms must take into account the opposition between paper texts (that are "read") and hypertexts (that are "scanned"). Hypertexts must be convenient in terms of proportions of text and space; markers must be more visible and the process of reading must be an easy task with sentences being simple and quick to see and understand. However, this does not explain the total lack of politeness in service posts that seems to display a deficit of social inhibition on the users' part. Politeness is largely known to be both a matter of personal taste and of cultural background. Regarding doctors, even the most bad-mannered posts prompted their understanding and support, which led to the conclusion that doctors tend to use politeness as a strategy to reaffirm their social roles or they are simply used to this online linguistic behaviour.

Electronic health exchanges seem to display characteristics of both written and oral discourse as well as features seemingly unique to electronic use. The analysis of the corpus seems to suggest different discourse styles occurring in these health encounters, within the same context of interaction. Consequently, while limited to a corpus of only 805 posts, these findings indicate that health posts are a relatively informal type of doctor/patient interaction, which is largely influenced by e-mails and chat conventions, and suggest a richness in electronic communication that needs to be further explored.

Annex 1: The Corpus

Subcorpus name as appearing in the article	Original subcorpus name	URL
DRJ	DrJoshua.com	www.drjoshua.com
AMD	AskMedicalDoctor	www.askmedicaldoctor.com
ADD	DoctorsLounge	www.doctorslounge.com
NETDOC	netdoctor	www.netdoctor.co.uk

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