ON DIALOGUE COHESION

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1.   Introduction

It has been claimed that conversations is the basic form of social organization (cf.Schegloff (1986) and it seems correct to say that conversation, or with a more general term dialogue (from the Greek dia logos through words), exhibits characteristics which are basic to social organization. It coordinates information and mutual understanding and it involves building social cohesion. This paper is about some aspects of how social cohesion is created through dialogue and addresses questions like: What is it that keeps a dialogue going? Why is it normally impossible to terminate a conversation by suddenly turning around and walking away, even if your interlocutor has finished his/her turn at speaking? To put it briefly, the aim is to analyze the glue of dialogue.

2.   Multilayered constraints and enablements

The first thing to notice is perhaps the complexity of the relations that are established between the participants in a dialogue. (The kind of dialogue I will primarily have in mind throughout the paper is spoken dialogue, the perhaps most basic kind of human dialogue. However, many of the claims will be generalizable to other forms of human dialogue, e.g. written dialogue using electronic media.) At least the following levels of organisation are involved in human dialogue, where each level provides necessary but not sufficient enablements and constraints on human communication.

(i)   **Physical**: The communicators are physical entities and their communicative contributions are physical processes.

(ii)   **Biological**: The communicators are biological organisms whose communicative contributions from this perspective can be seen as biological activation and directed behavior.

(iii) **Psychological**:
(A) **Perception, understanding and emotion:** The communicators are perceiving understanding and emotional beings whose communicative contributions
are perceptually comprehensible and emotionally charged phenomena.

(B) **Motivation, rationality and agency**: The communicators are motivated (including ethical, cooperative motives), rational agents whose communicative contributions, consequently, are motivated, rational acts (compare Grice (1975) and Allwood (1976)).

(iv) **Social:**
A: **Culture, social institution, language.** The communicators are, at least provisionally, members of a culture, of a social institution and of a linguistic community, and their communicative contributions can, therefore, be characterized as cultural, social institutional and linguistic acts.

B: **Activity:** The communicators normally, play a role in a social activity and their communicative contributions are contributions to that activity through their role, e.g, as a **sales clerk telling** a customer about the price of some goods or a teacher lecturing to students.

C: **Communication.** The communicators normally, at a given point in time, focus more on either sending or receiving information, i.e., they are primarily either in the sender, (speaker, writer, etc.) role or in the receiver (listener, reader, etc.) role. In the sending role, they are mostly performing a particular communicative act which makes them the agent of actions such as stating, asking, requesting, etc. Ibis leads to characterizations of their communicative contributions by such labels as; sent message, speech, writing, statement, question and request.

Since dialogue, in this way, involves a network of finely interwoven enablements and constraints, the "glue" or "cohesion" at work in dialogue must be construed in a similar multilayered way. One of the consequences is that dialogue and the successive contributions to dialogue are characterized by such features as redundancy, predictability, recoverability and, given the constraints on human perception and attention, a certain indeterminacy with regard to the relevance of its various dimensions.

In order, however, to analyze the redundancy in the "glue", the layers have to be described both individually and in relation to each other. It is to this task that I now turn, in trying to describe some aspects of what I have called communicative cohesion.

In order to facilitate the discussion 1 will start by characterizing the basic concepts that 1 will use in describing dialogues.

1. **Contribution:** The basic individual communicative unit of a dialogue 1 will call a contribution. A contribution can be defined as a sequence of communicative behavior bounded by lack of activity. If activity should cease during a contribution (eg by pausing while speaking), the pause must not be filled by another communicator's contribution, nor must it be so long that it is more reasonable to regard renewed activation as a new contribution. The unit in spoken language corresponding to a contribution is an utterance. This will be the unit 1 mainly consider in the following.

2. **Turn:** Besides utterances, it is also convenient to distinguish turns. A turn can be defined as a right to communicate and is a normative rather than a behavioral unit. A turn is, thus, often but not always, coterminous with an utterance. Consider the following examples:

  (1)   A: It's raining?   (2)   A: Don't go there
       B: m   B: (Silence)

In (1) B utters **m** during A's turn and in (2) B has a turn but chooses to fill it with nonactivity (silence). Example 1, thus, shows that an utterance does not have to be a turn and example 2 shows that a turn does not need to be an utterance.

3. **Grammatical units:** An utterance can contain several grammatical units. Cf example (3) where, for ease of reference, the grammatical is marked with punctuation marks and capitals.

    (3)   A: Yes! Come tomorrow. Go to the church! Bill will be there, OK?
            B: The church, OK

Example (3) shows that utterances are not coterminous with sentences. A's utterance contains 2 feedback morphemes and 3 sentences, and B's utterance contains an NP and a feedback morpheme but no sentence.

4.   **Functional features - communicative acts**

An utterance can be mono - or multifunctional. If it is multifunctional, its multifunctionality can be simultaneous or sequential. A's utterance in example (3), for example, contains sequentially the functions feedback giving (cf Allwood, Nivre, A1sén, 1992), request, request, statement and response elicitation. Furthermore, the statement 'Bill will be there' could simultaneously be a promise and, thus, illustrates simultaneous multifunctionality. Functional features such as request, statement, promise, could also be called "communicative acts". This concept, in turn, has an historical connection to concepts like "illocutionary force" Austin (1962) and "speech act", cf Searle (1969), and was proposed in Allwood (1976) and Allwood (1978) in order to amend some problems with the aforementioned notions.

A communicative act can be defined as a contribution or feature of a contribution which can be connected with a communicative intention (purpose, goal or function) or a communicative result. The reason for the disjunction in the definition is that communicative acts, like actions in general, seem to be identifiable by either behavioral form, intention or result, cf . also below section 9.

In summary, thus, the utterance (contribution) is proposed as the basic unit of dialogue, where it serves as an anchoring point for other kinds of organization, such as the right to communicate (turn taking), grammatical structuring, and functional intentional structuring (communicative acts).

4.   **Dialogue Cohesion**

4.1   **Basic communicative functions and responsiveness**

Let us now investigate some aspects of dialogue cohesion. The point of departure for the investigation will be the functional features of utterances.

The claim I want to make is that an important aspect of dialogue cohesion can be derived from the following four basic communicative functions

1 .   Contact
2.   Perception
3.   Understanding
4.   Other attitudinal reactions

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The claim is simply that after each utterance the listener (receiver) must evaluate whether and **how he/she** can and/or wants to continue, perceive, understand and in other ways attitudinally **react to the utterance** in question. Besides being a necessary requirement on communication, **M can also be** normatively reconstrued as obligations based on a basic human social obligation to be contactable for coordination of information which, in turn, is perhaps the most important precondition for social cohesion. Another obligation somewhat weaker than that already mentioned is then the obligation to report on the result of the evaluation. We could call these obligations the obligations of communicative contactability and communicative responsiveness or for short "the obligations of responsiveness". Thus, B's various replies in example (4) below, all honor these obligations, even though they are clear transgressions against other obligations.

A.   How are you?
BI: Shut up, 1 don't want to listen to you
B2:   1 don't have time
B3:   1 don't understand
B4:   None of your business

Normally, in dialogue, responsiveness is combined with yet other obligations which would tend to prohibit B 1 -B4. Examples of such other obligations are given in the maxims formulated M Grice (1975) or Allwood (1976). In fact, "responsiveness" can itself be considered as a special case of the application of these maxims. Responsiveness is frequently combined also with the obligations and conventions which are connected with a particular activity or a particular role in an activity. Thus, a pupil in a school class is under a different pressure to answer the teacher's questions in the classroom than he is to answer his friends' questions during the break. The pupil role reinforces his "responsiveness obligation" in relation to the teacher.

4.2   Expressive and evocative dimensions of communication

Let us now combine this analysis of communicative responsiveness with the following analysis, cf also Allwood (1976) and (1978). Each communicative act, e.g. statement, question, request, exclamation can be said, on the one hand, to count as an expression of an attitude (with a content) on the part of the speaker and, on the other hand, to count as an attempt to evoke a reaction from the listener. Table 1 summarizes this analysis for the four mentioned communicative acts. In statements and exclamations, the expressive dimension is more in focus, while in questions and requests the focus, to a greater extent, is on the evocative dimension.

Table 1   Components of dialogue cohesion Analysis of the expressive and evocative dimensions Of four communicative acts

Type of communicative act	Expressive	Evocative
Statement	belief belief	(that listener shares) belief judgement
Question	desire for information	(that listener provides) the desired information
Request	desire for X	(that listener provides) X
Exclamation	any attitude attitude	(that listener attends to)

To illustrate the role of the claims made in the table for dialogue cohesion, consider a speaker A making a statement like: "It's raining" to a speaker B. According to the table, A, thus, expresses his belief that it is raining and wants, or at least has nothing against, the same belief being evoked in B. Given the obligation of communicative responsiveness, B must now evaluate whether and how he can (and/or wishes to) continue, perceive, under-standing and react. Let us assume that he can (and wishes to) continue, perceive and understand. Since these are mostly preconditions for a reaction, he can now implicitly report on continuation, perception and understanding just by reporting on his reaction to the evocative dimension of A's statement. Some possible reactions are given in example (5).

(5):   A: It's raining
       B 1:   Yes (it is)
       B2:   Are you sure
       B3:   No (it isn't)

In B 1, B accepts the evocative intention. In B2, he questions A's grounds for the expressed belief and, thus, also the grounds for the reasonableness of accepting it as his own. In B3, he denies the validity of the expressed belief and by implication, he also denies the force of the evocative intention and his own ability (or wish) to accept the belief.

4.3   Evaluation and report

All three utterances in B1 -B3, however, respect the obligation of communicative responsiveness. Explicitly they report on an evaluation of the evocative dimension in A's utterance and implicitly they positively report on the functions of contact, perception and understanding.

Thus, an evaluation of all of the four functions of communication can be reported on positively or negatively, explicitly or implicitly. Table 2 gives us a survey of the possibilities seen as possible replies from a speaker B to a speaker A who has uttered "It's raining" "No reply", "any reply" and "irrelevant reply" are meant as descriptions of types of replies rather than as instances of replies.

The implicit way of reporting positively on contact, perception and understanding is to let what one says presuppose (imply) that one is continuing and has perceived and understood. Normally any relevant reply, whether it is positive or negative, would have this presupposition. Thus, both the positive replies "yes it is" and the negative "no it isn't sunny" normally imply that the speaker is continuing and has heard and understood the previous utterance. The difference between the explicit "yes it is" and the implicit "but yesterday it was sunny" is that "yes it is" explicitly accepts the previous utterance as true while "but yesterday it was sunny" merely implies this. In general, the information that is implied is diminished by making any of the four basic communicative functions explicit. We, in fact, get a default chain of implications of the following sort, other attitudinal reaction - > understanding - > perception - > contact. So, if A says "I hear you" this implies contact but not necessarily understanding or any further attitudinal reaction. It is also important to note that the implications are default implications since it might be possible, in some cases, to hear without continuing, or to understand without hearing properly, or to accept (as an example of an attitudinal reaction) without understanding. Even the implication of contact might be cancelled if we imagine a case where A by chance utters something to B which by C (to whom the utterance is not directed) is experienced as a relevant reply.

Table 2 Positive, negative, implicit, explicit reports on evaluation of a preceding utterance "It's raining"

Basic communicative functions	Positive		Negative	
	explicit	implicit	explicit	implicit
contact	"I will continue"	any reply which pays attention to interlocutor	I have to go" walk away	no
perception	"I can hear you"	any reply which betrays that the interlocutor's contribution has been perceived	"What pardon, sorry (I can't hear you)"	irrelevant
understanding"	I understand"	any reply which betrays that the interlocutor's contribution has been understood	"What, pardon, sorry, I don't understand"	irrelevant reply
other (evoked) attitudinal	"Yes it is"	"But yesterday it was sunny"	"No it isn't"	"The sound on the window pane is the water from the neighbour's garden hose"

Let us now consider replies which combine different types of reports. Below in examples B5- the text in brackets indicates the status of the reply with regard to polarity (positive and negative), explicitness (explicit and implicit) and basic communicative function (contact, perception, understanding and acceptance as an example of other evoked attitudinal reactions).

B5: I can hear you and I now understand that you are telling me about the weather (pos: expl: perc + pos: expl: underst.).

B6: I understand you want your raincoat (pos: expl: underst. + pos: impl: underst.).

B7: **I understand what** you say but you are wrong it isn't (pos: expl: underst. + neg: expl.: accept.)

B8: I understand but the sound on the window pane is the water from the neighbour's garden hose (pos: expl: underst. + neg: impl: accept).

Examples B5-B8 show how implicit, explicit, positive and negative features can be combined with regard to the different basic communicative functions.

4.4   Interactive communication management

Evaluation and report form an important part of the mechanisms behind interactive communication management, with at least the following subfunctions: (1) sequencing, (ii) turn management, and (iii) feedback, cf̂ Allwood, Nivre and Ahlsén (1992). Sequencing concerns the mechanisms, whereby a dialogue is structured into sequences, subactivities, topics, etc. Turn management concerns mechanisms which communicators' use for the distribution of the right to occupy the sender role in communication (having the turn) and feedback concerns means which communicators use to elicit and give information to each other, continuously throughout a dialogue, about the four basic communicative functions (contact, perception, understanding and other attitudinal reaction) described above.

The feedback system provides a kind of mini-version of the report system described above. With morphemes like yes, no, OK and oh, or mechanisms like repetition and pronominal reformulation, all of which are subject to prosodic modification, a speaker unobtrusively can combine information about the basic communicative functions with other information. For more details, cf̂ Allwood, Nivre and Ahlsén (1992). In fact, feedback morphemes and mechanisms, whether they occur as single utterances or as part of a larger utterance (often in initial position) are probably the most important cohesion device in spoken language.

5.   Motivation, rationality, agency and relevance

As we have seen above, one of the levels of organization which are relevant for the study of communication allows us to see communicators as rational agents pursuing various motives, some of which are cooperative and ethical. In fact, "communicative responsiveness" as discussed above, can be seen as a consequence, with regard to communication, of the human ability for rational coordinated (cooperative) interaction.

It is, in this connection, of some interest to relate the notion of "relevance" to "cohesion" since relevance by several authors has been claimed to play an important role, for among other things, dialogue cohesion, cf Schutz (1970), Allwood (1984) and Sperber and Wilson (1986). "Relevance" is a relational concept. This basically means that something is not "relevant" tout court but something x is relevant for something y with regard to some z in some activity A etc. Basic to the notion of "relevance" is, however, that it involves a meaningful connection, mostly, in fact, a means-ends relation. To see something as relevant is to see which purpose it serves. This has an immediate application to communication, since it can be claimed (cf **Allwood, 1984) that to understand** somebody is **to be able to see him/her as a motivated** rational agent, which entails being able to see his/her actions

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(including communicative actions) as relevant to some purpose. To the extent that another person's actions are totally irrelevant, it is not possible to see him/her as a motivated rational agent and his/her behavior also becomes incomprehensible.

Probably "incomprehensible" is here, in fact, slightly misleading. To understand a machine or a physical process, it is not required that we are able to see the machine or the physical process as a motivated, rational agent. It is sufficient that we are able to understand the causal mechanisms involved in the machine or in the process. Sometimes it has been suggested, cf von Wright (197 1), that the word "understanding" be reserved for comprehension involving purpose and intention while the word "explanation" should be used for comprehension involving cause and effect. If we follow this terminological suggestion, motivated rational action and purpose-related relevance are requirements of "understanding". Unmotivated, irrational behavior which has no purpose-related relevance can be "explained" but not "understood" in this sense, and since we as communicators, usually, want to be "understood" rather than merely "explained", we also primarily try to understand others by trying to see them as relevant (motivated rational agents) and only secondarily resort to comprehending them by "explanation".

6.   Dimensions of relevance

Even though participants in a dialogue can be presumed to attempt to achieve relevance both in their own contributions and in interpreting the contributions of others, contributions can, all the same, be more or less relevant. Below, 1 list four degrees of communicative relevance which 1 believe are at work in dialogue. Intuitively what is at stake with regard to degrees of relevance, is "importance for the purpose of communication".

(i)   **Primary relevance;** Here we find explicit or implicit reports of positive or negative evaluations of the most salient evocative intention(s) of the preceding contribution(s), as well as attempts, in the relevant cases, to carry out the tasks implied by the evocative intention.

(ii)   **Secondary relevance;** secondarily relevant contributions concern lack of contact, perception and understanding. Such contributions are always relevant and have precedence over others, since they concern preconditions for being able to evaluate the main evocative purpose of the preceding communicative contribution. In a sense, what we have here is an analog of the rule in formal meetings that "points of order" always have precedence. These contributions have precedence, but since they concern preconditions of communication rather than its main function, I have considered them secondarily relevant.

(iii) **Tertiary relevance;** Tertiary relevance could perhaps be accorded to positive or negative contributions concerning overall purposes of the activity of which the dialogue is a part. Cf. C's contribution in example (6) below.

> (6) AI: Coward
> B: Liar
> C: Please **remember the purpose of this meeting.**
> A2: Not only is he a coward, now he **spilled coffee on me**

Also contributions concerning various preconditions of a preceding contribution belong here. B's contribution in example (6) is an example of this. Both "coward" and "liar" are statements, even though in elliptical form, and thus presuppose belief on the part of the speakers. B's contribution, therefore, becomes relevant as a statement to the effect that this presupposed condition is not met by A, ie A does not really believe that B is a coward.

(iv) **Quaternary relevance**; Possibly a fourth degree of relevance could be accorded to contributions concerning other contextually available aspects. For example, such aspects as are available through perception in the speech situation or through cognitive activation caused by preceding discourse. A's second contribution in example 6 above exemplifies both of these features.

In principle, 1 believe that these four types of relevance capture important aspects of what it means to be more or less relevant to the ongoing purpose of dialogue communication. By implication 1 would also claim that 1 have captured an important part of the basis for what it means for a dialogue to be more or less cohesive.

7.   Other Approaches

Let me finally briefly contrast the approach described here with the approaches of Paul Grice and Herbert Clark.

In Grice (1957) and in subsequent articles, Grice (1969), it is claimed that what distinguishes "natural meaning" from "non-natural meaning" is that "a non-natural meaning X' has to arise by virtue of some agent A's intention that some agent B should realize X by recognizing A's intention to mean X, while in the case of "natural meaning", no such mediation of meaning via intended recognition of some agent's intention is necessary. Insofar as Grice's account of "nonnatural meaning" also can be seen as an account of communication, the present account differs from Grice's in not making recognition of intention (and, thus, "non-natural meaning") a necessary requirement on communication. Natural meaning in Grice's and everybody else's sense can be communicated and comprehended in the sense of "explained"

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but also in the sense of "understood", if it is seen as purposeful. Natural meaning can be communicated if it is connected with appropriate communicative intentions (display or signal, cf Allwood, 1976) and can subsequently be explained or understood. As far as 1 can see, Grice's criterion for nonnatural meaning, if extended to communication, will only be met in the case where there is successful recognition of another agent's intention to communicate "that he is communicating meaning W, which in very many cases is not required in normal communication, where it is sufficient that meaning M is simply communicated. The present account also differs from

Grice's in having a more detailed breakdown of the various features of communicative intentionality. In this paper, this mainly concerns what I have referred to as the expressive and evocative functions of a communicative act. For further analysis of communicative intentionality cf. Allwood 1976 and 1978.

The present account also differs from the account given in Clark and Wilkes-Gibbs (1986), Clark and Schaefer (1989). In these papers, a notion of collaborative speech acts is put forward and it is suggested that the appropriate metaphor for dialogue is the musical concert, where the musicians together produce a coherent output. One main difference between the present account **and the account** in **Clark and** Schaefer can be brought out by the following examples**:**

(7)   1 **warned him but he did** not hear me.
(8)   1 was referring to Bertrand Russell but she did not hear me.
(9)   1 warned him unintentionally
(10)   1 referred unintentionally to Bertrand Russell

According to Clark and Wilkes-Gibbs and Clark and Schaefer neither (7) nor (8) describe possible state of affairs. It is not possible to perform a communicative act (speech act), without success in the form of an appropriate reaction taking place in a receiver, connected to an appropriate response of recognition of the speech act. Because, if it were possible, this would mean that communicative acts could occur without being collaborative. Similarly, although less clearly stated, it seems that neither 9 nor 10 would be possible since actions should be intentional. 1 believe that, in fact, all four cases are possible because of an indeterminacy in our conception of action. As far as this conception surfaces through the use of verbs for communicative acts in the natural languages, 1 am acquainted with, it allows for an indeterminacy or underspecificity with regard to the identity criteria of these actions. It seems that the intention, behavioral form or actual result (in some cases context) of some behaviour are all, taken one by one, sufficient to allow a particular type of behavior to be identified as a particular type of action.

This means that, at least as far as the conception of action which surfaces in ordinary language is concerned, communicative acts need neither necessarily be intentional nor

resultative and the fact they need not be resultative, in turn, means that they need not be collaborative. An individual communicator can make a contribution (perform a communicative act) without being perceived or understood. He or she can even make a contribution unintentionally. Above all, even when a contribution is intentional and understood, it need not be responded to overtly in order to count as communication. Imagine only the following case which involves interactive, collaborative communication without overt response.

(ii)   A.   Think of a number
        B: (no response but hears, understands and thinks of a number)
        A.   Double it and then multiply it by three
        B: (no response but hears, understands and mentally carries out the operations)

Contributions in the form of "acknowledging feedback", cf Allwood (1976), are not needed to constitute speech acts but rather to inform the interlocutor of the extent to which his communicative objectives are met and sometimes, although rarely, we can communicate without feedback.

Successful communicative interaction (dialogue) is therefore not due to the fact that a single communicative act is necessarily collective and collaborative. Rather it is due to the fact that cooperation, and interactive communication to be successful, require that individuals employ single communicative acts of sending and receiving (understanding) in such a way that a kind of collaboration results.

8   Conclusion

It has been my purpose, in this paper, to explicate some parts of the multilayered nature of dialogue cohesion. My account has focussed on what 1 above have called the psychological level, ie properties of dialogue which can be related to the fact that communicators are perceiving, understanding and emotional beings who also can be seen as rational motivated agents whose mutual communicative attunement to some extent is enabled and constrained by what I have called the "obligation of responsiveness" or more generally by maxims of rational, motivated action.

Acknowledgments

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