



THE QUARTERLY NEWSLETTER OF THE
LABORATORY
OF
COMPARATIVE
HUMAN COGNITION

Center for Human Information Processing
University of California, San Diego

Volume 8, Number 1

January 1986

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Introduction from the Editorial Group

In this issue of the Newsletter we continue our effort to broaden our horizons to include significant scholarship from varied national traditions that contribute to our understanding of the cultural, social, and historical bases of human cognition.

The first three articles have been contributed by colleagues from the Center for Comparative Cultural Studies at the University of Copenhagen. We first became acquainted with the work of the Center in 1984 when one of us participated in a conference on literacy at the Center. That conference was an especially exciting experience because of the great depth of historical knowledge and breadth of cultural knowledge that its participants brought together. Relative to our American colleagues, the work of associates of LCHC is often considered socio-cultural and historical in its orientation, but in the setting created by Mogens Larsen and his colleagues in Copenhagen, it was clear that we were no more than amateurs in the study of phenomena of great interest to us.

In order to better educate ourselves and to bring the Center's voice into the discourse represented in this Newsletter, we asked Mogens Larsen to organize a set of contributions, which he did. When the articles arrived and we distributed them to be read by colleagues here in the USA who had participated in previous Newsletters, we found that in many cases they felt they lacked the appropriate background to comment on the articles and were concerned that other readers might also lack such background. At the same time, they were intrigued by what they read.

After consulting with our Danish colleagues, we decided that we would select three articles which members of our editorial group felt they could comment on sensibly, and make this issue a kind of dialogue on their work. Hence, at the end of each of the articles from the Center you will find a commentary that identifies the kind of discussion the article set off among us. These commentaries are intended only as starting points to provoke further thought. We had hoped to include responses by all of the authors, but for reasons beyond everyone's control, only two such responses could be obtained before it was neces-

sary to go to press. We invite readers' comments both on specific articles and on the dialogic process we are experimenting with.

Several themes common to the first three articles resonate strongly with the themes of this Newsletter. First and foremost is the idea of culture as an historical phenomenon that must be understood dynamically as a process of change. The historical depth is immediately signalled by Mogens Larsen's description of the evolution of cuneiform writing, and continued in the articles by Karen Schousboe on the development of concepts involved in the extraction of rent and by Minna Skafte Jensen on the ballad tradition. A second important theme is the interdependence of the media of communication on the communicative purposes, conditioned by economic and political conditions. Third is the special properties of different media for constructing meaning in particular socio-historical circumstances.

The fourth article comes from the far northeast part of Scandinavia and it too, introduces readers to a breadth of ideas that have rarely been equalled in this Newsletter, although it is focussed on a concept, the zone of proximal development, which is often discussed in these pages. Yrjö Engeström, like the other contributors, takes a historical-developmental approach to understanding the human mind, bringing ideas from several national traditions to bear on the problem of the relation between learning and development. Most striking to us in Engeström's work is the way that he brings together ideas from the Soviet socio-cultural school, especially the ideas of Leont'ev about activity and development, with the ideas of Gregory Bateson, as a way of overcoming the weaknesses in current formulations of the relationship between social and individual development. That he locates his argument within more familiar American and European approaches associated with cognitive psychology provides an invaluable set of pointers to help readers work through the broad implications of his argument. That he also allows us to re-admire the genius of Mark Twain emphasizes a lesson carried by all of the contributions printed here: the deep unity of human nature across great spans of historical time and cultural distance. He also gives us hope that in coming to appreciate the diversity with which that nature expresses itself, we can come better to understand ourselves and control our fates.

Writing on Clay: From Pictograph to Alphabet

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Writing about writing is a hazardous undertaking, especially if one forgets the simple fact that one's own writing system is just a single example of a general phenomenon. The Western European alphabetic system functions in a special way and is based on a series of principles which are to some extent specific to it and therefore only partly shared by other systems. This is the cause of much confusion and points to a real need for studies of a comparative nature based on a competence in different systems. It is my hope that this very basic presentation of some of the features of the cuneiform writing system, which flourished in the Ancient Near East between -3000 and 0, will challenge some of these ethnocentric conceptions of writing and interest scholars who work or function within non-Western literate traditions.

I shall attempt to keep this account non-technical. The cuneiform system was in use over a very long span of time and went through several phases of development and change, and the scholarly competence in the whole of this long tradition must necessarily be restricted to a few dedicated experts.

The complexities are partly a function of the structure of the writing system as such, partly due to accumulations of meaning and values over the vast span of time during which the system was in use. The end result as presented (e.g., by a modern sign-list) is quite bewildering and confusing, and it is not at all surprising that there was some skepticism towards the first Assyriologists in the 19th century when they began to present the principles of this reconstructed system of writing. It included a mixture of logographic and phonetic/syllabic principles first of all, so that one sign could be used as a logogram, representing a complete word, in one context, and stand for a syllable, spelling part of a word, in another. The sign known as DU, originally the drawing of a human foot, could function as a logogram with the meaning "walk," or it could represent the syllable

-du-. Secondly, this same sign could appear as more than one logogram, since the script had a high degree of sign-polyvalence built into it. The drawing of a foot could also represent the word "stand" and the word "bring." Context would often be the sole criterion on which to choose one meaning over another. With the meaning "go" or "walk" it would have the readings DU or GIN in the Sumerian language for which the system was invented; the Sumerian word for "stand," on the other hand, was GUB, and "bring" was TUM.

One single sign like FOOT could in other words represent or stand for several logograms and have several (corresponding) syllabic values. Some signs were only used logographically and a few had only syllabic functions as far as we know, and the system as a whole is still riddled with obscurities concerning the origin of values and meanings.

The prehistory of this system provides a little insight into the conceptual background. Centuries before the first real writing appears we find a widespread use of small clay objects which have distinctive shapes such as cones, discs, etc., the so-called "tokens." It has recently been suggested that they did in fact serve as counters for specific purposes, having some kind of metrological significance (cf. Schmandt-Besserat, 1981, and Le Brun & Vallat, 1978). The various types of tokens were used to record, or count, different objects or commodities. When these counters were placed in clay balls it became possible to transfer the information they contained through space and time in a safe way, tamper-proof. Such balls were then provided with sealings to give authorization and further information, and the next step was to impress the counters themselves in the wet clay on the surface of the ball. You would then know what the ball contained without having to open it. And, finally some genius decided that it was not really necessary to place any counters in the ball at all when imprints of the relevant counters had been placed on its surface - so we end up with the typical Mesopotamian medium of communication, the clay tablet.

These stages before writing presuppose some kind of bureaucratic system which had a need for information concerning deliveries and payments, etc. When writing did appear during the final centuries of the fourth millennium B. C. it took the form of drawings scratched into the clay and

combined with the numerical information provided by the impressed counters. The sign representing the head of an ox placed next to the marks left by five counters constituted man's first written message.

For more than half a millennium writing was not really used for any other purpose at all, but within this sphere it was developed into a very powerful tool indeed. Administrative texts and lists of signs are practically the only genres known in the corpus from Mesopotamia until around -2600, when we begin to find very brief votive inscriptions and some literary texts. So, writing was invented by bureaucrats and they held a monopoly over the use of writing for a very long time indeed. Obviously, this had a profound and lasting effect on the system itself.

As we all know, administrative documents exhibit a very special relation to spoken language, they do not reflect speech in a direct way. One does not read aloud the statistical yearbook or a tax return form. For one thing, they are mainly written logographically anyway, using Arabic and Roman numerals, and then they do not reproduce speech. "Reading" them involves the introduction of a great many words which may appear in the documents in the form of graphic indicators, lines, paper color, size and shape of the form, etc.

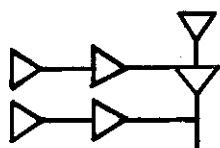
These observations are valid for the vast majority of the Sumerian texts of the entire third millennium. Writing was a basically mnemonic system and it did not aim at a complete or precise representation of the spoken Sumerian tongue. This language was polysynthetic in nature, based on monosyllabic, unchangeable roots which were modified by way of an extensive system of pre-, in- and suffixes. In writing only the most vital of these elements would be written out, by way of a syllabically used sign. Written Sumerian therefore appears as a kind of pidgin version of the language, using only the most basic and essential elements to carry meaning: "8 cow Dada bring."

Through the third millennium we certainly find a constant trend towards a more complete rendering of the Sumerian language, where more elements are written. The very earliest centuries of writing did not even present the signs in the "correct" order on each line, but around -2500 it became the norm to give the signs in a sequence which corresponded to the spoken message.

The mnemonic character of this system comes out clearly in the earliest literary texts. They stem from around -2600 and are hardly understandable to us, except in the lucky instances where we have much later renderings of the same compositions with the grammatical elements fully written out. What these early texts give us appears to be sequences of cues, presumably designed to aid a person involved in preparing for an oral performance. An isolated archaic version is accordingly only understandable to someone who is already thoroughly familiar with the full Sumerian text (cf. Civil & Biggs, 1966).

In other words, Sumerian texts were written in a system which was basically logographic in nature, making use of syllabic values to indicate the essential modification to the roots, and it could therefore function at a distance from the linguistic reality of the spoken tongue. Even though, as said, we find a steady development towards a shortening of this distance, the real break occurred when the system of writing was adopted to represent another, completely unrelated and entirely differently structured tongue, the Semitic Akkadian language.

Sumerian died out as a spoken language around -2000 and from then on most texts were written in Akkadian. This change was accompanied by a drastic modification of the way in which the script was used, and the first obvious difference was marked by a vast extension of the syllabic use of the signs. Logograms were still used in Akkadian texts to represent whole words, usually stock phrases, but most words were from now on spelled out by way of syllables. Since all these syllabic values were based on the Sumerian language it is easy to understand that the adoption of the system of writing was only one element in a very complex cultural transformation of the Sumerian heritage. The old Sumerian signlists were now provided with translations into Akkadian and with syllabically written phonetic renderings of the Sumerian words. An example of one entry from such an Akkadian list shows its nature as a kind of lexicon and dictionary:

mu-ul:  :ka-ak-ka-bu-um

The sign is originally a drawing of a star formation; its Sumerian pronunciation is given first, written syllabically, and the translation into Akkadian at the right. This shows very clearly the contrast between the Sumerian and the Akkadian use of the system.

Spelling out the individual words and reducing the use of logograms meant a drastic reduction in the number of signs necessary to write a reasonably unambiguous message. A logographic script used in a varied and elaborate literary tradition like the Chinese must have an enormous number of signs. Modern Chinese has around 50,000 I believe. Sumerian writing made use of much fewer signs; one obvious reason was the introduction of the principles of polyvalence and phonetic values, another was the very restricted range of Sumerian texts as compared with the Chinese tradition. The result was that Sumerian made use of some 1000 signs in the elaborate versions.

Akkadian texts could be written with a repertoire of some 200 signs, and in certain types such as private letters and contracts we find deliberate attempts to reduce the number further by not observing certain distinctions such as between voiced and unvoiced consonants. In such texts only very few logograms appear, but they are more common in texts which can be seen to belong to the curriculum of educated scribes: literary or scientific texts for instance. The tools available to the modern scholar who wishes to impress with his immense learning and erudition, high-powered technical jargon, a heavy use of loanwords of Latin or Greek origin, and a complex syntactic structure - such effects were available to the Mesopotamian scholar already at the level of the script. Here the basic sign of great learning was mastery of the Sumerian language and the Sumerian literary heritage, both of which were bound up in the most intimate way with the writing system itself.

Writing became a much more complex and widespread social phenomenon during the first few centuries after -2000. A rudimentary knowledge of the script was clearly held by a great many persons who would never be referred to with the old title "scribe;" this term in fact appears to have taken on the connotation "scholar," i.e., a person who was capable of making full use of the writing system on the basis of his extensive knowledge of the cultural tradition (compare the term *literatus*;

see Clanchy, 1979). During these same centuries we witness an explosion of the textual corpus with the development of entire new genres; perhaps the most significant phenomenon is the development of the written tradition in the private sector where texts of every conceivable type were composed in great numbers: contracts, letters, legal texts, testaments, adoptions, sales, rentals - anything that could be written down. Private archives are found in significant numbers from now on, and even a superficial analysis of such groups of texts (unfortunately badly neglected so far) indicates the importance of written documents as the basis for claims to property, status, etc. Centuries-old deeds were kept as proof of ownership to purchased land for instance.

At the same time schools became very important and produced written versions of the literary tradition, primarily in Sumerian. And now we find Sumerian written down in an attempt to render the spoken language in its entirety and complexity, obviously because nobody spoke it anymore outside the schools where it was a learned tongue.

These centuries down to around -1500 accordingly show a great variation in the use of the script, with heavy emphasis on a fairly simple syllabic system. After this time sources became scarcer for a while, and the system of writing appears to undergo substantial changes. The leading scholar in this field, I. J. Gelb (1963), has written about a "degeneration" in the script, away from simplification towards greater complexity. This is marked by a new emphasis on the use of logographic writings, a trend that appears to be general for all genres, but which is of course particularly evident in the learned compositions. Such texts as *omen compendia* were in the earlier phase often written with practically no use of logograms, but in the first millennium they were written in a pseudo-cryptographic script, using nearly exclusively logograms without any syllabic indicators. In fact, a number of these logograms have never appeared in any text before this time and they seem to constitute a kind of fake Sumerian invented as part of the technical jargon.

This script served to hide the contents of the texts from the uninitiated, and it is interesting to note that certain genres developed a syllabary which was used nowhere else. The purpose was also explicitly stated in many colophons to such

texts, where the reader is warned against letting anyone other than the trained experts gain access to the information contained in the document.

The private sphere certainly continued to exist, and there are still many private archives, but it seems clear that the trend was towards restricted literacy and a scribal elite. Scribes obviously functioned on many levels in the imperial structure of the first millennium, some as bureaucrats and some as scholars, but literacy appears to have become once again a part of the apparatus of the centralized power system.

Interestingly, we have a completely different writing system available at this time, the Semitic alphabet used for writing the Aramaic language. We know very little about the way in which it was used, or how many persons mastered it. Occasionally a clay tablet with a private agreement written in cuneiform will have an added note in ink using Aramaic and giving a brief resume of the contract. Reliefs from the Assyrian palaces also show scribes at work in the field during a pre-Vietnam body count (made simpler by the practice of cutting off the dead enemies' heads), one scribe writing on a clay tablet and his colleagues next to him writing on papyrus, obviously using the Aramaic alphabet.

We shall never know how widespread the Aramaic literature was, but it is possible that part of the private sphere made use of it. Cuneiform literacy had all the prestige, obviously, and access to this was severely restricted. One king, Assurbanipal, who built up the wonderful scientific library in his palace in Nineve, claims that he could read and write, even Sumerian, then not spoken for some 1300 years. We are not told if he could read Aramaic, for that was apparently nothing to boast of.

It is possible, as I hope to have demonstrated in this very brief account, to show a relationship between the development of the system of writing itself, the rate of literacy, and the basic political patterns. Writing begins as a tool of bureaucracy, it is in the hands of a group of trained specialists, and it is hardly used at all outside this sphere for several hundred years; a phase of decentralization during the first half of the second millennium marks a spread of writing into the private sphere where the script itself was simplified and where at least a group of professional

men such as travelling merchants, etc. became literate; finally, the late second and early first millennium saw a return to monolithic, centralized political structures and large empires, where writing became professionalized again and where the scholarly use of the script showed a vast increase in complexity.

These remarks only represent a tiny beginning towards an understanding of the function of literacy in the Mesopotamian world. What they point to first of all is the fact that the relationship between writing and speech was never a simple one. There is a complexly structured space in between these forms of communication, and there are enormous variations through the historical developments. It has become part of the received knowledge in literacy studies that the cuneiform system of writing was impossibly ambiguous and therefore incapable of rendering human speech. Havelock has drawn elaborate conclusions about the difference between a syllabic and an alphabetic system of writing on the basis of an analysis of a late Mesopotamian literacy text compared with Homer (1976, cf. also Cole & Griffin, 1983). Havelock implies that since this system needed experts who could retain a monopoly on the correct interpretation of the ambiguous written messages, texts "tended to codify and standardize the variety of human experience so that the reader of such scripts is more likely to recognize what the writer is talking about." The obvious contrast is of course, the alphabet, and Havelock comes close to the conclusion that the cuneiform script had so little information-carrying capacity that new, surprising or revolutionary messages simply could not be recorded in a way that would ensure understanding on the part of a potential reader. This is with some modification true of the very early Sumerian use of the script, but cannot be accepted for later phases. And the complexity of the late cuneiform literary tradition is a specific historical problem rather than a technological one. Cuneiform writing could certainly render Akkadian adequately and with very little ambiguity.

It is essential to keep in mind that the script itself carried a load of cultural significance and meaning which created a situation which is very different from the one in which a modern reader or writer is placed. The individual signs had several levels of significance, primarily because of the logographic meanings which were attached to them. For a fully literate scribe, the use of signs

in a composition would often be governed by considerations which are now impossible to recover. Certain texts give what modern scholars often regard as examples of "bad philology," where words are explained on the basis of strange and unusual logographic values of the individual signs with which they are written; whether or not the scribe was "right" in his reconstructions is of no relevance in this context, for the essential aspect is the web of meaning that could be spun on the basis of the signs as cultural constructions. It may not be entirely beside the point to mention that the chapter explaining the basic concepts in Chinese philosophy in Needham's book on Chinese scientific traditions is in fact an annotated sign-list (Needham, 1978).

This load of tradition kept the script alive and in fact was the only true meaningful medium of communication. The alphabet was there, but it was clearly inferior, having no cultural context. Why is the alphabet still being rejected by the Chinese, even though reformers have been explaining how it could transform Chinese society?

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Comments

I was really glad to read this article from Mogens Larsen because it is the first time I have had the opportunity to read about literacy in the ancient Near East written by someone who knows both the details of cuneiform writing and the debates about literacy in the modern world that some of my own work has been involved with.

Within current discussions of literacy, there has been sharp disagreement about the interaction between the technology of representation and the possible complexity of both literate practices and psychological consequences of literacy. At one pole are scholars such as classicist Eric Havelock (1976) and anthropologist Jack Goody (1977) who emphasize the restricted nature of non-alphabetic literacy. This position is stated most forcefully by Havelock. In his opinion, the system of writing used in Mesopotamia and Sumeria do not qualify as "real" literacy:

For in the beginning they were used to symbolize three different psychological operations: first, counting up and comparing quantities; second, observing physical objects as such in the external world; third, the act of naming these objects and the art of relating names and therefore objects to each other. The shapes were used to symbolize these mental acts directly... All systems which use scratching or drawing or painting to think with or feel with are irrelevant, though they have had long histories. A successful or developed writing system is one which does not think at all. It should be the purely passive instrument of the spoken word even if, to use a paradox, the word is spoken silently. (Havelock, 1976, p. 17)

Havelock goes on to argue that the alphabetic system, because it represents the sounds of language, permits the communication of a broad variety of topics, whereas logographic and syllabic systems are restricted in what they can communicate to already-familiar materials owing to ambiguities which arise in relating text to topic. In his writing and in Goody's *Domestication of the Savage Mind* one gets the impression that the

literacy in the Ancient Near East was a process of reminding oneself of materials that were already well known (such as religious incantations) or book keeping.

The picture that emerges from Mogens Larsen's description of near eastern literacy is substantially more complicated. Particularly interesting is evidence of a reasonably broad educated class that wrote letters in addition to using writing for deeds, contracts, and the like. In correspondence about this article, Professor Larsen wrote that Havelock overestimated the degree of ambiguity involved for people who knew the cuneiform script because the conventions relating sign to meaning were clear. This criticism of prior interpretations of the reading-writing process in Mesopotamia fits with the work of our Japanese colleagues who point to the way in which the juxtaposition of characters in their written language provides a resource for meaning-making that is absent in the representation at the phonetic level provided by the alphabet.

An issue which needs continued investigation is the way that efficiency of representation gets defined for different writing systems. At the end of his article, Mogens Larsen refers to the advent of Aramaic which is associated with the dying out of cuneiform. What was involved? I know of a fair amount of writing about the origins of Greek literacy, but little about the intermediate period when cuneiform gave way to syllabic representation system recorded on scrolls instead of clay. I would like to know more about the representation-efficiency-cultural practice mix that bridged between the death of cuneiform and the birth of alphabetic literacy. This article introduces some interesting new issues into the discussion. I get the impression that at the end of its life, cuneiform had, indeed, become an esoteric form that was in competition with "vulgar" Aramaic, a writing system based on syllabic principles that was taken up by the dynamic cultures living along the Mediterranean Sea. Along with this new mode of graphic representation came a change in the vehicle for recording print, as clay tablets gave way to scrolls of papyrus. Very often in ontogenetic development one witnesses a regression before a new, stage-like developmental transition. Very often, too, the eventual stage-like change is triggered by forces outside of the individual in interaction with internal factors. It would be very

interesting to know the extent to which a developmental model could be applied to the historical changes in cuneiform and the eventual transformation of literate practices that began 400-500 years before the birth of Augustus.

Response to Comments

Mogens Trolle Larsen

I am quite happy with these comments. I see it as a major concern to establish the great complexity in near eastern literacy, a situation which is somewhat obscured in Havelock's writings. It seems to me that his position is really based on ethnocentric ideas, with the Greek intellectual revolution and the western use of an alphabetic system as the governing principles. Havelock, therefore, can have very fixed ideas about what is good and what is bad, what is literacy and what is not. He can use the word "success" about a specific system of writing, which is described as "the purely passive instrument of the spoken word." This means that the richness of meaning that is characteristic of such systems as Chinese or cuneiform comes out simply as a hindrance to true communication; within the framework of his interests these systems become "a historical irrelevance." Calligraphy, obviously, stands out as the enemy of social literacy. For Havelock, writing should communicate on one level only, all else is seen as irrelevant, ambiguous, and inefficient.

Writing has a number of histories. It has developed, and alphabetic systems are certainly representative of later stages in such a developmental scheme than logographic and syllabic ones. Alphabetic systems have advantages over such scripts, and they can do things which an alphabet cannot. But much would be gained if we could rid the discussion of some of the recurring notions of "evolution," "superiority," etc., and concentrate our efforts on an understanding of the characteristics of the different systems, without having constantly to judge one of them more or less "developed" compared to Greek and western writing.

With due respect for the immense learning found in Havelock's books and articles, I still find that his characterizations of, e.g., the cuneiform system or his evaluation of the corpus of texts written with it ("the so-called 'literatures' of the

near east") must be taken *cum grano salis*. I wonder what cognitive psychologists make of his comments on systems such as cuneiform where "the shapes were used to symbolize these mental acts directly (i.e., counting objects, observing and naming them). They went straight to the psychological processes inside the brain." Such a system somehow does not sound terribly rational, and obviously stands in direct contrast to the Greek situation. It is hard to avoid the impression that Havelock is close to some of the classic ideas about the pre-logical mind.

The questions asked by the commentator with respect to the late use of Aramaic in first millennium B.C. must, unfortunately, remain unanswered. I have to confess to my own ignorance. Since Aramaic must have been used primarily for texts written on substances other than clay, they have not been preserved. There can be no doubt that Aramaic was used extensively during the time of the Assyrian empire, a historical phase from which we also have a huge amount of cuneiform texts written on clay tablets. However, the relationship between these two systems has not been adequately studied and, as I said, the evidence is scanty. That literary and scientific texts should be written in the classic script is obvious, and it is certainly correct that this had become a highly esoteric system at the time. In fact, the Assyrian scribes in such texts made use of a language which can be described as artificial, since it stands as a literary dialect of the Babylonian tongue (closely related to, but not identical with, Assyrian). The use of this dialect, which cannot have been spoken by anybody outside the schools ever, has its basis in the traditional cultural superiority of Babylonian vis-a-vis Assyria.

The royal scribes at the time formed an intellectual elite whose concerted efforts in a number of scholarly and scientific fields we are only now beginning to appreciate. But we should remember that while they were busy copying and commenting upon classic texts, the ordinary citizens of the Assyrian towns got married, bought houses, sold fields, slaves etc., borrowed money and fought legal battles with each other in court -- and all such activities were regulated and recorded by way of documents. So, a very large percentage of the population took part in the literate culture in this way; and what is more, the texts themselves are now found in the strong rooms of the

private houses where the involved citizens lived. Even though the owner of a house could not read, the deed proving his ownership was a very meaningful document for him.

It is also here that Aramaic becomes visible, for occasionally we find on such private texts an inked summary in Aramaic script of the main points of the cuneiform text. I think it very likely that in such cases the owner of the text added the summary himself and was able to consult it. So, the cuneiform system remained the official script in this late phase, even though probably many, perhaps most, people spoke Aramaic in the empire. The Assyrian dialect itself was not even used in the Assyrian administration or in the Assyrian scribal centers; it appears primarily in private letters and other texts which had a non-official character.

This extremely complex historical situation certainly deserves to be studied and evaluated with care, and I cannot hope here to do more than point out some aspects of the complexities.

oo oo oo oo oo oo oo oo

Man differs from the apes, and indeed all other living creatures so far as we know, in that he is capable of symbolic behavior. With words man creates a new world, a world of ideas and philosophies. In this world man lives just as truly as in the physical world of his senses. Indeed, man feels that the essential quality of his existence consists in his occupancy of this world of symbols and ideas -- or, as he sometimes calls it, the world of the mind or spirit. This world of ideas comes to have a continuity and a permanence that the external world of the senses can never have. It is not made up of the present only but of a past and a future as well. Temporally, it is not a succession of disconnected episodes, but a continuum extending to infinity in both directions, from eternity to eternity.

oo oo oo oo oo oo oo oo

Thus [with symbols] man built a new world in which to live. To be sure, he still trod the earth, felt the wind against his cheek, or heard it sigh among the pines; he drank from streams, slept beneath the stars, and awoke to greet the sun. But it was not the same sun! Nothing was the same any more. Everything was 'bathed in celestial light;' and there were 'intimations of immortality' on every hand. Water was not merely something to quench thirst; it could bestow the life everlasting. Between man and nature hung the veil of culture, and he could see nothing save through this medium. He still used his senses. He chipped stone, chased deer, mated and begat offspring. But permeating everything was the essence of words: the meanings and values that lay beyond the senses. And these meanings and values guided him -- in addition to his senses -- and often took precedence over them. [1958 ms; emphasis mine]

Leslie White

Panis Et Circenses - Orality and Visuality in Medieval Denmark

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*The shift from oral to written speech is essentially
a shift from sound to visual space.*

Walter Ong,
Orality & Literacy, 1982

One of the major propositions about the implications of literacy is contained in the quotation above. Indeed, the title of Ong's book itself indicates what is generally presumed to be the central issue here: That all preliterate societies were governed by oral discourse, and that the invention of writing significantly changed the form of discourse, prompted by what may be called the visualization of the world.

There is a very large literature (Goody, 1977; Havelock, 1966; Lord, 1960; Parry, 1971) which has been concerned with this overall shift from a so-called oral culture or "literature" towards a written literature. It has been implied that this shift produced a general shift in the minds of people from an obsession with what is heard to an obsession with what can be seen. In this article I am going to maintain exactly the opposite view: "Visual" perception and communication initially dominated "oral" perception and communication. I shall even maintain that orality as a specific category of communication only appeared after the spread of literacy; that the "words," so to speak, came to light only after they had been written down, and that this was the main prerequisite for a cultural discourse which around 1500 A.D. used writing, speaking, and quarreling as its core symbol or emblem.

Initially, I would like the reader to consider what actually stops a spoken sentence from disintegrating in mid-air. To my mind it is not only the rhythm, the specificity of the voice, and the meaning we detect in the utterance, but also the visual context. This context - the setting, the mimicry of the speaker, his whole social being - plays a crucial role alongside the actual presentation of the "text," even where such mnemotechnic tricks as repetition are being used. In the actual

function of the oral communication -- whether of a formal character or part of a day-to-day discourse - both visual and oral contextualization appear to be necessary and logical prerequisites. We cannot maintain that either one is superfluous to the construction of significance or meaning. But we might find that written literature read in silence in a secluded room does not specifically need a visual contextualization of the same order as that which a ritual or a poem presented orally to a large audience might need. In the first case the visualization is furnished exclusively by the book and the graphics, in the second case it seems to be provided by the whole setting -- the players or performers, the audience, the costumes, the ritualized patterns of behaviour, etc.

Not only does this context constitute a necessary prerequisite for the coherence of an orally performed speech, one might even say that an oral performance seems to be only part of a large-scale communicative act in which a number of other media appealing to the eye are included. Thus it is only in the reading, i.e., silent immersion in a text, that this contextualization becomes nearly superfluous. We find readers who are obsessed by the character of the book, whether it is in paperback or has a leather binding, but to the author the means of adding to the coherence of the text outside its own sphere are indeed very limited. He might wish to pick some specific paper or involve himself in the lay-out, but his one real possibility to "visualize" the text would be to add pictures to it, thus changing medium. Still the possibilities seem very limited and generally the meaning of the text is totally independent of the technology of the medium. Quite the opposite seems to be the case when we consider the enactment of a lawsuit. Here the arrangement of the room, the specific costumes of the main actors, the ritualization of speech and finally the procedure in itself would add to the "message" in the "text" - the verbal discourse, the legally framed negotiations. In fact, we may ask ourselves which is the central medium - the action or the word.

I should like to stress that no clear cut case can be presented. Oral and visual perception are both part of the human sensory apparatus and as such it seems meaningless to discuss which is of the first importance. It seems safe to propose initially that visual communication plays a different role in an oral culture as opposed to a society in which writing is widespread.

In this essay I am going to be concerned with how the two types of cultural communication - the visual versus the literate - alternatively were lodged under specific economic and social conditions in late-medieval Denmark during a period of extensive alphabetization, 1350-1550. The type of discourse I am going to discuss is that which concerns itself with the semantic field covered by concepts like power, violence, domination and authority - more specifically with the ways in which feudal rent was extracted.²

The Extraction of Rent -- Early and High Middle Ages

It should be nearly superfluous to stress the fact that any kind of extraction of rent or surplus needs a threat of sheer violence to support it. The interesting part, though, of this exercise of authority or domination is its cultural framing. What is it "called," how is the threat pronounced or framed and especially - to quote Weber - how is the authority legitimated (Weber, 1947)? If we consider the early and high Middle Ages (pre-1300) we must acknowledge that very little is known for sure. First of all, literacy was not widespread and although we possess some written texts which mention tax-collecting, they are very difficult to interpret, especially with respect to this problem.

The bulk of the manuscripts from this period (pre-1300-1350) fall into two categories.³ The first consists of a number of law-texts compiled and edited nearly exclusively in the vernacular. One manuscript was even written in the old, Northern vernacular alphabet -- the Runic. These texts, though, are not part of the debate about the cultural framing of the built-in violence. They are preoccupied with matters of inheritance, the buying and selling of land, the organization of the agricultural production in the villages, etc. Attached to these manuscripts are some fragments of historical literature in the vernacular, which might have been more pertinent to the questions raised here. Unfortunately, though, they are often partial translations from Latin manuscripts. Indeed, most of the texts which are concerned with the problem of how rent should be extracted are in Latin. As such, the discourse is formed by the Latin words and their longstanding cultural connotations of the Roman heritage and especially Roman (Canonical) law. The decrees of the King, for instance, were written in Latin by clerics

whose abilities as literati were formed by the classical readings, which has been their primary pathway to the skills of dictating and thus writing. This was also the case with the legal framework of the written deeds and charters concerning donations and the selling and buying of real property. The Latin framing of these writings causes us to use the utmost caution; the connotations must primarily have been of a literary kind, underlined by the fact that most discourse about law and justice took the form of glossematics. This characteristic is also prominent in the historical writings. The foremost example is the writings of Saxo Grammaticus: *Gesta Danorum* (Ollrik, 1931). It is known that one of his more prominent models was the work of Valerius Maximus (Kempf, 1854). Even complete passages were extracted by Saxo and used in his own text as a commentary on his story. It stands to reason that we cannot know to what extent these writings expose a Latin Roman Catholic-idealized concept of the organization of society and economy. Indeed, the detailed deciphering of the impact of this both Latin and literary (written) framework on the more day-to-day praxis of high medieval society has not yet been undertaken, except for a very few words or concepts (Fenger, 1982; See, 1964).

However, if we oppose what we know from archaeological excavations with these early texts and add some evidence from the Viking Age which was nearly untouched by the Roman Catholic church and its discursive practice, we find a few raw outlines which, in this context, seem to be sufficient.

First of all, it must be stressed that the primary way of presenting a threat without any doubt was the building of heavy fortifications. The ultimate defense also denoted the possibility of ultimate violence. We know that the earliest fortifications were built, probably at royal instigation, in the Viking Age (approximately 950 A.D.). These fortifications, which were situated all over Denmark, were large camps able to hold about 1000 persons each. It has been argued that they were meant to be training camps for soldiers used in the large Viking raids -- first of all directed against England. However, they do not seem logically situated if this were their sole purpose (Christensen, 1970; Skovgaard-Peterson, 1977). It is therefore assumed that they were primarily turned against the local population.

As such they are in accordance with what is known about the fortifications of medieval cities. Visby, a large commercial town on Godland, which for a long period played a crucial role in the east-west trade in the Baltic, is a good example. The walls were exclusively turned against the countryside while the city opened up to the seashore and harbor. It is assumed that their main function was to protect against raids from the population in the countryside. Up through the medieval history of Denmark we are presented with descriptions of the demolitions of fortified castles destroyed in peasant uprisings. I should add that the symbolic qualities in these dominating structures spread out all over the country was a central part of the "vernacular" day-to-day discourse about domination, subordination and violence.

Indeed this is corroborated by the old Northern word for violence, *vold*, denoting not only violence but also the wall of such a fortified stronghold. From an etymological point of view we can detect three intermingling parts of the semantic space of this word. First *vold* is rooted in the old Danish: Wall = a plain or meadow or (out)field (Old English: Weald = plain; Old German: *Wald* = forest). Thus one part of the semantic space covers the notion of the border(land) between the cultivated land and the commons or outskirts of a village. The second part refers to the Latin: *Vallum* = Fortification (Old German: *Wal*; Old English: *Wal*). To this must be added the Old Danish word: *Vol* = a beating stick (From Latin: *Vallus* = to commit violence) (Skautrup, 1941, pp. 370-371; Hald, 1976; See, 1964, pp. 196-204). To this belongs the word *vælde* which means dominion or might. To be in somebody's "vold" therefore means quite literally to be placed at the outskirts of his stronghold, subject to his dominion -- and thus taxpayers. The aim of a war of conquest was to induce the conquered population to pay tribute. The most famous example of this is the so-called "Danegeld."

The actual physical organization of the land was thus -- when seen as part of the discourse of violence and domination -- mirrored in language. Further confirmation of this obsession with direct violence can be found in the runic inscriptions of the Viking Age, in the descriptions given of the people commemorated by the stones. Their main

qualities were those of a competent and powerful warrior, capable of holding on to his own territory and, in fact, able to add to it.

The different kinds of discourse, the production of significance by way of the use of words and the ordering of the landscape, is in perfect accord with the ideology of such documents. The sheer visuality of the word "vold" (borderland, fortification and violence) underlined the fact that the enactment of violence was a very real drama in which the participants were subdued. As the principal character the warlord possessed exactly the qualities which were essential: valor, manliness and bravery.

The Extraction of Rent -- Late Medieval Age

During the next 500 years these ways of discourse (and behaviour) changed completely. The conversation was a long term process. It was present in embryonic form very early in the period and reminiscences of the earlier system could be found mid-16th century.

First of all, the concept of the good king or lord changed. In the historical writings of the early Middle Ages we first find the idea that a king not only had to be a valiant warrior but that he must also be well-spoken. This concept continued to play a very significant part in the historical writings of the late medieval age. Eventually it became the most necessary quality of a king, to be capable in oral performance, e.g., a good political negotiator. There is no doubt that this idea of a good king was fostered in close connection with the Christian concept of the king as a guarantor of peace, as one whose ultimate weapon is the true word, spoken well.

The most significant changes in the discursive practice occurred at the peak of the late medieval crisis. At that time the threat of violence came from the armed bands of nobles riding through the countryside demanding rent due. A very well-known example is Mourids Nielsen Gyldenstjerne, a noble who possessed manors, strongholds and land all over Denmark. We know that he personally went about with a band of approximately ten of his retainers extracting dues from his peasants, because he left an account-book in the form of a diary, through which we can fol-

low his trips in detail for the years of 1493 and later. It is a characteristic feature of the feudal lord and his way of life that his financial interests decisively cut him off from his demesne. Mourids Nielsen Gyldenstjerne was part time royal official and administrator - part time merchant. It appears that he spent two-thirds of his life away from his land.

This caused a heavy proliferation in the use of bailiffs and administrators, retainers, which again created a special type of fluid social organization. The prototype of this social form, the escort, derived from the bands of retainers harrassing the countryside while demanding rent. These bands were marked off through heraldry: Clothes of specific colors and cut, shields and weaponry, wagons and personal objects ornamented by coats of arms. Thus the idea of a new social form depended heavily on a change in the way of cultural communication. What the stronghold had signified pre-1300, the army, the band, the escort, the retainers, signified post-1400.

The symbolic character of their formation, the cultural communication through which we can see "them," was indeed of a very special kind. It seems to me that we may well regard this whole field of heraldry as a highly sophisticated form of pictography.

The bureaucracy of the staff of the lord increased heavily because of the need for the administration of his dispersed lands, which furthered an extensive proliferation in the use of literacy. First of all, there was a heavy increase in written accounts, letter writing, letters of introduction, contracts, inventories, etc. Secondly, there was an increase in the number of written deeds and juridical documents representing the will and rights of the never-present lord, thus furthering our sense of a culture of writing. All this was paralleled by some very significant technological changes, the introduction of paper as opposed to parchment and finally an increase in the use of the vernacular.

Due to this change we are now able to examine more closely the central concepts of the written texts of the period concerning the extraction of rent. While we must imagine a very limited circle of high-medieval "literati" with a specialized proficiency in Latin governing this discourse officially pre-1300, we can presume that

the vernacular discourse going on post-1400 at least represented a very real part in the lives of the ordinary man, even though we shall never know in which way it differed from the day-to-day oral discourse in the peasant society.

In the discourse of *vold* there was a very close connection between the ordering of the actual landscape and the words used. To be in somebody's *vold* was the equivalent of living in the shadow of a stronghold. This was paralleled by the way of describing land. When somebody dominated ("owned") a piece of land it was described as part of the village. He would own a quarter, a half, one or two *bol* in the village, literally denoting a specific part of the farmland with corresponding rights in the common, the forest, the meadows, etc. When somebody bought a piece of land or a farm he would receive it formally in front of a local court. In eastern Denmark the seller would deposit a handful of earth in the corner of the cloak of the buyer, (called *Scotatio* after the vernacular expression: *Skodning*). In the western parts of Denmark the seller would (or might) present a handful of earth along with a knife or a short stick called a *vol!* (Schousboe, 1984; see also Clanchy, 1979 for some corresponding English examples, indicating that these traditions may have had the same Viking ancestry). Thus what was owned or could be bought or sold was real estate in a near-modern sense, if we disregard the fact that the rules for selling and buying were very different from ours.

In the 14th and 15th centuries to own land was called *at have i være (væрге)* (to have in custody). Often it was abbreviated to the expression: "At have" = to have. In the specification of what was in custody, the rent and the primary producer was specified. The actual location of the farm was only mentioned by the name of the village. Sometimes not even these essentials were required, the details giving only the larger region and the expression: "Every right he (The Lord) has there."

The central concept here is, of course, *væрге* or *værn*. The etymological and semantic field of this concept is just as diffuse as that of *vold*. First of all, it stems from the old German: *Weri*, which is a verb meaning "to defend." To this corresponds the same concept in Danish. From this is derived the words *Warft* (Old Danish.),

Werft (Frisian) or *werf* (Dutch) which is a large mound of earth built on a marsh as a construction for the farmhouses and used as a defense against the flood.

The meaning also sometimes covers the word embankment. To this can be added the old Irish word *Fertæ*, which means a burial mound. Finally the word *værn* or *værge* in the 15th century acquired a new meaning in so far as it denoted a new weapon, the light sword or rapier. In a sense we might conclude that the words *vold* or *Iværn* in the end fused. But there is no doubt that when we met these concepts first the meanings were far apart. *Vold* implied without any doubt an aggression, *værn* implied the opposite, a defense. This difference was not blotted out, but in fact upheld by the very fact that the concept came to cover a weapon (the rapier). As the very symbol of nobility or the right to self-defense it was carried by the nobility in the 16th and 17th centuries, when no one else was allowed to carry weapons.

At have i værge, to have something in custody, meant in fact exclusively to have the right to defend. First of all, this was expressed through the formation of escorts or bands whose professed aim was to defend the peasants against neighboring lords bent on contesting the rights of their supposed opponents -- whose real object though was to threaten with violence, thus extracting rent. Symbolically this kind of economic organization was covered by the artifacts (and words) like *værge* = rapier = *vaben* = weapons, an abbreviation for a coat of arms; another word was *fæste* meaning a hold or grip (on the rapier), or as a verb, to lease a farm as a tenant, thus denoting that the peasant was given a firm grip over the land. Finally, *fæste* or *fæstning* might signify a stronghold.

Primarily, though, the meaning of the word "*værge*" as used in the old Danish laws, was covered by its late medieval counterpart, "*et forsvar*" (a defense). The literal meaning of this verb, *at for-svare* is to answer for someone. To present verbally the case in court for somebody else. This was the primary, and indeed, very restricted meaning of the word *værge*.

In *Jyske Lov* (1241) it is said that for those who cannot defend themselves -- the weak, the poor, the young, the old, the women, etc., -- the king may choose a guardian, in case they have no

fit relative, who is to be their "*værge*". Those who act as guardians must defend in court the land or interests of their charges (Skautrup, 1941). The judicial references in the concept of *værge* remained central for the rest of the Middle Ages -- the growth in the use of this concept was directly proportional to the growth in the legal framing of disputes of any kind.

Thus the extraction of rent was framed differently during the late Medieval Age in Denmark. From a real threat of violence, *vold*, to a veiled promise of defense, *værne*, it actually ended up in court where the whole mixture of speaking and writing came into focus. We know of course that a large part of what went on in the legal procedures were of a ritual, dramatic, visual nature, but without doubt attention centered upon speech -- quibbling over words and phrases in the written deeds, testimonials, verdicts, etc. It seems as if there was a very real decline in the use of spectacular dramas while an increase in legal processing took place, thus stressing the fact that orality as a distinct conceptual category surfaced right in the middle of fullblown bureaucratic literacy.⁴

Medieval Denmark, Economy and Society

In medieval Denmark the main part of the population, as in the rest of Europe, gained a living from one or another sort of subsistence farming. We have absolutely no exact figures concerning the size of the population. It has been estimated to a figure a little above one million pre-1300, falling to 750,000 to 500,000 post-1400. Today the Danish population is about 5 million, of which half live in the countryside (outside towns and cities). Apart from the agricultural production attached to the cities, most would be organized around manors, whether large-scale or small, during the medieval period.

A feudal lord in the 13th century would possess one, two, three or more estates. In the center of the estate there would be a large unit, farmed by the lord and bailiff, the so-called villicus. Around the manor a number of very small units were situated with maybe no more than five or ten acres of land, the peasants paying rent in the form of a couple of coins and a large amount of work on the demesnes. The dominant feature would be the huge size of the manor paired with a number of smaller sized peasant holdings clustered around

the manor, thus presenting us with a picture of the landholdings of the lord or seigneur as strictly concentrated.

Around 1400, the time of the demographic and social profile I described above, this economic organization had changed. From then on the feudal lord lived from rent paid in goods by yeoman living on normally sized farms (50-75 acres of land). The demesnes had been split up or the land had been parcelled out. Further, the small-sized units had been fused. To this must be added the fact that the farms or land controlled by one single nobleman or kingroup nearly always were spread out all over the country (Ulsig, 1968).

The explanation for this change in the organization of the feudal economy lies without any doubt in the conditions fostered by the late-medieval crisis. Fourteenth century Denmark was, as most of Europe, marked by the demographic crisis following plague, hunger, overexploitation of land, etc. It is generally assumed that the crisis which had set in already at the turn of the century was fully developed around the middle of the century. Around 1350 we have the first explicit statements concerning the problems following the diminished working force. Apart from death by hunger or plague it is thus certain that the long-term crisis first of all hit the large landowners, whether Church, Crown or Nobility (Gissel, et al., 1981). Rent was reduced to half or one-third of its former level, the large estates were parcelled out, the small cottages were turned into ordinary farms, tilled by wealthy tenants. Because of diminishing income, the lord's economy was reorganized. Formerly it relied heavily upon grain production. Now he leased the landholdings out, sometimes receiving no rent at all, more often a small insignificant manorial due, fixed and unchangeable. If possible, he sold or pawned out land in order to get ready money, thus furthering the extensive splitting up of landed property. Third, he would try to restructure the large "Wüstungen," using them for cattle raising and dairy production. Finally, he would go into international merchant ventures, taking up investment partnership with merchants from the Hanseatic League.

One of the main features of the feudal economy in this post-crisis period was its decentralized character. It is characteristic that the lands of a noble at the turn of the 14th century were heavily

dispersed all over the country and especially that the peasant farms were no longer centered around the strongholds. These were no longer "seen" daily by the peasants going to work, in fact the peasants did not go to work anywhere else but on their "own" plot.

It is in this society marked by a decentralized economic organization that the discourse about violence changed. The landowner simply took over the cultural framework of the largescale royal administration from the 12th and 13th centuries. Literacy became a very important prerequisite for the smooth running of the estates. Part of this consisted in securing the defense of the landed property against violence as well as against prosecution in court, hence the formation of escorts and armed bands. But following the extensive demographic decrease and mobility, people generally could not have known the exact extent of the land, for instance, a village, the commons, a forest or a precinct. A real land register was, until the end of the 17th century, an impossible task. Thus the right or duty to defend, especially or primarily in court, was re-allotted, not only to the retainers but down to the smallest peasant. His duty was to "keep the farm intact" against his fellow neighbors in the village according to its by-laws. In return he received the right to use the farmland, paying only a small rent to secure protection against the feuding lords to whom his fellow peasants belonged. On the new level the retainer had to keep the peasants in his district in order, defending them in the local courts against prosecution, etc. Thus we understand why the name of the peasant sitting on a farm was of utmost importance. In a private land register a specific right would be described as follows: In *Lillerød* (name of village), Hans Nielsen owes 6 bushels of rain, 1 firkin of butter, a lamb, a goose, two hens, and finally, a couple of shillings. These peasants acted as a "collective memory" of the borders in the landscape, the habitual division of hay and meadows, the rights of fishing, etc. It is an intriguing fact that in those parts of the country where the open field system prevailed, the lords in the 16th century succeeded in controlling the peasants (and their "memory") in such a way that they could not leave their service, or later, the manor on which they were born. In the lesser farmland where over-exploitation was less threatening and where the incitement to cut off a

slice of the neighbor's rights was less threatening, the lord did not care to exercise that kind of control.

Thus the shift in the media, the manner of discourse, from 1000 to 1500 can be explained as a necessary adaptation to the changes in the economic organization. In the preliterate period (or period with a very restricted literacy) small-scale economy reigned. This was coupled with the fact that the economic interests of the lords were very centralized. It is an intriguing fact that neither literacy nor orality seem to have played a significant part in the administration. Although Latin as well as vernacular literacy constituted a real possibility for all, only large-scale royal or church administrations utilized writing as a means of communication and administration (domination). At the local level the acts of domination and violence had to act both as a part of the praxis and as a way of discourse.

The decentralization of the feudal economy after 1300-1350 conditioned a change in this. First, the visual communication changed. Through the formation of escorts (armed bands or "fictional" brotherhoods) the ritualized character of behavior deepened. In a near-literal way we can still read the "message" of these escorts through the descriptions of their formation (Schousboe, 1984). But the decentralization also led to a widespread growth in literacy and, in the end, this furthered a significant change in the overall use of dramatic behavior as a central means of expression.

The final phase, which this made possible, was an extensive retirement into private life of the retainers and bureaucrats. They were now able to withdraw culturally into their own closed rankings in a much more direct way than hitherto been possible. It is no coincidence that exactly these retainers, administrators, scribes and merchants came to use writing as a major ornamental device in mid-16th century. Their ability to control written words, to commit sophistry and hairsplitting in and out of court, constituted their prime tool of the trade. It became also a symbol of the social category they finally formed, the dogged bureaucrats and officials. When they ordered a tombstone the sole ornament might very easily have been an inscription with a short biographic note. When we enter an old Danish church and try to read such a notice, it becomes evident that the

whole surrounding scene disappears from our visual field. The concentration upon the texts blots out the impressions fostered by the context.

The nobility on the other hand kept on using the ritualized drama as a central means of expression. In an excessive way the framework of processions, heraldry, jousting, and any other spectacular behavior continuously was used by this social category. While inscriptions were used on the tombstones of the burghers and bureaucrats, the noble effigies presented the dead in full statue. Thus, if we gaze upon an effigy we might register the whole chapel, the context, with no difficulty. The writings literally remove us from this context and bring us to ponder upon the oral message in text.

I shall thus maintain that literacy is first of all a historically conditioned way of orality.

Notes

¹Without the inspiration and commitment of Mogens Trolle Larsen and Michael Harbsmeier at the Center for Comparative Cultural Research this article could not have been written.

²For an overall presentation of my work on late medieval society and culture, see Schousboe, 1984. The references in these articles also cover the material presented here.

³For an extensive documented account of Literacy in Medieval Denmark, see Schousboe, 1986.

⁴For an extensive treatment of a similar shift in the organization of law and literature in medieval France, see Bloch, 1977.

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Comments

This article generated a many sided discussion by our group because it touched on the work of people from quite varied academic disciplines, striking many different chords. Here are some of the themes that we discussed.

The nature of sweeping claims, such as Ong's about literacy and a "shift from sound to visual" evoked several different kinds of reactions. Our group worries a lot about the impact of literacy on language, culture, and mind, and we pretty automatically turn away from any theory based on such dichotomies as "oral" vs "literate" mind or society. Jack Goody's elegant arguments for the irreducible heterogeneity within such dichotomies in *Domestication of the Savage Mind*, and that the heterogeneity is the source of system's change, seem pretty convincing.

Everyone got a lot out of the careful tracing of word meanings over time to show the way in which they name fundamental patterns of interaction where power relations are encoded in partly spatial terms. We have been busy reading Norris Minick's new translation of Vygotsky's *Thinking and Speech* where word meaning is proposed as a basic unit of psychological analysis. The coincidence of Dr. Schousboe's paper with that discussion led us into the homologies between cultural/historical development and individual development using the Danish materials as subject matter. A political scientist in our group found the data on power and language very relevant to current theories of state-building because it provides a nuanced view that is missing from current work in economic history.

As you can see, there was lots to talk about!

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Absolute continuity of motion is incomprehensible to the human mind. Laws of motion of any kind become comprehensible to man only when he examines arbitrarily selected units of that motion. But at the same time it is just this arbitrary division of continuous motion into discontinuous units that gives rise to a large proportion of human errors.

Leo Tolstoy

Types and Versions in Ballad Tradition: The Oral Poet's Use of the Potentialities of Variation

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European balladery is an attractive field for students of oral poetry: Ballads have been recorded for centuries --with differing intensity-- from all over Europe. The various vernaculars have developed their special branches of a tradition of ballad-singing that seems to have originated in France and spread over most of Europe during the Middle Ages.

In this paper I shall discuss only Scandinavian examples, that is the tradition I know best, and I shall rely mainly on Swedish material, because that is just now being edited in an excellent modern edition of which the first volume appeared in 1984. Danish ballads were published in a monumental 12-volume edition, initiated by Svend Grundtvig in 1847 and only brought to an end in 1976; Grundtvig's was a pioneering work, and his principles have been followed in scholarly editions ever since. But techniques have developed during the past century, and the Swedish text-editor, Sven-Bertil Jansson, is meticulously presenting the different versions of the ballads exactly as they were first put into writing, errors and all --except for some help to the reader, such as resolution and abbreviations, he does not tamper with the texts. This means that the Swedish edition is useful for a study of the versatility of an oral tradition, and that is what I shall use it for here.

In Scandinavia the first written texts of ballads date from the 16th century and are in manuscripts belonging to the highest aristocracy. I shall not discuss here the vexed problem if balladery originated in the upper class; but because the first written texts are presented as anonymous it is more probable than not that whatever its medieval origins, balladery has from its first recorded forms been an oral genre, transmitted by singers of the lower strata of the population. This

holds certainly true for the texts recorded during the great period of Scandinavian ballad-collecting, the first decades of the 19th century.

Scandinavian societies have become thoroughly literate during the last centuries, and there has been a constant and growing interrelation between oral tradition and printed textbooks or broadsides. Even earlier, when fewer people knew how to read, such an interrelation existed, for singers have always been eager to learn new songs, and they have had texts read aloud to them if they were not themselves literate, just as Parry, Lord and Bynum describe for some of their Serbian informants of epic. Generally, however, this does not seriously affect the oral character of the tradition: Whatever the provenance of a given song the singers will adopt it as part of their repertoires, try it out, and give it the form that suits their tastes. When a singer has established such a personal form of a given song it remains relatively fixed in his/her repertory, but it is still open to variation so as to suit the tastes of changing audiences.

There is an abundance of written ballads in folklore archives and elsewhere, and a main problem is how to systematize the texts. Normally they are divided into *ballad types* (a system introduced by a Swedish editor during the 1830's and codified by Grundtvig); examples of types in Anglo-American ballad tradition would be "Lady Isabel and the Elf-Knight" or "Mary Hamilton." The type is subdivided into *versions*, and there may be more than one *variant* of a version, e.g., different copies of one written text. Thus the ballad type is an abstraction, to be known only through its versions. A popular type may be recorded in hundreds of versions, e.g., the just mentioned Lady Isabel is a very wide-spread type, represented in most of the national traditions and known in almost 2000 written versions. It is not easy to find one's way in such a wealth of material, and ballad types are not always clearly distinguishable from each other: Intermediate versions may occur.

Roughly speaking, ballads have been studied by scholars of literature and of folklore. The former have been mainly interested in getting at the most original layer of the type, and it used to be a highly esteemed sport to reconstruct original versions of the single types. The results have been varied, depending on the scholars' theories of what

happened to the original in the course of oral transmission. Folklorists, on their part, have been less interested in an original and more in the ways the type has been living as a song in more recent times, the place it has taken in a given singer's repertory, the kind of audiences it has been sung to, etc. Adherents of the Parry-Lord school tend to take the folklorists' side, since to them the very concept of an original is irrelevant in an oral tradition. Their concern has been more with form than with content, however. For example, there are such brilliant studies as those by Anders and Holzapfel. Less interest has been taken in the variability of content, and that is what I am concerned with here.

For simplicity's sake I have chosen a type that is not very long, nor overwhelmingly well represented: "King's Fate Foretold by Prophetess." The Swedish edition has it in 13 versions, while the Danish editors print the two earliest texts and mention the existence of several broadsides and 23 versions recorded during the 19th and 20th centuries; only one of these is given in full. The type is known in Norway too. (TSB A 12, DgF 42, SMB3, NMB 4.)¹

The 13 Swedish versions span 200 years, the earliest one recorded at the beginning of the 18th century. The reader does not doubt that the 13 texts are rightly considered versions of one ballad type, since it is possible to give a summary of them in common: The theme of the ballad type is the gift of predicting the future, and it is treated in the form of a dialogue between a fortune-teller and the person whose future is concerned. The fortune-teller is a woman, while the other protagonist is either a king or a queen. The dialogue takes roughly the same course in all versions. The prophetess is first invited to lie down on a bed where knives or pins are hidden under luxurious sheets. But she declines, thus showing her proficiency. Through a series of more or less trivial questions her ability is further proved, and the climax is reached when she predicts the death of the king or queen or both; at the end of the ballad the prediction comes true. The fortune-teller is anonymous; in the two first recorded versions she is a mermaid. The queen has no name either, while the king is sometimes called Erik; it is not said explicitly where he is king, but the impression given is that his kingdom is Sweden.

But even if the versions treat the same theme in more or less the same words they are very different when considered each on its own merit. Some of them are erotic songs, some are thrillers; one is cheerful, another gloomily moralizing, some are charming, others boring. Through the exchange of almost the same words, the sympathy may be placed with one or the other of the protagonists, the course of events may show the reliability or not of the persons involved, and the end may strike different notes of doom or relief. Thus the poetical message of the versions differs widely. For example, the motif of the hidden knives is in most versions simply a physical trap: If the prophetess lies down she will hurt herself. But in one version it is spiritualized: Here the king is making erotic attempts at her, and when he invites her to lie down it is clearly an invitation to intercourse. Her reply is moralizing: The bed is broad and sumptuous, but in it death is waiting -- the risk does not consist in physical wounds but in the loss of chastity.

The earliest recorded version starts at day-break with the king riding down to the beach where he sees his seven ships founder. He catches the mermaid (it is implied that she is responsible) and puts her into jail for seven years; then he calls her to his court. But it is the queen who receives her and tempts her with the dangerous bed, after which she questions her concerning the ships. The mermaid dares not answer for fear of the stake, but instead she tells the future of the queen: She will give birth to three sons, each of whom will have a brilliant future, but after that she will die and the king will remarry a mischievous wife. After this dialogue the queen asks the king to be given the mermaid; she releases her, escorts her to the beach, where the mermaid dances gaily, hauls the seven ships to shore, raises her hat, expresses her gratitude to the queen and assures her that the king will never get hold of her again. In this version the dialogue develops so that the queen and the mermaid become allied, and the sympathy is with the mermaid. Even if she is a dangerous natural force, guilty of letting seven ships go down, the ballad rejoices in her release and ends on a cheerful note.

The other early version where the fortune-teller is a mermaid gives her the villain's part. In this version too, she is a dangerous natural force, the personification of aggressive female eroticism -- with which there is no sympathy! She comes to

the door of the prince's bedroom, and when he will not let her in she just opens the locked door, enters, and tries to seduce him. The king is told, he has the mermaid fetched, and the fortune-telling dialogue follows. The king is impressed by the ability of the mermaid and offers her a reward, but when she asks for his son he refuses, and that is the end of the song. Here there is no cheerfulness, but rather an uncanny feeling of insidious female power and sinister morality.

Whenever else the ballad strikes an erotic note it is the king who tries to seduce the fortune-teller, but she refuses, often with a reference to the queen, e.g., "What will happen if she is listening?" But this very detail is used in a special way in one version. When the king asks the woman how long his life is going to be she evades the answer with a reference to the queen: "What will happen if she is listening?" Her refusal to unveil his imminent death is an expression of care for the feelings of the queen, a care that ought to have been the king's; but he is indifferent and insists on being told. Thus this detail that is normally an expression of fear of the queen's jealousy becomes an indirect means of portraying of the king's character.

In many versions the fortune-teller is reluctant to answer the questions of the death of the king and queen, because she fears reprisal. The king assures her that she has nothing to fear, but nevertheless there are versions where she is put into jail after her prediction -- the message of these songs is concerned with the misuse of royal power. But on the contrary, one version is a description of the pious and just king. When he is told that he must die soon he calls the peasants to his court and remits their tributes; in reward flowers grow on his tomb and he is promised a seat in heaven.

The two earliest Danish versions published in DgF go back to the 16th century, and of the Swedish versions they are closest to the oldest Swedish versions, i.e., A. The fortune-teller is a mermaid, and the other protagonist is a queen; neither of them has a name. However, according to the title given to the ballad by the Danish humanist editor Anders Sorensen Vedel the queen involved is Dagmar. She was the wife of king Valdemar II and died young during childbirth (1212); in Danish folklore she has a reputation of being the model of virtue while the king's second queen

was wicked. The detail of the Swedish version A where the prophetic foresees that the king will get an evil new wife thus confirms Vedel's opinion that the Danish ballad was sung of queen Dagmar.

Those of the Swedish versions that relate the ballad to a specific royal couple mention the king's name as Erik, but the informant of version D (c. 1810) thought that the reference was to the Swedish king Erik XII (1339-59. In Denmark too there were kings named Erik, and the ballad has been sung of Erik "Plovpenning" (reigned, 1241-50). Besides, there is an intriguing link to the Danish king Erik Klipping (1249-86). He is the villain of a series of Danish ballads, where he is a seducer and gets his punishment by being killed by the victim's husband. In one of these ballads there is the following incident: One evening the king finds himself alone in the wilderness, when he becomes aware of a small house with a light on. He enters and finds a beautiful young woman inside; he asks her for intercourse, but she refuses with a laugh, saying, "First you ought to pay for what you have already done." The king says, "If you know that, you must know more: How long will my life-time be?" This exchange of words connects the passage with the ballad discussed here: The motif of the lustful king, the fortune-telling woman, and the king's imminent death is in common, and so is the wording "If you know that, etc."

This Danish material shows that the same story-patterns may be associated with different historical characters, and again, that different persons of the same name may attract patterns from each other. Thus the Danish ballads add to the picture given by the Swedish tradition, suggesting still further possibilities of variation inside the same framework.

My interest is with the variability as such, the astonishing degree to which one and the same theme and course of events are adaptable to different messages, not only the story-pattern but often also the specific details, including the wording. The analysis confirms the results of the investigations conducted by Parry and Lord in their classical studies of Homer and Serbo-Croatian epic. And it demonstrates that for an analysis of aesthetic qualities and poetic message in oral tradition the scholar must be careful to distinguish between the tradition and its individual manifestations.

Notes

The following are explanations of the acronyms used throughout this article:

DgF= Danmarks gamle Folkeviser. Edited by Svend Grundtvig, Alex Olrik, H. Grüner-Nielsen, Erik Dal, Iørn Piø, et al. Copehagen, 1847-1976.

NMB= Norske mellomalderballader. Edited by Adel Gjøstein Blom. 1-. Oslo, 1982-.

SMB= Sveriges medeltida Ballader. Edited by Bengt R. Jonsson, Margareta Jersild, and Sven-Bertil Jansson. 1-. Stockholm, 1983 -.

TSB= The types of the Scandinavian medieval ballad. A descriptive catalogue. Edited by Bengt R. Jonsson, Svale Solheim, and Eva Danielson. Stockholm, 1978.

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Comments

There has been a great interest in looking to "hard sciences" like physics for ways to evaluate human behavioral-cognitive sciences as well as for hints on how to proceed to build models, collect and process data, and develop theoretical constructs and sound arguments. The most productive approach to using information from the history, philosophy, and conduct of other disciplines is to form analogies, not clones; and I believe a very productive way to work with analogies is to synthesize several different apt bases. Thus, my primary interest in Jensen's paper is that it pro-

vides a base for analogies concerning the inquiry that most interests me: What, if anything, is a human?

Once, it would have been unnecessary to think of work on ballads and oral poets as merely analogous to disciplines like linguistics and psychology; such work would have been part and parcel of the disciplines if not the major arena for work. But Jung hardly appears in standard introductions to psychology, and linguists revolted against examination of recorded corpora with the advent of Chomskian models. So, a re-admiration (Pace Freire) of work that has continued in this tradition can be fruitful. There's a real problem at least for American scholars looking at work like Jensen's. Because of something like a paradigm shift that is quite recent in our disciplines, we were brought up to know that we don't do that sort of thing anymore and we are likely to assume that someone who is doing it is merely someone who hasn't gotten the most up-to-date news, rather than someone who is dancing to a different drummer whose rhythm has grown rich in the time that we have ignored it.

Jensen's title itself suggests that this is a fertile piece for thinking. The key words for me are "types," "versions," and "use of the potentialities of variation." An interest in types and versions resonates with a paper that Newman, Cole & Griffin wrote, which was titled after a child's comment, "They're all the same in their own way," and in which they grappled with the problems of categorization for richly interactive and dynamic records of talk exchanges. A problem that they had with many of the available schemes was a general presupposition that versions within a type were to be scaled, that developmental progression was assumed, not found from analysis of the categorized data. In Jensen's title, the plural in "potentialities of variation," suggests that studying the ballad tradition and the oral poets could comment on a future for variants that didn't assume one variant as the apex of development, as the inevitable outcome of progress, in short, a non-ontological approach. And, "use," of course, suggests an agent about to do something with those variants to influence the outcome of the potential- exactly the idea for those of us influenced by Vygotsky's (1976, especially Chapter 6) understanding of the interaction of teaching, learning, and development.

Several specific arenas for thought occur in my response to Jensen's article, only one of which will be discussed here owing to restrictions on space.

Jensen's description of the variations she finds focus the reader on the fact that the same material is used differently in different variants. An element may re-occur from one variant to the next but be used very differently given differences elsewhere in the ballad. (I particularly noted the section about the fortune teller's worry that the queen would overhear.) So, it is not just that an element varies but that its use and interpretation varies independent of its form, but dependent on the form and use of the system as a whole. This is very difficult to think about. Take the expression, "It's different." That is an apparent paradox: To use the word "it" is to claim some relation that the predication "different" asserts is not the case. We avoid the paradoxical interpretation by saying that there is a time or space difference or a type-token relationship difference and "it" can refer to different tokens of the same type. And, Jensen's domain of study provides her with a clear means for avoiding the paradox: In this variant, there is one "it" and in that variant, there is another token of "it." So, for the scholar or the archivist "it" has multiple uses; for the singer or the audience "it" has a character that can be exploited for a number of different uses; I am not sure if there are any cases where "it" has multiple uses for the singer or the audience, or even whether such a question is plausible to raise in this domain.

In the domain of study that I usually work with, the problem is more difficult because the multiple uses are in the same time and space; the "individual manifestations" that Jensen tells us to look to at the end of her article are harder to tease apart. And, I am primarily interested in accounting for the uses from the participant perspective. Jensen's emphasis on the potential for variation, even if the form remains the same, suggests that at least some parts of the "teasing apart" might be unnecessary. Cazden once described the phenomena I'm interested in by describing children in teaching/learning exchanges in a zone of proximal development as doing "it" before they were able to do "it;" for a variety of reasons, Cazden's noticing was put in the words of a currently influential theory, to wit, "performance before competence." This

wording suggests two sorts of resolutions to the paradox of "it's different:" On the one hand, the "it" is an analyst's it and what is attributed to the child is of a different philosophical (and possibly psychological) order than what might be attributed to someone else doing "it" by the analyst. On the other hand, the "before" suggests that there are two different time spans interacting here, such that the "it" can be interpreted with two temporally different frames of reference -- the whole ontogenetic frame and the current little task frame (the child is doing the "it" that can be defined in the little task time frame before he is able to do "it" that can be defined in the frame of his or her full developmental history). The latter interpretation is close to Carol Emerson's reference to the Zone of Proximal Development as a dialogue with the child's future. But, interestingly, the Emerson description suggests more than the interaction of multiple temporal systems that make relative the frame of reference for one actor -- the word "dialogue" brings in the contemporaneous social interaction between adult and child in the Zone of Proximal Development. If we take a lesson from Jensen's resolution of the paradox, we might say that the "it" in question has some characteristic for multiple uses, that the child in a Zone of Proximal Development exploits one such use (as the singer of a ballad) and that the adult exploits a different use (as the singer of a different variant of the ballad); they just happen to be contemporaneous and any effect on the child's subsequent related activity is to be accounted for by something like modeling. But this is not all that could be thought of by referring to Jensen's case. It could be that the participants in a Zone of Proximal Development are more like the archivist-- that the multiple uses, not just the use of one of the multiples is the point of development. As Newman, Cole and Griffin argue: In an educational activity system, there is mutual appropriation; the teacher-system appropriates some acts of the child, interpreting them in a different framework than the one used by the child-system to generate them; simultaneously, the child appropriates the culturally time-tested system provided by the teacher for interpreting and re-organizing his or her acts.

Such are the potentials that I picked up in Jensen's article. I have not commented on the meat of the issue for students of the ballad tradi-

tion, for those interested in social history, for the oracy-literacy debate. A different singer, a different characterization -- although the article is not a ballad, I enjoyed the use of the potentials.

Response to Comments

Minna Skafte Jensen

I was bewildered by your comments at first, but also fascinated: Were these the thoughts that my paper provoked in American readers trained in the fields of psychology and linguistics? I was happy to have them not as direct oral communication, but recorded in writing so that a couple of readings could help me towards understanding.

What I wanted was by no means to re-introduce into your field activities that have gone out of use. My aim was to contribute to the general information of what our Center for Comparative Cultural Research is all about by writing a paper on a topic that is well suited for a comparative approach. We work in analogies and find that it can be stimulating.

I also wanted to convey an impression of my respect for oral traditions. I study the ballads as recorded texts; even live performances have to be recorded in some way in order for the scholar to be able to analyze them. This means that the wider context is lost: gesture, music, dance, interaction between performer and audience, as well as the knowledge of the world shared by those involved. Even so, recording is necessary to form a base for study. You are right of course that the scholar or the archivist reacts to the traditional texts in other ways than the singer or the audience. But the scholar's interest is not exclusively scholarly; it has in it important elements of pure enjoyment of the art. So after all it is perhaps closer to the audience's than what might be expected. The scholar's only chance to understand anything of such texts is to study them slowly and patiently, while the audience's reaction is immediate. What I admire in the oral traditions that I know of is their aesthetical refinement and the depth of experience that is embedded in them; a similar level of sensitivity is rarely achieved in written texts. It has to do with their special blend of memorization and improvisation: The message is individual even if the code constantly underscores its collective nature. One and

the same ballad type is made to mean what the performer and his/her audience want it to mean by changes that are so subtle as to escape notice. Even so they are all different in their own way.

The Zone of Proximal Development as the Basic Category of Educational Psychology

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Two Classic Dilemmas of Developmental Psychology

Within modern developmental psychology, two classic dilemmas persist. The first is the problematic relationship between learning and development. The second is the equally problematic relationship between individual and societal development.

The first dilemma may be provisionally formulated as follows:

The central question for our purposes is whether learning is identical to development or, at least, whether development can be conceptualized as consisting of some kind of accumulation of units of learning. (Baltes, Reese & Nesselrode, 1977, p. 208)

Another way of putting the problem is found in the work of Ann L. Brown. For her, development is essentially the process of going from the specific and context-bound to the general and context-free.

Basically the problem is how does the learner go from specific learned experiences to the formulation of a general rule that can be applied to multiple settings. (...) How does the learner come to use knowledge flexibly? How do isolated skills become connected together, extended and generalized? (Brown, 1982, p. 107)

The second dilemma has been formulated by Riegel in a polemical manner.

Although they (developmental psychologists, Y.E.) study developmental differences (and sometimes changes), they eliminated,

with few exceptions, any consideration of history. For example, young and old persons tested at one particular historical time differ widely in regard to the social-historical conditions under which they grew up. Although the impact of historical changes during an extended period, for example, in education, health care, nutrition, communication, etc., is often much more dramatic than any differences in performance between young and old persons, this factor is generally disregarded in developmental studies. (Riegel, 1979, p. 21)

Bronfenbrenner states the same argument in poetic terms.

It would appear that, over the decades, developmental researchers have been carrying on a clandestine affair with Clio - the muse of history. (...) I suggest that, after so many years, the developmental researcher's illicit liaison with Clio is no longer a tenable arrangement; it is time we embraced her as a legitimate partner in our creative scientific efforts. (Bronfenbrenner, 1983, p. 176)

Bronfenbrenner notes that development takes place like in a moving train. One can walk forward and backward through the cars, but what really matters is where the train is going (Bronfenbrenner, 1983, p. 175). The train metaphor exemplifies the central problem embedded in most of the available societally and ecologically oriented analyses of development, including that of his own (Bronfenbrenner, 1979). The environments of societal contexts are seen as historically changing, but not as being constructed and reconstructed by people living in these contexts. Contexts are imposed upon, not produced by humans. Nobody seems to be driving the train, not to mention building and repairing it. Within the Riegelian tradition, there are attempts to turn this determination upside down and picture "individuals as producers of their own development" (Lerner & Busch-Rossnagel, 1981). This time, individual life choices are interpreted as decisive constituents of the historically changing societal context - an attempt not much more convincing than that of the ecologists. Buss (1979, p. 330) correctly notes that there has been a lot of loose talk within the life-span developmental literature about the individual-society dialectic as involving mutual or reciprocal determination - but little concrete analysis of what this really means. Regrettably, Buss himself offers merely a continuation of loose talk.

What makes the individual-society dialectic a dialectic is that a given level of development on one side of the relationship is dependent upon, while at the same time is a condition for, that same level of development on the other side of the relationship. (Buss, 1979, p. 331)

A glance at recent discussions concerning these two classical dilemmas reveals a characteristic gap. Solutions to both dilemmas are sought *either* by reducing and subjugating one side of the dilemma to the other *or* by postulating a formal "reciprocal" relationship between the two sides of the dilemma. In both cases, no mediating "third factor" is found with which the connection of the two sides could be made concrete and alive.

In the following sections, the concept of activity is developed and employed as such a mediating factor. Based on this mediating tool, the analysis of the two dilemmas will produce a deeper and more concrete problem, namely *how the new is generated* in human development.

Levels of Learning

In 1942, Gregory Bateson introduced the concept of "deutero-learning" to denote the processes of learning to learn. According to Bateson, learning to learn means the acquisition of certain abstract habits of thought like "free will," instrumental thinking, dominance, passivity, etc." (Bateson, 1972, p. 166). As Bateson further noted, "Even within the duration of the single learning experiment we must suppose that some deutero-learning will occur." (Bateson, 1972, p. 169) Deutero-learning often takes place as tacit acquisition of non-conscious apperceptive habits.

In 1969, Bateson presented a more sophisticated version of his learning theory. He worked out a complex hierarchy of the processes of learning, based upon "a hierarchic classification of the types of error which are to be corrected in the various learning processes." (Bateson, 1972, p. 287). He summarized the hierarchy as follows:

Zero learning is characterized by *specificity of response*, which - right or wrong - is not subjected to correction.

Learning I is *change in specificity of response* by correction of errors of choice within a set of alternatives.

Learning II is change in the process of Learning I, e.g., a corrective change in the set of alternatives from which choice is made, or it is a change in how the sequence of experience is punctuated.

Learning III is change in the process of Learning II, e.g., a corrective change in the system of sets of alternatives from which choice is made. (We shall see later that to demand this level of performance of some men and some mammals is sometimes pathogenic).

Learning IV would be change in Learning III, but probably does not occur in any adult living organism on this earth. Evolutionary process has, however, created organisms whose ontogeny brings them to Level III. The combination of phylogenesis with ontogenesis, in fact, achieves Level IV. (Bateson, 1972, p. 293)

According to Bateson, Learning I comprises the forms of learning treated by various versions of connectionism: habituation, Pavlovian conditioning, operant conditioning, rote learning, extinction. "In Learning I, every item of perception or behavior may be stimulus or response or reinforcement according to how the total sequence of interaction is punctuated" Bateson notes (1972, p. 292). On the other hand, Learning II or learning to learn (deutero-learning) means the acquisition of the context or structure of some type of Learning I. Thus, common descriptions of a person's "character" are actually characterizations of the results of Learning II. "It follows that Learning II acquired in infancy is likely to persist through life." (Bateson, 1972, p. 301)

The outcomes of Learning II, the habits or the "character," save the individual from "having to examine the abstract, philosophical, aesthetic, and ethical aspects of many sequences of life." (Bateson, 1972, p. 303). But Learning III is essentially conscious self-alteration: It will "throw these unexamined premises open to question and change." (Bateson, 1972, p. 303.). Learning III is a rare event, produced by the contradictions of Learning II. On Level III, the individual learns to control, limit and direct his Learning II. He becomes conscious of his habits and their formation. "Certainly it must lead to a greater flexibility in the premises acquired by the process of Learning II - a freedom from their bondage." (Bateson 1972, p. 304)

The power of Bateson's argument has been amply testified by a number of eloquent analyses of the "hidden curriculum" in school learning (see especially Levy, 1976) as well as by works like those of Argyris and Schön (1974; 1978) on "single-loop learning" and "double-loop learning" in organizations and professions. The unconscious learning to learn, acquiring the context of "how to make it" in school and work, is a fact readily observable every day. Learning III seems indeed a rare event.

Bateson's conception cannot, however, be reduced to this. Otherwise he wouldn't really be a classic, richer than copies and followers. There are two major aspects which make his analysis distinctive. Firstly, his hierarchy is not based on observation and classification but on evolutionary and historical analysis. Secondly, Bateson is not satisfied with presenting the situation as a stable picture. Instead of moral pleas for "changing the situation," he probes into the inner contradictions in Learning II that generate Learning III.

In 1956, Bateson worked out a general description on these inner contradictions and named it the *double bind*. In double bind situations, the individual, involved in an intense relationship, receives two messages or commands which deny each other - and the individual is unable to comment on the messages, i.e., he cannot make a metacommunicative statement.

If you say this stick is real, I will strike you with it. If you say this stick is not real, I will strike you with it. If you don't say anything, I will strike you with it. (Bateson, 1972, p. 208)

The outcomes of Learning II, the unconscious habits, frequently and necessarily lead the individual to double bind situations. The habit once learned becomes self-defeating in a superficially similar but structurally altered context; or two mutually exclusive habits seem to be required at the same time. Bateson reports an ingenious experiment with a porpoise. The animal was trained to demonstrate "operant conditioning" to the public. First, for a certain movement she got reinforcement (food). The next time, the previous movement did not bring reinforcement - but as the porpoise made another movement, she obtained the same reinforcement that was given the first time. This changing of contexts continued for 14 sessions.

The experience of being in the wrong was so disturbing to the porpoise that in order to preserve the relationship between porpoise and trainer (...) it was necessary to give many reinforcements to which the porpoise was not entitled (...) Each of the first fourteen sessions was characterized by many futile repetitions of whatever behavior had been reinforced in the immediately preceding session. Seemingly, only by 'accident' did the animal provide a piece of different behavior. In the time-out between the fourteenth and fifteenth sessions, the porpoise appeared to be much excited, and when she came on stage for the fifteenth session she put on an elaborate performance including eight conspicuous pieces of behavior of which four were entirely new - never before observed in this species of animal. (Bateson, 1972, .p 277)

The case of the porpoise neatly illustrates the productive - and pathogenic - potential of the inner contradictions imbedded in Learning II. However, it does *not* illustrate the breakthrough to Learning III. As Bateson states, "mammals other than man are probably capable of Learning II but incapable of Learning III" (Bateson, 1972, p. 306). What, then, does the case of the porpoise illustrate in terms of the mechanisms of learning?

Certainly not the unconscious molding of habits. Also certainly not the reorganization of consciousness characteristic of Learning III.

In order to come to grips with this paradox, we must reinterpret Bateson's theory of the concept of activity.

Learning and Development

Human activity may be structurally depicted as reciprocal movement between the poles of the double triangle presented in Figure I.

Any human activity is a systemic formation possessing its own cultural history and inner developmental dynamics. Human activity is always a contradictory unity of production and reproduction, invention and conservation (see Moscovici, 1984, pp. 60-62). The distinctive feature of human activity is that it is a continuous *creation of new instruments* which in turn complicate and change qualitatively the very structure of the activity itself. It is essential that human activity cannot be reduced to the upper sub-triangle alone. Human activity is not only individual production. It is simultaneously and inseparably also social exchange and societal distribution.

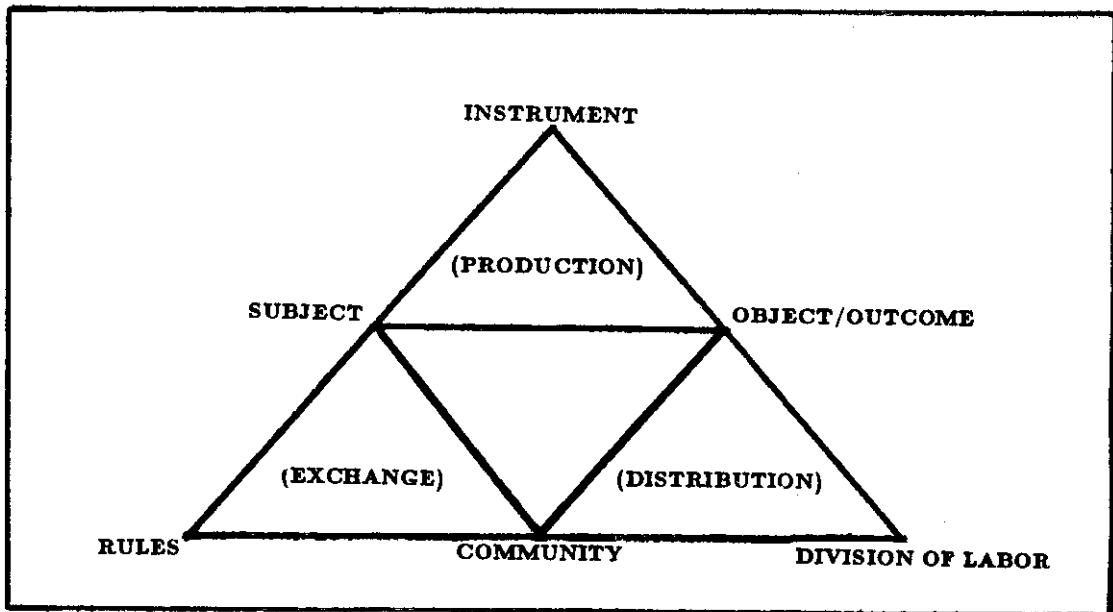


Figure 1. The structure of human activity.

In other words, human activity always takes place within a community governed by a certain division of labor and by certain rules.

In its phylogenetically and ontogenetically early forms, learning appears as an aspect or appendage of other activities, such as work and play. Later, specialized forms of learning evolve, separated from the original "mother activities."

In Bateson's Learning I, both the object/outcome and the instrument are given. Learning means repetitive corrections in the way the subject uses the instrument upon the object. There is a fixed, correct way which is to be obtained. The movement is primarily one-way and non-conscious: from the object to the subject to the instrument to the object. Instruments on this level maybe called tools or primary artifacts (Wartofsky, 1979, pp. 201-202; Bunn, 1981, p. 23).

A tool is a generalized embodiment of operations that have become standardized through repetition: "the labor operations that have been given material shape, are crystallized, as it were, in it" (Leont'ev, 1981, p. 216). A tool always implies more possible uses than the original operations that have given birth to it: The tool is the first "rational generalization" (Leont'ev, 1981, p. 215). Phylogenetically, Learning I means extremely slow and gradual improvement of tools, due to the essentially non-reflective nature of their use: "for example, the "natural retouching" of universal stone implements in the course of using them" (Leont'ev, 1981, p. 237). Learning I is equivalent to the formation of non-conscious operations "in the course of simple adaptation to existing external conditions" (Leont'ev, 1981, p. 237).

Learning II is actually an inseparable companion of Learning I. In its rudimentary or reproductive form, Learning II means that as the given tasks are repeatedly accomplished with Learning I, a tacit representation or image of the way of accomplishing the tasks is necessarily generated. It first takes the form of a habit, essentially unconscious and implicit. However, even such a reproductive habit or image is potentially a second-order instrument, a secondary artifact, "created for the purpose of preserving and transmitting skills, in the production and use of "primary" artifacts" (Wartofsky, 1979, p. 201).

Such representations, then, are reflexive embodiments of forms of action or praxis, in the sense that they are symbolic externalizations or objectifications of such modes of action - 'reflections' of them, according to some convention, and therefore understood as images of such forms of action - or, if you like, pictures or models of them (...). The modes of this representation may be gestural, or oral (linguistic or musical) or visual, but obviously such that they may be communicated in one or more sense-modalities; such, in short, that they may be perceived. (Wartofsky, 1979, p. 201)

Wartofsky speaks about "reflexive embodiments." Bunn, in making essentially the same distinction between tools and models (corresponding to primary and secondary artifacts, respectively), argues in a similar vein.

(..)the wider application of an exosomatic instrument to the world implies that the laws which had governed the working of a tool have become so useful at large that, by synecdoche, they come to substitute for the world. When a tool is 'turned' from its intended use and contemplated instead of applied, the arbitrary connection between a tool and its referred function is transformed so that it is no longer a means to a different end. Seen as reflections of the end itself, the principles by which a tool is constructed may be construed as hieroglyphs, omens, signatures, symptoms, laws, or models of higher function. (Bunn, 1982, p. 24)

At first sight, these notions are incompatible with the unconscious nature of the acquisition of habits with Learning II. How can something be unconscious and reflexive at the same time? Yet, this is exactly what Learning II is. It is best conceived of as oscillation between two ways of making models, two kinds of generalizations. These two ways were identified by Selz (1924) as "instrument actualization" and "instrument abstraction." Another classic, Bartlett, coined these two ways "closed system thinking" and "adventurous thinking."

Thinking, as a mental process, likes, so to speak, to go on in closed systems. For this gives it a wide apparent range, and especially rids it, as completely as possible, of all ultimate uncertainty. (...) But the thinker is more than a thinking machine. So there grows up a tremendous struggle between those forces which try to reduce all forms of human knowledge to the

closed-system variety (...) and those forces which lie behind the human zest for adventure and are continually revolting against and breaking out of the closed system. (Bartlett, 1958, p. 96)

More recently, a very illustrative experimental description of these two ways in their oscillating interaction has been provided by Karmiloff-Smith and Inhelder (1975). The essential precondition of any Learning II is a problem situation. The training of the porpoise moved the animal into the realm of Learning II because she was presented with a task where uncertainty concerning the correct procedure prevailed. Similarly, Karmiloff-Smith and Inhelder presented young children with a relatively difficult block balancing task. As in the case of the porpoise, the first approach taken by the subjects was that of seeking the immediate solution and concentrating on the outcome of one's effort - the "action response" as the authors name it. The children were happy when they got the blocks balanced, unhappy when they failed. However, another approach emerged in the midst of the first one.

Frequently, even when children were successful in balancing an item on one dimension (...), they went on exploring the other dimensions of each block. It was as if their attention were momentarily diverted from their goal of balancing to what had started as a subgoal, i.e., the search for means. One could see the children oscillating between seeking the goal and seeking to 'question' the block." (Karmiloff-Smith & Inhelder, 1975, p. 201)

This latter approach was named "theory-response." Within that approach, the subject does not measure his success with the immediate outcome (balanced or not balanced), but rather with the verification or falsification of his hypothetical model. If the subject has formulated the hypothesis that, put into a certain position, the block will not balance, he will rejoice when the block does not in fact balance. In Bruner's (1974, pp. pp. 218-238) words, the subject has entered "generic learning" or started "inventing a coding system."

At this point we witness experimentation for the experimentation's sake; for attending to the means implies seeking knowledge

of the appropriate range of possible actions on an object. (Karmiloff-Smith & Inhelder, 1975, pp. 207-208)

These two aspects of Learning II may be named (a) reproductive and (b) productive, for the sake of simplicity. In Learning IIa, the object/outcome is given and the instrument is found through trial and error, that is, through "blind search" among previously known means. In Learning IIb, the object/outcome is given and the instrument if found - or rather invented - through experimentation. The former leads to empirical generalizations, the latter is the prerequisite of theoretical generalizations (Davydov, 1977). The latter, productive aspect cannot be totally eliminated from Learning II, even if it may well be subordinated to the point of invisibility.

Interestingly enough, the porpoise went through a learning process essentially similar to that of the children in the experiment of Karmiloff-Smith and Inhelder. As these authors point out, before a conscious theory construction can take place, the subject must gradually crystallize his previous mode of action into a model against which negative examples may be recognized as counterexamples. In a spontaneous process, this takes a great number of attempts. This process of recognition is manifested in pauses.

As long as the child is predominantly success-oriented, there are rarely any pauses in his action sequences. As his attention shifts to means, however, pauses become more and more frequent in the course of the sequence. Only when goal and means are considered simultaneously do pauses precede action. (Karmiloff-Smith & Inhelder, 1975, p. 208)

The classic treatment of the importance of pauses in problem solving is Köhler's (1925) study of Sultan the ape. The pauses are obviously a close relative to the excitation of the porpoise between the 14th and 15th session. The recent work of Schön (1983) testifies nicely that moments of productive experimentation or "reflection-in-action" appear in the daily work practice of professionals in various fields. Here again, pauses or momentary withdrawals from the interaction play a crucial role as the professional enters into a "framing experiment," a reformulation of the problem with the help of analogy based on a "genera-

tive metaphor" from his earlier experience (Schön, 1983, pp. 268-269). Lopes (1981) reports similar findings from his research on therapy sessions.

In Learning I, the object presents itself as mere immediate resistance, not consciously separated from the subject and instrument by the learner. In Learning II, the object is conceived of as a problem, demanding specific efforts. The subject is no more a non-conscious agent but an individual under constant self-assessment stemming from the success or failure of his attempts at the solution. In other words, the whole double triangle depicted in Figure 1 acquires a hierarchically higher second layer. This second layer corresponds to the formation and execution of goal-directed actions in Leont'ev's (1981) scheme. The operations formed on this basis, from the "top down," become automatic but not the same way as in Learning I. These operations are in principle capable of becoming subjected to conscious elaboration when there is some departure from the normal conditions of performance.

Labor operations (...) thus acquire another genesis in connection with their complication when the goal of the action is part of another action as a condition of its performance, the first action is transformed into a mode of realizing the second, into a conscious operation. (...) From the aspect of the structure of man's consciousness the formation of conscious operations means a new step in its development, a step that consists in the rise of a 'consciously controlled' content in addition to the content presented in consciousness, and the transition of the one to the other. (Leont'ev, 1981, p. 237)

School systems as cultural-historical inventions aimed at separating Learning II from labor and other primary practices in order to effectivize and control Learning II. It would be erroneous, however, to consider traditional school learning as learning activity. Recall that human activity is an integral systemic formation characterized by the continuous creation of its instruments. From the point of view of the learners -- or of the pupils, to be more exact -- school learning is not production of new instruments of learning. It is production of citizens and wage-earners, above all. There is an activity going on in and about schools, but it is not learning activity. It is the activity of "school-going." Learning in its different forms is an occasional by product of this activity, just as it originally is a by product of work.

Learning activity would be a new form of human activity where new instruments of learning are continuously created. In other words, Learning IIb would be the dominant form of true learning activity. Theoretically and experimentally such learning activity has already been worked out, most notably by Davydov and his collaborators (Davydov, Lompscher & Markova, 1982). In that form, learning acquires much of the qualities of research, art, and play. It becomes a true activity in the sense that its outcomes are socially meaningful instruments: models or secondary artifacts.

Learning II represents a fundamental generalization of the outcomes of learning. In that sense, Learning II means development, going from the specific to the general (recall Brown's criterion). But the developmental step from Learning I to Learning II is not restricted to humans, and neither is it fundamental for the typically human brand of development. Learning II is a level open in principle to other higher mammals as well. In terms of human phylogenesis, it is *deja vu*.

The typically human type of development, not found in any other species, is transition to Learning III. This we know from Bateson. But what is the specific mechanism of Learning III?

Bateson offers some key hints. As we remember, Learning III is a product of double bind situations. The most well-known product of continuous double-binds is schizophrenia. It is a deep restructuring of the subject's consciousness, caused by contexts where the subject is unable to comment in a metacommunicative way upon the contradictory messages or commands he receives. But what if the subject is able to comment upon the messages? "If you say the stick is real, I will strike you with it. If you say the stick is not real..." According to Bateson, the subject "might reach up and take the stick away from the master" (Bateson, 1972, p. 208). In other words, he may rise above the constraints of the context and break it, or put it into a wider context where it becomes relative and changeable.

The question is explosive. The simple stylized experimental sequence of interaction in the laboratory is generated by and partly determines a network of contingencies which goes out in a hundred directions leading out of the laboratory into the processes by which psychological research is

designed, the interactions between psychologists, the economics of research money, etc., etc. (Bateson, 1972, p. 305)

In Learning II, the subject is presented with a problem and he tries to solve the problem. In Learning III, the subject asks: "What is the meaning and sense of this problem in the first place? Why should I try to solve it? Who designed it, how and for whose benefit?" As Bateson notes, this kind of behavior is easily coined as disruptive.

Even the attempt at Level III can be dangerous, and some fall by the wayside. There are often labeled by psychiatry as psychotic and many of them find themselves inhibited from using the first person pronoun. (Bateson, 1972, pp. 305-306)

Learning III is motivated by the resolution of the contradictions of Level II.

(...) the resolution of contraries reveals a world in which a personal identity merges into all the processes of relationship in some vast ecology or aesthetics of cosmic interaction. (...) Every detail of the universe is seen as proposing a view of the whole. (Bateson, 1972, p. 3069)

Whereas in Learning II the object is seen as a problem possessing its own objective dynamics outside the subject, in Learning III the object system is seen as containing the subject within it. Furthermore, the quality of the subject itself changes radically.

Selfhood is a product or aggregate of Learning II. To the degree that a man achieves Learning III, and learns to perceive and act in terms of the contexts of contexts, his 'self' will take on a sort of irrelevance. The concept of 'self' will no longer function as a nodal argument in the punctuation of experience. (Bateson, 1972, p. 304)

This fundamental change in the character of the subject has been described by Raiethel (1983), following Hegel, as the progression from the initial "Urzentrierung" (Learning I) to "Dezentrierung" (Learning II) and finally to "Rezentrierung" (Learning III). The individual self is replaced -- or rather qualitatively altered - by a search for a collective subject, capable of mastering the complexity of "contexts of contexts," i.e., of societal practices with highly developed division of labor as well as multi-level technological and symbolic mediations.

What are the appropriate instruments of Learning III? Wartofsky suggests a concept of tertiary artifacts.

(...) we may speak of a class of artifacts which can come to constitute a relatively autonomous 'world,' in which the rules, conventions and outcomes no longer appear directly practical, or which, indeed, seem to constitute an arena of non-practical, or 'free' play or game activity. (...) so called 'disinterested' perception, or aesthetic perception, or sheer contemplation, then becomes a possibility; but not in the sense that it has no use. Rather, in the sense that the original role of the representation has been, so to speak, suspended or bracketed.

(...) I would characterize such artifacts, abstracted from their direct representational function, as 'tertiary' artifacts, and suggest that they constitute a domain in which there is a free construction in the imagination of rules and operations different from those adopted for ordinary 'this worldly' praxis (...) That is to say, just as in dreams our imagery is derived from our ordinary perception, but transcends or violates the usual constraints, so too in imaginative praxis, the perceptual modes are derived from and related to a given historical mode of perception, but are no longer bound to it. (Wartofsky, 1979, pp. 208-209)

In discussing the means of scientific activity, Judin (1978, p. 323; see also Otte, 1984) proposes "theoretical substantiations" as the instruments of the tertiary level. They serve as the means of constructing and using "modeling conceptions" as second level instruments. In a similar vein, we may argue that Wartofsky's tertiary artifacts are actually methodologies or visions or world outlooks which serve as guidelines in the production and application of secondary artifacts, i.e., models.

Learning III may now be characterized as the construction and application of world outlooks or methodologies -- or ideologies, if you will. But it is not only a matter of imaginary production. In Learning III, the subject becomes conscious and gains the practical mastery of whole systems of activity in terms of the past, the present and the future. Individual manifestations of Learning III are commonly called "personal crises," "breaking away," "turning points" or "moments of revelation."

Learning I and Learning II, in their interaction and contradictions represent what is commonly understood as learning. Learning III represents what is often referred to as development. However, this kind of categorization is misleading. Learning I and Learning II are always embedded, in an altered form, in Learning III. Development can only take place as a "result" of learning. This was clearly realized by Vygotsky. He made a distinction between two kinds of (school) learning -- bad and good. According to him, "the only 'good learning' is that which is in advance of development" (Vygotsky, 1978, p. 89). This distinction corresponds to our distinction between Learning IIa and Learning IIb.

From this point of view, learning is not development; however, properly organized learning results in mental development and sets in motion a variety of developmental processes that would be impossible apart from learning. Thus, learning is a necessary and universal aspect of the process of developing culturally organized, specifically human, psychological functions.

To summarize, the most essential feature of our hypothesis is the notion that developmental processes do not coincide with learning processes. Rather, the developmental process lags behind the learning process (...).

Our hypothesis establishes the unity but not the identity of learning processes and internal developmental processes. It presupposes that the one is converted into the other. (Vygotsky, 1978, pp. 90-91)

In other words, productive experimentation of type IIb is a necessary precondition for the fruitful resolution of double binds. Expansive, non-pathological breaking out of the context of the double bind requires certain sophisticated learning actions, typical to the research-like reflective model building and testing at the core of learning activity. In the school context, this implies that pupils acquiring and applying Learning IIb will strive after a conscious subject position in their learning, thus questioning the relevance of their school learning in general and seeking wider contexts of life activities where school learning is relativized and put into perspective.

Individual and Societal Development

We have covered one side of the contradictory unity of learning and development. The

other side may be more unexpected. Learning is not only a necessary precondition of development -- development is also a necessary and always present ingredient of learning. This contention resembles the traditional idea of defining development as a sum of learning experiences. But the resemblance is only external.

Learning III as the outcome and form of typically human development is basically collective in nature. The collective Learning III is perhaps not so dramatic as its individual manifestations. But the real production and application of world outlooks, restructuring of complex activity systems, is not conceivable in individual and drastically sudden terms alone. In periods of exceptional upheavals, such as revolutions, the collective and the individual, the profound and the sudden, seem to merge, even to the point where the individual seems to take the leading role. But these are temporary phenomena. The bread and butter of human development is collective Learning III, gradual in form but profound in substantial effects.

In Learning II, in problem solving, there is always -- whether conscious or not, planned or unplanned -- the phase of the application and realization of the acquired instrument (be it a habit or a model) in real-life conditions, in societal practice. This phase, however, is rarely included in the object field of learning research.

If we are to study the conditions under which generic learning occurs, the pattern of much of the present learning research needs drastic change. The present approach is to study the speed of acquisition of new learning and, possibly, to study the conditions that produce extinction. When we have carried our experimental subjects through these steps, we either dismiss them or, if they are animal subjects, dispose of them. The exception, of course, is the clinician; but even his research on learning and cognition is of the cross-sectional type. We have been accustomed to speaking of mazes with rats and testwise human beings, but in the spirit of being annoyed by an inconvenience. (...) If we really intend to study the conditions of generic learning (...), then we shall have to keep our organisms far longer and teach them original tasks of greater diversity than we do now. (Bruner, 1974, p. 233)

If we follow Learning II after the laboratory phases described by Bruner, into the subject's activity outside the laboratory, we shall find out that the newly acquired instrument never stays exactly the same as it was in the phases of its original individual acquisition and internalization. It will change and produce surprises, new qualities, in its very integration into the wider context of social life activity of the subject. It will be concretized and generalized in practice which is necessarily richer than the abstraction originally acquired.

Appearing in direct contiguity with objective reality and subordinate to it, activity is modified and enriched, and in that enrichment it is crystallized in a product. The realized activity is richer and truer than the consciousness that precedes it. Thus, for the consciousness of the subject, contributions that are introduced by his activity remain cryptic; from this it follows that consciousness may seem a basis of activity. (Leont'ev 1978, p. 78)

This tacit transition from the sphere of initial internalization to the sphere of the often delayed externalization is actually a transition from Learning II to Learning III - from individual actions to the public or collective mode of activity.

The ends of the actions are intended, but the results which actually follow from these actions are not intended; or when they do seem to correspond to end intended, they ultimately have consequences quite other than those intended. Historical events thus appear on the whole to be (..) governed by chance. But where on the surface accident holds sway, there actually it is always governed by inner, hidden laws and it is only a matter of discovering these laws. (Engels, 1976, p. 366)

The individual makes a contribution to the societal development and thus indirectly to his own individual development. This differs from the explosive mode of Learning III described by Bateson. Obviously both modes exist -- the explosive and the tacit or gradual. The problem with the latter is that it takes place in the form of unrecognized innovations, "behind the back" of the subject, as it were. The subject remains merely a potential subject of their activity and development, effectively cut off from the collective mastery by the fragmented division of labor.

A proper example of this latter, gradual and tacit aspect of Learning III is the development of language. As the individual learns new models of using language, he and his teachers know that these models are not societally new, they are only new to this specific individual. But as the individual uses those models in his life activities, he actually produces *societally new* variations of the models, though mostly nonconsciously. His contribution loses its individual identity and merges into a vast pool of similar contributions in the social exchange within communities. In the long run, it will participate in the formation of new compelling models of language use, models into which the individual may or may not "grow from below," without explosions. These models eventually mold his whole world outlook and methodology of dealing with the world, though often very slowly and marginally.

In this, admittedly indirect and even somewhat drab sense Learning II always entails Learning III. What is not so drab is that this view suggests a new approach for developmental and learning research. Instead of asking how the individual subject developed into what he is, the developmentalist might start by asking, how the objects and structures of the life-world (themselves understood as activity systems) have been and are created by human beings, how something objectively new is developed all the time. The researcher would thus start with Bronfenbrenner's "train," but as a train which is continuously constructed and reconstructed by its passengers. On the other hand, this kind of constructivism does not mean seeing "individuals as producers of their own development." Rather, individuals are seen as co-producers of societal and cultural development and only indirectly as producers of their own development. Consequently, a learning researcher might not be satisfied with recording what is learned within the period of the initial acquisition of new knowledge or skills. Rather, he would concentrate on the practical application as an integral part of the process of learning and trace the mutations of the acquired contents as they become integrated into the life activities of the learner, i.e., truly socialized and generalized.

Above we have presented two alternatives from the point of view of the individual: development as personal crises and explosions, and development as tacit, invisible contributions. These extremes fail to account for perhaps the

most interesting phenomena of Learning III. Consider for example the Children's Campaign for Nuclear Disarmament started by Samantha Smith and her friends in the United States in 1981. Within a few months, thousands of children all over the country and abroad joined the movement, starting by writing letters to the leaders of the USA and the USSR. Samantha's invitation and visit to the USSR subsequently became world news and an important ingredient in the popular push toward a new dawn of detente.

The children who started the campaign did not experience personal crises, nor were their contributions invisible, tacit and nonconscious. Their very small actions rapidly grew into an objectively new form of societal activity. The societal development to which the little circle of children had given the impulse noticeably influenced the children's individual development. Samantha Smith and many other children became the "youngest ambassadors" not only in the media but in their personal reality. Compare this example with the effects of school learning, or with the effects of the regular campaigns against smoking, against traffic accidents, etc. In these cases, the initial impulses are massive, as measured with hours, manpower, or money. Yet the developmental effects in societal practice are meager, sometimes negligible.

This suggests that there are two basic types of development -- development being now understood as the *transitions between the levels of learning*, as movement from operations to actions to activity. These two types may be compared with the consequences of throwing a stone into the water. Normally, the stone produces a series of circles of waves, where the innermost waves are highest and then get smaller while moving outward, until they die out completely. In human development, there appears not only this type of movement, but also another, opposite type, where the waves grow while they move outward from the impulse, then turn back to mold the initial source of impulse, and finally create a new, higher-level structure or stability than the original.

This metaphor, used also by Ilya Prigogine (1985, p. 7) in a more general context, forces us to consider the crux the problem. How is the objectively, societally new generated in human development?

How the New is Generated

Prigogine defines the essence of the emerging new scientific rationality as follows:

Classical science is associated with the negation of time in the name of eternity. Nineteenth-century science is associated with a concept of time as decay. But the history of our world cannot be a succession of historical catastrophes only (...). After all, if there was decay, there must also have been some moments of creation. Curiously enough, this simple truth seems to have been first perceived by artists (...). At present, physics is in search of a third conception of time as reducible neither to repetition nor to decay. (Prigogine, 1985, p. 3)

In developmental psychology, we find occasional discussions and puzzlements around the question: How is the new generated from the old? The analysis presented so far suggests that this is an erroneous way of putting the question. The new is not generated from the old but from the *living movement* leading away from the old.

'If you do not know what you are looking for, then why are you looking; if you know what you are looking for, then why are you looking for it?' For a creature with a mind, search and investigation, which involve this internal contradiction, are characteristic.

This fundamental contradiction is the true source of development of the mind of animals and man. (...) To look for something that does not yet exist but that is possible (...) this is the fundamental, cardinal aspect of the vital activity of every sentient and thinking being - a subject. (...) In light of this activity the paradox of search consists in the fact that it combines within itself the possible and the actual. (Davydov & Zinchenko, 1982, p. 24)

Davydov and Zinchenko, in line with Bernshtein, define the living movement as the genetically primary unit of analysis of mental reality. The cultural prototype of living movement is work. The paradox of search is embedded in the very first forms of human labor activity.

Movement takes place as a necessary connective link between foreseeing and remembering. The disjunction between these two elements is overcome by the present, that is, intensive action in the present. (Davydov & Zinchenko, 1982, p. 31)

We may now return to the example of the Children's Campaign for Nuclear Disarmament and to the postulated two types of development. It seems that the living movement demonstrated by the Campaign contains one distinctive feature. The paradox of the search has in this case become conscious to the searchers themselves, it has reached the quality of a genuine double bind, and it has been resolved through collective, conscious action in the present. In other words, the type of development we are concerned with here -- expansive generation of new activity structures -- requires above all an *instinctive or conscious mastery of double binds*. Double bind may now be reformulated as a *social, societally essential dilemma which cannot be resolved through separate individual actions alone - but in which joint co-operative actions can push into emergence a historically new form of activity*.

The reason why standard moral dilemmas such as those used by Kohlberg and his colleagues are not real double binds thus become evident. They take place in a cultural-historical vacuum, within no recognizable concrete activity structures. The mastery of double binds is nothing else than laborious historical analysis (or historical intuition) of the inner contradictions of the activity systems the subject is a part of. No such analysis or intuition is possible for a subject facing some of Kohlberg's dilemmas, simply because the information and time needed are in principle made unavailable.

Here we come back to the instruments. To be inventive in a dilemma situation is to invent a new instrument for the resolution of the dilemma. This demands experimentation, borrowing or "conquering" already existing artifacts (such as letters in the case of the Children's Campaign) for new uses.

(...) the experimenter cannot move beyond the point for which methods and instrumentation are available. He may sometimes invent them; more often he adopts them from some source that may be well outside of his own immediate interest (...)

One of the most important features of these turning-points in experimental development is that they very often introduce methods and instrumentation new to the field of research involved, but already developed in some other region of investigation. But if the experimenter who does

this has any original impact upon his science he always does more than this. He must adapt the new methods and instruments for use in his own field, and he must show that they can be used to reach a compelling answer to some current problems, and at the same time to lead on to a number of further problems. (Bartlett, 1958, pp. 133-135)

Bartlett's analysis of scientific experimentation is well transferable to other societal activities. The problem in Kohlbergian dilemmas is that there is no field of activities and artifacts in which the dilemma would be embedded. Thus, there is nothing to experiment with in the first place.

The instruments are also what distinguishes the case of the porpoise from the case of the Children's Campaign. Though the porpoise went through an intensive dilemma and resolved it by producing genuinely new behavior, she never produced new instruments in the proper sense of the word. She did not produce implements or models that could be communicated, preserved and transferred among her own species. These processes could possibly take place only through a kind of symbiosis with man. The actions of the porpoise could not by themselves push into emergence a new co-operative activity system in the "societies" of the porpoise species. They would remain individual achievements unless man chose to try to transfer them to other individuals and species.

Recently Bratus and Lishin (1983) have presented an instructive discussion which has direct relevance to the problem of the double binds. On the basis of Leont'ev's (1978) theoretical work and their own clinical experiments, they describe the psychological phases of the emergence of a new activity in the diagram that follows (Figure 2).

In the diagram, the symbol N refers to "need," the symbol A refers to "activity," the symbol O refers to "object" and the symbol M refers to "motive." Each new expanded need is produced in an activity which in turn is established on the basis of a previous need that, having met its object, has been transformed into a motive. But the exceptional point in these continuing cycles is something which is symbolized with S_n . This symbol refers to the concept of "need state."

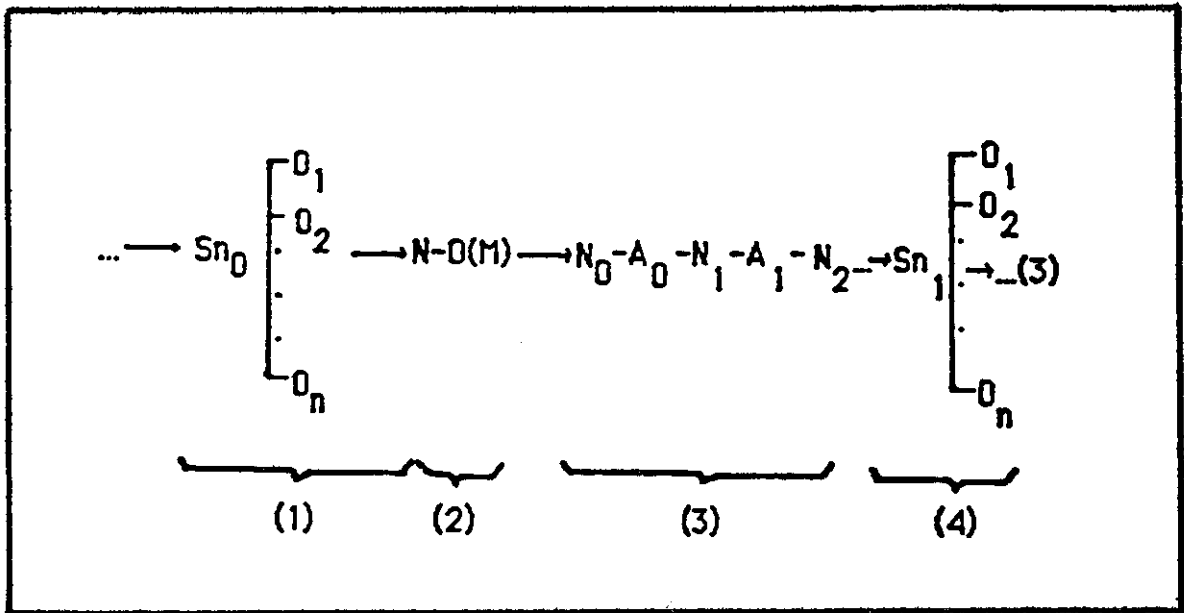


Figure 2. The emergence of activity according to Bratus & Lishin (1983, p. 44)

(...) a breakdown in the sequence of activity is possible at two points: either at the point N-A, when a need cannot be satisfied by the previous set of means of activities; or at the point A-N, when on the contrary, the existing operational and technical means do not correspond to the previous needs. In either of these cases some special state of indeterminacy may arise in which desires, as it were, lose their object, and one may say that a person desires (sometimes very passionately) something he himself does not know and cannot clearly describe.

This peculiar state of indeterminate, temporarily objectless desire may be called a need state (...). (Bratus & Lishin, 1983, p. 43)

This characterization immediately reminds us of the notion of the paradox of the search as formulated above by Davydov and Zinchenko. Essential in the need state is that the subject faces competing alternatives and is unable to determine the direction of his efforts. The new activity emerges through three zones: (1) the zone of a need state, (2) the zone of motive-formation, and (3) the zone of transformation of needs and activity (Bratus & Lishin, 1983, p. 44).

However, a need state cannot last long. Sooner or later an encounter with, discovery, or active testing action of some object occurs; this object fits the particular need state, which places it in a qualitatively different rank, the rank of an objectified need, i.e., a need that has found its object or motive. Then, through the discovered motive, the need stimulates activity, during the course of which the need is reproduced and (...) somewhat modified, impelling it on to a new cycle of activity that is different compared with the previous one, etc., i.e. a sequence of transformations emerges. (Bratus & Lishin, 1983, pp. 43-44)

Two important critical comments are necessary here. First, it is never a question of arbitrary or accidental competing objects in the need state. Beneath the seemingly accidental surface of disconnected "alternatives" or "options," there lie the historically determined inherent contradictions of any object of the given socio-economic formation. In capitalism, the inherent contradiction functioning in every single object is the double nature of labor and commodities, being simultaneously abstract and concrete, exchange value and use value. Thus, the need state is basically a

subject's bewilderment at the face of these two mutually excluding and mutually dependent sides of the same object.

The formation of the capitalist organism emerges as the process of growing tension between the two poles of the original category. The transformation of the opposites of value and use-value into each other becomes ever more complicated (...).

The poles of value gravitating towards each other remain two extreme points between which ever new economic forms emerge. Any new economic reality assumes a meaning and significance only if it serves the mutual transformation of value and use-value, if it becomes a form of realization of value as a living antagonistic unity of its inner opposites. (Ilyenkov, 1982, pp. 276-277)

Needless to say, all objects and life structures are "economic realities" in capitalism, becoming increasingly integrated into and penetrated by the basic economic laws of the system. The other critical comment concerns the "automaticity" of the emergence of new activities postulated by Bratus and Lishin. The authors claim that need state "cannot last long" and that it will eventually be replaced by a new cycle of transformations. First, there are good grounds to argue that a need state often does indeed last long and produce various forms of deprivation, passivity and withdrawal, not to talk about "substitute activities" such as alcoholism studied in depth by the authors themselves. But more important is the manner in which the need state is supposed to be resolved. Bratus and Lishin make it sound like a very easy and effortless process: "Sooner or later an encounter with, discovery, or active testing action of some object occurs." There is ample evidence that the most of such "sooner or later" choices actually involve not generation of new activities but "rediscovery" of old, regressive activity forms. Life moves in circles, not in an ascending spiral. Obviously invisible contributions to development are made in this form, too. But this is not really what we are looking for.

A need state contains no automatism. It may be "resolved" through regression or it may be resolved through expansion. To clarify the structure of the latter process, we now turn to the elaboration of the category of the zone of proximal development.

The Zone of Proximal Development

Vygotsky's famous definition of proximal development reads as follows:

It is the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers. (Vygotsky, 1978, p. 86)

According to Vygotsky, the zone of proximal development defines those functions that will "mature tomorrow but are currently in an embryonic state," i.e., the "buds" of development. Vygotsky claimed that primates and other animals cannot have a zone of proximal development. Human children, on the other hand, can "go well beyond the limits of their own capabilities," they "are capable of doing much more in collective activity (Vygotsky, 1978, pp. 86, 88). Vygotsky saw instruction as a chief means to exploit the zones of proximal development.

Therefore the only good kind of instruction is that which marches ahead of development and leads it; it must be aimed not so much at the ripe as the ripening functions. (...) instruction must be oriented toward the future, not the past. (Vygotsky, 1962, p. 104)

Vygotsky refers to Montessori's idea of "sensitive periods" as optimal points of departure for instruction.

She found, for instance, that if a child is taught to write early, at four and half or five years of age, he responds by 'explosive writing', an abundant and imaginative use of written speech that is never duplicated by the children a few years older. This is a striking example of the strong influence that instruction can have when the corresponding functions have not yet fully matured. (Vygotsky, 1962, p. 105)

The concept of the zone of proximal development has had quite a renaissance during the last few years, especially in the United States. A common interpretation and application of this concept is to use it as a rationale for different versions of "dynamic assessment of intelligence" (see Brown & French, 1979; Day, 1983).

Another common interpretation takes the zone of proximal development as a rationale for creating social situations or environments where instructional support is given to children, thus

enabling children to acquire new skills in a new way, through joint problem solving and interaction. The notion of "scaffolding" (see Wood, Bruner & Ross, 1976; Wood, 1980) is a product of this line of interpretation, so is Cazden's (1981) work on children's speech acquisition, and so are several contributions to the important volume edited by Rogoff and Wertsch (1984).

Neither one of these common interpretations does full justice to Vygotsky's conception. In the case of the dynamic assessment interpretation, it is easy to notice that Vygotsky "does speak to broader issues" (Day, 1983, p. 164). But even the notion of "scaffolding" is unduly narrow. Peg Griffin and Michael Cole point out two serious weaknesses in this interpretation. First, scaffolding (or creating "formats," see Bruner, 1985) refers to acquiring discrete skills and actions, not to the emergence of total long-lasting activities: It is a "largely spatial metaphor, in which the temporal aspect of the construction of the whole remains as a residual, unanalyzed aspect of the living process" (Griffin and Cole, 1984, p. 48). Second, the idea of scaffolding is restricted to the acquisition of the given.

The scaffold metaphor leaves open questions of the child's creativity. If the adult support bears an inverse relation to the child's competence, then there is a strong sense of teleology - children's development is circumscribed by the adults' achieved wisdom. Any next-step version of the Zo-ped (zone of proximal development; Y.E.) can be of similar concern, including work that we have done. (Griffin & Cole, 1984, p. 47)

This self-critical formulation is exceptionally important. Griffin and Cole try to sketch an expanded conception of the zone of proximal development. In line with Leont'ev's (1981) analysis, they see the child's development as a series of transitions from one ontogenetically leading or dominant activity to another: from play to formal learning, from formal learning to peer activity, from peer activity to work. Furthermore, they do not subscribe to a fixed universal order of automatically occurring transitions. To the contrary, "it is possible to show changes in leading activities that follow development sequences within a single setting" (Griffin & Cole, 1984, p. 60). Play activity, for example, is often a mediat-

ing device which helps youngsters enter new activities (Griffin & Cole, 1984, p. 62). The authors' conclusion is:

Adult wisdom does not provide a teleology for child development. Social organization and leading activities provide a gap within which the child can develop novel creative analyses. (...) a Zo-ped is a dialogue between the child and his future; it is not a dialogue between the child and an adult's past. (Griffin & Cole, 1984, p. 62)

Inspiring as this conclusion is, it is difficult to avoid the impression that the authors themselves, not to mention other researchers, have only started to consider its implications. This is evident in the inconsistency between the conclusion cited above and Cole's formulations in other publications. An article in the recent fine volume edited by Wertsch (1985) is a case in point. Here, Cole speaks of the zone of proximal development exclusively in terms of "acquiring culture," never in terms of creating it. He summarizes the article by stating the following:

The acquisition of culturally appropriate behavior is a process of *interaction* between children and adults, in which adults guide children's behavior as an essential element in concept acquisition/acculturation/education. (Cole, 1985, p. 158)

In the same volume, Sylvia Scribner goes even further:

The child is a assimilator of sign systems and develops higher functions through processes of internalization. Adults in the course of history are the inventors and elaborators of sign systems, as well as users. Assimilative and creative processes are not the same. (Scribner, 1985, p. 130)

Scribner supports her standpoint by referring to Vygotsky's discussion on the development of memory. But it is obscure how that relates to the question of children's potential to create new cultural means and forms. Probably more relevant are the findings of Davydov (1977) and Poddjakov (1981), according to which even pre-school children can form real theoretical generalizations, though they do not yet appear in a verbal form but take other, object-bound and enactive as well as graphic forms of expression.

As a matter of fact, Vygotsky, too, said very little about creative process (except in his early work on the psychology of art). Vygotsky's concept of the zone of proximal development is itself

in need of development. The cultural-historical school founded by Vygotsky has up to the present time concentrated on the acquisition, assimilation and internalization of the tools and sign systems of the culture. How these tools and sign systems are created has mainly been treated as a problem for the future. One important exception is the theoretical work of V.S. Bibler. He reveals the creative potential in Vygotsky's conception of internalization as follows:

(...) the process of immersion of social relations in consciousness (...) is (...) a process of transforming expanded and relatively independent 'cultural models,' prepared cultural phenomena, into culture of thinking, a dynamic culture, which is fused and condensed in the individual person. An objectively developed culture acquires a subjective determination in inner speech, i.e., a determination in which it is manifest as a future-oriented form of creativity, of new, as yet nonexisting, merely possible models of culture. The relationship is inverted, and inner speech must be understood as not so much a 'phenomenon of internalization' as the intention of the 'externalization' of thought, as an embryo of a new, not yet objectively posited culture, not yet deployed in the external, social aspects of culture, an embryo concentrated in the concept. Social relations are not only immersed in inner speech: they are radically transformed in it; they acquire a new (as yet unrealized) sense, a new orientation toward external activity, toward their objective materialization. (...) But then, (...) inner speech (and its elementary form of mono-dialogue) may be represented as the dialogue of those cultural-historical models of thinking (activity) that are internalized in the different voices of my own 'I,' the argument among these functioning as a kind of positing, the creation of new cultural phenomena (knowledge, ideas, works of art) (Bibler, 1984, pp. 52-53).

The individual "mechanism" of transforming internalization into externalization may well follow the lines sketched by Bibler. But the relationship between individual and societal development remains the fundamental problem within the concept of the zone of proximal development. Griffin and Cole (1984, pp. 48-49) stress that the zone of proximal development "includes models of a future, models of a past, and activities, that resolve contradictions between them." But this temporal perspective seems to be understood in individual terms only: the individual moves from

one activity to another in the course of his development. What is not discussed is whether and how the *activities themselves as societal systemic formations develop and change constantly.*

Old and new, regressive and expansive forms of the same activity exist simultaneously in the society. Children may play in a reproductive and repetitive manner, but they do also invent and construct new forms and structures of play, new tools and models for play activity. Their playing seems to become increasingly consumptive and pre-fabricated, the exchange-value aspect seems to dominate it more and more as the toys and games have become big business. But is it so simple and uni-directional? What are the inner contradictions and historical perspectives of the play activity of our children? Once in awhile parents are astonished as they find their children playing something which does not seem to find any preconceived canons: something new has been produced "from below." Sometimes these inventions from below become breakthroughs that significantly change the structures of play activity.

All this applies to adult activities as well. Research on work activities, for example (see Projekt Automation und Qualifikation, 1980, 1981; Toikka, Engeström & Norros, 1985), can bring into the open "grey zones" (often associated with major changes or serious crises in the production) where the management is actually unable to determine the exact direction and content of its next technological, organizational and economic decisions. The actions taken by the workers then acquire unexpected influence - whether the workers themselves are aware of it or not.

Human development is a dialectical unity of the individual and the societal. It is real production of new societal activity systems and not just acquisition of individually new activities plus perhaps individual creation of "original pieces of behavior" (recall the porpoise). Above we have distinguished between three types of development: the *individual-explosive*, the *invisible-gradual*, and the *collective-expansive*. The third type is the one which requires intuitive or conscious mastery - the subjectification of the subject. The concept of the zone of proximal development as an *instrument of subjectification* is relevant in the context of this third type of development.

We may now attempt a provisional reformulation of the zone of proximal development. It is the *distance between the present everyday actions of the individuals and the historically new form of the societal activity that can be collectively generated as a solution to the double bind potentially embedded in the everyday actions.*

Klaus Holzkamp, seemingly unaware of Vygotsky's conceptualization, has recently developed a somewhat similar idea of human development. According to him, embedded in every individually experienced existential threat and restriction in capitalism, there is a "second alternative" of - "*exceeding the limits of individual subjectivity through immediate co-operation in the direction toward realizing general interests of joint self-determination against dominating partial interests*" (Holzkamp, 1983, p. 373). Holzkamp speaks here of the principle of "double possibilities." He concretizes further this idea with the concepts of "possibility zone" and "possibility generalization." The former refers to a "relationship between general societal possibilities to act and my specific way of realizing, limiting, mystifying them" (Holzkamp, 1983, p. 548). The latter means that the individual grasps and realizes his individual possibilities to act in relation to other individuals within the same "typical possibility zone" and with the societal possibilities (Holzkamp, 1983, p. 549).

From the instructional point of view, our definition means that teaching and learning are moving within the zone of proximal development only when they aim at developing historically new forms of activity, not just at letting the learners acquire the societally existing or dominant forms as something individually new. To aim at developing historically new forms of activity implies an instructional practice which follows the learners into their life activities outside the classroom. It also implies the necessity of forming true productive learning activity (Learning IIb) in the learners. The instructional task is thus twofold: to develop *learning activity* and to develop historically new forms of the *primary target activity* (of course learning activity is itself the primary target activity during the early school years).

But this instructional mission requires a closer, if only tentative, analysis of the steps to be taken in traveling through the zone of proximal development. Recall the three sub-zones sug-

gested by Bratus and Lishin: the zone of a need state, the zone of motive-formation, and the zone of transformation of needs and activity. In light of the preceding discussion, these three steps turn out to be insufficient. What is lacking, above all, is the *transformation of the need state into a double bind*, into a contradiction which uncompromisingly demands *qualitatively new instruments* for its resolution. To make the necessary steps concrete, we now turn to a literary example of the zone of proximal development.

The example is Mark Twain's *The Adventures of Huckleberry Finn* (1950). The story begins with Huck being harassed and threatened by his father. Huck gets away by staging his own death. He settles on an island in the Mississippi river. There, he accidentally meets the runaway slave Jim, his old friend. Because of the friendship, Huck promises not to tell anybody about Jim. The two live on the island a while. Then things start to move.

Next morning I said it was getting slow and dull, and I wanted to get a stirring up, some way. I said I reckoned I would slip over the river and find out what was going on. Jim liked that notion; but he said I must go in the dark and look sharp. (p. 54)

This is a signal of a *need state*. There seem to be lots of alternatives for the choosing.

Huck finds out that Jim is being intensively hunted. So they get off down the big river on a raft, floating during the nights and hiding during the days. But this is not yet "*intensive action*" to resolve the dilemma. Rather, it is *reaction*, forced by the circumstances and still relatively aimless. This goes on until they approach areas where slavery is abolished.

The following is a beautiful description of a *double bind*. The contradiction is intensified until it becomes unbearable. Huck desperately tries to *analyze* the situation and find an acceptable solution.

Jim said it made him all over trembly and feverish to be so close to freedom. Well, I can tell you it made me all over trembly and feverish, too, to hear him, because I begun to get it through my head the he *was* most free- and who was to blame for it? Why, *me*. I couldn't get that out of conscience, no how nor no way. It got to troubling me so I couldn't rest; I couldn't

stay still in one place. It hadn't ever come home to me, before, what this thing was that I was doing. But now it did; and it stayed with me and scorched me more and more. (...)

I got to feeling so mean and so miserable I most wished I was dead. I fidgeted up and down the raft, abusing myself to myself, and Jim was fidgeting up and down past me. We neither of us could keep still. Every time he danced around and says, "Dah's Cairo!" It went through me like a shot, and I thought if it was Cairo I reckoned I would die of miserableness.

(...) My conscience got to stirring me up hotter than ever, until at last I says to it, "Let up on me- it ain't too late yet - I'll paddle ashore at the first light and tell." I felt easy, and happy, and light as a feather, right off. All my troubles was gone. I went to looking out sharp for a light, and sort of singing to myself. By and by, one showed. (pp. 87-88)

Now Huck really starts to paddle ashore. As he leaves, Jim says to him.

Pooty soon I'll be a-shout'n for joy, en I'll say, it's all on accounts o' Huck; I's a free man, en I couldn't ever ben free ef it hadn' ben for Huck; Huck done it. Jim won't ever forgit you, Huck; you's de bes' fren' Jim's ever had; en you's de *only* fren' ole Jim's got now.

I was paddling off, all in a sweat to tell on him; but when he says this, it seemed to kind of take the tuck all out of me. I went along slow then, and I warn't right down certain whether I was glad I started or whether I warn't. When I was fifty yards off, Jim says:

Dah you goes, de ole true Huck; de on'y white genlman dat ever kep' his promise to ole Jim.

Here, Huck first enters the phase of *hesitation and pause*. Then *the intensive action to solve the dilemma* starts. In a very short period, Huck finds the *object and motive* for the subsequent activity: freeing Jim. He also invents the first *instrument* for this (the story of the sick family).

Well, I just felt sick. But I says, I *got* to do it - I can't get *out* of it. Right then, along comes a skiff with two men in it, with guns, and they stopped and I stopped. One of them says:

"What's that, yonder?"

"A piece of a raft," I says.

"Do you belong on it?"

"Yes, sir."

"Any men on it?"

"Only one, sir."

"Well, there's five niggers run off to-night, up yonder above the head of the bend. Is your man white or black?"

I didn't answer up prompt. I tried to, but words wouldn't come. I tried, for a second or two, to brace up and out with it, but I warn't man enough - hadn't the spunk of a rabbit. I see I was weakening; so I just give up trying, and up and says:

"He's white."

"I reckon we'll go and see for ourselves."

"I wish you would," says I, "because it's pap that's there, and maybe you'd help me tow the raft ashore where the light is. He's sick - and so is mam and Mary Anne."

Oh, the devil! we're in a hurry, boy. But I s'pose we've got to. Come - buckle to your paddle, and let's get along." I buckled to my paddle and they laid to their oars. When we had made a stroke or two, I says: "Pap'll be mighty much obleeged to you, I can tell you. Everybody goes away when I want them to help me tow the raft ashore, and I can't do it by myself."

"Well, that's infernal mean. Odd, too. Say, boy, what's the matter with your father?"

"It's the - a - the - well, it ain't anything much."

They stopped pulling. It warn't but a mighty ways to the raft, now. One says:

"Boy, that's a lie. What is the matter with your pap? Answer up square, now, and it'll be the better for you."

"I will, sir, I will, honest - but don't leave us, please. It's the - the - gentlemen, if you'll only pull ahead, and let me heave you the head-line, you won't have to come a-near the raft - please do."

"Set her back, John, set her back!" says one. They backed water. "Keep away, boy --keep to looard. Confound it, I just expect the wind has blowed it to us. Your pap's got the smallpox, and you know it precious well. Why didn't you come out and say so? Do you want to spread it all over?"

"Well," says I, a-blubbering, "I've told everybody before, and then they just went away and left us." (pp. 89-90)

After the intensive episode, Huck formulates in an inner dialogue, the new general model for generating the new activity -- i.e., freeing Jim.

They went off and I got aboard the raft feeling bad and low, because I knowed very well I had done wrong, and I see it warn't no use for me to try to learn to do right; a body that don't get *started* right when he's little, ain't got no show - when the pinch comes there ain't nothing to back him up

him up and keep him to his work, and so he gets beat. Then I thought a minute, and says to myself, hold on - s'pose you'd a done right and give Jim up: Would you felt better than what you do now? No, says I, I'd feel bad - I'd feel just the same way I do now. Well, then, says I, what's the use you learning to do right, when it's troublesome to do right and ain't no trouble to do wrong, and the wages is just the same? I was stuck. I couldn't answer that. So I reckoned I wouldn't bother no more about it, but after this always do whichever come handiest at the time. (p. 91)

Huck's new general instrument is something like a pragmatic moral philosophy. It harnesses him against the attacks of bad conscience stemming from the old societal norms of slavery.

The rest of the book is about the *practical application* of the model. There occurs, in a miniature form, a *transformation of actions into a collective activity*, temporarily joined by a couple of common crooks and finally joined by Tom Sawyer, too. In his introduction to the book, T. S. Eliot points out this collective essence by noting that "Huck in fact would be incomplete without Jim." (Eliot, 1950, xi)

And the *style* of the book, which is the style of Huck, is what makes it a far more convincing indictment of slavery than the sensationalist propaganda of *Uncle Tom's Cabin*. Huck is passive and impassive, apparently always the victim of events; and yet, in his acceptance of his world and of what it does to him and others, he is more powerful than his world, because he is more *aware* than any other person in it. (Eliot, 1950, x)

It is almost as if Mark Twain had had a notion of the zone of proximal development as he ended the book with Huck's words.

But I reckon I got to light out for the Territory ahead of the rest, because Aunt Sally she's going to adopt me and civilize me, and I can't stand it. I been there before. (Mark Twain, 1950, p. 292)

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Computerization in Soviet Education

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This is a brief report of the recent trips by Mike Cole and Luis Moll to the Soviet Union to discuss problems of computerization in the elementary school years. A major goal of these visits was to arrange for joint research involving Soviet and American cognitive scientists. At present it appears that such joint research will be possible, involving LCHC in a cooperative venture with colleagues at the Bank Street College of Education and the Graduate School of Education at Harvard.

In general, and in education in particular, the situation vis a vis computers in the USSR can only be considered grim. There are very few machines of any kind available currently in Soviet schools. There are some notable exceptions to the generally grim picture, and there are energetic moves underway to remedy the situation, but mass production of personal computers is still "around the corner" and the major pilot projects we saw use foreign made machines.

The current push for computerization in the schools is at the 9th-10th grade level. A textbook written by Andrei Ershov from the Computing Center in Novosibirsk has been widely distributed. It is designed to teach about the main ideas of computing for classrooms without computers. The textbook emphasizes algorithmic thinking, with applications mainly in mathematics and physics.

This past summer a crash teacher training program was conducted for 9-10 grade teachers throughout the country. We were told that approximately 60,000 teachers were introduced to computer literacy teaching. These teachers, like their pupils, had little access to computers, although they were shown videotapes that took them through standard hardware and at least gave them a glimpse of software applications.

Cole saw one exemplary computer training program and heard about others. Often exem-

plary programs are designed jointly by a school and factory or research institute, much in the spirit of our business-education cooperative efforts. One especially interesting cooperative effort between a branch of the Institute of Cybernetics and an elementary school begins as early as the second grade. The program Cole saw was at a special "Educational-Work Training Center," a school in Moscow that has converted full time to training 9-10th graders in badly needed computer skills. About 15 schools send students one day a week for two years to get certified in computer operation, programming, and word processing skills. Some of the classrooms use a machine that looks like a PDP 11 with several workstations; others use a network of 15 Yamaha micros. The Yamaha classrooms are arranged so that every machine can reach every other one; the teacher's machine is the only one with a disk drive and a printer. The keyboards have both Cyrillic and Roman letters; the words in the programs are mostly Russian, but there are many English words used. These systems are used primarily for teaching programming. The center machines are available after school and we saw youngsters, much like ones we know here, working on programs for a variety of purposes, including writing game programs of the space wars variety.

The Soviets we spoke with were particularly admiring of the advances made by the Bulgarians in integrating micros into the regular curriculum. Moll met with a Bulgarian computer specialist and came away with the impression that the approach to computer literacy was much like that which we at LCHC have been pursuing, including heavy involvement of the community with the children and computers. He also met people who are using computers to build simulations to help children master physics principles.

During the next few months we expect several Soviet visitors in the US and our editorial colleague, Esteban Diaz, will be going to Moscow. During July, two Soviet scholars will be visiting LCHC to learn about our networking activities and to prepare for the experiment in joint activity between children. Then they will travel East to visit the Eastern sites where the children will be located and to become familiar with the networking on EIES at the New Jersey Institute of Technology. Anyone interested in joining these interactions should send us a message via BIT-NET, EIES, or the Source.

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Additional support for the *Newsletter* has been provided by a grant from the Carnegie Corporation, No. DC15-06/86-Cole.

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