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Bakhtinian Plagiarism in Group Interactions:

From Negative Interdependence to

a Semiotic Model of Constructive Learning

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ABSTRACT

Bakhtinian Plagiarism in Group Interactions:

From Negative Interdependence to

a Model of Constructive Borrowing

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This article shows the extent to which pupils borrow information from one another. In the course of classroom observations, learning in groups appeared to be polyphonic and was based upon the ideas of others. Learning through plagiarism, however, must be interpreted not as negative interdependence, but as a way for children to construct new meaning in the group situation. The observations were conducted in 33 elementary classes that used team learning. Group assessment differentiated results according to: (a) problem-solving strategies; (b) the types of interactions; and (c) declarative, procedural, and contextual knowledge. In-group plagiarism was noted in all 33 classes and inter-group plagiarism in 16 of the 33. Both qualitative and quantitative data analyses revealed a link between plagiarism and the perceived quality and creativity of verbal production. Although plagiarism did not make a difference to declarative and procedural learning, it was linked to high levels of prior knowledge and enhanced past experiences in creative ways.

KEYWORDS

Plagiarism - borrowing - negative interdependence - constructive learning - semiotics - Bakhtin -

strategies - polyphony - jubilation - polyphonic learning



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"It is often said that imitation is the sincerest form of flattery." Gore (1998, p. 19), Mac World (unknown source)

Semiotic is the study of how signs are made meaningful. The case of Mikhaïl Mikhaïlovich Bakhtin, a teacher and then a normal school teacher educator whose writing and thought seminally foreshadowed semiotics, is interesting to consider.

The grandson of an aristocratic Russian family fallen on hard times, he was sent into "administrative" exile on the Siberian frontier. One of his major essays lay dormant in a drawer for half a century. Three books of his were published under the names of friends and disciples of his who were politically more fortunate: the linguist V.N. Vološinov and the literary critic P.N. Medvedev. This article addresses just these issues of borrowing and the paternity of the ideas we communicate: As M. Aucouturier writes, in Bakhtin, "we find a rare instance of a scholar who accepts anonymity, who sacrifices personal renown to the cause of disseminating his work" (Bakhtin, 1978, p. 11). Even though a good deal of Bakhtin's critical work appears compatible with Marxism, he seems to have been more deeply influenced by phenomenological thought, having read the work of its major exponents (Bernard-Donals & Emerson, 1996). Bakhtin's critical analysis inclines him to denounce the risks of hegemony in any ideological universe (Brandist, 1996). His work is still highly relevant today (Frank & Emerson, 1998), with new books introducing him to the public (Morris & Adlam, 1997) and a newsletter dedicated to him (Lee & Thomson Eds., 1997). New images of his work arise (Simons, 1997). Teaching, too, has begun to be analyzed in Bakhtinian terms (Phillips, 1997). His thinking has gained so much currency in the past decade that analyses of dialogic consciousness are to be found even in the field of nursing (Bowers & Moore, 1997).

Bakhtin's methodological reflections on the humanities and language, which were post-revolutionary, broke free of formalism by showing the limits of efforts to isolate meaning from the human culture within which it is situated. Meaning is not neutral: it circulates. Any material object put into circulation takes on a meaning aligned with the intentions and the context that define it. Thus reality is empirical and is built upon a creative intent. Given this premise, Bakhtin seeks to transcend the



dualism of positivism and idealism by describing the act with which consciousness constitutes its subject. The stripping of the aesthetic object leads up to a process of appropriation of the sign, which makes Bakhtin a precursor of the semiotics whose poetic working out was to be reinvested in a science of ideologies. Ideologies — science included — are understood to be specific sign systems. Bakhtin defines consciousness as the frontier between the individual and society, as the inhabitant who resides in the social structure of ideological signs (Bakhtin, 1978, p. 11).

In the light of Bakhtin's work, learning in a social context consists of a *polyphonic* recreation, a recreation in multiple voices (Zhougwen, 1997). The pupil is integrated into a socially determined network. The truth of learning is located among consciousnesses, in the movement of interchange and dialogue which represents the only genuine way for ideas to exist. In this light, the ultimate goal of learning, of creation, of exchange — and by extension, the ultimate goal of search/research — is to achieve jubilation. Laughter is not translated into discourse. It is a world view, at the intersection of the social with the individual. This laughter is not mocking; it affirms at the same time as it negates; it dissolves duality, while pointing towards truths that remain unreached, with the cavity of meaning yawning ineluctably. Meaning must remain open; when it is fixed, it is lost. Thus, borrowing allows for the communication and the appropriation of the meaning of others and entails its own transcendence through unceasing dialogue. For instance, reading influences writing (Lancia, 1997; Pennycook, 1996). Discursive and textual borrowing are such common phenomena in day-to-day dialogue that they even occur between languages (Heath & Boumans, 1997). Thus plagiarism may be understood in a wider context as a matter of identity (Scollon, 1995). It is as Vytgotsky (1978) demonstrated: outward actions are mentalized and build identity.

In Bakhtin (1981), context has primacy over text. Meaning consists of constant interaction with the context and the environment in which it is created. In that sense, meaning is dialogic, and part of it is picked up from beyond the bounds of the text. Then is plagiarism always bad (Kincaid, 1997)? In a Bakhtinian sense, plagiarism constitutes a process of conceptual dialogue that serves as the basis for communication, that is, of a shared world view. This process is inevitable, even though at a certain point it is bound to entail acknowledgment of the source of the idea. It is at this stage that



acknowledgment becomes a method. In other words, in this article I am exploring a positive aspect of plagiarism. These questions are made all the more relevant by the flow of unprotected information on the internet (The cream of other men's wit, 1997; The internet, 1998) and the creation of computer applications to detect plagiarism (Verco& Wise, 1996).

Plagiarism can be unconscious. It prompts a whole new paradigm for psychological research (Landau & Marsh, 1997; Marsh, Landau & Hicks, 1997): Implicit memory tasks show that students use information from past experiences with no awareness of doing so. This phenomenon has been named cryptomnesia. Cryptomnesia is an "implicit memory phenomenon in which people wrongly claim that current thoughts and ideas are a product of their own generation when, in fact, these ideas had been encountered by them some time earlier and then forgotten" (Marsh & Landau, 1995, p. 1568). Inadvertent plagiarism is retention without memory of the source (Roediger, 1990) and seems to be a function of the importance of the source. Its strength can be measured and will affect the self-attribution of the information (Schacter, Chiu & Ochsner, 1993). Given that the **learning communities** and networks of thought are constructed through consensus owing to the approval and integration of the ideas of others, study of sources and their contextualization becomes an instrument for acknowledging the principles of ideological construction, and, indeed, an instrument for the study and integration of knowledge through constructive learning.

Researchers on learning tend to consider it as taking place within a given context, and to believe that ultimately the only way to conduct rigorous study of reflective strategies is by taking into account the environment within which multiple, embedded problems are solved. For instance, a teacher who presents a pupil with a problem simultaneously presents at least one other problem. Along with the problem posed comes the problem of maintaining the teacher's confidence through a correct answer, or that of not losing face, or that of keeping up good grades to show your parents. Since knowledge is situated in this perspective, it is jointly constructed by individuals in communities, individuals who share the same convictions about the same knowledge. In group learning, knowledge is "coconstructed," as researchers in the neo-constructivist tradition agree (Brown et al. 1993; van Glasersfeld, 1994); but what does that mean? How is it co-constructed? How is the information



supplied by the surroundings integrated into learning? What are the ethical problems posed by the co-construction of knowledge? These questions underpin the present article. The links made during learning among things known, and inter-group influence, suggest that constructive learning rests on a semiotic model, that of the appropriation of signs and indices that belong to the immediate surroundings and that are susceptible of being linked to the task.

On learning with peers

In exploring peer learning in a classroom context, one should distinguish at least two approaches (Damon & Phelps, 1988; Oxford, 1997). The first builds *collaboration* among peers on the epistemological premises of the theory of action (or interactionism) that is at the root of social constructivism (Palincsar, Stevens & Gavelec, 1988). This first way of looking at peer learning leads to organizing large activities based on thematic investigations in direct relation with day-to-day life. The learners have to practice peer critical thinking intended to empower them. The second approach to learning among peers rests upon methods for packaging curricula, structuring lesson-plans, and *cooperative* learning. Collaborative learning (the first approach) differs from cooperative learning (the second approach) in that the teacher plays a less directive role and the task is organized for the long range and less structured. In the cooperative-learning approach, mastery and achievement are emphasized rather than empowerment.

Nevertheless, since, over the years, information has been widely disseminated about these two pedagogical approaches to peer learning, certain bridges have been built. Their divergences, mostly epistemological, seem to be fading, although the two trends have their own conventions, journals, and specialized publishers. Some authors now propose intermediary methods. For example, Harbeck (1997) has designed the cooperative-learning field investigation model. This practical model has all the characteristics of cooperative learning: cooperative structures are used with groups of experts and lesson-planning steps and phases. However, the model is actualized through long-term field investigations involving weeks of peer thematic collaboration with authentic interviewing and in-depth project-based learning; and it aims at empowering medium-size groups of students in their knowledge and shared reflection of human systems (all characteristics of collaborative learning). Other authors,



like Matthews, Cooper, Davidson & Hawkes (1995), have built theoretical bridges between cooperative and collaborative learning. They have identified some commonalities between the two approaches:

- 1) Learning is active and responsible and it is a shared experience.
- 2) The teacher is a facilitator or a coach (a midwife, not a sage on a stage).
- 3) Lectures and small-group activities have to be balanced.
- 4) Small-group learning enhances higher-order, critical thinking, and reflection is organized on thought processes.
- 5) Consensus-building is based upon social competencies.
- 6) Learning is supported by small academic communities.
- 7) Valuing diversity is considered essential for a democratic society.

Indeed, cooperative learning could benefit from the long-term-project perspective of collaborative learning and its emphasis on knowledge-building and scaffolding processes in academic research communities. As well, some work by Dansereau's team on scripted cooperation (O'Donnell & Dansereau, 1992) and the use of knowledge maps in cooperative learning (Lambiotte, Skaggs & Dansereau, 1993) bear some resemblance to reciprocal teaching (Palincsar, 1992). Both scripts allow for Socratic feedback dialogue. In its turn, collaborative learning could take advantage of some cooperative methods for creating interdependence in groups and structuring interactions fruitfully. For instance, Brown et al. (1992) engineered a collaborative community of learners with Aronson's jigsaw method (1978). It's just the way of looking at things that has been rather different in these two trends.

Now that peer learning is trendy, we have almost forgotten that it entails a trade-off in greater planning and in the teacher's tension and increased vigilance to ensure that everything is working well as regards both content and interpersonal relations. If the progress of cooperative learning breaks down, the teacher may be faced with open conflict that can last right until the end of the school year. On this score, work on peer learning has long neglected the social context that makes this type of learning difficult for classes of twenty-five to thirty pupils (Dishon & Wilson-O'Leary, 1984;



Bennett, Rolheiser-Bennett & Stevahn, 1991; Abrami et al., 1993). The experiential, contextual, and biographical dimension is often missing from research on cooperative learning, and represents a new emphasis, due perhaps to collaborative borrowings.

In their 1994 review of the literature, O'Donnell & O'Kelly showd that the major literature reviews in this field were slanted, the meta-analyses were biased, and research control-group members were not selected equitably. They adopt a sane position about a field of research in which vague concepts (What is cooperation within a group? How to elicit it? Can it be generalized?) seem to have resulted in a considerable amount of slippage and inappropriate usage. As O'Donnell & O'Kelly point out, the euphoria associated with cooperative learning masked its complexity (p. 322). Modes of interaction are complex, and there is no group learning without interaction.

Figure 1 summarizes the key concepts found in research on peer learning in groups (Johnson & Johnson, 1994; Slavin, 1990, 1995). Looking at it, one observes that there exist two orientations that have long been split: in the lower part of the figure, the cognitive approach, and in the upper part, the socio-behavioral approach. In the cognitive approach, researchers have emphasized, as can be seen at the very bottom of the figure, pupils' cognitive interdependence (for half a century now, research on group learning has been based on the concept of interdependence) and the role of dialogical feedback and cognitive conflict in furthering pupil representations and optimizing pupil interdependence. Group cooperation is conceived of as a cognitive task of an exploratory kind (the first research trend, at left) which facilitates learning by modeling it (the second research trend, at right). In the socio-behavioral approach, represented in the top part of the figure, social behaviors prevail, within a perspective that may be based upon

interactions, incentive structures, goals, or social and group cohesiveness. The motivation and social cohesion that flow from behavior are studied insofar as they contribute to the development of social skills (on the right) which allow for conflict resolution. If the emphasis is placed on cooperative social behavior, then positive interdependence is perceived within the broader context of achievement. This article is concerned with the interdependence of the social and the cognitive poles, that is, between conflict resolution and problem solving (top and bottom of the figure). These two levels of



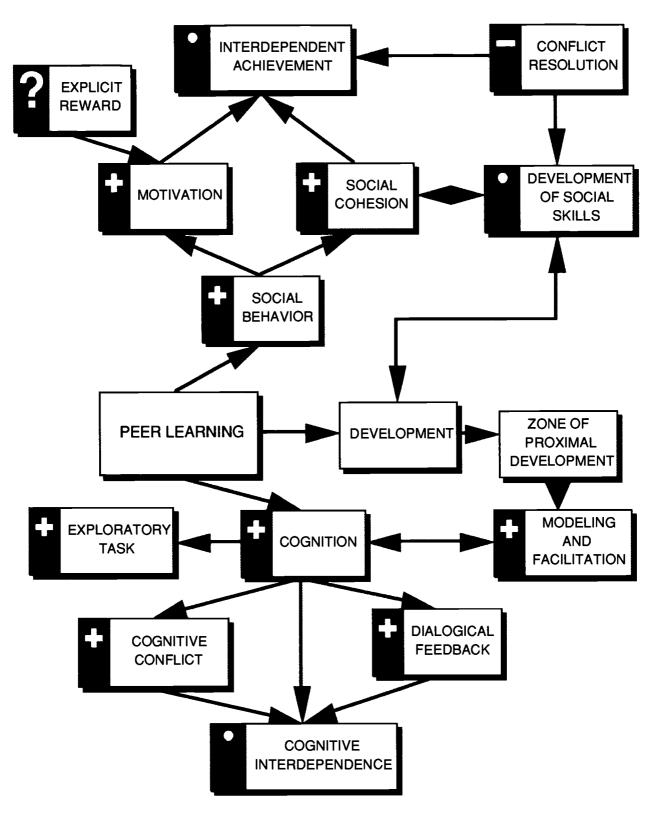


Figure 1 Theoretical developments in research on peer learning



learning cannot be treated separately when learning takes place in a group. A developmental view would integrate both aspects, the social and the cognitive.

What happens in group learning is not really known. The truth is, learning groups seem to differ profoundly from each other, just like the individuals they are composed of. Research that provides a description of what has really taken place within each group and among learning groups is still rare. In this field, research is needed:

- 1) on regulatory methods for learning groups that suit different natural surroundings;
- 2) describing in detail what happens in learning groups both strategically and socially;
- 3) presenting analyses at various levels of the process and of the learning that takes place.

On studying peer interdependence

Cooperative learning is based on positive interdependence with the goal of stimulating mutual responsibility for learning. Pupils' interdependence is generally premeditated: pupils share their objectives, their resources, their tasks, their roles, their rewards, and their group identity (Cohen, 1994; Johnson & Johnson, 1994; Kagan, 1992; Slavin, 1990). The "positive interdependence" needed for group learning is based on clear, shared goals. What kinds of goals? To take one example, approaches are premised on the assumption that the child has integrated academic goals and that the thought of passing the final test of knowledge is an adequate motivating factor. But doesn't the laying out of academic goals, as the designers of cooperative learning do, equate with ignoring the pragmatics of these situations? Nowadays, who can confidently write that all pupils will consider academic goals an intrinsic motivation? Why does the pupil participate in the group? *How* does the pupil participate in the group? Although it is observed that larger groups (five to eight pupils) are harder to regulate than smaller ones (two to four pupils), the former involve more motivating factors.

Neo-constructivist perspectives propose that the teacher balance the construction of knowledge, oppose children's erroneous concepts in order to broaden their understanding of natural phenomena,



tie instructional episodes in with the children's prior knowledge, make the pupils' predictive models explicit, inquire into the nature of evidence provided, make use of multi-sensory strategies, synthesize knowledge, and so on (Neale, Johnson & Smith, 1994; De Corte, 1995). But can balance be regulated from outside? Are representations always accessible? Are misunderstandings always verbalized and corrected in the group? Is the group always constructive? Isn't it the case that we have a confusion here between an epistemic model and a set of prescriptions for classroom management? Should we look for process models that are more realistic in terms of what happens in actual classes?

Certainly, pupils are not ideally and forever in a positive relationship with each other. What type of interdependence develops, for instance, when learners suffer social consequences for academic success, and are labeled "teacher's pet," "nerd," or "brain" (Daniels, 1994, p. 1011)? Motivations that keep pupils interdependent may be found at the level of content (interest, relevance, expectancy, satisfaction), at the level of the teacher (affiliative drive, authority, socialization), or at the level of the group (goal-orientedness, rewards, norms, cohesion — Dörnyei, 1997). But when group cohesiveness is strong it is not always used to further the school task. Some studies have shown that, when they are in groups, pupils develop strategies for not learning (McDermott, 1976; Perrenoud, 1988). They attune themselves to this goal and become mutually interdependent in the nonachievement of the task. What I am raising here is not the case of "uncertain mutuality" (Damon & Phelps, 1988, p. 9), in which "collaborators sometimes withdraw from one another to work independently, and often one child will spontaneously assume a lead problem-solving role." Rather, I am focusing on cases where interdependence has been achieved but has become negative: it is used to lobby teachers and force them to lower their standards; impose leadership effects on weaker students; and organize cliques and deliberately share some activities that have nothing to do with school tasks. Devine (1996) provides numerous such examples and there are traces of this phenomenon in the research literature on cooperative learning.

For instance, Grisham (1994, p. 26) tells the story of Sylvia, a fourth-grade teacher: "Students tended to form cliques. Sylvia was frustrated by her perception of her students' inability to get along or to



stay on task during group work. As the students got unruly, Sylvia tended to get more negative in her response to them. Her attempts to manage her students were only partially successful because students were socialized into a chaotic group work mode." Deering (1994, p. 26) mentions the case of Ms. Borraga, who spent "a lot of time trying to get Ernesto and Paco to quit laughing and flirting, and starting working." He points out that "educators need to be alert for patterns of exclusion and competition which may develop in their classrooms and cooperative groups" (p. 36).

The list of cases in which the pupils became negatively interdependent could be lengthy. The question is how to reverse this negative polarity. Pierre & Hotte (1997) studied a similar matter at the level of the system: they tried to modify human behaviors by helping a new leader's role to develop. Yet concrete situations demonstrated that peer interactions often altered in the course of cooperative learning activities, even when tutoring relationships were finely organized. In the same vein, Vollmer (1997) noticed "disturbing cooperations" while organizing peer-tutoring help in cooperative activities: "Fredi is teasing Yasser. One may wonder whether her behavior can still be called help. Yasser does not seem to appreciate it as help. Maybe it's more like provocation and struggle, perhaps a playful struggle" (p. 6). The cooperative role became a facade while the interdependence turned sour.

"Positive interdependence" is perhaps just an ideal — its obverse may be the rule. Its exceptional nature could motivate the teachers involved to pursue elevated goals. Positive interdependence could in fact function as an analyzer: It would enable one to face intolerable classroom situations by thinking "Gosh, yes, the kids are pretty active, and things are happening — so much that it must be positive, even though what they do is rarely on task." Positive interdependence would then become a veil thrown over the shocking realities of the classroom. Indeed, even researchers who work on social skilling through cooperative learning come to acknowledge disruptive group behaviors, those behaviors inappropriate to the setting or situation in which they occur (Charles, 1992). Such is the case of Jordan & Le Métais (1997), who note numerous cases of class disruption in relation with what I would call the negative interdependence of the classroom leaders: "The more dominant members of the group were consistently getting their own way. This not only inhibited the timid students from becoming more assertive, but allowed for the development of classroom factions



between groups The students resented teacher-selected groups as a strategy to separate them from their friends; there were often arguments within such groups, arising from the work content and from personality clashes" (p. 8). Let me add that, in studies on cooperative-learning implementation at an advanced stage, anxieties appear among the beginning users as well as the experienced teachers about the level of resistance to cooperative implementation (Anderson, Rolheiser & Bennett, 1995); and of course resistance means a (positive?) student coalition to dictate the course of events. After all, they had been told they were in control.

In summary, this article explores the thesis that active peer learning in part eludes planning and is constructed through interactions that often take a form that is unpredictable; for instance the form of borrowing. If one views this phenomenon positively, it is borrowing that distinguishes learning in company. From the point of view of social interactionism, solitary learning is rare. Even physical experience is interpreted in terms provided by social consensus. Thus learning, polyphonic by nature, rests on networks of exchange owing to one's integration of the meaning conferred on an activity by others.

METHOD

This article works with the following heuristic hypothesis:

Learning is by nature polyphonic. It is probable that the integration of suggestions emerging
from the social context has a determining role in creative processes of learning. Links made
using suggestions present in the social context would then constitute one of the modes of
learning used.

As regards method, polyphonic exploration is uncommon because it rests on intertextuality; it brings together textual genres that are usually kept apart. It innovates in linking arguments and argumentative methods hitherto kept separate, usually on account of doctrinal quarrels. The polyphonic approach requires mastery of the conceptual universes engaged with, and sufficient



freedom of thought to free oneself up from the doctrines of the two universes in the effort to subsume them under one method and one encompassing ethic. That is what the present article attempts. Methods that are hardly ever encountered together have been brought into a dialogue whose goal is to elicit practical reflection. This is an article for open-minded readers who can broaden their paradigm in order to envisage how it may complement another paradigm to which one assumed it was opposed. These are the terms in which I have cast the heteroglossic thesis of double conceptual universes and their threshold phenomena.

The polyphonic undertaking leads to self-liberation from entrenched language, to transcending the bounds of one's prejudices in order to better grasp their controlling fixity. This method likely has its seasons, sometimes "in," sometimes "out." In an era of qualitative research when interpretative narrativity prevails, what could be more jubilatory than to press into service the ideology of mathematics — with a sideways glance — to show that it too is capable of being effective in the conception of change. Later, I will appropriate the universe of statistical signs to conduct a paradoxical verification of the thesis of *polyphonic learning*. Statistics, currently considered to be an embarrassment in the field of education (Cizek, 1995), would seem to be permitted anything during this thaw, whereas qualitative methods are experiencing their turn at fixity. Thus the reader is invited to take part in a polyphonic and jubilatory methodology that is in tune with the thesis of the article.

Task description

The learning situation I investigated is one of group learning of oral language arts. Different groups were observed during a process of communicative learning that consisted of coming to an agreement to jointly plan and produce a telephone answering machine message. The assessment criterion for the task was based on the quality of every pupil's contribution. Everybody had to say one bit of the message. One pupil had the job of showing how the telephone answering machine worked. After that, they divided up the planning and execution of the message. The aim was to jointly create an outgoing message in the vein of: "Hello, you have reached ... please leave" A child (the peer), a student teacher in practicum (the novice) and a qualified classroom teacher (the expert), having first



learned together how to use a telephone answering machine, were then responsible for regulating one learning group each. The fourth-grade class was divided into three groups.

On the pedagogical level, the experience organized in class with the answering machines met different goals. It had to sustain:

- 1) group collaborative and creative thinking, in the planning of the outgoing message;
- 2) positive interdependence, in the sharing of the roles associated with the production of the message;
- 3) active and responsible learning, for which the regulator (peer, student-teacher, or teacher) would be a coach or a facilitator;
- 4) in-group democratic decision-making in open learning, in the activation of complex problemsolving strategies;
- 5) critical reflection, in the assessment of the most successful verbal productions.

Participants

The study took place in the Eastern Townships of Quebec (the administrative region called Estrie). The level of schooling was elementary, and the children were nine years old. It involved 459 pupils, distributed in 63 experimental learning groups in 21 classes. Group composition was arrived at through systematic random choice. One child's name was first chosen randomly on the class list. Beginning at this name, we worked through the alphabetic list, assigning the randomly chosen first name to Group 1, the next to Group 2, the next to Group 3, and then going back to Group 1 again; and so on until the list was exhausted. In each class, Group 1 was given to a peer regulator, Group 2 to the student teacher, and Group 3 to the experienced classroom teacher. Peer regulators were chosen by classroom teachers as being positive leaders in the class and capable of regulating a learning group. The student teachers were in third year in a faculty of education (the third year is the last before the diploma is conferred). Classroom teachers were qualified "associate teachers," that is, seasoned teachers chosen by the faculty of education, having shown very good ability to supervise practicums over the years and taken relevant training. Moreover, three researchers played the role of moderate participant observers (Spradley, 1980). They observed each group and intervened as moderators in postactive conversations with the teachers and student teachers.



Research methods

In order to examine the role of social context as the semiotic foundation for constructive learning, I worked on the basis of observation data about the activity from which a log had been written up. Personal interviews with the pupils, the student teacher, and the classroom teacher were set up both before and after the task. The verbalizations were recorded and then transcribed verbatim. Ethnographic notes were taken of the interaction and it was also assigned a temporal codification linked to learning strategies. The strategies inventoried were based on Schoenfeld (1985) and were adjusted to the context of using of a telephone answering machine for an oral task: reading instructions, exploring, reflecting, planning, applying, verifying. The reliability of strategy coding was verified (average rough agreement: 0.86). Probabilistic non-occurrence agreement was higher (0.77) than occurrence agreement levels (0.61); average kappa was 0.56. In doubtful cases, coding was peer-validated during observations; taking into account this co-observation safeguard, in-experiment reliability was considered satisfactory. Declarative and procedural knowledge, as well as prior knowledge (first implicit, then explicit when the pupil is capable of explaining the knowledge orally) were assessed by means of Likert-type criterion-based evaluation scales which had been tested and validated during a pre-investigative stage (Tochon, 1997). Evaluation scales were revised and improved, and observers were educated up to a level where full reliability of assessments was achieved (kappa = 1.0); nevertheless coding was peer-validated among observers during the experiment.

Analysis

It is important to mention that the initial objective of this research project was not to study borrowing, but rather communication within learning groups, and this was done with the cooperation of student and classroom teachers. It was empirical observation of borrowing in the classes that prompted the coming to awareness that led to the analyses presented herein. This article relates to a dimension of constructive learning that is linked to experience of a social context. This dimension is linked as well to other results obtained within the same research program, which we cannot present here for lack of space. A polyphony of components have contributed to the analysis. The program includes ethnographic and quasi-experimental elements. The article takes account of observations



made in class of pupils' strategies and their interactions with each other, as well as of unrestricted conversations with pupils, student teachers, and classroom teachers. These conversations included interviews with the classroom teachers, which were transcribed verbatim. Thus, observational elements could be confronted with the results of the pre-tests and the procedural and declarative post-tests and pupils' strategies, as well as with the quality of their oral work as assessed by a panel. This work, then, is situated at the intersection of varying epistemological streams. An effort to validate a Bakhtinian semiotics with statistical methods suggests positively provocative and fascinating "postmethodology." Bakhtin is, after all, the bard of interlanguage and paradoxical confluences.

As regards qualitative methods, this article rests on thematic exploration and analysis of recurring content through the method of constant comparison. The quantitative methods used consist of discriminant analysis and principal-component analysis, as well as data analysis methods consisting of hierarchical analysis, and implication analysis. In statistics, data analysis represents a new set of methods for processing data that has broken away from classical, descriptive, inferential statistics on the epistemological model. Statistical implication is a very recent non-symmetrical method of data analysis based on post-correlative treatment. Hierarchical analysis is an extension of implication analysis that produces quasi-implications about binary classes of variables in order to build a tree of oriented classes. It is based upon conditional probability. Many methods build data organization on a criterion of similarity measured by symmetrical indices, though real-life situations display sets of variable classes that are inclusive and implicative in "if a then b" terms. This non-symmetrical approach, inspired by Lerman (1981) and perfected and developed by Gras (1996), provides oriented classifications of the variables represented on graphs. The significant nodes of the hierarchical graph are then examined in terms of the contribution of each participant, group, or object. The use of these data-analysis techniques proves particularly relevant when it comes to questioning quantified pedagogical observations and formulating hypotheses (Gras, 1992).



EXPERIENCE OF THE SOCIAL CONTEXT DURING LEARNING: QUALITATIVE INDICES

The technical term for the conceptual link made between kinds of knowledge is *indexation*. The entry words in the index of a book, for example, point to passages that are linked. We can conceive of borrowing as an indexation of knowledge to the social context. It is in this sense that borrowing may be called one of the methods of constructive group learning. Before modeling the events that influenced pupils' knowledge in their task accomplishment, I would like to recount some of the cases met with in the course of our classroom experiences.

Groups influenced each other as regards several aspects of learning: the way of proceeding, tone, rhythm, the nature of the message and its recipient, concepts conveyed in the message, and how to get it across. Imagine a class in which pupils have been assigned to three groups. Each group has been given the task of designing an original, creative message for a telephone answering machine. These pupils will inevitably listen to what the other groups are doing. Some groups, in fact, regularly send out spies to monitor the progress of other groups and steal their ideas. In post-active interviewing, many teachers reflected on this. The results of the study were discussed with the teachers, whose comments brought new light to the semiotics of group learning. Though the borrowing of ideas appeared inevitable in learning, and could be seen as constructive when reinvested in a new, creative way, honesty in acknowledging the sources of new information appeared to be an important complementary goal for teachers who build creative situations. For instance, group-to-group influence was particularly striking in groups 1 to 7.

CLASS 1

AN OBSERVER: "When the group regulated by the student teacher began with a song, a pupil from the group regulated by a peer came over and said 'Oh no! Not a song! That's ours!"

THE CLASSROOM TEACHER: "Yes, and that was frustrating for them. And it kept on happening. When the kids were getting dressed at their lockers a little while ago, one of them came over almost in tears and said 'They're accusing us of ... ' And that's a problem I'm going to have to solve in days to come [the teacher intends to go into this relational matter



more deeply in a future class]. That's why we asked them if they had suggestions to make to the people who came for that purpose [the researcher and the observers]. If we could have different rooms — if that were feasible — it would really be an asset for the children."

THE STUDENT TEACHER: "I heard an accusation about the word 'punk,' for instance: 'We had that word, we started off with *punk*,' ... and just because that word was in our message, we were being accused of plagiarism."

CLASS 7

STUDENT TEACHER: "The children were pretty disappointed, you know. They were saying 'Oh, that team next to us, they copied us."

THE CLASSROOM TEACHER: "Those are things that often happen in class. They hear something that's being done by another team, and they change their approach, or else it gives them an idea and they use it. Young people don't yet have a sense of uniqueness, of being set apart. They would like that, but the idea of copying is very much there."

Spying strategies were developed systematically by many pupils, as they tried by any means available to them to steal the ideas of others in order to construct better learning situations. What is acknowledged in neither the more widely disseminated research on these subjects nor the doctrine of cooperative learning, is that there can be a *negative interdependence* among pupils. The observations made in the classes above show that certain pupils — and I'm using euphemisms here — come together to manage the class their way, and their lobbying has an impact on the work of their classmates and the classroom atmosphere. In this connection, even if to a large degree a certain derailment in educational system can be explained administratively, the teacher cannot simply abandon her or his educational role, which bears on the body as well as the mind (cf. Devine, 1996). In this perspective, one may wonder whether plagiarism within and between learning groups is a marker of negative interdependence. To show this, it would be necessary to study its incidence in relation to other learning variables.

In class, information circulates and is jointly constructed. Mutual influence determines learning. In order to test the impact and effect of inter-group influence on learning, I inventoried cases of borrowing for all the learning groups regulated by a peer, a student teacher, or an experienced



teacher.² Table 1 presents the main observation data; time of occurrence is indicated in minutes.

Table 1
Passages from observation notes relating to borrowing

Class	Group	Time	Observation data	Borrowing
1	Peer Group	29	Hear Group S: "Singing, that's us!"	-
	Student-teacher Group	14	Listen to Group P singing and then imitate them. Send a pupil to spy on Group P.	+
	Classroom-teacher Group	37	-	
2	Peer Group	36	Ask for help from a pupil in another group.	+
	Student-teacher Group Classroom-teacher Group	29	Listen to Group P and make a note of their message.	+
3	Peer Group		-	-
	Student-teacher Group Classroom-teacher Group	43	Pupil from Group P comes to offer an idea.	+
4	Peer Group		The leader goes to listen to other groups; repeats the message sung by Group C.	+
	Student-teacher Group		Listen to Group P and get an inspiration from it.	+
	Classroom-teacher Group	14		-
5	Peer Group	33	Decide to shout like Group S.	+
	Student-teacher Group	40	Send a scout to see what Group P is doing and put it into their message. Listen to Group P	+
	Classroom-teacher Group	16 24	again. Listen to Group P. Listen to Group S and get an inspiration from it.	+
6	Peer Group	21	Sing like Group S.	+
	Student-teacher Group	35	Want to imitate the others but the student teacher forbids it.	•
	Classroom-teacher Group	7	Sing like Group S.	+
7	Peer Group	25	Decide to imitate Group S (noises).	+
_	Student-teacher Group Classroom-teacher Group		· -	- -
9	Peer Group		-	-
	Student-teacher Group Classroom-teacher Group	5 19	- Pick up and copy Group S's idea. Listen to Group P.	+

²Table 1 offers a condensed version of several dozen pages of experience narratives that I cannot present here in full for lack of space.



Class	Group	Time	Observation data	Borrowing
10	Peer Group Student-teacher Group	18 2 6 12	Copy Group S (noises). Listen to Group C. Listen to Group P. Listen to Group C, but no borrowing.	+ -
	Classroom-teacher Group	12		
11	Peer Group	10	Laugh when they hear Group S: "They have good ideas." Copy them.	+
		40	Imitate Group S's song.	
	Church and to solve Crouse	42	Copy Group C.	
	Student-teacher Group Classroom-teacher Group		Copy Group C.	+
15	Peer Group		Copy Group S's idea (song + message).	+
	Student-teacher Group Classroom-teacher Group		:	
16	Peer Group	34	Borrow the other groups' procedure.	+
	Student-teacher Group Classroom-teacher Group		• •	•
18	Peer Group	17	A pupil suggests copying Group S.	+
	Student-teacher Group	47	They decide to copy Groups P and C (singing).	+
	Classroom-teacher Group	11	The pupils want to copy Group S, Classroom teacher refuses. They continue to listen to Group S but draw a blank on ideas.	-
19	Peer Group		•	-
	Student-teacher Group Classroom-teacher Group		Copy Group P's list of given names and strategy. Copy the principle of alternation and pick up	+
			Group P's idea.	+
22	Peer Group	27	Listen to Group S: "They copied!"	-
	Student-teacher Group	23	Listen closely to Group P and then Group C; imitate them.	+
	Classroom-teacher Group	26	Reconsider their message while listening to Group P.	+
23	Peer Group		-	-
	Student-teacher Group Classroom-teacher Group	41	Pick up Group C's idea.	+

Table 1 shows that 25 learning groups, in 16 of 33 classes, overtly borrowed ideas from other groups as they carried out their task. Groups that didn't borrow ideas from others were usually checked in their efforts to borrow by the classroom teacher or the student teacher. In every group, the borrowing of ideas took place between pupils or between pupils and the classroom teacher or the student teacher, to the point where at the end it was hard to say who had had an idea to start with.

Nevertheless, pupils displayed an acute sense of ownership of their ideas, above all by reason of their



membership in their group. Their reaction to borrowing when it took place at their group's expense, and their jubilation when borrowing was to their advantage, showed that morally speaking, pupils do not consider borrowing neutral. Was this a matter of negative interdependence? The acquisition or loss of original information was associated with strong affective responses. The integration of another group's ideas could lead to the complete disruption of plans and, at the end of the line, translate as a different evaluation by the panel that assessed the quality of oral work based on cassettes recorded by the groups. Here is an example from class 22, drawn from my own log.

CLASS 22 — NARRATIVE OF EXPERIENCE

The group regulated by a peer decides at minute 15 to produce a message for a baseball team. Discussion about possible background noises: They'd need a reader, a sound person ... one girl has an idea but she doesn't dare say what it is. Everybody encourages her; they pick up her half-spoken meaning: what they need is cheerleaders. It's the boys who ask the questions. The leader regulates the discussion but doesn't monopolize. The leader handles the equipment but allows each of the others to play back in turn. The cheerleaders start singing, then they record their song several times. Meantime, the student teacher's group has listened closely to the group regulated by a peer; at minutes 22 and 23, it has heard the experienced teacher's group snapping their fingers. Their idea about the road-runner "beep beep" has been transformed into a message for the number "888-8RAP." Being listened to at minute 26 by the peer-regulated group has led the experienced teacher's group to reconsider its message and pupils are examining other ideas. The student teacher's group has done next to nothing so far and has no ideas; it's a bit apathetic, warms up a little bit, and finally decides to record a song because what the peer-regulated group is doing pleases it. Minute 37: the peerregulated group of pupils shout out "They copied!" and it's true. In a learning community, there are locomotives and there are rail cars, and at the end of the line, it's impossible to distinguish the results produced by the rail cars from those produced by the locomotives. When it comes to assessment by the panel, the oral work of the student teacher's group will receive an "A", and that of the peerregulated and classroom-teacher-regulated groups a "C".



A SEMIOTIC MODEL OF CONSTRUCTIVE BORROWING

In this section, I will try to transcend the concept of negative interdependence and situate it within a more broadly encompassing model. The posture I will assume is that of the postmodern idler in statistics.³ As an exploratory approach, statistics is the art of discovering emergent possibilities. It is a way of understanding by means of another language. It is the case, after all, that there are such things as mathematical aesthetics and intuition. Underlying all of this will be the image of the researcher as a cultivated being who masters a polyphony of semiotic instruments in order to illuminate understanding and guide action in a symphonic and jubilatory direction.

In short, what I am exploring here is a factor that seems to differentiate the learning of different groups. The previous section of this article supplied numerous astonishing instances of how the kinds of knowledge necessary for a task were not linked to each other but were borrowed from a partner or from a partner group. In a Bakhtinian sense, personal knowledge is built on the knowledge of others (Bakhtin, 1981). To date, this phenomenon has hardly been studied at all in education (except in critical literature on intertextuality and metatexts, currently very fashionable--Messaoud, 1998). Borrowing seems to be revealing of an aspect of group learning that has an important impact on social life and the lives of individuals. The cases of inter-group borrowing of ideas allow us to sketch out a semiotic model of constructive learning. A direct count of borrowings was conducted for each peer-regulated group, student-teacher-regulated group, and classroom-teacher-regulated group. It became apparent that certain groups carried out one or more borrowings and others didn't. Ten peer groups, eight student-teacher groups, and seven classroom-teacher groups borrowed. If this is seen as a symptom of negative interdependence, it must give us pause. But perhaps certain indices will allow us to broaden our understanding of this phenomenon.

To elucidate it, I sought first to examine the relationships between borrowing and other variables. The only significant simple regression I found on an exploratory basis is a negative linear regression

³Nowadays, in order for statistics to be taken seriously in the field of pedagogy, it must assume the appearance of uselessness.



with the procedural post-tests. Borrowing is not an aid to action. I then tried several discriminant analyses, still on an exploratory basis. The dependent variable was the borrowing, and I sought potential independent variables. In this manner, I discovered that explicit prior knowledge of the context for use of an answering machine was significantly linked to borrowing (variance in discriminant function: 0.39; df: 1.67; F: 6.01; p=0.02). This predictive relation has theoretical implications. Pupils who can make their prior theoretical knowledge of the task explicit show creative ideational behavior and are the same pupils who borrow the most information and ideas from other groups. Their learning proves to be polyphonic.

In order to see which group the borrowing emerged from and what kind of group benefits from it, I proceeded to conduct a hierarchical data analysis (Gras, 1996; Bodin, Gras & Lagrange, 1997). Figure 2 shows the direction in which borrowing flowed: at a significant level (99% probability) it benefits peer-regulated groups at the expense of groups regulated by a classroom teacher. Pupils borrow less information from other groups when they work with an experienced teacher. In these cases, however, one often notices systematic borrowing of the teacher's ideas, with the teacher

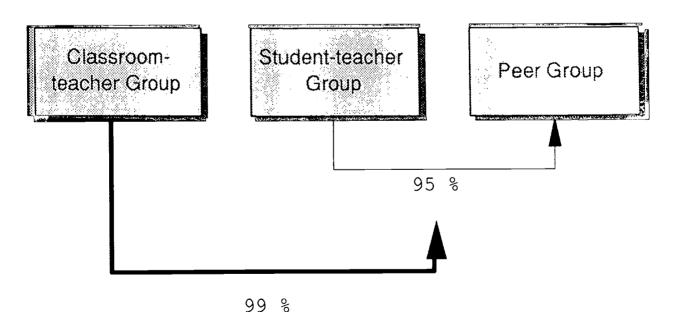


Figure 2
Hierarchical tree showing the direction of inter-group borrowing



behaving as though she or he did not notice these borrowings.

In the analysis presented in Figure 3, there is a clear probability that borrowing is linked to prior knowledge (90%) and the ability to explain it (85%). This means that if there is borrowing, one can be almost certain to find a high capacity for explicitation; and if so, there is also strong conditional probability it is rooted in a high level of prior knowledge of the domain in which borrowing is

performed and actualized.

I wished to pursue this matter further, so I proceeded to conduct a factor analysis by principal components. For this purpose, I chose the following variables: borrowing, implicit and explicit prior knowledge, results in declarative and procedural post-tests, oral work (panel's notes), learning achieved (pre-test results deducted from post-test results); and I referred to other data obtained within the research program. The main objective of the analysis was to specify relations among these variables and the role of borrowing in relation to the major achievement variables in the corpus. It was my view that any significant tendency in this direction could supply the foundation for subsequent theorizing. This analysis allowed for the specification of two factors, the third factor being divergent.

Figure 4 presents the graph on which I based my analysis. In this graph, the two factors are represented by axes 1 and 2. These two axes explain 65.48% of the total inertia. The quality of the representation of

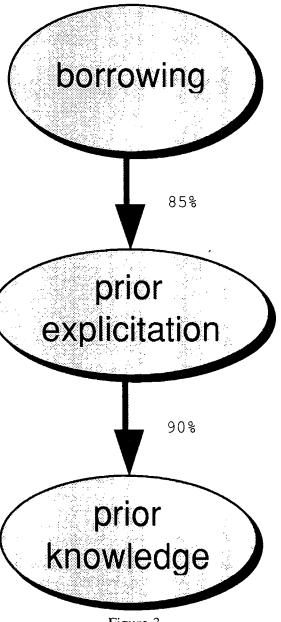


Figure 3
Implicative analysis of the variables related to borrowing



variables achieved in this two-dimensional space shows good fit. Variables, factor loadings, amounts of variance accounted for by each factor, and eigen values are shown in Table 2.

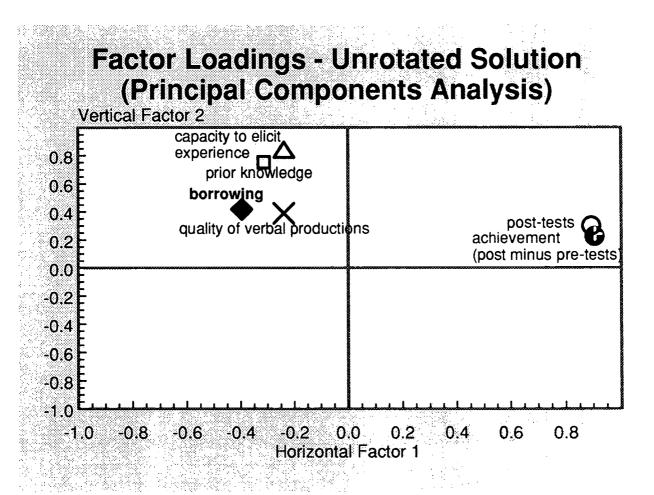


Figure 4
The role of borrowing in learning: An exploratory factor analysis



Table 2. Items and factor loading for achievement variables

Variables	Factor 1	Factor 2	
Prior knowledge	-0.31	0.75	
Capacity to elicit experience	-0.24	0.83	
Declarative post-test	0.89	0.30	
Procedural post-test	0.90	0.24	
Quality of verbal productions	-0.24	0.39	
Achievement (post minus pretests)	0.91	0.22	
Borrowing	-0.40	0.42	
Eigen values	2.81	1.78	
Percentage variance accounted for	40.12 %	25.36 %	

AXIS 1 - horizontal (Figure 4) — Axis 1 explains 40.12% of the total inertia. It is determined by the opposition of two groups of data. At the left, borrowings and the quality of the oral work are grouped with prior knowledge, both implicit and explicit, at a lesser distance. This first grouping along the horizontal axis signifies that the borrowings are linked to the quality of oral work, and that pupils who already had experience with an answering machine showed a tendency to borrow ideas and apply them. Given that the ability to explain contextual knowledge is linked to the creativity and originality that served as criteria for the oral work, we can infer that this grouping constitutes a "creativity" pole, as opposed to the grouping found at the right of the graph, which constitutes a "technical" learning pole on the "technical-creativity axis." This axial opposition of creative and technical learning shows the role played by borrowing in group learning. Borrowing is linked to creativity.

AXIS 2 - vertical (Figure 4) — Axis 2 explains 25.36% of the total inertia; it is not determined by specific variables. On this second axis, borrowings and the quality of oral work are at the same level as results and progress in declarative and procedural learning. This means that for certain groups, borrowings and the quality of oral work were linked to the level of success and progress in learning. This strong relationship between prior experiences and the quality of oral work is corroborated by other analyses from the same corpus, but Figure 3 also provides important supplementary information relative to the role of borrowing in this process.



I conducted a second factor analysis whose objective was to verify the relation between borrowing and learning strategies, namely reading or listening to instructions, reflection, planning, exploration, application, and verification. The results of this analysis are presented in Figure 5. The analysis was conducted on the basis of the totals from observations for each category observed. It is possible to explore their mutual relationship using a factor analysis whose goal is to support an intuitive conclusion regarding the role of borrowing in learning. Factorization yields three factors. I will only analyze the first two; they account for 54.56% of the total inertia and the quality of representation of the variables in this two-dimensional space shows good fit. Variables, factor loadings, amounts of variance accounted for by each factor, and eigen values are shown in Table 3.

Table 3. Items and factor loading for strategic variables

Variables	Factor 1	Factor 2	Factor 3
Borrowing	0.19	0.44	-0.75
Reading or listening to instructions	-0.57	0.10	0.41
Reflection	0.21	0.64	0.47
Exploration	0.10	0.70	-0.06
Planning	-0.86	-0.21	-0.19
Application	0.81	-0.36	-0.06
Verification	0.84	-0.14	0.20
Eigen values	2.51	1.31	1.05
Percentage variance accounted for	35.88 %	18.68 %	14.95 %



Factor Loadings - Unrotated Solution (Principal Components Analysis)

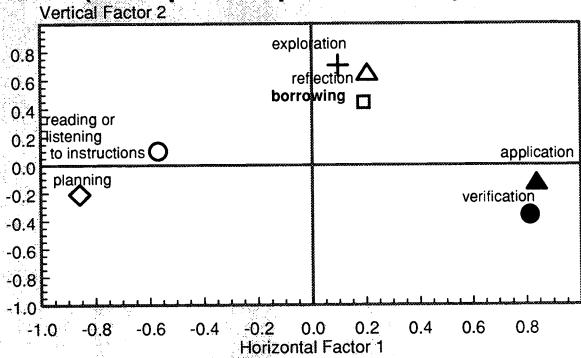


Figure 5
The strategic role of borrowing:
An exploratory factor analysis

AXIS 1 - horizontal (Figure 5) — Axis 1 explains 35.88% of the total inertia. The methods that are well represented on this axis are the opposed groupings "instructions/planning" and "application/testing." From these groupings we can conclude that planning is proportional to instructions and that verification is proportional to application, which confirms results achieved in earlier work (Tochon, 1997). I will call this axis the axis of convergence with the task, because the four variables that represent it are proactively centered on achievement of the goal of the activity. These two groupings of variables characterize two opposed kinds of learning groups: one is oriented towards a declarative method of problem-solving (repeated instructions, intensive planning); the other is focused on the procedural achievement of the task (numerous applications and verifications). Since borrowings are not located in either of the two groups, we can conclude that borrowing is not an



activity directly centered on declarative or procedural tasks.

AXIS 2 - vertical (Figure 5) — Axis 2 explains 18.68% of the total inertia. Three grouped variables are well represented on this axis: borrowing, reflection, and exploration. I call it the axis of divergence from the task because these activities are productive of knowledge that has no direct nor obligatory link with task achievement. They are not integrated into the instructions, they are not planned, and they have no direct relationship with application and verification of the message on the answering machine. The grouping together of these three variables signifies that borrowing is a divergent activity that satisfies other goals than those of the declarative and procedural task.

In summary, the data analyzed allow for the establishment of a semiotic model that explains borrowing and defines its role in constructive learning (Figure 6). Borrowing is linked to experiential richness and to the ability to make one's experience explicit. To this rich substratum that appears to have a discriminant function, is added a strict relationship between borrowing and creativity, to the extent that (1) borrowing corresponds to high quality in creative production; and (2) borrowing is associated with reflection and exploration, and constitutes a divergent axis in task accomplishment. Groups that are creative in problem-solving are less focussed on the task and more focused on creation through experience. Thus, in learning, borrowing includes a degree of uncertainty: it is not always linked to success and progress in declarative and procedural learning. It rests on goals that transcend the declarative and procedural task: for instance, social goals like that of winning a competition.



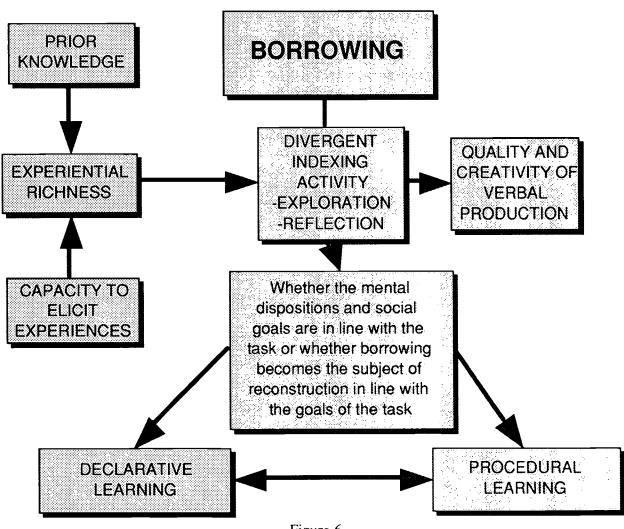


Figure 6 A semiotic model of constructive borrowing



CONCLUSION

In this article I have tried to explore phenomena that are evanescent and hard to grasp. The goal was to explain group learning, using information that emerged from the social context of the task. A troubling phenomenon became apparent during observation of 33 elementary classes working cooperatively: pupils were plagiarizing each other. In the fields of teaching and learning, plagiarism was a phenomenon that had been studied only in the area of higher education (Ashworth, Bannister & Thorne, 1997; Wilhoit, 1994). This seemingly negative interdependence merited reframing within a more broadly encompassing interpretive model that addressed the polyphonic nature of learning. I managed this by revealing several factors that, when linked together, provide quite convincing indices of a semiotic model of constructive learning. Within this model, borrowing is clearly situated; it is linked to creativity through indexation; and it only has an impact on success if pupils adopt academic goals and reconstruct the data borrowed in light of their prior knowledge and plans. There is already research evidence showing that inadvertant plagiarism (cryptomnesia) occurs more often when participants are engaged in a creative idea-generation task than when tasks are based on memory (Marsh, Landau & Hicks, 1997). However the present experimental data are the first ones on plagiarism occurring in group learning and in elementary classroom settings. It sheds new light on unexplored aspects of peer learning.

The data analyzed allowed for a recognition that borrowing carried out with information from the social context constitutes one method of group learning. The details of certain events that had been reported on qualitatively made it possible to grasp certain important implications of the way certain groups operated. Learning establishes links with relevant indices belonging to the social context of the task. This operation through borrowing gives learning a polyphonic dimension. The inventory of borrowings between groups made it possible to model the role of borrowing. The semiotic model of constructive learning that flowed from this defines a Bakhtinian approach to learning. It shows the role assumed by attentiveness to voices in conflict, even as, within the group, a guide shows the path to be taken. In the course of this experiment the best ideas seemed to emerge, not from compliance with the set rules of operation, but from the untamed borrowing of ideas from other



groups and their remodeling in an innovative and original manner.

In short, the borrowings do not seem to correspond to a principle of sociability or mimicry, but rather to the selection of the most original useful information, and its reconstruction within previously arranged models for action. One can find thinkers who have anticipated this model and analyzed the links between plagiarism and creativity (Faber, 1997; Guy, 1998). In this perspective, it is only when borrowings performed in plural ways expressed by multiple voices are rearticluated in order to produce a new "other-authentic-thing" that we may speak of constructive learning. The data analyzed in this article show that:

- More than one-third (25) of the groups observed borrowed ideas from other groups for their oral work; moreover, in every group, borrowing took place between pupils to the point where at the end of the activity, the source of a given idea could no longer be traced.
- Group constructive learning is polyphonic and partly based on knowledge present within the
 social surroundings in which the task is conducted. The phenomena of interdependence
 related to borrowing must be interpreted in this light. The creation of links between the task
 and experience in context constitutes one method of learning.
- Borrowings are associated with the quality of oral work and a high level of prior experience. They testify to creativity, although this creativity is not necessarily associated with the goals of the task or with a higher level of success. Borrowing seems to influence the quality of oral work and creativity in the task, but it has no direct influence on success and progress in learning. Explicit prior experience seems to have a discriminant function in borrowing. The activity of borrowing is divergent in relation to a task that relies on strategies of reflection and exploration: it is not planned and rarely corresponds to instructions.

Borrowing thus constitutes a new and seductive area of research, as regards both methods of group learning and the ethics of behavior vis-à-vis new information. In conclusion, this article takes a



neo-humanist perspective on borrowing (Bowers, 1994). The data analyzed show the ethical limits of the co-construction of knowledge. If spontaneous borrowing is a part of learning, the acknowledgment of sources is nevertheless a part of a culture of honest exchange, which allows for a dialogue that respects distinct positions and ideas and facilitates the growth of knowledge. Hence all the works of Bakhtin are now published under his name.

Given its generative and creative nature, it is most likely that this new conceptualization will instigate cryptomnesia, and thoughtful readers will received thanks for thinking about—and referring to—this first source while bringing it to bear in further studies.

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