Healthy Arguments for Literacy in Health

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Abstract

This paper explores the nature of argumentation, and its potential impact within the setting of the doctor-patient interaction. More specifically, we propose a twofold investigation. Firstly, we intend to clarify the ontological conditions for supporting the appropriateness of using argumentation in the medical setting, and show its general advantages. Within this framework, by relying on a set of medical consultation recorded with the help of Tessin physicians, we shall underline a typology of action types where argumentation occurs in the medical setting. Secondly, we shall offer some key-concepts to address the evaluation of arguments in the field. Here, considerations on the quality of the statements that make up arguments and the argument schemes adopted will allow us to shed light on the demarcation point between sound and derailed arguments, as a way to foster an optimization of the medical argumentative practice at an empirical level.

Introduction

As we will show in this paper, argumentation occurs in doctor-patient consultations. Despite this occurrence we noted, however, that only a few contributions tackle the issue of argumentation in this field. In particular, according to our knowledge, there are no contributions that extensively focus on the role that argumentation has in the doctor-patient relationship and, consequently, on its peculiarity within this interaction. To quote the most relevant studies in the field, Grasso, Cawsey and John (2000) attempt to apply the New Rhetoric's system of argumentation to the domain of health promotion, but without fully exploring how argumentation develops between the doctor and patient. Bacher, Hass and Neidig (2002) focus on the argumentative burdens of patients' self-advocacy. This perspective, although it is interesting, needs to be implemented by an analysis of the argumentative features and potentialities of the doctor's role. It is in fact generally recognized that in the typical physician-patient interaction doctors are dominant while patients are submissive (Ballard-Reische and Frederikson 1990). Upshur and Colak (2003) focus almost exclusively on the role and use of evidence-based approaches to support conclusions and recommendations. Finally, Dickinson (1998) uses a model of argumentation to clarify the nature and function of data in decision-making. In his paper, however, it is not clear where and in what context he sees argumentation. The ambiguity of his approach seems to derive from the fact that he considers the term argumentation in the wide and general sense of reasoning. But although argumentation is indeed a process of reasoning, not every process of reasoning is argumentation.

As we believe, analyses of argumentation in doctor-patient interaction must be grounded on a preliminary investigation of the nature of argumentation, and its potential impact on within the doctor-patient setting. This investigation is the precise aim of this paper. More specifically, we shall present a twofold examination. Firstly, we intend to clarify the ontological conditions for supporting the use of argumentation in the medical setting, and show its general advantages for both doctors and patients. Within this framework, by relying on a set of medical consultations recorded with the help of Tessin physicians, we shall underline a typology of action-types where argumentation indeed occurs in the medical setting, and discuss its modalities according to each type of action. Secondly, we shall address some methodological issues linked to the evaluation of arguments in medical consultation. While providing some contextual parameters for framing the evaluation, we shall approach the discussion on how selection of the statements that make up arguments and argument schemes can have an impact on the efficacy of the argumentation. Findings from this discussion, on the one hand, stress the need to conduct further systematic studies of argumentation in medical consultation, and on the other hand, are expected to shed light on relevant factors for enhancing an optimization of the argumentative practice in the field.

Argumentation in the Doctor-Patient Setting

From the Doctor's Point of View

Among the a priori assets of an asymptomatic doctor-patient relationship, there is surely the presupposition that the health of the patient is the shared goal of the medical consultation. As an ideal situation, then, the doctor – who possesses the technical expertise on a medical matter, should advice the patient on what s/he should do, and the patient should be willing to do it, knowing that what the doctor advices is for his/her best interest. This straightforward situation is often clouded by a main factor that, as we shall show, supports and promotes the use of argumentation by doctors. By contrast to mathematics, that appear as a paradigm of precision and certainty, where certain moves lead to predictable outcomes, in medicine the nature of the nexus cause-effect can neither be assured, nor predicted with certainty. Although medical advice ultimately derives from a careful consideration of objective parameters, doctors are constantly in the position of having to make clinical decisions at different levels. In particular, doctors are faced with the evidence that there are always more treatments (including the non-treatment option) available for the same disease. And this means that especially, but as we shall show, not exclusively, at the level of prognosis, what they suggest results mainly from their own choices among several possibilities for dealing with patients' situations.

If medicine has always faced such limitations, in the past the subjective nature of doctor's advice would not have highly impacted patients' compliance. Medicine was surrounded by the idea that the doctor, like the shaman, held the key to sickness and death. The acceptance of medical device was based on the rational recognition of the expertise of the doctor, without the need of additional deliberation. Although similar patterns of interaction still occur, due to the information available and the general influence that traditional and new media have on people's decisions, patients are becoming increasingly more aware of the risks linked to the choice of one treatment instead of another (Schulz 2003). The coming age recognizes the literate patient who, has unrestricted access to health information via websites and other support networks and can challenge the onto-institutional essence of the doctor-patient consultation as an expert vs. non-expert relationship (Sarangi 2004). Often, doctors find themselves in need of legitimizing their standpoints on what they see as the best way to deal with the particular cases encountered. When the reliability of their decision is no longer taken for granted, argumentation begins to play a role. To address the potential risks linked to a dismissal of the doctor's authority - risks that especially concern the compliance of treatment from patients – this authority can be reinforced by adducing reasons in support of the doctors' points of view. Since medical knowledge risks invoking disagreement, doctors can use argumentation as a technique to manage this disagreement.

Indeed, by drawing on the basic classical explanation of the term, argumentation is a process of giving premises in support of conclusions. To argue means to give reasons for proving the truth of standpoints on issues which are intrinsically problematic and allow different solutions (Van Eemeren and Grootendorst 2004, Rigotti and Greco 2005). By analyzing the recorded interactions, we noted that to a certain extent, the information given by doctors are explanations (especially of diseases, treatments and medical tests). However, argumentative sections can clearly be recognized at the level of delivery of diagnosis and prognosis. In particular, in delivering diagnoses, argumentation enhances the acceptability of the doctor's point of view for those diseases that cannot be easily determined. Back pain, for example, falls under this category. In the majority of cases, doctors cannot diagnose any definite disease or offer any real cure. The high-tech investigations for spinal disease tell us very little about back pain (Waddell 2004). In cases like this, the use of argumentation from the doctor's side is a way to justify the lack of an immediate diagnosis or the need of further medical tests to patients who are often expecting instantaneous help. The role of argumentation at the level of prognosis delivery is even more extensive. As previously mentioned, there are always different treatment options (including the non-treatment option). Here, argumentation manifests doctors' motivations for the advice s/he reveals to patients and shows their technical expertise and competence, while providing reasons for the patient to comply. With this last point, we shift our focus to the importance of argumentation from the patients' side.

From the Patient's Point of View

The process of argumentation has crucial consequences on the way patients receive medical advice. By using argumentation, doctors lead patients to reflect upon the reasonableness of their advice. When they deliver medical advice in the form of arguments, doctors inform patients on why certain treatments (and eventually not others) are prescribed to them specifically, or on why treatments should be followed in certain ways. Argumentation, then, offers information that can be utilized by patients as points of reference for structuring their decisions on the actions to be taken. Insofar as this information is shaped in the format of reasons, the process of argumentation:

- adds motivators to what, in Sealre's terms (2001), are the internal reasons (factual information and intentional) and to other propositionally structured entities such as needs, commitments and requirements that the patient might have;

- stimulates the appraisal of the relative weights of the whole set of motivators as a way to arrive at a decision.

Clearly, the ultimate outcome of the interaction must always take into consideration the gap between the deliberative process and the decision itself, as well as between the intention-in-action and the actual carrying out of the activity to its completion (Searle 2001). Individual decisions in terms of behavior are ultimately affected by a series of factors that, as social scientists know well, is very difficult to determine. Yet, it is probably not an exaggeration to claim that argumentation is actually the only instrument at a doctor's disposal that makes a reasoned compliance of the patient possible, where the patient takes a certain course of action advised by a doctor because s/he has understood and believes in the inner motivations behind it. We claim that the fact that the doctor gives advice embedded in reasons stimulates the patient's critical thinking skills. It helps the patient to make sense of his/her own situation in order to make the best decision for his/her health. To use a recent key-concept in health research, argumentation has an impact on people's health literacy (Healthy People 2010) by singling out ranges of possible actions and enhancing the choices among these actions.

By considering the rhetorical connotation of argumentation, it is clear that the arguer tries to persuade or change the audience's mind to make his/her standpoint acceptable. Thus, imagine the range of possible doxastic attitudes that a patient might have towards medical advice, P, represented by the following simplified list (Blair 1992) revised:

1. convinced of P
2. has reasons to believe that P
3. undecided about P
4. convinced on not-P
5. has no idea about P

The use of argumentation is expected to move the patient in the lower positions (from 3 to 5) to the higher numbers in this list (1 and 2). This fact has generated in some scholarship (Eddy 1990) the idea that argumentation prevents patients' freedom, insofar as it strengthens doctor's standpoints and impedes objective decision making. But as we have pointed out elsewhere (Rubinelli and Schulz 2006), the tendency of understanding argumentation as a somehow coercive process is minimized by the ontology of both the doctor-patient relationship and human decision making. As Quill and Brody (1996) point out "an open dialogue, in which the physician frankly admits his or her biases, is ultimately a better protector of the patient's right to autonomous choice than artificial neutrality would be." Although this idea might appear naïve, if a patient goes to see a doctor, s/he expects the doctor to reach a diagnosis and propose a treatment. Moreover, in those cases where arguments are perceived by people as convincing, this conviction is often not enough to motivate actions. The risk of patronizing patient's decisions through argumentation is low. Argumentation does, however, offer information for the patients to think about the acceptability of the doctors' standpoints. Ultimately, it solicits the addressee to make a free decision and to adhere to the opinion if s/he believes in its reasonableness (Rigotti and Greco 2005).

Toward a Typology of Argumentative Action-Types

The underlined theoretical framework stresses the essential factors that, generally speaking, support the validity of using argumentation in medical consultations. But how does argumentation occur in practice? In this section we would like to deepen the above considerations by proposing a typology of argumentative scenarios that take place between doctors and patients. The data for this typology have been drawn from a set of 70 transcripts of medical consultations. These transcripts were recorded by 11 Swiss doctors (8 GPs and 3 oncologists) who collaborated with the research activities of our Laboratory. Patients who agreed to be recorded signed an informed consent. Identities of both doctors and patients are kept anonymous. We shall present quotations from the transcripts translated in English. Original texts of the quotations are available upon request.

Four argumentative action-types were derived from the transcripts:

- Argumentation to justify a diagnosis
- Argumentation to justify a treatment or the need of additional investigation
- Argumentation to correct patients' wrong behaviors
- Emphatic-argumentation to minimize patients' concerns

We begin by analyzing the first action-type: *argumentation to justify a diagnosis*. This form of argumentation happens when the doctor provides reasons in support of what he sees as the appropriate diagnosis of the patient. In this sense, it is expected to have an impact on patients' declarative knowledge (Schulz 2005). In this argumentative activity type, the majority of standpoints are in the form of "You have X" or 'You do not have X', where X is a certain specific medical condition. The *inventio* (the Latin technical term for naming the process of discovery of the reasons of an argument) is performed during the initial stages of the consultation. Following Byrne and Long's (1976) codification of the logic of the medical consultation, six main phases can be individuated where phases 2 and 3 involve the *inventio* and phase 4 contains the argumentation of the diagnosis:

1. The doctor establishes a relationship with the patient
2. The doctor discovers or attempts to discover the reason for the attendance
3. The doctor conducts a verbal and/or physical examination

4. The doctor, the doctor and the patient, or the patient (in that order of probability) consider the condition
5. The doctor and occasionally the patient detail further treatment or investigation
6. The consultation is terminated, usually by the doctor

The following quotation – where D stands for 'doctor' and P for 'patient'- helps us exemplify the argumentative action-type performed at the diagnosis's level:

Phases 2 and 3
001 D: So, tell me something about your problem.
002 P: Well, on Wednesday I was ok. Then in the
003 evening I noted that my neck was
004 swollen and yesterday I had a fever,
005 39.2.
006 And are you coughing?
007 P: Yes. And when I start I never stop. I
008 took some pills and a cough syrup.
009 P: And I had some Nisulid
010 D. Yes yes. It is good for the fever.
011 Ok, then, let me see your throat.
(*physical examination*)
Phase 4
063 D: Ok, you can put your clothes on. Now,
064 from what I've seen, I think you have just
065 some form of the flu. Your lungs are ok,
066 and even the throat does not look bad. Your
067 heart beat is regular (*here the doctor gives further details concerning the patient's condition*)

In phases 2 and 3 the doctor attempts to understand the patient's condition. He discovers reasons in support of a certain diagnosis by listening to the patient's story, asking questions and performing physical tests. In the end s/he presents the standpoint 'you have some form of the flu' by means of the following coordinative argument where all premises adduced must be taken together to constitute a conclusive defense (Figure 1):

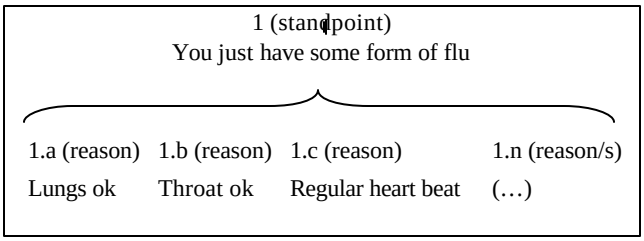

Figure 1

The next thing to note here – and that will be useful for further analysis - is the level of argumentative interaction that might occur between doctors and patients according to the types of difference of opinion they may have. As VanEemeren et al. point out (2002), we can generally distinguish four main types of differences:

1. The *single nonmixed* difference of opinion, when there is only one party who is committed to defending a standpoint only, while the other party has no idea whatsoever about it.
2. The *multiple nonmixed* difference of opinion, when one party attempts to defend more than one standpoint to another party who lacks a standpoint.
3. The *single mixed difference* of opinion arises when opposing standpoints are adopted with respect to the same proposition. This occurs when one party puts forward a positive standpoint and the other party rejects it, or vice versa.
4. Finally, in what it is called a *multiple mixed difference* of opinion, two or more opposing standpoints, which relate to more than one proposition, are adopted by the parties.

In the transcription from which we have extrapolated the above passage, there are no explicit signs that the patient already had a contrary opinion about his diagnosis. That interaction seems to be a typical instance of single nonmixed difference of opinion. In what follows, we present an example of a single mixed difference of opinion. The patient involved in this case went to see the doctor thinking that something was wrong with his lungs. After investigation, the doctor argued in favor of a simple flu:

Phases 2 and 3
001 D: So, why are you not ok? What do you feel?
002 P: Well. I have not been well for the last
003 month. I always have a fever.
004 I am coughing a lot.
005 D: Do you have shivers?
006 P: Yes, when I start to have a temperature, I
007 shiver
008 D: But how do you feel now?
009 P: I've been better for the last four days, but I
010 feel that I have something wrong with my
011 lungs. And, you know, that my father died
012 because ..
013 D: Sure, of course I remember.
014 D: Did you take any medication in the past few
015 weeks?
016 P: Nothing strong, just some ***
017 D: Ah, ok. That's does not hurt. Ok,
018 then, let me examine you
(*physical examination plus some outpatient test*)
Phase 4
063 D: Now, dear ***, I really think that you have
064 nothing to worry about. Your lungs are fine,
065 it is nothing bad. I believe that it is just a flu
066 that you have neglected a bit.
067 I really have no indication to imagine it is
068 something else. Your lungs are ok, just some
069 catarrh, and there are signs in your throat
070 that indicate a bacterial infection …

In the above passage, the patient holds the standpoint "I have something wrong with my lungs", which he supports by means of an argument from analogy – pointing out the fact that, we can presumably infer, the patient's father died for a lung disease. This fact leads the doctor to present two different standpoints in the delivery of diagnosis and give reasons for one of the two, namely the second (Figure 2)

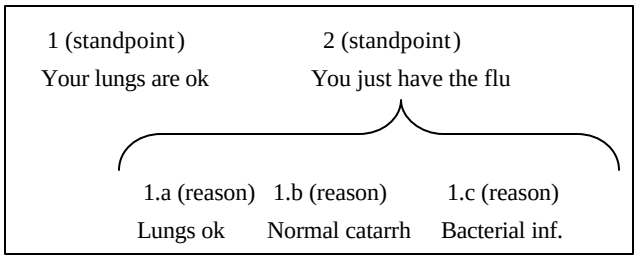

Figure 2

Let us now consider the second action-type in the doctor-patient argumentative setting, namely *when the doctor put forward an argument to support a certain treatment or the need of further investigation*. This action type occurs in what Byrne and Long codify as phase 5 and it is expected to impact the patients' procedural knowledge. In fact, doctors' standpoints concerning prognosis issues imply that patients do something in terms of following a treatment, or adopting/changing a certain behavior and so forth. To support standpoints on prognosis issues, doctors find reasons by considering their knowledge and experience according the condition diagnosed, and by recalling what patients have previously said about treatments already taken, potential allergies and so on. Similarly to before, here we encounter arguments presented in the context of several types of differences of opinion.

In the first case, the doctor argues in favor of a mucolytic treatment and the patient explicitly agrees. The example is a typical case of argumentation in a single nonmixed difference of opinion (Figure 3).

050 D: Now, by considering that the catarrh
051 you have is neither bad, dark, nor a lot, I
052 would simply suggest that you take some
053 nose drops.
054 P: Yes, yes, that's ok with me.

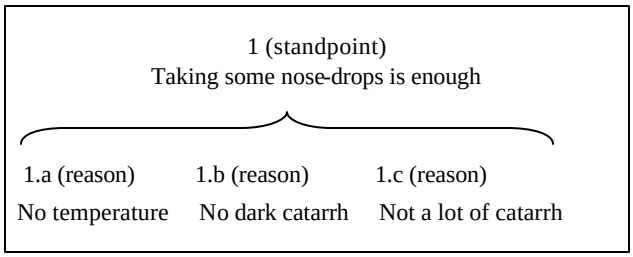

Figure 3

In the second case we analyze, the doctor claims that the patient should take some nose drops. No reasons are given in support. Although the patient does not explicitly manifest a different point of view, the doctor prevents and addresses a potential mixed difference of opinion on the treatment by arguing against the need of taking antibiotics (Figure 4). We can presumably infer that, in the absence of an explicit demand from the patient's side, the doctor's argumentative move against antibiotics has been motivated by his/her experience in consultation. In an age where antibiotic resistance is an issue, doctors have to often deal with unnecessary demands of antibiotics (Britten 1995) The passage in question reads as follow:

001 D: Now, considering that you do not have a
002 fever, that perspiration has reduced
003 and that you look as if you're getting better
004 and better, you do not need an antibiotic.
005 You just have to take some drops. If we see
006 you have a high temperature again, we can
007 then consider an antibiotic treatment

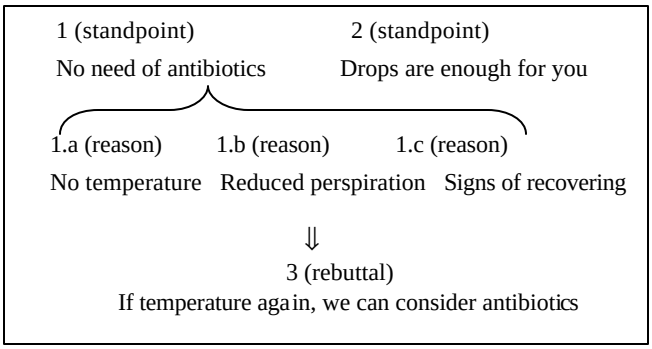

Figure 4

In the third case, the conflict of opinions is explicit. When the doctor diagnoses that the patient has a mild form of flu, he claims that s/he does not need antibiotics. From the doctor's point of view, this claim could be read as a way to bring into discussion a patient's potential disagreement on the treatment. Indeed, the patient counteracts by asking for antibiotics and the doctor argues against it (Figure 5):

058 D: Well, you do not need antibiotics.
059 P: No, no, no. I will be better with some
060 D: Not really, I have no reasons to prescribe
061 you an antibiotic. You do not have a sore
062 throat you did not have any temperature.
063 I will prescribe you some syrup - so it helps
064 with your cough. And I will also give you a
065 spray that helps the bronchi

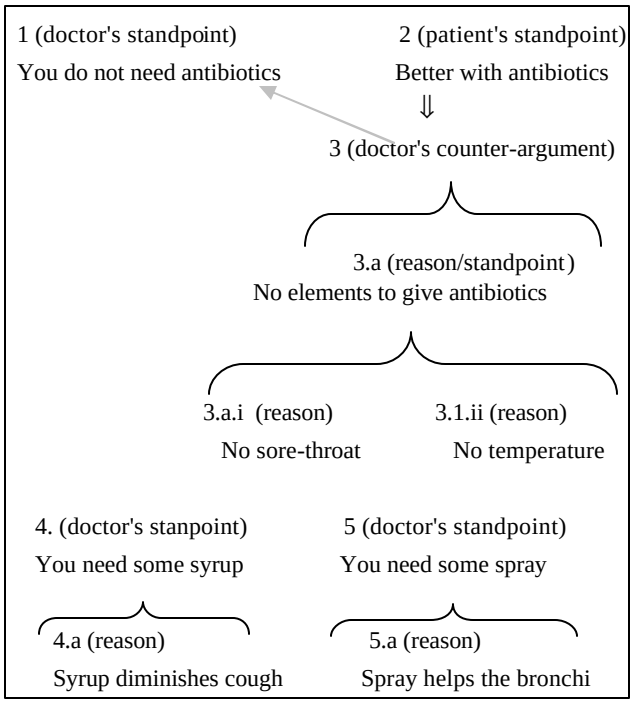

Figure 5

The third argumentative activity-type that occurs in the doctor-patient interaction is performed in the phase of prognosis. In particular, *doctors can use argumentation in support of the correct way in which a certain treatment must be followed and/or to modify eventual wrong behaviors from the patients' side*. In these cases, like before, argumentation is expected to impact patients on a procedural level. In the first case we analyze, there is an explicit difference that justifies argumentative moves between the way a certain treatment, viz. nose spray, should be taken according to the doctor, and the way the patient is using the nose spray (Figure 6):

015 D: Do you use physiological water for your
016 nose?
017 P: Yes. I am also using the spray, Nasilin
018 Ah, when did you start using the spray?
019 About two weeks ago, two or three times a
020 day, especially before going to sleep.
021 D: No no, you have to stop with the spray. It
022 creates an addiction and has nasal mucosa
023 side-effects.
024 But even once before going
025 P: to sleep?
026 D: No, no. It is better to stop using it

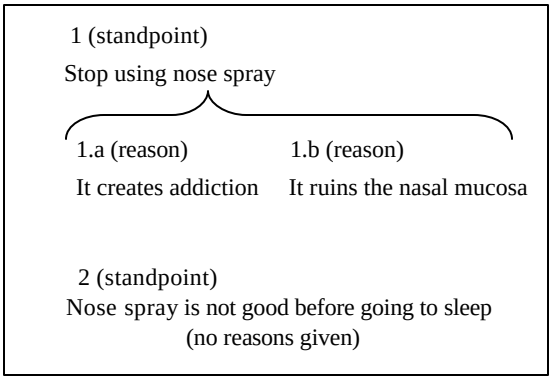

Figure 6

In the following case, however, which is an instance of a multiple mixed dispute, there is an explicit difference of opinion concerning the need to visit a dentist. For the doctor the patient has to go see a dentist, but the patient does not see this visit as important (Figure 7).

035 D: Look, you have to see a dentist.
036 P: I do not see how it could help. I do not even
037 know where to go, the last
038 time I went was years ago and I did not like
039 it. I know that there's nothing I can do with
040 my teeth.
041 D: Look, if you do not go to see a dentist, there
042 is nothing I can do here. What you have
043 must be seen by a dentist. This is one of the
044 cases where you have no choice. It is a
045 mistake if you do not go. The risk is that you
046 loose your teeth.
047 You are young and it would be a pity if you
048 had to
049 use dentures. You do not have an otitis,
050 you have a tooth-infection.

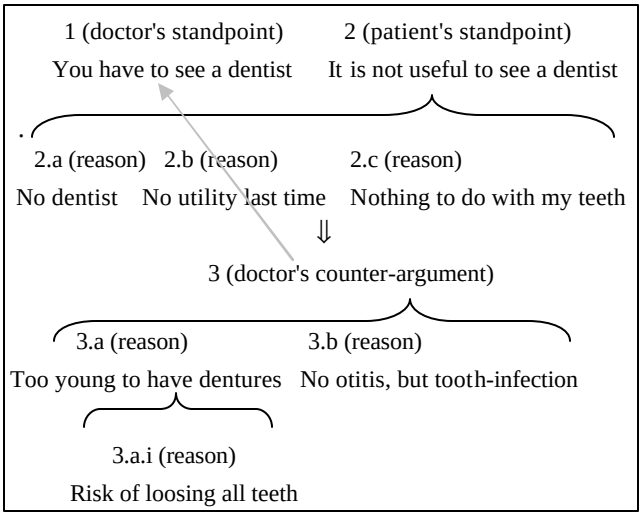

Figure 7

In this activity type, argumentation can also be used in a single unmixed difference of opinion, as a way to prevent possible mistakes in the assumption/performance of a certain treatment. Consider the following case, where the doctor argues for the correct way of taking antibiotics (Figure 8):

034 D: Ok, then. I will give you an antibiotic.
035 pills,
036 you must take one in the morning and
037 one in the evening for six days. And you
038 must take the pills for six days, even if you
039 feel better,
040 because six days is the minimum time to
041 fight infection and kill the bacteria that are
042 hidden in your tonsils, ok?

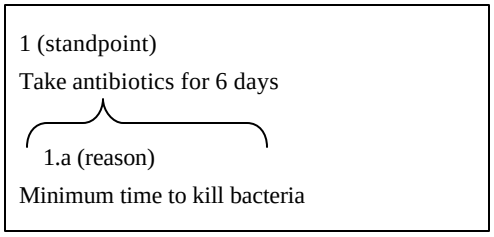

Figure 8

Let us now see the fourth and last activity-type that we have labeled earlier as *emphatic argumentation*. This form of argumentation, that occurs both at the level of prognosis and diagnosis, is put forward as a way to minimize patient's worries on his/her condition and following treatment. Here the potential difference of opinion is not direct, but follows as a consequence of the worries and fears that a patient develops. When, in fact, a patient is scared by the side-effects that a treatment might have or perceive his/her condition with excessive pessimism, h/she can eventually grow a passive or even negative response to medical advice. In such a case, empathic argumentation can help patients both 1. create a more favorable state of mind towards their condition and treatment suggested and 2. increase the potential compliance. Clearly, this form of argumentation occurs very often in scenarios where the patient is seriously, but not terminally ill (cases of interaction with terminally ill patients are subjected to different forms of communication that we do not consider in this paper). In the example we propose, the patient has just been advised to do chemotherapy. Here, the patient is very passive throughout the consultation. The doctor concludes the discussion of the treatment by minimizing the severity of the chemo side-effects and emphasizing its expected benefits probably as a way to raise the patients' hope and stimulate active behaviors toward fighting the cancer (Figure 9):

073 D: I see that you have beautiful hair.
074 There is a high possibility that you
075 will loose it - unfortunately despite the
076 progress of science we cannot avoid it. It is
077 because we put a sort of cold hat on the
078 scalp. But your condition can be treated. We
079 believe that chemo, in your case, will work.
080 The hair will grow again and even better.
081 Also, if you are afraid of vomiting- because
082 you probably know that this is another side
083 effect,
084 today we have such a powerful anti-vomit that
085 I can assure you 100% that that won't be a
086 problem. Also, always remember that in your
087 case, chemo is really more a preventative action.
088 If you cannot tolerate it, then we will stop and
089 not speak of it again.

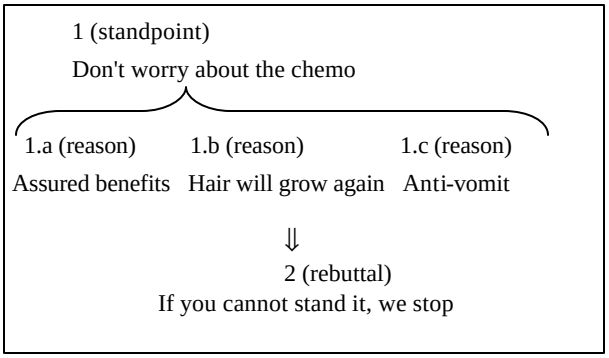

Figure 9

Having presented the main argumentative activity-types that occur in the doctor-patient interaction, we now continue by underlining some key concepts to address the issue of the argument evaluation in this field. Assessing the modalities of evaluations is a fundamental step in understanding the demarcation point between sound and derailed arguments and, consequently, fostering an optimization of the argumentative practice at an empirical level.

Towards an Evaluation of the Arguments

The analytical overview of the activity-types presented in the previous paragraph constitutes the basis for an evaluation of the arguments. It clarifies the difference or potential difference of opinion at hand and the position of both the doctor and the patient. It surveys the advanced arguments and allows the understanding of implicit and explicit elements relevant to the argumentative interaction. But, of course, this is not enough. To design a proper method of evaluation for assessing the argumentative moves in the doctor-patient interaction, it is first and foremost important to understand the core object of the evaluation itself. In other words, in what respect must this type of arguments be evaluated and when can a standpoint be considered conclusively defended? In general theory of argumentation, evaluation involves analyzing the soundness of each single argument in terms of logical and

pragmatic consistency (Van Eemeren et al. 2002). Although we believe that consistency is a crucial pre-requisite for the reasonableness of any argument, in the field of the doctor-patient interaction, it must be complemented by other considerations.

According to our theoretical framework, argumentation in the doctor-patient interaction is "healthy" (effective and ultimately recommended) if it meets two main conditions: it has, firstly, to provide an adequate justification for medical advice and, secondly, to give patients adequate reasons for enhancing the critical thinking process. Later on, we shall consider the issue of "adequacy" in this context. But before, it must be noted that these two conditions are to be seen as the basis for resolving explicit or implicit/potential difference of opinion between doctors and patients. If the patient has no opinion on his condition and the way it should be treated, argumentation is expected to show the reasons for believing in the diagnosis and prognosis delivered by the doctor. These reasons can be utilized to foster decision-making and a critical assessment of information that the patient receives from family, friends, and other health professionals. On the contrary, if the patient already has an idea about his/her condition that contradicts (or simply differs) from the doctor's advice, argumentation is expected to contribute to a resolution of this difference. When the patient is passive, and does not declare the different standpoints, the potential disagreement can be prevented and addressed through argumentation. If the patient is active, and thus manifests a different standpoint, then the doctor can conduct a proper critical discussion towards the resolution of the difference of opinion. These considerations show that, although argumentation is essentially dialogic, it is the doctor who plays the major role. The doctor must adequately 1) provide argumentation in support of his/her advice, 2) recognize and address implicit differences of opinion and 3) deal with explicit conflicts of opinion. This means that eventual interventions in the field will have to be focused mainly on enhancing doctors' ability to manage argumentative scenarios.

Naturally, one might ask, when is a doctor's argumentation adequate in this context, and when is the difference of opinion between a doctor and a patient adequately resolved? Following current trends in argumentation theory (Van Eemeren et al. 2002, Walton 2005), for arguments to be adequate, at least two main requirements are needed:

- The statements that make up the argument must be acceptable as an at least sufficient defense (or refutation) of the standpoint
- The argument scheme employed must be appropriate and correctly used

As for the first point, the main factors that influence the acceptability of argumentative statements include the choice of content, arrangement and wording. For reasons of space, we cannot fully articulate all the relevant elements that these factors involve. For a more detailed discussion, the reader might consider the analysis we have presented elsewhere (Rubinelli and Schulz 2006). In this paper, we present two cases to exemplify argumentative relevance of choice and arrangement of content. Consider the following passage from one of the transcripts (Figure 10):

029 D: The exams completed at the hospital
030 have revealed
031 that there is a contraction of the esophagus
032 and there, cancer cells have been found.
033 It is for this reason that we must do chemo-
034 therapy.

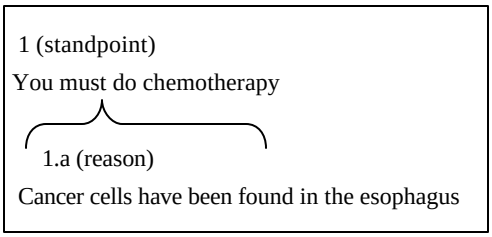

Figure 10

The doctor suggests to the patient that s/he should have chemotherapy by giving clinical evidence that medical tests of the esophagus have revealed cancerous cells. The problem with this content is that, the doctor has only partially tailored the information given according to the situation of *this* patient, and has provided him/her with a general reason that does not necessarily motivate the conclusion. When giving general information, the patient may find it difficult to fully understand why this is the best course of action to take for his/her situation. As a matter of fact, having cancer is not necessarily a reason for chemotherapy. It is widely known that in some cases of cancer, chemotherapy is not recommended, and surgeries or other kinds of less invasive treatments can be performed instead. A patient who has been given only general information might not understand why s/he should do something that could be done differently.

The following example shows how arrangement of the content can play a role in the argumentation. In this passage, the doctor mentions different treatments and suggests chemotherapy:

132 D: As you know, the bronschopy has revealed
133 tumoral cells.
134 We should do
135 chemotherapy and eventually
136 radiotherapy. Chemo and radiotherapy can
137 also be done simultaneously, but it would
138 be a bit more toxic.
139 But we will do it, maybe
140 in a second time. It is better to do only
141 chemotherapy at the beginning …

The doctor is discussing potential treatments, and making inferences without clarifying at this stage what all these

treatments are. Only later in the discussion, the doctor asks the patient if s/he knows what chemotherapy and radiotherapy are, and the answer is negative:

265 D: do you know what chemo is and what
266 radiotherapy is?
267 P: mmm… could you explain it?

In the following part of the conversation, the doctor gives a very general explanation of what these two treatments are. Suggesting a treatment without explaining what it is from the start might prevent the patient from understanding why it has been advised. The explanation must come before or during the argumentation. If it is separated, it implies that the patient must infer by him/herself about the relationship between cancer, chemo and radio therapy in the context of his/her own condition.

In another case, the doctor argues in favor of a treatment composed both of chemotherapy and radiotherapy by mentioning the possibility of success, but without explaining what they are. In line 114 the patient interrupts the doctor and asks for this explanation, as this information was crucial to understand the doctor's position:

110 D: We could
111 have possibilities of success if we do a
112 chemotherapy treatment first, and after
113 a few cycles, we will do radiotherapy
114 together with chemotherapy depending on…
115 P: Chemotherapy? What does that mean?

As we said before, the adequacy of an argumentation also depends on how it employs one of the possible argument schemes. By means of an argument scheme (traditionally known as a *topos*), the premises and the standpoint being defended are linked together in a specific way (Perelman and Olbrechts-Tyteca 1958, Van Eemeren et al. 2002), which, firstly, may or may not be done correctly and, secondly, might not be appropriate for the patient involved in the interaction. To give an example:

004: D: it is because of this carcinoma that has
005 already been treated, that you are here
006 today. We have discussed again the situation 007 with the internal radiologists Doctor * and
008 Doctor *, and the decision is that instead of
009 doing the emboli, an embolization again, it
010 better to do chemotherapy.

The doctor supports his view that the patient should do chemotherapy by using an argument from authority. The structure of this argument scheme is the following (Walton 2005):

Major Premise: Source E is an expert in subject domain S containing proposition A.
Minor Premise: E asserts that proposition A (in domain S) is true (false).
Conclusion: A may plausibly be taken to be true (false)

The doctor claims that the chemo-treatment has to be done, because it has been decided by a team of experts. The reasons adduced for the standpoint do not reveal any clinical information about the inner motivations for choosing that treatment. Unless the patient already has a correct knowledge of chemotherapy, and is able to understand his/her case by himself, this argument prevents him/her from making any critical reflection to decide about the treatment. In the above situation, this choice of argument is even more problematic because the patient went to the doctor knowing that a different treatment (namely the embolization) had been previously suggested. But in the above passage, there is no explanation of why doctors suggested a different clinical action. In the following lines of the dialogue, the patient interrupts the doctor and asks for an explanation about the change in the treatment:

057 P: I have another question doctor. Why, did
058 you suggest embolization before,
059 and now chemotherapy?

Clearly, if the patient had been passive, s/he would have missed some essential information.

Another argument scheme that can cause problems of acceptance – and that we only mention, here, as a final remark – is the argumentation based on a causal relation. In this kind of argumentation, a standpoint is defended by making a causal connection between the premises or reasons and the standpoint, such that the standpoint, given the argument, ought to be accepted on the ground of this connection. The risks of using this scheme is that, as we have discussed earlier, in medicine very rarely the nexus cause-effect can be claimed with certainty. People, generally, are becoming more and more aware of this epistemological limitation that must also be addressed in any argumentation where a treatment is supported by emphasizing the expected benefits.

Conclusion

What was the point of the paper we just presented? Firstly, we claim to have shown how argumentation, generally, can have an impact on the doctor-patient relationship. As a process of giving reasons, argumentation supports doctors' justification of their advice, while enhancing patients' critical skills toward decision-making. By then analyzing the kinds of argumentative action-types that take place in the different stages of the medical consultation, we have illustrated main patterns of difference of opinion, and discussed its realization in the various argumentative scenarios. Secondly, we attempted an analytical approach toward the evaluation of the arguments in this field. To

assess the adequacy of the arguments, it is crucial to control both the selection of the statements that make up the argument – mainly in terms of content, arrangement and wording – and the argumentation schemes. To introduce a more technical terminology, the evaluation of the arguments in the medical consultation can benefit from considering, according to the pragma-dialectics approach, *strategic maneuvering* (Van Eemeren & Houtlosser 2005). This perspective - that we have only sketched in this paper - will constitute the starting point for further investigations. In particular, it is our intention to better understand how difference of opinion between doctors and patients can be resolved though argumentation. This will imply a deeper analysis of the norms instrumental in achieving this purpose, as well as an examination of how dialogical situations can be handled by doctors and patients in a way that preserves the onto-institutional nature of the relationship, while boosting the quality of the patients' decision making.

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