

The Problem of Discoursing in Activity

FUTOSHI HIRUMA

Center for Human Activity Theory

Kansai University

hiruma@chat.kansai-u.ac.jp

GORDON WELLS

University of California at Santa Cruz

gwells@ucsc.edu

TAMARA BALL

University of California at Santa Cruz

tball@ucsc.edu

Abstract. *Discourse is a mediating artifact, which, as is increasingly being recognized, plays a central role in activity. The intrinsic features of discourse are that it is emergent, multi-perspectival, jointly constructed. Together, these features suggest that discourse should be treated as a process (i.e. as “discoursing”). Following SFL and examining our own discussion, we will suggest a way of developing Bakhtin’s notion of speech genre in order to capture a dynamic nature of discoursing in a comprehensive account of the various ways in which it functions as a mediating artifact in activity.*

Keywords: *Discoursing, mediating artifact, speech genre, activity*

Introduction

From Vygotsky’s focus on tool- and sign-mediated action (Y. Engeström & Miettinen, 1999; Vygotsky, 1978) to Engeström’s model of activity system(s) (Y. Engeström, 1999) by way of Leont’ev’s three strata model (Leont’ev, 1981), the concept of activity has shown to be characterized by three essential features: objectivity, collectivity, and mediation. Thus, as instantiated in practice, an activity can be construed as a set of collaborative, artifact-mediated actions, each of which has its immediate goal, but which, together, work toward an overarching object.

Talk typically occurs as one of the mediational means for the realization of

the actions that achieve the goal (object) of an activity. But it sometimes seems to be an activity in its own right. For example, we engage in gossiping, chit-chatting, discussing, and so on, each of which has its distinct motive but one that appears not to be directly linked to some other action. How we relate talk with an on-going activity is fairly readily explained in the case of gossiping, such as an activity for establishing or maintaining mutual relationship. However, the problem is much greater in the case of discussion, in which the nature of the activity is emergently constructed through the very talk itself. This will be the major focus of this paper.

In the current context of activity theory, the term “dialogue” has been preferred rather than the ordinary term “talk” in part because dialogue can be taken to include non-verbal as well as verbal modes of communication. There are broadly two different research approaches in which dialogue has received attention in cultural-historical activity theory.

One research approach uses the term at a macro level. In the third generation of activity theory, dialogue among different activity systems has been foregrounded (Y. Engeström, 1999). The research focusing on multi-voicedness among social languages in a classroom (Mortimer & Wertsch, 2003) and the notion of the third space which temporally emerges between teachers’ and students’ scripts for learning-and-teaching (Gutiérrez, 1995) can be included in this line of research. As depicted in Engeström’s (1999) diagram (cited in Daniels, (2001), p. 92), dialogue is represented as a kind of interaction between activity systems. The problem is that the precise nature of dialogue is hidden behind lines or arrows symbolizing the interaction.

Another approach attempts to understand how dialogue plays out within an activity and to locate it within an activity system. R. Engeström (1995), comparing Bakhtin’s notions of social language, voices, and the speech genre with Leont’ev’s analytic strata of activity, action and operation, integrates them within the framework of Y. Engeström’s activity system model. Boag-Munroe (2004) tries to depict dialogue as a distinct, linguistic, activity system which also serves as one of the mediating artifacts in an overarching activity system.

Our concern is related to the latter approaches. However, since the term dialogue is sometimes understood in the restricted sense of being in opposition to monologue, we prefer to use the term “discourse”, in order to keep our stance neutral. We also restrict the scope of discourse to the use of a symbolic system, such as language.

Features of Discourse

We propose that the intrinsic features of discourse are that it is emergent, multi-perspectival, and jointly constructed. Together, these features suggest that discourse should be treated as a process. We shall therefore use the term “discoursing”.

As emergent, discoursing has three characteristics: it is genetic, productive

and reflective. In the first, discoursing emerges phylogenetically, ontogenetically, and logogenetically (Halliday & Matthiessen, 1999). Phylogenetically, given that other species can engage in species-maintaining collaborative activities, such as hunting, rearing, and guarding, without the use of discoursing, the emergence of this practice seems to be critically related to the development of higher, and uniquely human, mental functions. This is corroborated by the fact that, ontogenetically, the discourse function of exchanging information develops later than that of exchanging goods and services (Halliday, 1985). Logogenetically, the emergence of discoursing is “the unfolding of the act of meaning itself” (Halliday & Matthiessen, 1999, p. 18). So, just as the ontogenetic developmental process has a staged structure, which recapitulates a part of the phylogenetic process, we can anticipate that the logogenetic process is equally constrained by prior developments.

By the notion of productive, we intend to capture the fact that discoursing can give rise to newness. For instance, in casual conversation, ongoing topics are not predetermined, but through successive contributions move stepwise and cumulatively to conclusions that are unanticipated and new to all participants (Button & Casey, 1984; Jefferson, 1984). Similarly, in situations involving material action, discoursing typically initiates the action stages, monitors and diagnoses their progress and also provides the medium in which solutions to emerging problems are co-invented. This can be clearly seen in Wells’s (2002) analysis of the discoursing between two students who were planning to make a model boat.

Such cases, in which a topic or an object emerges in the course of discoursing, can be construed as instances of a reflexive process. This is the third characteristic of the emergent nature of discoursing, in which a product of discoursing becomes a resource to mediate further action or discourse. Discoursing fuels itself.

Discoursing is basically conducted by at least two people. Each person has his/her own distinctive position and history which give rise to his/her perspective. This multi-perspectival nature is important for the first feature. Different perspectives open a realm for conflicts and their negotiation which, in some cases, result in creation of newness. It also introduces the third feature; that of joint construction.

In discoursing, participants have to adjust their perspectives by an “attunement to the attunement of the other” (Rommetveit, 1992) in order to attain their mutual object and goal. Moreover, by definition, the object of an activity itself has to be, at least partially, shared through negotiation among the participants involved in the activity. To negotiate a shared object among participants belonging to different activity systems is crucial for inventing a new activity system through discoursing (Y. Engeström, R. Engeström, & Kerosuo, 2003). The perspectival nature and joint construction of discoursing have been explored under the term dialogism (Holquist, 2002), which is influenced by the works of Bakhtin. It is important to note that dialogism not only refers to the dia-

logue among the participants but also highlights the fact that each participant is both speaker and listener simultaneously (Clark & Holquist, 1984; Lindfors, 1999; Rommetveit, 1992).

A Way of Collaboration: Genre

As suggested, the three features of discoursing are not exclusive but interwoven. Participants who have their unique perspectives collaboratively construct newness through discoursing. From this perspective, one important question concerns how distinct participants coordinate their contributions so that they are progressive and productive in achieving the object in view. In considering this problem, we draw on the notion of genre. In Bakhtin (1986)'s discussion of speech genres, we think the following passage is noteworthy because it suggests a way to handle this problem:

[of an utterance] we guess its genre from the very first words; we predict a certain length (that is, the approximate length of the speech whole) and a certain compositional structure; we foresee the end; that is, from the very beginning we have a sense of the speech whole, which is only later differentiated during the speech process. (pp. 78-79)

To handle the differentiation of genres to which Bakhtin refers, we draw on the work in systemic functional linguistics. Martin characterizes genre as follows:

For us a genre is a staged, goal-oriented social process. Social because we participate in genres with other people; goal-oriented because we use genres to get things done; staged because it usually takes us a few steps to reach our goals. (Martin & Rose, 2003, pp. 7-8)

This definition of genre captures one aspect of our problem, namely that it is a progressive process aimed at achieving an object in view. From our perspective, however, we also need to examine whether this definition resolves the other aspect of the problem, that is the productive nature of discoursing. In a word, how and to what extent does the genre guide our discoursing in order to achieve our object in view, which is not predetermined at the beginning but gradually takes shape through the discoursing? Before examining the problem, we introduce a distinction within discoursing, and then examine the genres that organize each type of discoursing, because linguists have already made considerable progress on this task.

Two Modes of Discoursing

Following Halliday (1978), we distinguish two modes in which discoursing me-

diates activity. The first is the “ancillary” mode. In this mode, discoursing is supportive of some other ongoing action (e.g. shopping, giving directions, instructing how to use a computer, or preparing dinner). The mediating role of discoursing in this mode is easily recognizable because the object of the action in focus is the production of some material artifact or a change of state in the material world (e.g. exchange goods for money, reach a destination, set up computer or roast a turkey). Discoursing in the ancillary mode thus occurs in order to facilitate the achievement of this object/goal.

The second is the “substantive” mode. Discoursing in this mode is referred to by such terms as “chatting”, “gossiping”, “discussion”, or “debate”. When discoursing is the sole material action, its mediating function is less self-evident. Nevertheless, although the immediate goal in the substantive mode is the collaborative exchange of perspectives, there is nearly always some larger “object in view,” such as reaching a decision for action, constructing a theoretical explanation, or establishing/maintaining social relationships. Furthermore, there is always a material outcome in the “text” jointly created; sometimes this has a permanent form, as in this text that we are creating.

Which of these two modes is in play on any occasion depends on the nature of the overarching activity as well as on the point reached in the unfolding realization of the activity in a sequence of constituent actions. In some cases, such as in the collaborative production of a new material object (e.g. Wells, 2002), both modes of discoursing are likely to occur in different stages of the activity.

Genre in Ancillary Mode

When the goal concerns material action (e.g. purchasing goods) which the ancillary mode of discoursing supports, Hasan (Halliday & Hasan, 1985) gives a very detailed account of the genre of shopping in a local store. Her discussion also serves to illustrate the way in which such genres resolve the problem of coordinating contributions in the ancillary mode.

Hasan discusses an example of discoursing which people who can speak English easily identify as a case taken from “shopping”.

According to Hasan, the structure of this text is composed of elements which correspond to a staged action of shopping. There are two kinds of elements. One is obligatory elements. The other is optional elements. Some of the optional elements are iterative. These elements form a sequence in which some elements are allocated fixed position and the others are movable to a certain extent. The above example can be decomposed into five elements; SR (sale request), SC (sale compliance), S (sale), P (purchase), PC (purchase closure). All of these occurred in this sequence and are the obligatory elements by which the object of shopping is achieved.

SR = Can I have ten oranges and a kilo of bananas please?

SC = Yes, anything else ?
No, thanks.
S= That'll be dollar forty.
P= Two dollars.
PC= Sixty, eighty, two dollars. Thank you.
(Halliday & Hasan, 1985, p. 95)

The particular activity of shopping is define by the goal of buying and selling goods. In other words, the object of shopping is aimed at completing a transaction between buyer and seller which is mainly accomplished through discoursing by the production of a text, like that shown above.

The genre described above shows how the contributions of the participants are coordinated and constrained in order to carry out the particular action. In particular, the obligatory elements enable participants to anticipate the range of contribution in discoursing. If the expected contributions are not made, a repair will be required.

Genre is thus related with the context of situation (Halliday & Hasan, 1985; Hasan, 1996). The relationship is reflexive. In a word, on one hand, in a particular context of situation, the relative obligatory elements are normatively anticipated. On the other hand, the elements produce the context by which participants and even overhearers know what is going on, what kinds of role the participants should take, and what type of channel they use. Both are thus co-constructed.

This perspective on the relationship between genre and context of situation helps us to clarify the ancillary mode of discoursing. Analytically, context of situation has three components; field (e.g. what is going on), tenor (e.g. role of the participants), mode (e.g. type of channel). Each component has values which, in total, form a configuration denoting the type of situation in which the discoursing is being conducted. And, vice versa, the context configuration predicts the discoursing.

However, in the case of ancillary mode, the context configuration more regulates discoursing than discoursing does the context configuration because the range of values in the situation is afforded by the material environment and institutionalized by a particular culture. Each element of genre corresponds to the material action that the genre mediates: selection of goods, handover of goods and money. Moreover, the typical sequences of material action such as shopping or going to a restaurant for dinner and so on are also scripted in a particular culture.

Substantive Mode of Discoursing

As can be seen, ancillary genre structures are driven by the sequence of (material) sub-actions required to complete the overarching action. In the case of the substantive mode of discoursing, on the other hand, the direction of regu-

lation can be considered to be reversed, because it is frequently the discoursing that constructs the context configuration, especially the field (topic focused on in the discoursing), which, in turn, gives rise to further discoursing. The relationship between discoursing and its context configuration thus has a recursive nature.

This recursive nature of the relationship poses a problem for participants, particularly in open-ended discussion, where the object in view as well as the discursive means for its attainment are emergent. Thus the problem is how participants achieve progressiveness in discussion when the object and the outcome are simultaneously and productively being developed through the discoursing in which they are engaged.

In what follows, drawing on the discussions involved in the production of this paper, we will explore a way to analyze and represent a discussion and investigate the relationship between this genre of substantive discoursing and the activity that it mediates.

Analysis of Discussion for Production of this Paper

In the process of writing a draft of this paper, we held regular discussions over a period of six months. The purpose of our discussions was to deepen our understanding of the relationship between discoursing and activity in order to compose the paper. More generally, the purpose of any discussion is to explore relevant issues and to create new knowledge from previous experience and knowledge in order to meet a challenge of some kind. Discussion is thus a kind of open-ended problem solving in which neither the initial nor the goal state of the problem is predetermined. Nevertheless, we did start with a very general goal, which was to explore how discoursing in discussion can be characterized. In a word, the problem we tackled was what kinds of function and goal discoursing serves and how it is jointly constructed to achieve that goal.

Outline of situation

F came to the University of California at Santa Cruz at the beginning of September 2004 to spend a part of the overseas research leave provided by his university. From the end of September, F and G started to discuss the relationship between discoursing and activity - or discourse analysis and activity theory - roughly once a week. First we discussed activity, and whether discoursing is an activity or not. After several weeks, T joined our discussion and G proposed preparing a joint paper for the ISCAR 2005 conference. We started to write our proposal at the beginning of January 2005, submitted it, and then continued discussion about those aspects of the paper that needed to be filled out. Early in the course of this sequence, G proposed recording our discussion for analysis and we eventually recorded 8 discussions.

Contextual configuration of our discussion

Following the schema of contextual configuration proposed by Halliday and Hasan (1985), the context of situation for our discussion can be described as follows.

Field: Relationship between discoursing and activity, (the topic of the paper).
Tenor: Contributors, non-hierarchic, social distance middle.
Mode: Substantive, spoken media, phonic channel with visual contact and also written media, graphic channel such as email communication of drafts, etc.

Generic structure of discoursing in our discussion

For the purposes of our research, we selected four discussions for preliminary analysis. These roughly corresponded to the production stages of the paper: before writing the proposal, while writing it, after the proposal had been submitted, and during the writing of this paper. Having spent some time coding the four selected transcripts and thinking further about the content of those discussions, we reached some tentative conclusions. First, we were not explicitly aware in advance of the genre that would be most appropriate for our purpose. However, over the course of our meetings, we seem to have jointly constructed a genre that can be represented in the following diagram (Figure 1). The horizontal dimension represents the sequential structure, while the vertical dimension represents the constituent units, arranged on a hierarchical scale.

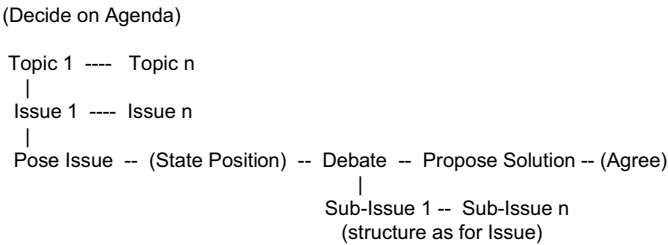


FIGURE 1 Genre structure of discussion

The genre represented by this schematic diagram is rather like the shopping genre. Its actual, detailed realization on any occasion is influenced by local circumstances. For example, there are temporary digressions for various reasons, such as clarifying terminology, expounding another scholar's views at length, etc (see appendix 2). There are also incursions of other genres, such as recounting anecdotes, teasing, etc. This feature of the genre's actual realization might equally be found in genres of the ancillary mode. In a typical case of shopping at a local shop, for example, gossiping or joking might interpenetrate the obligatory discoursing for buying and selling.

As with ancillary genres, too, in principle, the structure of the genre is influ-

enced (if not determined) by the immediate goal. However, what has to be emphasized is that at every level, and particularly at the lower levels, participants may not share the same goal and may even be working toward incompatible goals. As a result, some aspects of the sequential organization of any particular discussion may result from jockeying for control of what goal is currently in view or from the moves involved in negotiating the goal.

In order to examine the precise relationship between the proposed genre and the realized discoursing, we chose two excerpts from the transcripts (Discussion 1 and 6, also see appendix 1 and 2).

Tables 1 and 2 show frequencies of total types and total tokens, average word length, type-token ratio and content words ranked in the top 10 % of observed tokens of each excerpt. As shown in the tables, the first four indices were ap-

TABLE 1 Key word frequencies of the discussion 1

Word	Frequency	Ratio
activity	22	2.37
material	15	1.62
media/mediate/meidates/mediating/mediational	12	1.29
discourse	11	1.19
semiotic	9	0.97
gesture/gestures	8	0.86
means	8	0.86
gaze/gazing	7	0.76
shared	7	0.76
SUM	99	10.68
Total Tokens:	927	
Total Types:	276	
Type-Token Ratio:	0.30	
Average Word Length:	4.31	

TABLE 2 Key word frequencies of discussion 6

Word	Frequency	Ratio
action/actions	24	2.63
topic/topics/topically	20	2.2
end/ending	17	1.87
beginning	10	1.1
boundary/boundaries	10	1.1
goal	6	0.66
discuss/discussion	5	0.55
SUM	92	10.11
Total Tokens:	911	
Total Types:	304	
Type-Token Ratio:	0.33	
Average Word Length:	4.28	

proximately equivalent. In terms of lexical density, both excerpts are the same. Differences in types and number of the top 10 % content words suggest that we addressed different topics on each occasion. In the discussion 1, the most frequently occurring word was “activity” (22 times), whereas in the discussion 6, the word “action(s)” and “topic(s/ally)” were used 24 and 20 times respectively. However, in the overall context of our discussion of the relationship between discoursing and activity, these words still have relevance. For example, the words “activity” and “action” are essential constituent parts of activity theory. In terms of register, especially field, the content or meanings in our discussions were chosen from a certain range of options accumulated in relevant disciplines (i.e. activity theory and discourse theory), and then instantiated into a choice of particular types of words. That is one of the resources which gave us a sense of continuity in our discussion.

As can be seen in the transcripts, these frequently observed words were spread out over the course of the discussion in contrast with the less frequently observed words, such as “gaze(gazing)”, “shared”, “goal” and “discussion(s)” that were seemingly gathered around parts of the discussion. In terms of lexical cohesion, especially indicated by repetition, these differences of frequency and dispersion of the content words suggest a hierarchical construction of cohesiveness in our discussion. High frequency and wide dispersion of a few words and comparatively low frequency and narrow dispersion of other words reflect at least a two layer structure; combination of overall cohesion and partial cohesion. The overall cohesion is another resource giving us a sense of continuity although it only has a small scope.

Figure 2 and Figure 3 shows the analyzed genre structure of the excerpt of each discussion. Although they are represented as having a three layer structure; topics, issues, and sub-issues, both analyzed excerpts have issues and sub-issues under one topic, thus the content word frequencies described above can be considered as reflecting the structure of issues and sub-issues.

In the excerpt from discussion 1, the first topic was “distinction between semiotic and material action” which was initiated by F and clarified by G. Immediately, the first issue 1.1 “there are two kinds of activity system, semiotic and material” was posed by F introducing the high frequency word “activity”. In G’s starting position on the issue, the lower frequency words “discourse”, “means”, and “shared” were introduced. Adding another new word “mediational”, G proposed a solution to the issue but with no obvious agreement. Taking up the words “discourse” and “media” from the preceding proposed solution, T opened up sub-issue 1.1.1. In response to the sub-issue 1.1.1, G used all the words that had appeared previously. Again the proposed solution to the sub-issue 1.1.1 was suspended. While stating a position on the sub-issue 1.1.2, another low frequency word, “gaze”, was introduced. Conversely, the words “discourse” and “means” disappeared in the subsequent discussion. After proposing a solution to issue 1.1, T started a new issue, 2.1, while reintro-

ducing the word “semiotic”, which had been used in the topic clarification at the beginning of sub-issue 1.1.2.

In this excerpt, there were one topic, one issue, and two sub-issues. Two sets of the lower frequency words such as “discourse” / “means” and “gesture” / “gaze” appeared and disappeared respectively in the sub-issues. These words, therefore, play constituent parts in the sub-issues. In contrast, the frequently used word “activity”, which appeared in each of the overall sub-issues, served the function of connecting them as a whole issue.

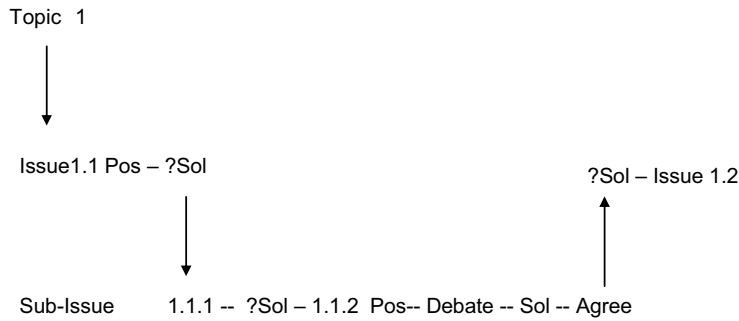


FIGURE 2 Diagram of discussion 1

As shown in figure 3, the excerpt from discussion 6 has one topic, two issues and one sub-issue. After negotiation of the agenda, the first topic, “how to define extent of action,” and the first issue, 1.1 “Is each meeting an action?”, were introduced by F, using the high frequency word “action” and the low frequency word “boundary”. Stating position, debating, proposing solution and agreement followed, using the word “action” and introducing the new word “beginning” and “end(ing)”, which can be seen as a synonym for “boundary”. The second issue, 1.2, was introduced by F, using the second high frequency word “topic” and the low frequency word “goal”. Therefore, there are two sets of words corresponding to the two issues. However, in contrast to the case of sub-issues in the excerpt from discussion 1, these are not exclusive. The words of the first set, i.e. “action(s)” and “boundary”, are infiltrated into the second issue.

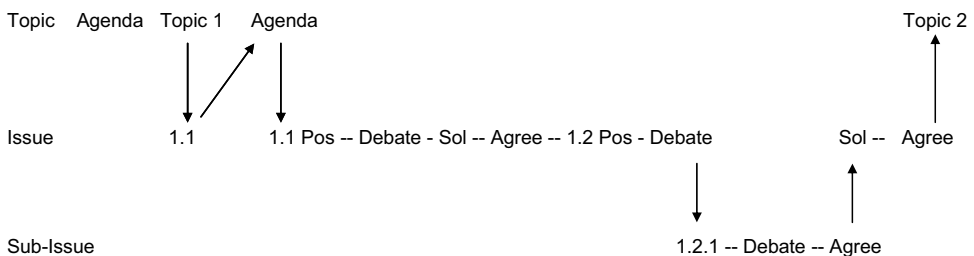


FIGURE 3 Diagram of discussion 6

Compared to discussion 6, discussion 1 does have a similar sequential and hierarchical structure but it seems not to have the same firm boundary of constituent parts of sequences. As indicated by a question mark in figure 2, some of the proposed solutions and the pros and cons of them were seemingly suspended. Lexical cohesion in discussion 1 has a two layer structure: and overall cohesion throughout the issue and partial cohesion in the sub-issues. In that discussion, these two layers of cohesion served as a resource for its sequential and hierarchical structure. By contrast, discussion 6 has a relatively firm structure of genre, allowing it to tolerate the intrusion of temporary digressions without losing its overarching goal (agenda). The difference between the two discussions suggests our constructed genre did not spring from nowhere but was a collaborative construction which may have been based on the genres in our respective tool kits and our ways of using them.

Both sequential and hierarchical structures gave us a sense of progressiveness and direction in our discussions. Especially, the way of constructing them is noteworthy for our case. Transition from relative dependence on lexical cohesion to genre corresponds to the macro temporal phasing of our discussions. Whereas the organizing structure was afforded by lexical cohesion in the initial phase, it was constructed through the gradually consolidating genre in the middle phase.

Conclusion

In this paper, we have attempted to resolve two problems. The first was that, at first sight, the substantive mode of discoursing seems to be an activity in its own right. However, even in the substantive mode, discoursing mediates some activity beyond itself. The activity is deepening understanding and creating new knowledge appropriate to a particular situation and a culture, and it is conducted by collaborative meaning making, which is instantiated in discoursing.

The other problem was how we get things done through discoursing. Activity, particularly when it is mediated by the substantive mode of discoursing, can be captured by two aspects; register and genre. While register designates a culturally constructed range of contents of meaning that can be realized through discoursing, genre projects their sequential organization in a particular instantiation as a transformation of object into outcome of the activity. In a word, they are spatial and temporal, synoptic and dynamic constellations of culturally provided options. At the moment we start to talk, we can anticipate an extent of semiotic space and a possible route in that space. While activity is being instantiated through discoursing, the register and genre thus provide a sense of position and progression for the ongoing activity so that we can collaboratively and productively get things done; making meaning.

Genre is thus a kind of cultural tool kit. It affords the way of operationalizing discourse-mediated action. Each member of a particular culture appropri-

ates it in her own way so that there are likely to be differences, even in the same genre, among members. So, when engaging in discourse-mediated action, participants start with the versions of genre they have appropriated, and therefore have to coordinate their versions or invent a new genre. This conclusion, we argue, is a way of developing Bakhtin's notion of speech genre.

Acknowledgments

Part of this paper was prepared as a part of research supported by Kansai University's Overseas Research Program for the year of 2004.

References

- Boag-Munroe, G. (2004). Wrestling with words and meanings: Finding a tool for analysing language in activity theory. *Educational Review*, 56(2), 165-182.
- Button, G., & Casey, N. (1984). Generating topic: The use of topic initial elicitors. In J. M. Atkinson & J. Heritage (Eds.), *Structures of social action: Studies in conversation analysis* (pp. 167-190). New York: Cambridge University Press.
- Clark, K., & Holquist, M. (1984). *Mikhi bakhtin*. Cambridge, MA: Harvard University Press.
- Daniels, H. (2001). *Vygotsky and pedagogy*. London: Routledge Falmer.
- Engeström, R. (1995). Voice as communicative action. *Mind, culture, and activity*, 2(3), 196-215.
- Engeström, Y. (1999). *Learning by expanding: An activity-theoretical approach to developmental research* (K. Yamazumi et al. Trans.). Tokyo: Sin-yo-sha (Original work published in 1987).
- Engeström, Y., Engeström, R., & Kerosuo, H. (2003). The discursive construction of collaborative care. *Applied Linguistics*, 24(3), 286-315.
- Engeström, Y., & Miettinen, R. (1999). Introduction. In Y. Engeström, R. Miettinen, & R.-L. Punamäki (Eds.), *Perspectives on activity theory* (pp. 1-16). New York: Cambridge University Press.
- Halliday, M. A. K. (1978) Language as social semiotic. London: Edward Arnold.
- Halliday, M. A. K. (1985). Language as code and language as behaviour: A systemic-functional interpretation of the nature and ontogenesis of dialogue. In R. F. Fawcett, M. A. K. Halliday, S. M. Lamb, & A. Makkai (Eds.), *The semiotics of culture and language, vol. 1* (pp. 3-35). London: Frances Pinter.
- Halliday, M. A. K., & Hassan, R. (1985). *Language, context, and text: Aspects of language in a social-semiotic perspective*. Deakin University Press.
- Halliday, M. A. K., & Matthiessen, C. M. I. M. (1999). *Construing experience through meaning: A language-based approach to cognition*. London: Cassell.
- Hasan, R. (1996). What's going on: A dynamic view of context in language. In C. Cloran, D. Butt, & G. Williams (Eds.), *Ways of saying: Ways of meaning: Selected papers of Ruqaiya Hasan* (pp. 37-50). London: Cassell.
- Holquist, M. (2002). *Dialogism* (2nd ed.). London: Routledge.
- Jefferson, G. (1984). On stepwise transition from talk about a trouble to inappropriately next-positioned matters. In J. M. Atkinson & J. Heritage (Eds.), *Structures of social action: Studies in conversational analysis* (pp. 191-222). New York: Cambridge University Press.
- Leont'ev, A. N. (1981). The problem of activity in psychology. In J. V. Wertsch (Ed.), *The concept of activity in soviet psychology* (pp. 37-71). New York: Sharpe.

- Lindfors, J. W. (1999). *Children's inquiry: Using language to make sense of the world*. New York: Teachers College Press.
- Mortimer, E. F., & Wertsch, J. V. (2003). The architecture and dynamics of intersubjectivity in science classrooms. *Mind, Culture, and Activity*, 10(3), 230-244.
- Rommetveit, R. (1992). Outlines of a dialogically based social-cognitive approach to human cognition and communication. In A. H. Wold (Ed.), *The dialogical alternative: Towards a theory of language and mind* (pp. 19-44). Oslo: Scandinavian University Press.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wells, G. (2002). The roles of dialogue in activity theory. *Mind, Culture, and Activity*, 9(1), 43-66.

Appendix 1: Analysis of the discussion 1. Sep. 2004

Time	Speaker	Transcript	Coding
00:48	F	They completely converge into one. The we can not separate But I don't think it mean it still have meaning...	Topic 1.
01:01	G	You're saying that uhmm, conceptually we can distinguish between semiotic - [F oh?] -action and material action. But that in reality.. they ... are.. ... intertwined and maybe...the distinction is an artifact of our discussion rather than a real one	Clarify Topic 1. Distinction between Semiotic action and material action
01:48	F	May - w - Maybe that will xxx one theory. But another is that xxx really there is two kinds (of) fundamental activity systems. One is the (semiotic) activity system. Another is the goal-oriented material based activity system xxxx	Issue1.1. Two kinds of activity system, semiotic and material?
02:13	T	The reason that we first decided to separate them is because we were trying to xxxx phylogenetic	State Position to Issue 1.1 (but not extend)
02:27	G	Well another reason we - I think I separated them was because the problem with which we started is - what is the relationship between discourse and activity - F [laughs] - which assumes that there ARE two separate things one is discourse and the other is activity . T [consents] And ... for convenience... its useful to say well... one discourse is essentially a means for achieving the other. And that was where we started and that's where we got to last week when we were thinking about that. But we could then say: well - but it's equally true the other way around.. that's to say joint activity is the MEANS for, if not the ... creation of discourse but at least for the creation of a - of a shared social world.	State Position to Issue 1.1
03:44	G	But maybe - maybe we - we're making a mistake in levels - that's to say there are two activity systems or xxx or two dimensions of human activity .. One is the semiotic and the other is the material and that discourse is a mediational means for both and that Discourse itself has its semiotic aspect and its material aspect... oh dear this is getting TOO COMPLICATED!	?Propose solution to issue 1.1

04:28	F	[Laughs]	
04:29	T	How would discourse be a media - I don't know...	Sub-Issue 1.1.1. How would discourse be a media?
04:34	G	Ok so this- this does actually help - that we have semiotic activity .. at least conceptually and we have material activity . And the discourse is in fact the mediational means for the achievement of both.	
04:56	T	Why did - why..	
05:05	G	Well in order to engage in joint activity you have to coordinate actions, and discourse is a mediational means for the achievement of goal-oriented material activity . And on the other hand, to create a shared social world you have to construct patterns of meaning.. and the meanings themselves are not - not necessarily linguistic- "sounds rehearsed" But in order to be co-constructed they have to be realized in some material means . and ... of the material means like drawing and ballet and ahh church ritual -	?Propose solution to issue 1.1.1
06:09	T	Can we keep it really simple like a gesture ? Like one gesture or one facial expression..	?Pose new Issue
06:15	G	Whats-	Ask for clarification
06:19	T	So.. I am trying to think.. is it..OK so you said that discourse is the mediational means for both the material activity and the semiotic activity . But now in the most primal way. If I'm - don't know but lets say - facial expression, was the first kind of discourse	
06:46	G	Umhmm temporary consent	
06:47	T	How is it a mediational - how is it mediating both of those?	Sub-Issue 1.1.2. Is gesture a media?
06:56	G	Well its clear how.. gesture can mediate goal oriented material activity .	State Position to Sub- Issue 1.1.2
07:07	T	Uhhmm	

07:08	G	You can gaze at something or other to indicate that that's the focus of joint attention - you can smile to indicate that what the other person is doing fits your idea of what your trying to do together, you can make a variety of gestures to indicate what sort of action is required Now. how does it - how does gesture allow the creation of a shared social world.. Well- actually the shared social world at that stage is: the joint action! It's not - I don't think gesture allows - well I don't know... A shared social world at some level involves shared concepts..	
08:08	T	But I was thinking of it the other way around right? It was that the JOINT material activity made possible the.. arise of something that became gesture ..	Debate on Sub-Issue 1.1.2
08:27	G	Yes that may also be true	
08:33	T	That it was first almost sporadic movement - I mean this is very hypothetical right? but that at some point there came along a way to.. ah.. ga.. it was sporadic - you know in a way it was sporadic that I was gazing at the object of my material activity - but Then. Because there's another social conspecific* with me- that gaze became a gesture .. so its the other way around from what you jsut said - I think *Invoking mutual shared setting or background: Tomasello Where the gaze was mediating the activity - but I am trying to say how the activity is mediating the gaze .	
09:30	G	Yep - I think - I think that's true. In the end that - I'm not sure that we're to say one preceded the other. At any rate - this is very speculative	Propose Solution to Sub-Issue 1.1.2
09:43	T	Right. So was it -so what's the point?	Agree on Proposed Solution Sub-Issue 1.1.2 / Pivot to return Issue 1.1
09:47	G&F	[Both laugh vigorously]	
09:50	G	Yeah what's the point?!	
09:51	T	Futoshi tell us what the point is.. [...]	

10:10	T	<p>I think one point is that whichever way around we decide it may be and we decide we can't decide because it's too speculative we're still saying that there is two things going on</p> <p>right? The activity - and I am gazing at my activity and my gaze being something that mediates in some sense... I see there - two activity systems still happening - each mediating the other - how we don't know which came first the chicken or the egg- but maybe one point is that maybe there still xxxx two</p>	?Propose Solution Issue 1.1
10:51	G	<p>One of the points that Mike Cole makes is that all artifacts are simultaneously semiotic and material. ahhh and I think I mean are we willing to accept a distinction between semiotic and material - at least conceptually that there is a distinction between the material and the semiotic</p>	Issue 1.2 Theory of Artifacts.

Font size of top 10 % types of words is enlarged according to their frequencies.

Appendix 2: Analysis of the discussion 6. March 2005

Time	Speaker	Transcript	Coding
00:06	F	<i>Suggests issues that we might discuss, going into considerable detail</i>	Proposes Issues for Discussion
02:22	T	<i>Assents</i>	
02:23	G	I hear several points .. one is the question of how to represent the structure, for example, in a diagram .. The second one is .. er . an adequate conceptualization of open-ended discussion and topic continuity [F: Mm] and change .. I see it as two very different things but maybe the second is the one we have to clarify first because we can't represent something we haven't fully conceptualized	Clarify Agenda
03:18	F	Yes	Agree on Agenda
03:22	G	though representing often helps	
03:27		<i>Brief discussion about reference for a book</i>	
04:37	F	And the other thing I think- I thought about is How to make a boundary of action ?	Topic 1. How to Define Extent of Action?
04:45	T	Boundary of action . yeah	
04:52	F	To analyze our discussion - how to make the boundary of action ...how to figure out the boundary of action - an action Is each discussion meeting an action ?	Issue 1.1 Is each meeting an action?
05:40	G	Well I see the problem	
05:43	T	We have two problems here	← Agenda
05:44	G	The second one- . the one of conceptualizing the continuity and changing in topic	Justification for Proposed order
05:59	F	Yes I think that's somewhat relevant	Agree on Agenda
06:04	G	I think it's essential.	
06:07	G	From the abstract - going off on a tangent - the writing of the first two thirds of the paper is relatively straightforward mainly reviewing and consolidating what's already be end one the last part where we explain how it all works is the important part	Apparent Digression to Composing of Paper
06:38	F	the difficult part	Agree

06:39	G	<p>my reaction we know in Leont'ev model that</p> <p>action can contain many sub-</p> <p>actions so the issue of whether it's a new</p> <p>action is not an overwhelming problem</p> <p>because we can say the action we started on in September was to develop an account of the issue that we proposed to talk about [F: Mm-hmm] and that is an</p> <p>action in the activity of understanding discoursing and activity .. and that's going on for ever [F:</p> <p>Yes] Our action has a beginning and an end - it started when we first met in September and it will end - well, temporarily end.</p>	<p>State Position on Issue 1.1</p> <p>Offers theoretical grounds</p>
08:00	F	<p>Is that end a temporary end. or-</p>	<p>Req. Clarification</p>
08:05	G	<p>Well it probably is the end of this</p> <p>action, when we finally complete this paper [F: Mm-hmm] whether or not we deliver it in Seville doesn't matter because the paper is what contributes to the dialogue more widely.. the presentation will be one sort of</p> <p>ending but the final end of the</p> <p>action is the artifact, the text in print. F [Yes]</p> <p>So there's a beginning and an end and each time we meet-</p>	
08:45	T	<p>So in response to Futoshi's question about the</p> <p>boundary of action, I feel you're saying it's partially defined by the artifacts that are used</p>	<p>Debate on Issue 1.1</p> <p>Boundary of Sub-Actions is defined by artifacts</p>
08:57	G	<p>Well if we say it's a staged, goal-oriented, social process. in genre theory or, on the other hand, we say that the</p> <p>action is to contribute to the dialogue- the wider dialogue about this topic then I see no difficulty in setting the boundary - the largest</p> <p>boundaries on our action - that we'll probably refer to as an activity-</p>	<p>Debate on Issue 1.1</p> <p>Offers theoretical grounds and States Position</p>

09:29		<i>Brief digression on technical and everyday use of “activity” and “action”</i>	
10:07	G	[an action] has a beginning and an end . that seems to me to be one of the definitions of an action	Proposes resolution to Issue 1.1
10:12	F	Yes a beginning and an end and a goal .. the goal is similar to ..the topic of a particular conversation	Agree on Issue 1.1 Pose Issue 1.2 Relation between Goal and Topic
10:36	T	a goal could be considered the topic ?	Challenge
10:38	F	yes, of a particular conversation .. so for- I’ve read CA xxx every conversation has a beginning and an end so the one beginning <gives> the topic - in telephone calls . why I’m calling and xx and the topic has a beginning and an end and <some goal>	
11:18	G	But then that seems to be a little too simplistic to me [F; Mm] in that although there’s a beginning and end of the oral discoursing on any occasion there can be multiple topics within that time .. so just as there are sub- actions within actions , there are sub topics within the major. goal topics	Qualification
11:58	T	Because- it would be interesting to see if xx in your data sample, to collect samples of telephone conversations-	Sub-Issue 1.2.1 Suggest new data
12:07	G	Disagree.. I’m not going into yet another sort of data collection-	
12:09	T	No, I know	
12:10	G	No we’re collecting data [in a very interesting way	Agree
12:13	T	I agree	Sub-Issue 1.2.1 resolved

12:16	F	So x the beginning of the topic is xxx topic -related action ... can somewhat easily be sorted out. but end of the topic is very difficult	Issue 1.2
12:23		<i>Brief discussion of distinction between “talking to the topic” and “talking topically”</i>	
14:19	G	So how do you decide on the boundaries of topic . well I would say. that maybe this is one of the. insights .. and that is that boundaries are not clear-cut [F: Mm] .. when you’re talking to the topic . and there is an agreement to change topic . then you can mark a boundary .[F: Mm] there isn’t really a point where you could say. you have all agreed - intersubjective agreement on the new topic but if you are talking topically , as you say, one thing slides into another	Propose Solution to Issue 1.2
15:04	F	I agree xxxx .- somewhat relevant topic . so that at the beginning and the ending it’s a very different topic that we’re talking about	Agreement on Issue 1.2
15:24	G	You know, I think xxx we might want to make a distinction. between ... ancillary and constitutive discourse xx hypothesis. it may be the case that. the action and sub- action are very clearly defined by the material processes whereas. in constitutive discussion .. there is no. conclusive end to the discussion-	Referring to Topic 1 Issues 1.1 and Issue 1.2 Initiates Topic 2 Contrasts Ancillary and Constitutive Discourse re Hierarchy of Action/Topic

Font size of top 10 % types of words is enlarged according to their frequencies.