

The Virtual Dialogue; Neo-Hermeneutics Online

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ABSTRACT

Distant, Computer-mediated, Online, Asynchronous, Virtual, Dialogue; these are the key words that apply to education and research when people work at their own computers and are in communication with each other through their computer modems or by satellite.

Connection between teachers, students and colleagues is facilitated by computer conferencing (CC) software, which may run on a campus network, on a "gateway" service like AOL or Earthlink, on a free standing BBS (bulletin board system), or on an Internet Web like "Blackboard".

People who live and work in this domain use a special typographic argot akin to that of ham radio operators. It operates on 16 and 32 bit bandwidths but initially it worked with the multiples of 8 that constrained the way bits, bytes and characters were combined into information.

Keywords: Virtual, Anadolu University, Computer-mediated, Online, Asynchronous

INTRODUCTION

I Distant, Computer-mediated, Online, Asynchronous, Virtual, Dialogue; these are the key words that apply to education and research when people work at their own computers and are in communication with each other through their computer modems or by satellite. Connection between teachers, students and colleagues is facilitated by computer conferencing (CC) software, which may run on a campus network, on a "gateway" service like AOL or Earthlink, on a free standing BBS (bulletin board system), or on an Internet Web like "Blackboard".

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Acronyms like CC, BBS, PC, DOS, OOP, ASCII and BASIC abound, and newcomers may have trouble getting accustomed to contractions like SYSOP (system operator), MODEM (Modulate-DEModulate), and style conventions like NeXT, eSoft, HyperText, and E-mail. E-hyphenation is a shorthand expression for anything that is an electronic counterpart of something concrete. However, the convention is useful as a reminder that even though the a term may seem familiar, its "E-" or "EL-" form refers to a different domain where everything works by different rules.

Distant education can also refer to conventional correspondence school and TeleVideo (university without walls) courses. But when courses are offered online, it means that they are accessed on a computer conferencing system and are therefore computer-mediated. Online E-courses can be of many kinds. Sometimes they are merely new-style correspondence courses, except that the text materials are mailed to students by post and then student-teacher communication by post is supplemented by modem-accessed E-mail. Such courses range from the impersonal exchange of lessons and assignment reports to an intensive dyadic tutorial.

Some online courses go the other extreme and try to employ "realtime", "chat" conferencing. This is when all members ("callers," "users," or "terminals") are in simultaneous communication with each other through the "host" conferencing, or gateway system. However, realtime conferencing, even when televideo is added, has not turned out to be as effective as was originally hoped. It is expensive and inconvenient, requiring elaborate advance scheduling; and the discussions are so awkward and place such heavy burdens on the moderator, that spontaneity and creativity are sometimes inhibited. In a class of 20, a long time may pass before an individual comment reaches its turn on the screen.

Asynchronicity is one of the primary advantages of online education because this means that all members can participate at the time and place of their own choosing.

This is a new educational environment and we are only now beginning to understand its unique qualities. Foremost among these is the asynchronous online dialogue, for when online education is at its best, it imparts to education a "virtual" form of the Platonic dialogue.

People who have not spent much time at online conferencing sometimes find this hard to believe. The computer is widely regarded as a depersonalizing instrument. Today, the ordinary person's main contact with computer-mediated communication is probably the depersonalized and off-putting voice mail systems that require the caller to press a succession of phone buttons through a pathway of department messages and finally into a message recorder.

Teachers, especially good teachers, fear that computer-mediated education will destroy the thing most essential to their teaching, the personal, face-to-face oral give-and-take of the classroom or seminar. Their charisma -the secret of their teaching effectiveness- is missing. The first online teachers assumed this would be true, but the advantage of reaching students who could not otherwise go to college or class warranted experimenting with the medium. However, it quickly became clear that, although online education has many limitations, and even though students are not in the physical presence of the teacher, it is not depersonalizing environment.

Interpersonal relations and even intimacies, exist online, and many stylistic conventions have sprung up to break out of the bleakness of ASCII, the alphanumeric code through which online communication most often occurs. Moreover, even something so personal a counseling works very well through computer-mediation. This has been proved by the success of Roger Gould's computer-based Therapeutic Learning Program-TLP (Roger Gould, Professor of Psychiatry, UCLA; <discover&decide> psychiatry site) in the Cigna Corporation health services package, and available by membership online.

If the terms "personal" and "online" still seem self-contradictory, consider that online users exchange texts, and text is what elicits the highest and most personal expressions of style and personality in poetry and fiction. Some teachers express themselves best through speech, but many do this best in their writing. With students, by the second or third session of an Electronic Course, the individual personalities of its members come through as vividly as a Victorian signature, and individuals can often be recognized after a line or so of text.

ASCII

It bears emphasizing that the online dialogue model can work within the limits of the ASCII alphanumeric code over ordinary phone lines. This means that the lowliest 8 bit computer, so long as it has a modem and a disk drive, works as well as the most exotic Compaq or Mac.

OUTREACH

The "text-plus-dialogue", "constructional" mode described here is not only an effective mode of online education; it is the cheapest to run and it outreaches to the largest user base.

THE SUPRA-TECH MYSTIQUE

There is at work today a kind of technological imperative that pushes everybody toward the most exotic state-of-the-art facilities possible. The educational variant of this tech- push elan says:

Cutting edge computer advances today make it possible to incorporate into computer-aided courseware, state-of-the-art facilities such as: multimedia ingredients from movies, documentaries, news clips, pictures, realtime televideo lecture segments, graphic designs, orchestral performances, database reference texts and interactive discussions between teacher and students. Therefore, it is claimed, all these features should be incorporated into courseware. It is implied that any system that cannot do this is hopelessly archaic and LoTech, and nobody should waste time working with it.

Computer scientists also point out that such hitech resources cannot readily be transmitted through modems over ordinary analog phone lines. They describe glowingly the miracles that will be possible when broad band, digital ISDN systems spread, and cutting edge equipment will make it possible to do everywhere what today is possible only on internal, state-of-the-art university network systems.

The point has much validity, and it is especially relevant to the design of innovative courseware for use in universities like Carnegie Mellon and MIT where first class networking facilities and transmission lines are installed.

However it is also well to remember that most of the separate multimedia resources mentioned above are already available for integration into the courses offered in regular classrooms, and most teachers can get them from the libraries and audio-visual labs of their own institutions. However, very few teachers believe that the teaching time they require justifies their use.

Merely because it is now technologically possible to integrate such resources into computer courseware is no more reason to do it in the electronic classroom than in a conventional classroom, just because they are available. A teacher who does not use multimedia teaching resources without a computer will hardly be inclined to use them with one.

Besides, plain ASCII online teaching possesses powerful pedagogical resources of its own, and these will be discussed below.

What follows concentrates upon what can be done today, with present equipment, over ordinary analog phone lines, reaching users with simple home computers.

Graphics present another matter. Simple ones can be made with standard ASCII and ANSI alphanumeric keyboard characters. Anything that can be done that way can be saved to ASCII and transmitted satisfactorily. If, however, one wishes to use a graphics software package, this works through "bit-mapped" screen designs, which means that the screen containing the design must be transmitted in a compiled form.

Consider the matter this way A teacher can now go to the library and check out films, symphonic recordings, reproductions of gallery paintings, architectural designs and recorded interviews. Many of these are on (or can be put on) CD-ROM. Today, all of these multimedia resources can be brought into the classroom and used in their concrete forms to enhance lectures.

Do teachers do this? A few, do, of course, especially in fine arts courses, but most do not. Do teacher want to use such resources? No; but, why not? Films, for example, are usually regarded as taking up too much time. When they are used, it is often transparently clear that their main purpose is to take up time, perhaps while the teacher must be absent.

For the present, as a practical matter, online education is limited to what can be finessed at lo-tech levels, and that is what the following discussion is about.

THE INFRA-TECH MYSTIQUE

Span of Apperception

Using a computer to read a text is quite different from reading printed pages of text. There is an intrinsic constraint that turns into a form of freedom. When using a computer to read a text, screen-by-screen, one loses a sense of the text's organization and development much more quickly than when reading through a series of printed pages. Apperception is even less certain when scanning an online message as it scrolls by on the computer screen. Even so, if the text is not too long, it is usually possible, on the fly, to grasp and retain a general idea of its subject matter; enough, intelligent acknowledgment. When online texts are longer and when they deal with complex topics, one's intuitive sense of subject-matter and one's sense of the urgency of the matter, become much more tenuous.

Although no precise measurements of these matters are available, experience in online teaching indicates that it is possible to retain a fair idea of topic and argument on the scroll-by if the text is shorter than about 250 lines; the size of a short printed page. Sometimes it is even possible to make a relatively coherent preliminary comment at that time -- with more extended dialogical commentary delayed until after the text has been downloaded and transferred to hard copy. This is an important online constraint, first, because screen after screen of dense text is off-putting, and second, because during long scroll-by stints, one becomes too "lonely." Frequent and immediate comments are essential to the computer-aided student-teacher dialogue in the distant, online E-course, or graduate E-seminar.

Summary

If the teacher's online text entries are too long, the downloading seems to take an interminable time to scroll past. Then, the reader's intuitive apperception of their contents is confounded and the initial flash of interest and curiosity is first dulled and then lost entirely. Moreover, a long text requires extensive thought, and one tends to put it aside until an extended block of time is available. However, with a short text covering only one topic, just the opposite may occur. Intuitive apperception may remain fresh through the scroll and interest may be whetted rather than dulled. Only a short time will be needed for the rejoinder, and so one may be prompted to get at it immediately.

After a little online experience, the teacher learns how to break texts into topical segments without the loss of elan; the student knows the next segment will be coming along immediately; the teacher has merely paused at the end of a point, as is often done in the oral delivery of a lecture, to make certain that the students are following the thought. So, as a practical matter, delivering short, online packets of text in successive segments is not really very different from the way conventional lectures are delivered; it is only different from the way they are written.

Ideally, the online teacher uploads a text segment that has about a third of the content of a conventional, fifty minute classroom lecture. This is just about right. Teachers in graduate school were given the maxim to cover no more than three topics in each lecture. Electronic students come online daily, sometimes several times, and access the text and acknowledge its receipt. At that time, they are free to leave short extemporaneous notes, and usually do. The present online text may be referred to, or perhaps an explanation why an assignment is tardy.

Students then go offline to consider the captured text material and do what is necessary to prepare a commentary -frequent commentary is a usual requirement of online teaching. Students are usually required to participate dialogically by providing commentaries or discussions of the text material.

This is all asynchronous, but it occurs frequently. That is, online teachers and students are encouraged to attend E-classes for a shorter time each session, but more frequently than the conventional three hourly meetings a week.

Author's Note: To increase frequency of attendance and encourage dialogue, it helps to limit text segments to less than 250 lines and request that student written responses and comments be shorter than 100 lines.

THE DOMAIN OF THE VIRTUAL

Electronic, distant, asynchronous, dialogical education takes place in a computer-mediated domain often called "virtual". It is important to establish at the outset a fairly concise idea of what is and is not, "virtual". My *Virtual Society* (Martha Boaz Foundation, USC, 1988; *Virtual Society* (Shareware expansion) 1989) book contrasts the virtual with the concrete, not with the real. A virtual thing is as "real" as is something concrete; but its reality is different.

Virtual reality means the electronic domain that is created when special electronic gloves and body-function monitors are used to convey digital information to a computer. The present usage is not quite so extreme as this.

Murray Turoff and Roxanne Starr Hiltz (Murray Turoff and his wife Roxanne Hiltz were among the first theorists of the internet world.) used the term virtual to mean a computer-generated surrogate for something concrete. The Hiltz "virtual classroom" is the model for the way virtual is used here.

For example, the Intel Pentium chip is capable of running both old MS-DOS programs as well as new 32 bit advanced Windows programs. The reason is that it has built-in circuitry that is capable of emulating the operation of a simpler Intel chip. So it is said that the Pentium chip contains within itself a "virtual PC" This is not actually so; there is not, in fact, a concrete PC inside the Pentium chip; merely the capability of functioning like an older PC.

Now consider the classroom and the academy. Online, distant classrooms are not unreal. They are real but they are not concrete, physical things in buildings full of actual people. However, by computer mediation, it is possible to emulate and simulate the functioning of concrete classrooms, but in the virtual rather than the concrete domain. Virtual classrooms do not exist on the screen of the user's terminal, but rather, in the archival resources of the host computer. They are "called up" by the user, or caller, or terminal, just the way the user of a Pentium may call up an old MS-DOS program and make the machine emulate an old PC, in the virtual domain. The ideas of simulation and metaphor furnish useful indicators: When a computer simulates something concrete, we may be dealing with the virtual.

On the other hand, merely doing the electronic, computer-mediated version of something concrete does not necessarily produce its virtual simulation. For example, E-mail is not virtual mail, no more than is mail by Morse code or carrier pigeon or FAX. The mail is the same, its conveyance is different. Virtual refers to more than the vehicle, or medium of delivery.

My *Virtual Society* book tries to make clear that "virtual" is not a Marshall McLuhan kind of thing. The mere fact that a computer is the medium for doing something does not make that "something" virtual. A teacher may give a "lecture" in an online course but it is not necessarily a virtual lecture just because a copy of the text of the lecture was posted in an online course; the same text could have been posted at the door of a conventional classroom and one would not call it a virtual lecture. The computer version could be distinguished as an E-lecture; as when electronic mail is called E-mail. But E-lectures are actual texts in actual courses, and not metaphors for texts and courses.

The Virtual enters when computer-mediation confers an unmistakably metaphoric quality on something. Mere duplication and transcription are not the distinguishing attributes of the virtual. A printed transcription of a Platonic dialogue is no more than a transcript; and the transcript of a virtual dialogue is merely a transcript. A transcription is certainly different from the original source, but it does not change the qualitative nature of the original.

However, there are computer-mediated operations in which qualitative changes in substance are achieved, and one of these is in the "virtual dialogue".

The Virtual Dialogue; Discursive Reasoning in a New Mode Consider, Now, the Virtual Online, Asynchronous Dialogue

The first question is: does an asynchronous, online dialogical discussion constitute the same thing as is usually known as a dialogue? As interpreted here, it does not, and for two main reasons: the conventional dialogue is unmediated and spontaneous. A transcription of a conventional dialogue is not the dialogue itself, but a representation of it in an entirely different medium: a transposition from the aural to the visual domain. It purports to be a record of a discussion that, when it happened, was immediate and spontaneous.

The virtual dialogue is computer-mediated and asynchronous. The participants do not hold a realtime discussion, and their mode of participation is possible only by virtue of the computer's text enthrading capability. The print-out that results is not the transcript in writing of an aural original, but rather the direct "hard" - or congealed - copy of a text-based dialogue.

Yet, because the virtual dialogue simulates, by computer mediation, a metaphoric dialogue, it is a real dialogue. However, ontologically, so to speak, it is a dialogue in the virtual rather than the concrete domain.

THREADS

The Enthreadd E-Dialogue

Visualize, now, the segments of an online E-course being launched in electronic space in successive bursts of text. The "space" is the educational domain of a conferencing system. Its dimensions depend upon the sophistication of the host software. Several different kinds of messaging facilities are in use, from straight E-mail and file-transfer utilities to more sophisticated types of utilities that support chain-linked and serial-commentary texts and comments. These latter can enhance considerably the potentials for dialogical exchanges by the technical ways in which their message exchange and commentary facilities operate. For example, on the best systems it is possible to link, or "enthread" a comment or a rejoinder onto a topic, and do so back and forth in a chain-like discursive dialogue that can be conducted intermittently over a period of several days.

Teacher and students upload many successive messages on different topics over a several day period. Each time members log on, the system tells them what new messages are waiting, the topic and its address. Accessing an enthreaded message or rejoinder takes one right back through the stack of successive text segments to the original topic with the newly enthreaded comment. One may then re-read the entire dialogue, with all its threads. If after-thoughts occur, they can be added and anybody who logs on later will be notified.

As new topics occur, enthreaded comments are attached to each one, like a succession of messages threaded onto the tail of a kite: comments, and comments on comments.

Teachers often enthread additions to the end of a text, for example, a bibliographical note, a definition, or a deeper extension of the topic for those who wish to explore it further. The effect is that of a document composed with HyperText software.

Picture now, what an E-course may be like after a few days. Its scroll-by has turned into a series of short topical segments that are followed by brief realtime student acknowledgments and notes. Next, may come comments composed offline for uploading and enthrading to the appropriate E-lecture. These may be followed by the teacher's rejoinders to the student comments. Sometimes the teacher will thread them directly onto an individual student's comments but usually all student comments on a topic are dealt with collectively at the end of that segment. In this way, each course topic develops into a dialogical module.

The individual comments that are threaded together to make a virtual (online, asynchronous) dialogue are not, themselves, virtual; they are merely electronic transcriptions or duplicates of text segments. However, as people engage in the text-threading process back and forth, the record that they build begins to acquire an "emergent" quality, and it turns into something more than a sequence of texts. It is not merely that the exchange is serial; serial texts can be found on the wall of a public washroom. The virtual dialogue is more than an additive text produced by successive commentators.

As an online discussion unfolds, there are collaborative, discursive and interwoven features that combine to impart an emergent quality to their joint product. The body of enthreaded statements and rejoinders turns into an online dialogue with a unique composite quality that is solely attributable to the computer facilitation that made it possible. One cannot produce that kind of dialogue by either voice or print interchanges.

It is not merely an electronic dialogue because it is not like a voice dialogue in all respects except for being transmitted, stored and retrieved electronically. The dialogical quality of an online discussion only becomes manifest retrospectively. Consider how the student receives each increment of a discursively enthreaded discussion:

- The student logs on. A notice says that there are new messages.
- Its header says that it is a comment to an earlier comment, onto which it has been threaded.
- At the end of the new message is a menu of commands. One command permits going back to the text to which the message refers. That message may, itself, have been threaded onto an even prior comment.
- If so, the prior one also has a retrieval command.
- The reader can back-chain from the present and trace the thread of comments back to the original, as did Tom Sawyer and Becky Sharp.
- Or alternatively, one can go back to the first message and follow the thread of commentaries down to the present.
- The dialogue is made manifest by the way in which it is accessed.

This form of discourse has never before existed and it cannot be duplicated in any other medium.

The virtual dialogue, consisting of successive threads, simulates to some degree, hypertext qualities. As people become more familiar with the enthrading operation, they learn how to use it more creatively to produce a non-linear kind of discursive reasoning; a hypertext dialogue.

Text-Plus-Dialogue

There is nothing quite like this kind of modular text-plus-dialogue discourse in any other form of teaching. It explains the earlier claim that distant, online education restores the dialogue to teaching for the first time since Plato. However, there are special differences owing to the nature of the medium.

Dynamically, the E-class consists of a set of dyads: the teacher plus each class member; with the class itself being the set of all these dyadic sets. Furthermore, each teacher-student dyad holds its dialogue in the asynchronous online presence of the entire class; a "presence" that is constituted as each member individually comes online. The result is a series of private- public dyadic dialogues, each of which relates to the same sequence of topics. This, lends another new quality that is unique to online education.

Non-Linear HyperText If one goes back to the beginning of an E-course, the re-reading of it gives an unusual experience. By the time a month or so has passed, teacher and students have collaborated in the creation of an interwoven, web-work "record" whose enthreaded structure exhibits some of the non-linear tree-like branching aspects of a hypertext

document, except that linkages occur only at the ends of the individual comments. Moreover, there is a kind of inertial trajectory that follows the linear trunk line themes of the E-lectures. This means that the E-course as a whole has turned into something much more than the collection of the teacher's successive texts. Rather, it has become something like the record produced during a legislative hearing, or in a congressional debate, or at a judicial trial. One gradually realizes that this online "record" is the "course."

Most teachers, new to online teaching, are entirely unprepared for the discovery that the student-plus-commentary dialogue that occupies half or more of the "record" would become an integral part of the E-course.

In conventional courses and seminars, oral, extemporaneous class discussions and teacher-student exchanges are valuable, sometimes the most valuable, parts of the course. However, they are not constructional elements of the course, the way that the choral passages are constructional parts of the Beethoven Ninth Symphony. Yet this latter example applies to online education: the E-course, at its best, can turn into something like a symphonic performance. Once teachers learn this, they can see how to work toward this end from the start.

The Student Dialectic

As students become aware of these subtle changes in their roles, their approach the give-and-take of the E-dialogue begins to change. It is not only that they try to do their share to "construct" the course, they also realize that because the online record is the E-course, their function as students is to build a "record," as do the principals in a hearing or a trial. Students then begin to make contributions "for the record," meaning, in order to improve the educational quality of the "record."

In a conventional class, student roles will gradually assert themselves: The devil's advocate, the "straight man," and the comic relief, and so on; but in the E-class, in addition to those conventional roles, students may begin to play constructional roles in building the record. Frequently, a minor dialectical theme will develop between two or more members who share either similar or contrasting interests and talents. When this happens, the competition intensifies as they bring their characteristic contributions online. There are occasional surprise coincidences and divergences due to the geographic and temporal separation between the contributions. Usually, however, the individual members begin to develop their own characteristic themes, or POVs (points of view), and refer to them repeatedly and contrapuntally. One member may have literary and publishing interests, another, HiTech expertise, and often someone is from organizational psychology. They specialize in covering the materials from those personal perspectives. Gradually, the E-course turns into a dialectical construct.

This is not only reminiscent of the Platonic dialogue, it is constructional ("constructivist"), in the contemporary philosophic sense of that term. It is also constructional in a sense reminiscent of the Renaissance atelier, or guild studio. In an online E-course, the teacher is like an architect working with apprentices and assistants in an electronic Taliesin where they collaborate in the creation of an edifice; in this case, an edification.

Finally, it is also constructional in the orchestral sense, with different student "voices" entering as cued by the day's E-lecture; string, brass and percussion, with the E-teacher serving as an architect-director in the constructional process; for the resulting edification is both a construction and an orchestration.

REPEAT OFFERINGS

In repeat offerings of an E-course, the teacher has two options

To preserve the best of the dialogical developments for the benefit of the new class, or to strip the record and have the new class work anew from the basic thematic material. Each has its pedagogical merits and some teachers prefer a modification in which every class

starts from scratch, but on completion of each thematic module, past dialogues can be made available. The teacher's choice may be dictated by the constructional character of student projects that are assigned; the student's sense of discovery is undermined if prior contributions are available in advance.

So effective is this new form of teaching, it will probably make its way into the conventional classroom. Experiments with it this way are being conducted, using the model of the way audiovisual aids are used in the conventional classroom.

Hypertext and multimedia resources are also being used online in the constructional approach. As these are only available through computer mediation, soon the tables may begin to turn and the conventional concrete classroom may become an adjunct to the virtual academy.

Those who have never engaged in online teaching may regard this as sheer fantasy. Put the notion aside for a moment and consider the effect of the foregoing factors on collaborative taskforce research.

TASKFORCE RESEARCH ONLINE

Online Taskforce Research

Collaborative research that involves contributors from several different fields has become common in post-modern science. Much collaboration can be done by academics in their separate locations, but periodic conferences are necessary, and they are very expensive. The government's computer-mediated ARPA Net was one solution to this but even when it operated, it was limited to E-mail and file exchange facilities. In any case, relatively few academics were included.

As a result, collaborative taskforce research was not possible for most academics. The Virtual Academy described here provides online taskforce research facilities that remedy this situation.

The taskforce research model of the Virtual Academy is based on the metaphor of a joint editorial project. It calls for a project director, or moderator, who guides and facilitates the online collaboration of several specialists, all of them participating remotely and asynchronously. This is "distance," or "tele-conference" research.

When academics first begin to upload their papers in a teleconference, they do as they have always done before in print media; they prepare chapter-length or article-length documents and then upload them to the online taskforce conference facility. Here, text length raises problems similar to those discussed above. But consider what it was that got scientists to producing of chapters, naturally.

This was not always the case. The length of ancient, pre-alphanumeric auidial texts, like that of oral declamations and soliloquies, was determined by audience span-of-attention. Then came scroll-texts, which had to be quite short because relatively few papyrus sheets could be glued end-to-end and wound around a stick.

It was the codex, born of commercial and apostolic necessity, that engendered chapters. Itinerant preachers had to be able to pack book-length bibles in their back packs to carry on their missionary rounds. That soon generated the long, linear, paginated book, and with it the long, discursive text. It is not "written" that scientific text segments must be chapter length.

Today's video "texts", of course, are often little longer than "sound bites". Online E-texts, for reasons indicated earlier, are shorter than print texts and they induce a different and less linear form of reasoning.

Of course, if online facilities are used only to transfer documents, this is merely another type of mail and length is of no concern. However, asynchronous online scientific and academic collaboration works best when the texts, like E-lectures, are short and only concerned with one topic, or argument at a time. Then, as with the students in an E-course, the other taskforce members are induced to contribute more frequently, more dialogically, and more creatively. They, too, begin to build a "record," and their commentaries become more "constructional.". The taskforce "record" begins to take on the quality of a collaborative product.

As in the online E-course, online taskforce research is most creative when the text contributions are less than about 250. Sometimes when this happens, one gets the feeling that a new genre of scientific research is emerging. Again, the most familiar analogy is that of the trial record created in the course of common law litigation.

To better appreciate this, recall the theory of the common law process: it is a law-finding procedure and when it is well done, and presided over by a talented judge, one has the feeling that the "unwritten law" that results was implicit in the evidence and emergent from the "record." The judge, it is claimed, does not "make" the law but rather "announces" it. The judge announces a "ruling" (extrudes, so to speak, a rule) and in the best of cases, that rule is consistent with all of the evidence – with the record as a whole.

This is a hermeneutic process. Hermeneutics traces to the "hermeneuts" who "translated" the meanings of the early eucharistic ritual for visiting strangers. Later, in Talmudic uses, it came to mean uncovering the "constructional" meaning of obscure and enigmatic texts, and acquired a special logic of procedure. Justice Brandeis was especially talented in combining the hermeneutic and the case methods, in what came to be known as the "Brandeis Brief". Contemporary, post-modern science is sometimes called post-positivist and neo-hermeneutic because scientific explanation tends less and less to follow the model of the closed causal world of classical mechanics and tends more and more to approximate the collaborative rule finding hermeneutics of the common law. Moreover, as is to be expected of a prominent new paradigm, contemporary neuroscience approves.

- Molecular biologist Gunther Stent finds hermeneutic processes at the level of the cell. (Gunther Stent, 1969)
- Neurobiologist David Marr argued that visual images are constructed hermeneutically; (David Marr, 1990)
- Philosopher of science Patrick Heeley confirms this analytically; (Patrick Heelan, 1983)
- Neurobiologist Gerald Edelman said that the mind constructs concepts by Darwinian hermeneutics; (Gerald Edelman, 1992)
- Information theorist Michael Arbib concludes that the mind's information theoretic schema are constructed hermeneutically; and (Michael Arbib, 1985)
- Mathematical psychologist Vladimir Lefebvre's mathematical model of the brain's reflexional processes demonstrates formally the mind's hermeneutic architecture. (Vladimir Lefebvre in Harvey Wheeler,1990).

Preliminary experience with taskforce research projects at the Virtual Academy indicates that online, collaborative taskforce research can be conducted as a hermeneutic process comparable to that which neurobiology now posits of the human mind.

In teaching also, practical experience and science together indicate that the virtual dialogue approach to online education is compatible with deep-seated cognitive processes of our species.

Editor's Note:

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