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ANALYSIS OF MOO AND WOO ENVIRONMENTS

bits extracted from the
"Projet VMDL"
Rapport Final
de la Participation Suisse
au projet Européen VMDL

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Note: *This paper in HTML format is somewhat a draft*. Some parts are missing because things got lost in the quick and dirty translation. I am not even sure that I got materials from the latest version of the report here. (Daniel Schneider)

There is more information about the TecfaMOO Project

1. VMDL

Note: some parts are still missing, because things got lost in the quick and dirty translation (Daniel Schneider)

1-1 French abstract

L'objectif du projet communautaire européen VMDL (programme DELTA) est d'examiner les modes de fonctionnement d'équipes de recherche utilisant les nouvelles technologies de l'information et de la communication pour collaborer entre elles. Avec l'Université de Genève, le projet réunissait des équipes des Universités de Lancaster (UK), de Twente (NL), de Coimbra (P) et des membres indépendants du laboratoire de recherche Neurope Lab à la frontière franco-genevoise. Le projet a démarré en octobre 1994 pour une durée d'une année. Il a été prolongé jusqu'à fin décembre 1995. Au niveau suisse, le projet était financé par l'OFES et dirigé par l'unité TECFA (faculté FPSE) de l'Université de Genève. L'équipe Suisse a rejoint les membres européens en avril 1995 pour une durée de 6 mois.

Les membres européens VMDL ont travaillé sur des études de cas. Trois communautés de chercheurs ont été examinées en détail: le groupe VMDL lui-même, un autre projet européen impliquant une trentaine de chercheurs et une équipe de quarante physiciens.

Au niveau Suisse, l'équipe de Genève est partie des outils de communication des chercheurs avec l'objectif de faire le point sur deux technologies dites du futur et de vérifier leur pertinence pour des équipes de chercheurs, soit en les expérimentant, soit en examinant des cas de réseaux existants, i.e. des exemples d'usage. Ces deux technologies sont d'une part, un serveur de communication synchrone (MOO) couplé à l'interface World-Wide-Web (environnement WOO), d'autre part, différents systèmes de vidéoconference.

Keywords:

research networks; videoconferentechnology; cooperative working and learning; MOO; textual virtual reality.

1-2 VMDL and the Swiss Participation

Virtual Mobility and Distributed Laboratories (VMDL) was a pilot project in the European Commission, Directorate DGXII programme, Human Capital and Mobility. The project built upon recent experiences of the Just-In-Time Open Learning project (JITOL), which was part of the DGXIII Delta programme. The latter undertook field trials of various information and communication technology (ICT) tools and methods for the support of knowledge exchange between professionals. Based on JITOL experiences as well as others involving the support of distributed collaborative work among professionals, the VMDL Project looked more closely at the processes of distributed collaboration and the technologies and instrumentation that can profitably support thoses processes.

The predominant form of interaction between the VMDL members has been through electronic mail and computer conferencing (asynchronous) with four face-to-face workshops and other information sub-group meetings which have taken place as opportunities arose. Electronic communication has been extensive with, generally speaking, around 5-10 interactins each day across the whole team during certain phases of the work. Some of these have been operational and social, but the majority have been concerned with the research itself.

The project chose to limit the forms of electronic communication used in order to ensure complete technical reliability and to avoid any project member being excluded for reasons of limitations in their access to certain communications channels. Limited use has been made of less robust, though more advanced systems in order to enrich the perspectives of the research.

The research itself has taken the form of Case Studies which have been used as data for analysis of a small number of distributed research teams. Those studies most deeply have been:

- the VMDL project team itself through reflexive, self-analysis;
- a Delta European Union project of fixed duration involving six partners and about 30 researchers;
- a sub-group of about 40 physicists working collectively on experiments associated with CERN.

These research groups were selected because of wide variation in their tasks, composition, management structure, use of communications technology, other forms of interactivity and life-span.

One of VMDL goals and research questions was to assess ways in which ICT meet the needs arising in researchers' communities as they work collaboratively with one another. As the VMDL european group mainly used and/or researched electronic asynchronous conference and electronic mail, the Swiss decided to have a look into the future, into some of the latest collaborative technologies, considered as full of promise, and to see if these live up to this fame. To respect the european approach, it was decided to give as much emphasis as possible to users' experiences of these media; for this reason, the Swiss contribution is based on case studies.

Geneva contribution is about synchronous communication systems. It is divided in two parts, the first one concerns textual virtual reality server coupled with world wide web display (WOO environment) and the second one deals with videoconference and other multimedia-based communication technologies. This choice has been made from the evaluation reports of the VMDL junior scientists. After months of deliberate reflection on their own functioning as a distributed research community though the CAUCUS communication system, these junior scientists mentioned a need for both synchronous and asynchronous communications and for sharing of non-textual information like graphics, audio and video data.

2. Analysis of MOO and WOO Environments

2-1 Stages of the project

2-1.1 Choice of a MOO environment

This part of the project started by studying various MOO environments and especially those offering virtual space for research communities world-wide. Two environments have been particularly interesting, the MediaMOO and the BioMOO. The MediaMOO is an environment designed to enhance professional community among media researchers. Indeed MOO as a communication medium for communities and as a learning environment is an important concern for the MediaMOO people. The BioMoo is dedicated to research in biology. it is used as a virtual meeting place using both the WWW interface and the MOO server. Both environments are particularly interesting for they host living communities since about two years and hundreds of scientists or students around the globe have registered. These environments, although they are not exactly similar to the ones we are concerned with are relevant for us to know how virtual communities do evolve spontaneously and what tools people use to manage such virtual communities. We thus introduced ourselves to these communities, evolved in their environment and talked to people to have a better idea of how these communities really work.

2-1.2 Design of the TECFAMOO

Following this study we have built up our own environment in order to offer a testbed adapted to the VMDL project's purposes: we then offered a virtual meeting place within the TECFAMOO called the Educational Technologies Center for European communities of researchers associated to this research domain. We designed both a virtual building on the TECFAMOO and related WWW pages with maps and standard WWW hypertext links to papers and bibliographies from the library virtual room.

2-1.3 Organisation of virtual meetings

We invited the European Science Foundation's - Learning in Human and Machine - task force 5 (collaborative learning) group to have a meeting which goal was to prepare the work for a four month away workshop.

This community was chosen for the following reasons:

- regular use of computer and especially of computer mediated communications,
- internet access (most of people are working from European Universities),
- organisational need for a forthcoming face to face workshop,
- small number of researchers (ten or so),
- mature community (several face to face meetings before the moo session),
- the person in charge of the task force 5 works in TECFA.

We have thus decided to choose such a community to limit the problems related to technology, newborn relationships within a community, lack of concrete need and too distant or indirect organisation. Indeed other factors than the proposed environment could have influenced how people reacted about this new communication facility.

The meeting date was then decided through traditional e-mail interactions and the problems people had to discuss on the MOO were reminded within this exchange.

Consolidation by informal meeting

As a MOO server is a permanent database, we encouraged researchers from the LHM community to create some habits on TECFAMOO. Indeed, we helped those interested in to build their own office and the kind of interaction that took place is illustrated in this report's part. What we aimed to do was actually to encourage people to log on the TECFAMOO on a regular basis for the community to try different contexts of interactions (planned meetings but also informal discussions, use of mail facilities, etc.)

2-2 Presentation of MOO & WOO environments

2-2.1 Feeling of distance

In a recent article, Graham McBeath and Stephen Webb have argued that today's communities have to deal with the diminution of the feeling of distance between persons: “The warmth suggested by the term `community' is at root importantly signifying the desire to have a sense of shared space, orderly and respectful of personal space which allows us a delimited freedom, but not a space in which the spaces between ourselves and others are so wide that no-one feels responsibility to be concernful about anyone else, other than being concerned about ones feeling that one should be concerned, but not feeling sufficiently obligated to help out. In other words knowing a moral rule about how one ought to act, and not doing so. ”

The MOO (MultiUser Object Oriented) environment could allow the community to overcome the feeling of distance that stands in the way of productive collaborative research. We will see that the most important feature allowed by this environment is the share of a virtual common space for distributed communities.

2-2.2 General features of MOOs

MOOs are a type of MUDs (Multi User Dimensions/Dungeons), widely used on the Internet for socializing and interactive role-playing games. They allow many users to log in at the same time, and interact with the program and among themselves. Currently, MOO technology is being used for many purposes: games but also private or professional communication, socialization and collaborative working. The MOOs became virtual "places" on the network where people can meet and collaborate on various projects. Technically speaking, a MOO is a network-accessible, multi-user, programmable, interactive system. When a user connects to a MOO he connects as a character with the help of a specialized telnet-based client program.The client's primary task is to send and receive I/O between the server and the user. The MOO server exists on one machine on the network, while the client is typically run by the users on their own machines.

Having connected to a character, participants then give on-line commands that are parsed and interpreted by the MOO server as appropriate. Such commands may cause changes in the “virtual reality”, such as the location of the user. In the MOO architecture, everything is represented by objects. Each person, each room, each thing is considered as an object that can be looked at, examined and manipulated. The MOO keeps a database of objects in memory and this means that once created objects are still available at each session. A MOO world can be extended both by “building” and by programming. “Building” means creation and customization of new objects starting with some prototypical object. The internal programming language is quite powerful. It has been used to add an impressive set of objecs for professional use (such as an internal WWW client, generic classrooms, in-MOO information systems). Note that it is possible to port objects between different MOO servers (provided that permission is given)

2-2.3 Interacting with a MOO

Once we are connected a MOO server, we could type, for instance:

```
>look
```

And the response might be:

```
Common room
You find yourself in the common room of the International Educational
```

```
Technologies Center. This is a place where people from different communities
can meet and exchange ideas. So enrich yourself :)
Colin is here.


Obvious Exits: RH (to Reception Hall), Lib (to Library), Cafet (to Cafeteria),
EARLY (to EARLY-Sig5), IFIP (to ....IFIP-W3), LHM (to LHM), VMDL (to VMDL),
PNR33 (to PRN33), STAF (to STAF), and Audit (to auditorium).
```

In order to establish a connection with a MOO, people must have a "character" on the server. They must supply a password to login to the MOO as that character. Once the connection has been opened, all the commands that one type are perceived to come from one's character. When the connection is closed, the state of one's character (location, possessions, etc.) may be preserved by the server.

The MOO server typically presents a virtual space organized into "rooms". A room, in the MOO sense, corresponds to a place where characters or objects may be located. In the example above, we were in a room described as a the room of a specific building. If we typed “ VMDL ”, we would have been moved to a new room though an exit named “ VMDL ”

2-2.4 Interacting with people on the MOO

The synchronous part:

The primary means of communication within a MOO is by talking to other people who are located in the same room as you are. An example transcript might look like:

```
David says, "hi. I'm still getting used to this stuff :-)"
>"hi david
You say, "hi david"
David says, "I remembered reading all this nifty social commands like knocking
and something that was supposed to take you to where someone else was, but
couldn't figure it out when I needed it :)"
>"it comes with some time
You say, "it comes with some time"
David says, "Anyway, I'm trying to get up to speed on the moo, and hoping you
could help maybe."
>"yes, what's your question?
You say, "yes, what's your question?"
```

It is possible to talk privately to a person using a whisper command, or to talk to someone who is not in the same room by using a page command. Many other commands exist, and may be created as needed. An example is “CB” (Citizen Band) channels which can be used by all people working on one or serveral projects.

The asynchronous part:

In addition to the synchronous component of MOO communication, there are e-mail and news facilities on this kind of server. Once a "character" is registered and even if he/she is not logged into the MOO, it is possible to send e-mail messages, and new messages are mentioned at the beginning of each MOO session. People can also subscribe to lists where messages meant to everybody or to specific groups are posted. "Characters" can even benefit of an answering machine that records intended synchronous messages when absent. Various kinds of manipulable “information objects” such as “books”, “note-boards”, “tutorial rooms”, “poster” are an other flavor of asynchronous communication tools.

2-2.5 Spatial metaphor

One interesting aspect of MOOs is that they impose a spatial metaphor to the participants. One may talk and interact easily with people in the same virtual room, and may use other means to communicate with people in other locations. Spatial concepts make use of our capabilities to understand quite complex relationships between objects and ideas. MOO systems describe a very rich space based on the city metaphor. Spatial representations are used frequently to convey one or more attributes of the information objects to the user: sorting, grouping and so forth. When users move, use or create objects in space they communicate some relationship either to the system, to some other user or to themselves. The primary advantage of space is that there is more "room" to put objects in and that not the whole space is always "in front of the user". Objects can be moved closer or farther away and the metaphors of the room, the house or the city provide container metaphors for objects that are easy to understand. This type of space is therefore useful to organize larger collections of objects. The main advantage of spatial user interfaces based on real life metaphor is in the ability to communicate a spatial relationship easily to other users. Indeed people are used to navigate in real life spatial environments based on very vague descriptions and facts. They are also generally used to memorize relationships of objects in spatial terms. People might communicate about the location of documents even more naturally and we will see how this feature is relevant when the MOO server is coupled with a WWW interface and hypertext links. Thus spatial concepts are a natural way to organize information and, communication about spatial properties is a typical task for human. Spatial metaphor is thus not only relevant for human communication (you join somebody to have a talk or you organize a meeting in a specific room) but also for objects organization and in our concerns, objects can be records of previous meetings, black boards, information notes, posters, slides and so on.

2-2.6 Professional use of MOOs

MOO can be an effective way to hold pre-arranged meetings for people who can't be in the same physical location. It could then become the ideal means of communication for distributed communities of research which main property is not to be able to have face-to-face meetings without carefull preparation and lots of participants travelling. Transcripts of the meetings can be saved and emailed to people who weren't present. Using a MOO in this way is not as time-effective as meeting in reality (if we do not consider journey time), but is less expensive and at least as useful as having a conference telephone call. In many cases these features compensations the relative slowlyness of “typed” discussion. However, Moo communication is not just “typed text”. Text entered is revisable and backtraceable, two features that have disctinctive advantages over direct voice communication.

MOO is rather relevant as a coordination mechanism. People tend to announce on the MOO what they are doing in real life. Phrases like "Colin checks the tapes" are commonly seen. Furthermore characters are called "idle" when they do not respond to activities.

MOO may be used as brain-storming or problem-solving mechanism. When the conversation is about a small issue, such as some detail of organization, or how to fix some user's problem, solutions can be reached in a few minutes on the MOO. Traditionally, in research communities, these conversations happen through far slower email.

It is common for someone on the MOO to have a real-life interruption, be it a phone call, an office visitor, or simply being too busy to pay any attention. Thus people tend to become inactive suddenly. This doesn't create a communication problem: whenever they resume, the buffer is there, containing the old conversation, and it can be continued without difficulty.

When many people are in a room, the conversations can get confused and intertwined. One quickly learns to pay attention to the conversation one is involved in, and to partially ignore the others. The use of recipient indications (such as "Sandrine [to David]: I agree with you") solves a lot of the problem. This is, again, something that one adapts to very quickly.

The MOO requires a bit of time to learn. There are about 10 commands that everyone must learn immediately (say, page, look, examine, who, whisper, emote, and so on). Learning to administer a MOO is more difficult and to add innovative extensions even more. Adminstration involves creating or disabling guest characters, building the initial “world” (e.g. a “virtual campus”) and porting needed objects and communication features from other MOOs. The inital “Lambda MOO” database is not quite sophisticated enough for professional use. Note however that specialized MOO data-bases for educational and research will be soon available (e.g. from Diversity University). Learning the internal MOO programming language in order to enhance or augment the set of available objects and procedures takes even more time (like learning any new programming language) but this is something that can be done incrementally.

To summarise, one can say that MOOs have several features that make them a useful communication tool for a research communities:

- MOOs are interactive in real-time. When one “says” something, all the intended recipients see it immediately. They can answer in the amount of time it takes to type their answer.·
- MOOs have multi-channel communication features. One can communicate to different people over different channels (e.g. one can hold an intensive discussion in a room, listen to the “chatter” on a “CB” channel, and exchange “pages” with people in other location.·
- MOOs can be used as non-intrusive cooperation tool, i.e. unlike phone calls, one can deal with a

"request" when available.

- MOOs also have asynchronous features. They have an internal e-mail and news facilities. Furthermore, many messages can be written on virtual notes or bulletin boards.
- MOOs are multi-user capable. A large number of people can interact with each other at once.
- MOOs are a networked service. Clients and servers simply need to be on the same network in order to connect to each other.
- MOOs are extensible. MOO servers contain an embedded programming language that may be used to extend the database of server objects and to create new commands. If the tool is to be adapted to new uses, it must be flexible.
- MOOs are exclusive. Only people who have been given characters on the MOO are allowed to connect to it. This is a crucial feature. In most of MOOs, guests are allowed to visit but their communication and navigation features are limited compared to the ones of registered "characters" and some objects may have a restricted access to guests.
- MOOs, in conjunction with most clients, have a history mechanism. Even though the interaction on a MOO happens in real-time, it can be stored in a file by a client that is connected or recorded by virtual tools especially programmed for this purpose.

2-2.7 MOO and WWW together

The "World Wide Web" (WWW) is a distributed hypermedia system that runs over the Internet. In a hypertext, if you want more information about a particular subject mentioned, you can usually "just click on it" to read further details. WWW documents can be linked to other documents written by different authors, in various locations. To access the web, you run a browser program. The browser reads documents, and can fetch documents from other sources. Information providers set up hypermedia servers which browsers can get documents from. The browsers can, in addition, access files by FTP, NNTP (the Internet news protocol), gopher and an ever-increasing range of other methods. Finally, the browsers permit searches of documents and databases as well as a "fill-out form" interfaces for accessing any kind of external programs running on a server.

Current research involves integrating MOOs with audio, video, and shared programs. One of the best improvements have been made through the integration of WWW display to the MOO servers. The MOO then becomes the perfect sequencer for devices already available via WWW (sound files, videos, on-line texts and various programs) because of its spatial metaphor: one could actually talk to the people who are in the same room on the MOO and read the same WWW page containing the same links to the same documents. Applications would be shared by anyone looking at the same page (thus being in the same room), and changes could be made and seen by everyone. These tools have proved to be enormously useful when working on long documents or using images to illustrate any kind of idea.

As mentioned above, the WOO environment integrates two internet services: World Wide Web (WWW) and Multi-user Object Oriented Environments (MOO) creating the "WOO" label. The corresponding transaction protocol provides a means for MOO servers to serve HTML documents to WWW clients such as Netscape, and provides clients with the multi user and rich programming features of MOO combined with the rich content of the entire WWW. Anyone with a character on a WOO can publish its own WWW home page to the entire world, but also create dynamic objects that serve information on the WWW in an adaptive and flexible way.

Because the World-Wide Web can be considered as a knowledge integrator, a distributed hypertext, an interface to any kind of remote programs, an interface to certain local programs, and an interface to various communication tools (ftp, gopher, e-mail and news groups), it has very quickly become one of the most important frame of the Internet. Although it provides a great deal of support for publishing information and navigating through it, it does not provide as much support for Computer-Supported Collaborative Work (CSCW), where users can collectively write, annotate, and explore documents. This is why its advantages are so enhanced when MOO is associated with it.

Currently, WWW-MOO integration works best in the WWW->MOO direction, i.e. using the WWW for navigation, inspection and manipulation of MOO objects. For synchronous communication it is much more productive to use a regular MOO client. The current HTTP (WWW server protocol) does not allow to preserve state and therefore to maintain continued connection to a MOO server, e.g. since WWW pages have to be loaded by a user operation a WOO page will not automatically update itself when the state of the MOO has changed. (Workarounds like "Netscape's" server push exists but are not very effective). This situation however, may change in the near future when more sophisticated WWW clients (i.e. Netscape synchronous communication plug-ins) will be available.

2-2.8 Comparison between WOO and other CMC tools

Email, computer conferencing and remote database:

A few years ago, Robin Mason defined Computer Mediated Communication as a 'set of possibilities which exists when computers and telecommunications networks are used as tools in the communications process: to compose, store, deliver and process communication'. Several facilities were then covering the CMCs:

- electronic mail, which allows messages to be sent to electronic letter-boxes for named individuals, which can be accessed when the named user logs on;
- computer-conferencing, which allows messaging to be shared 'openly' by all members of a conference;
- access to remote database, such as bibliographic sources, sets of abstracts, etc.

Actually, it seems clear that a WOO environment offers all this and much more. However, regarding more deeply to what the above mentioned facilities really are, slight differences can be reviewed:

Electronic mail is used to send a document to any number of recipients. It is, for the most part, reliable, and is used so constantly that it has become convenient through force of habit, if nothing else. It can either be interruptive or not, depending on the receiver's preference. While email communication can be so fast as to be nearly real-time, it does not normally convey the feeling of a real-life conversation. It is possible to keep a history of email messages. Email is probably the most used of communications tool a community of researchers has. Electronic mail although available within the MOO (the MOOMail system), is still more practical when used independently. For instance, it is easy to create folders on traditional email systems while it is less strait forward on MOOMail system. However, the MOOMail system can automatically send the messages on the registered email address where they can be moved to the appropriate folders. So the MOO should not replace the email facilities, it could rather be a complement.

Computer conferencing can be replaced in the moo using the mail-recipient lists device. Indeed MOO mailing lists can be created and even moderated. Lists can be public and accessed by anybody on the MOO or they can be restricted to a specific group of users. In the first case, it corresponds to the News system or to the mailing lists available on Internet and in the second case, it rather corresponds to a computer conference although the interface is far more rustic. MOO even bring a new dimension to the word computer conference. Indeed, as Mason understood it a few years ago, computer conferencing consisted in messages shared by a group of people and sometimes moderated by one administrator. The conference was taking place in an asynchronous mode which is not the best environment to hold a conference for several obvious reasons. Within the MOO, a conference can be hold in real time, interactions can occur and slides can even be shown or directly in the MOO or through the WWW interface. Then the WOO environment becomes one of the best medium to hold a computer conference. It happens on the BioMOO and its efficiency really is astonishing. (An exemple is available in appendixes.)

Remote databases can also be accessed in the MOO itself, and from WWW interface with all the facilities such an interface can offer. In the MOO, databases are constructed by administrators. As an example, the BioMOO offers a database of people, with their real-name, their e-mail address, their research interests, etc. WWW offers various kinds of databases based on several kind of research systems. Depending on the interface, boolean operators can be used, and search is often available through a form. And, of course, telnet sessions can be opened from a WWW link so traditional kind of remote database are still available. In addition, data and HTML pages can be served according to the “history” and the “profile” of the authenticated MOO character. So again, the WOO environment is really efficient.

Other CMC facilities:

News (or USENET news), is a system that allows a document to be spooled on a machine for some time, where many people can access it. News can be shared across many machines or isolated to one site. It is a good way to communicate with many people about various topics in a non time-critical manner. News is perhaps the best way to send announcements that many people should see. Multiparty discussions can work relatively well in news, but can take time, and have a tendency to diverge into irrelevant topics. News are normally accessed by the readers if and when they choose to read it, not when the news is first available.

The UNIX talk command is useful for short conversations between two people. Enhanced versions of it allow conversations between any number of people. It is as real-time as it is possible to get over an ASCII connection, allowing one to see the typos made by the other person. However, talk can be annoying primarily because it is extremely interruptive (from which window is that beep coming from?), there is a confusion between talk protocols on various operating systems, and the interface is inflexible and primitive. Nonetheless we do use it occasionally.

Compared to E-mail and News, the primary disadvantages of a MOO are that it must be actively administered and that the user must initiate the connection. Compared to UNIX talk, the MOO remains a communication tool that is not as interruptive although messages appearing on the MOO window can be a distraction if one is working on something different. The following table tries to resume the main differences between the above mentioned communication facilities:

Table 1:

	asynchronous	synchronous	archivable	unobstrusive	multi-user	exclusive
E-mail	X	X	X	X		
News	X		X	X	X	
E -conferences	X		X	X	X	X
Talk		X				X
MOOs	X	X	X	X	X	X

A Comparison of MOO with real life communication:

Pavel Curtis mentioned that “ social behavior on MOOs is in some ways a direct mirror of behavior in real life, with mechanisms being drawn nearly unchanged from real-life, and in some ways very new and different ”. As MOO communication appears to occur in a synchronous mode for the main part, it is indeed interesting to compare it to real life communication. As Eva-Lise Carlstrom [92] explained it, some differences can be seen:

1.) 'Proxemics'. There is no spacing of players in a MOO room: all are simply there. Proxemics may, however, be implied by use of emote commands or use of furniture or other objects ("Lilly sits on the sofa"). Classrooms are good examples. These are specific rooms adapted with tables, desks, and board. People can sit arount tables and the current communication cannot be heard from one table to another. E.g. if Paul is sitted at the red table, he can talk to Lilly who is sitting at the same table but he cannot talk directly to Pierre who is sitted at the blue table. When Daniel who is sitting a the teacher's desk is speaking loud, everybody in the classroom can hear him. This kind of room can of course be used as a conference room.

2.) 'Silence'. This carries comparatively little meaning on the MOO. Unlike speech sounds, Internet typed messages take a measurable amount of time to reach the receiver. Usually the delay is small enough not to cause communication problems, but longer delays arise intermittently, caused by a general lag, or slowing of the system due to heavy processing. It is understood that MOO lag may increase at any time, and that individual players may be experiencing lag on their systems that the others do not see. Also, messages appear only when the player press return at the end, so a long message will cause a longer pause while the player types. The features of a slower "speed of sound", variable lag time, and the fact that messages are shown only in their entirety, not heard as they are spoken mean that a lack of immediate response to a comment or question is not taken as meaningful until it lasts for several utterances.

3.) 'Turn-taking'. For the same reasons listed for silence, strict turn-taking is impossible and so does not exist. Similarly, interruption is generally an undefinable concept. Several conversations tend to be going on at once in a room, even if only two people are there, and utterances belonging to the various subjects overlap and intermingle. The conditions described above make this likely to occur, and it is also unproblematic because all messages appear on the screen and do not draw each other out as they would in speech. Also, a player who is confused by a seemingly contextless remark can look back up the screen for its earlier referent. This form of communication is slightly less ephemeral than sound, and spacing and timing are less important than in normal speech. One disadvantage of a text-only environment, however, is that events which do not interfere with vocal-aural communication do interfere with MOO communication. For instance, a programmed object that performs actions frequently is just as "noisy" (in terms of taking up screen space and reading attention) as a character talking, and if there is too much going on, speech messages may be missed in the confusion, or scroll off the screen too quickly to be read.

2-3 Use of the TECFAMOO in the VMDL project

2-3.1 The TECFAMOO

The TECFAMOO is a text-based virtual reality. It is a Virtual Space for Educational Technology, Education, Research and Life at TECFA, School of Psychology and Education, University of Geneva, Switzerland. The TECFAMOO project has been started as a small informal project in the fall of 1994. Currently we have been using MOO technology as CMC tool for our own teaching and research. Since April 95, the TECFAMOO has an experimental World-Wide Web interface allowing to take increased benefits from both technologies. This latest development increases our commitment to MOO technology. TECFAMOO purposes are mainly: ·

- Virtual Meeting Spaces for researchers and other professional communities ·
- Environment for distance teaching ·
- Experimental Research for “ Virtual Classes ”
- and we particularly plan to invest in the following areas:·
- Collaborative work ·
- Collaborative information systems (retrieval based on spatial organization and hypermedia production) ·
- Learning Environments (e.g. simulation)·
- Social & Political issues in virtual worlds

The TECFAMOO main places:

```
TecfaMOO ARRIVAL area
  _________
 /___  ___/                              Grand Opening: this summer
    / /                                  Builders and Programmers Permits
   / /                                   are available to qualified people
  /_/ ECFA MOO   Arrival Area

  A Virtual Space for Educational Technology, Education, Resarch & Life
  at TECFA, School of Psychology & Education, University of Geneva

  'VISIT' (for Visitor Information) 'BUILD' (Builder's Information)
  'Register' (User creation)

   See: http://tecfa.unige.ch/tecfamoo.html for information on this project

You see Puppet with Teleport Messages and BUS FOR EDUTECH here.
Obvious Exits: Up (to Les Puces de Plainpalais), UC (to Underground Corridor),
VISIT (to Visitor Information), TRANS (to Rond Point de Plainpalais/Taxi),
BUILD (to Underground Construction Office), and Register (to TecfaMOO
Registration Room).
>


Underground Corridor
 ------------------------------------------------------------------
You find yourself in a mechanized high-tech "people moving"
Underground Corridor. It links sites of educational interest
Choose one of the folling destinations and you will be ported there:
 ------------------------------------------------------------------
Arrival:  TecfaMOO Arrival area (#11)                    *builders info*
MOOseum:  The MOO Museum / Moo building and programming    *visit!*
Forest:   The Forest Campus                              *use it!*
IVU:      The International Virtual University Campus    *empty so far*
EduTech:  The Internationl Educational Technology Center   *open!*
GNA:      The GNA Center                                 *InterMOO Forum*
```

```
Piazza:   Uni GE (Psychology and Education + TECFA)
Tecfa:    Home of the TECFA Unit                          *our place*

One of the walls has an elevator and elevator panel.  Perhaps you should look
at it more carefully.
Obvious Exits: Uni (to Ugly Foyer), Piazza (to Piaget Piazza), MOOseum (to
Foyer), Arrival (to TecfaMOO ARRIVAL area), IVU (to IVU), EduTech (to
International Educational Technology Center), Forest (to Forest Campus), GNA
(to GNA Center), Tecfa (to The Tecfa Atrium), and PanGea (to PanGea).
>
```

```
The Tecfa Atrium
The Atrium of TECFA with its spring fountain is the place where TECFA
people can relax and talk about the latest advances in Educational
Technologies. Type a ROOM NUMBER to enter an room.

  +---------------------------o   o------------------------------------+
  |G11=Patrick   G10=Francoise|   | UP<   G26=Daniel   G25=Pierre      |
  |   Mendelsohn     Schmitt  | N | DOWN>     Peraya     Dillenbourg   |
  |                o----------o   o----------------------------o       |
  |G12=Meeting     |                            o-----------o |G23=    |
  |   Room         |                            |           | | David  |
  |                |            (*)             |G24 Seminaf| | Traum  |
  |                |                            |   Room    | |        |
  |        o-------o                            |           | |        |
  |        |         The Atrium                 o-----------o |        |
  |        o--------------------------o   o-------------------o        |
  |G17=Daniel G18=Patrick G19=Sylvere |   |G20=Boris                   |
  | Schneider  Jermann     Martin-M   |  S|Borcic                      |
  +-----------------------------------o   o----------------------------+

You see Atrium's Coffee Machine, WWW-box, Sphinx, Puce, TECFA Seminar
Anouncement Board, and chihuahua here.
Obvious Exits: N (to Piaget Piazza), G18 (to Colin's Office), G11 (to Patrick's
Office), G17 (to Daniel's Office), G23 (to David's Office), G24 (to Seminar
Room), G25 (to Pierre's Office), Down (to The TECFA Bar), Up (to The Students
Floor), S (to Le jardin des plantes), Swiss_village (to Piazza Maggiore), and
UC (to Underground Corridor).
```

2-3.2 The International Educational Technology Center

In order to set up a virtual environment for communities, we have designed on the TECFAMOO server a virtual International Educational Technology Center dedicated to receive researchers in Educational Technologies. Private and public rooms have been built in order to let some place available for newcomers. They can enter the library, the common room and the cafeteria without being cumbersome to usuals. Private rooms belong to international communities of researchers and, people are asked do not distract them. Volontarily, the EduTech Center has not been completely constructed to let researchers build and organize a space of their own. Only the public rooms are to be administred by a person in charged of them in TECFA: the Library, the common room and the cafeteria. In this perspective, the Library should be the most important room to administrate. Actually, many structured links to on-line document are to be provided through the WWW corresponding page. Access to on-line publications, on-line magazines, on-line bibliographies, interesting available WWW pages and archives of MOO important interactions sessions are already available and this is one of the major condition to the creation of a 'living' virtual research center.

On next pages, we captured on screen the WWW pages corresponding to the rooms of the EduTech Center.

(missing)

2-3.3 The LHM meeting

Although most of the participants were using the MOO for the first time, the results of the first LHM meeting have been successful regarding participation, social cohesion and quality of interactions. Indeed, knowing that changes initiated by innovations give rise to a reflexive anxiety, all participants seemed to be at ease with the text-based virtual reality and the spatial metaphor and post-meeting remarks insisted on the positive side of MOO communication. In about 2 hours (including the delay caused by some technical problems of one participant), the meeting that had to be organised, was indeed organised. At the end of the MOO session, all participants seemed to know what they and their colleagues had to prepare.

Unlike in face-to-face or videoconference interactions, the MOO communication is not strongly structured in talk turns. Several persons can indeed 'talk' at the same time. Nevertheless, and although participants are not seen from each other, the process of communication can be regulated by navigation and action or emotion verbs in addition to the moderator regulation. Navigation and emotion vocabulary can be compared to non-verbal communication in a face-to-face context. Actually, someone will be able to inform the other participants that he or she is smiling. Many kinds of messages can indeed indicate what people are actually doing or what is their state of mind.

In this example, Daniel, one of the organisers of the LHM meeting prepare the VCR MOO object to record interactions:

```
Daniel teleports Sony in.
Daniel consults the manual for Sony.
Daniel drops Sony.
Daniel turns on camera to begin recording. . .
Daniel pans the camera left and right over Reception Hall. . .
Daniel zooms the camera in on joze. . .
Daniel zooms the camera in on Lone Dirckinck-Holmfeld and Annita Fjuk. . .
```

Navigation feedbacks are also helpful to understand others' attitude towards the conversation:

```
Patrick leaves for the library.
Kaspar teleports out.
Patrick has arrived.
Daniel goes home.
```

Emotion commands also allow the participants to know about each others' state of mind:

```
Pierre does not understand
Sandrine giggles
Daniel . o O ( we got multimedia here !!! )
```

and some emotions can be automatically translated by the TECFAMOO server when one adds a sign at the end of its sentence.

```
:) is translated into smiles: Daniel smiles "I like that :)"
:( is translated into frowns: Daniel frowns "I don't like that :("
;) is translated into winks: Daniel winks "this is OK ;)"
```

Within the MOO the meeting situation is not really different of any other taking place in a synchronous mode. Actually, it can even be described in the same terms as the ones used by Michele Lacoste [92] when she described the general process of a videoconference meeting. As any kind of meeting, a videoconference meeting is predetermined by an agenda that rules the thematic movement, and the theme and/or the chairman are strongly conditionning the talking turns allocation.

A videoconference meeting often starts by a pre-meeting where the participants meet each others. To go from private talks to a collective meeting, several states have to be stepped over: ·

1. create on interlocutory hub;
2. formally indicate the beginning of the meeting and make sure that there are no technical problems;
3. agenda.

To end a videoconference meeting the author has discerned four stages:

1. pre-end of the meeting;
2. schedule of the next meeting;
3. end of the meeting;
4. postmeeting.

Although these stages cannot be well delimited, the following discussion examples show that there is a similarity between MOO and videoconference meetings.

From the TECFAMOO arrival area, we helped the meeting participants to use the basic communication commands and to find the meeting room within the MOO. To this last purpose an object has been programmed which is called BUS FOR EDUTECH. People just have to look at this object, read the instructions and follow them. This object has the particularity to move all it contains from one virtual place to another. One person, external to the LHM meeting, was welcoming the participants. Interactions have taken this form:

PRE MEETING

```
Kim Issroff has connected.
You say, "hello"
You ask, "are you coming for the lhm meeting?"
Kim Issroff says "'yes'"
You say, "ok, welcome here, type 'enter bus' and then 'go' to go to the meeting
place"
Kim Issroff says "'Sandrine, I am not sure if you are getting what I am
writing'"
You say, "that's fine, i can read"
Daniel says to Kim Issroff [Guest], "hello kim, we get everything allright :)"
Kim Issroff [Guest] enters BUS FOR EDUTECH.
```

and in the meeting room, one could hear:

```
Pierre exclaims "Kim arrived in the village. She will join us soon by bus!"
```

From the bus, Kim has read the following text:

```
You enter BUS FOR EDUTECH.
BUS FOR EDUTECH
This bus is going to the Educational Technology Center. This is where the LHM
meeting will take place. To drive this bus, type 'go'. Please, type without
quotes.
>go
the bus starts and heads for Edutech center
please, all passengers should type 'leave' to leave the bus
>leave
You exit BUS FOR EDUTECH.
International Educational Technology Center
You find yourself in front of a nice building dedicated to Educational
Technology Research. Communities of researchers are meeting here.
Still Under Construction: If you wish to build here, Contact Sandrine.
For the LHM meeting, type RH.

You see BUS FOR EDUTECH here.

Obvious Exits: N (to Le jardin des plantes), UC (to Underground Corridor), and
RH (to Reception Hall).

the bus returns to the arrival station
```

At the meeting place, some information has been written on a virtual board to prepare the session:

```
>rh
Reception Hall
You enter a large and nice hall. You can see old paintings on the walls but
some people are clearing them, they want to put new ones, modern art...
There is an information board in this hall on which you feel you could find
interesting information for a newcomer. Type 'look board' to view the posted
titles, type 'read <number> on board' to read the message.

You see Information Board and How to send MOO mail here.
Obvious Exits: Out (to International Educational Technology Center), C (to
Common room), Lib (to Library), and Cafet (to Cafeteria).
>look board
A big information board where messages are kept. Type 'read <number> on
<board>. For more information on usage type @examine board.
    Currently posted notices:
    1< Welcome to EduTech (Sandrine).
    2. LHM meeting (Sandrine).
    3. Sitges Plans (Pierre).

A sign says: 'Public Posting Allowed.'
```

```
>read 2 on board
 <<LHM meeting>>  [Sandrine-6/19/95 20:33 MET]

Welcome to the LHM taskforce 5 meeting. If you want to say something to
everybody in this room start with quote (e.g. >"hello there). If you want to
speak to one person in particular, use 'page' (e.g. >page Jane hello, happy to
be here). Thanks, enjoy here ;)

   << end >>

>read 3 on board
 <<Sitges Plans>>  [Pierre-6/20/95 11:53 MET]

Please remember that in Sitges, we decided to have 3 working groups.The 'brits'
(Karen, Kim, Claire & Mike) were supposed to review methods and tools (in a
large sense) for ANALAZING collaborative interactions.
Group 2 (Ulrich, Pierre, Calle, Rolf & Engelbert) intended to review
computational models of collaborative problem solving.
Group 3 (Lone, Joze, Bob & Stevan) planned to review tools for supporting
communication during collaboraive learning.
That's our starting point. The question is: do we try to stick to that or do
we set more modest goals for our next workshop?
Pierre

   << end >>
```

\>

INTRODUCTION OF THE MEETING

(creation of the interlocutory hub, indication of the beginning, agenda presentation).

```
Pierre says "Ok, nice to have you here..."
Pierre says "I put a note on the Information board"
Pierre says "To view the information board, just type 'look information  board'
Pierre says "You'll find out what to do with that board if you type '@examine
information board'"
[...]
Pierre says "OK, while Daniel is fixing Karen's problems, I would like to start
talking about ESF"
Joze exclaims "Pierre, hurray!!"
Pierre says "Remember we had very ambitious - and probably sincere - plans in
SItges"
Pierre says "But now, I guess not much has been done, we have only 3 months
lefts and these are holidays (at least a part of it) and conferences"
```

This introduction shows that a MOO communication can be effective for meeting management. People can “ place ” themselves as meeting moderator or simple participant. They can provide facilitating tools like an information board or slide projector. Motivation can also be announced by short enthousiastic messages like “ Pierre, hurray!! ” and this is not as easy for asynchronous communication mode where this kind of messages is rather considered as noisy. MOO communication is also very simple when one whishes to indicate the beginning of the meeting and to present the agenda.

DISCUSSION 1

```
Lone Dirckinck-Holmfeld and Annita Fjuk says "Annita is a Ph.D.student from
Oslo University. She has been in Aalborg since February. We are writing a paper
together for the Aix-seminar."
Kim Issroff asks "what is the paper about?"
Pierre asks "yes, what is this paper about ?"
Lone Dirckinck-Holmfeld and Annita Fjuk says "the title of the paper is:
Problem orientation as a method, and as a fundamenet for computer mediated
collaborative distance learning. "
Pierre asks "what is 'problem orientation'?"
Lone Dirckinck-Holmfeld and Annita Fjuk says "we are using a method called Soft
Dialectics which is based on dialectical analysis and Soft System methodology
(Checkland)"
Lone Dirckinck-Holmfeld and Annita Fjuk says "Problem orientation is work
method and a fundamental principle for critical pedagogy."
Pierre does not understand
Lone Dirckinck-Holmfeld and Annita Fjuk says "Our work again: We are using Soft
Dialectics to structure our discussion on collaborative learning at distance
here at Aalborg University. "
Daniel says to Lone Dirckinck-Holmfeld and Annita Fjuk [Guest], "anything of
that on a www server by any chance ?"
Lone Dirckinck-Holmfeld and Annita Fjuk says "Yes, of course we can...when it
is finished"
Daniel says to Lone Dirckinck-Holmfeld and Annita Fjuk [Guest], "it is useful
```

```
to have it there before, so people could comment, unless it is secret or really
in its VERY beginning stage"
Lone Dirckinck-Holmfeld and Annita Fjuk says "If you are interested: we will
be happy to mail you information about Soft Dialectics and abour problem
oriented project"
```

This first discussion illustrates an interactive presentation. One character composed by two people is presenting its work as part of the discussed problem contribution. Other characters ask questions as soon as they feel a need for it and by the end of this discussion, pratical information is exchanged between the different characters (about the location of the paper related to the work, etc.) so that all the meeting participants can switch to another part of the current problem. This discussion shows that MOO communication is well adapted to interactive presentation of work, etc. Although in this case, the discussion was unprepared and short, other examples show that even prepared and formal presentations are very well supported by a MOO session when some basic communication rules are used about participants interaction with the speaker. The complete script of these examples are available in the fourth part of this report (Annex 2 : BioMOO seminar).

DISCUSSION 2

```
Pierre asks "Ok, I think the best strategy we can have for Aix is that we try
to discuss things that we do anyway, and preferably which is connected to the
goals that were allocated to the three subgroups. Let's for instance talk about
the subgroup 3 since it included Lone, Bob, Joze who are here (and Stevan who
is not). Its goal was to review tools for supporting collaborative learning.
Would Lone's paper fit to that goal?"
Pierre asks "Did Joze and Bob plan to do something about that goal during Joze's
visit in Lancaster?"
Pierre says "Actually, despite the fact that I am in the subgroup 2, we had
here to review various groupware, more precisely whiteboards (plus audio) that
we need for the BOOTNAP project. We tested ShowMe, Belvedere, Kansas and are
trying now LBL, Collage and Groupkit. We could make a synthesis about that..."
joze says "We are using LBL video, audio and wb tools in COST 14 project and
we have some experiences with these and similar tools"
Pierre asks "How does it work?"
joze says "Bob says:  I have no problem about looking at tools, but I would be
worried if we didn't start with some real needs, contexts, and aims of the
collaboration."
Pierre asks "Learning isn't a goal?"
Lone Dirckinck-Holmfeld and Annita Fjuk says "Hello again, during our analysis
we have indetified some interesting phenomenon to be explored more deeply. Some
of them are: Commitment is a critical aspect in various forms in Computer
mediated collaborative learning (at distance). Articulation work (See Kjeld
Schmidt and Liam Bannon) is another interesting phenomenon. There are som other
aspects, e.g. what consitutes the virtual room and the interplay between the
organisational elements and the design of the artefact (functionality and
aestetics)."
joze says "Bob says: learning is a goal in intensional situations.  In our case
as researchers, yes we are learning all the time but much of it is contextual
and not necessarily directly intentional."
Lone Dirckinck-Holmfeld and Annita Fjuk exclaims "To Pierre: For us, learning
IS the goal!"
Lone Dirckinck-Holmfeld and Annita Fjuk says "Our interests are intentional
learning. However, the principle s"
joze says "Bob says: a key dimension here is motivation; one might link this
closely to the nature of the problem.  Is this a real problem with which we
can directly associate (say as part of our day-to-day work) or does it seem
artificial - like an exercise.  Unlike Pierre, I hate jogging but given a real
challenge to get up a hill (which motivates me) then I will make the effort
(and enjoy it)."
Lone Dirckinck-Holmfeld and Annita Fjuk says "According to group 3, I think it
is important that this survey includes in-depth studies of exemplary use-
situations (out of labs!)"
joze says "Bob says: I agree with Lone (et al) about naturalistic settings."
Pierre asks "Do you remember this chapter that we wrote when preparing the ESF
proposal. We described task features which impact on the effects of
collaborative learning (e.g. the importance of regulation, the conceptual
opnesss, etc.). COuld you use these criteria in your analysis Bob ?"
joze says "Bob says: thanks Pierre, I would need to revisit that document"
```

The second discussion differs from the first one in the sense that more participants are talking together and that it is more a working discussion than a presentation. The aspects of this discussion are a bit more “ philosophical ” (Leaning isn’t a goal? - For us, learning IS the goal!) and at the same time more “ practical ” (Do you remember this chapter that we wrote [...]?). One can say that this discussion looks very much like a working session discussion with several levels of communication and several elements discussed at the same time.

DISCUSSION 3

```
Pierre asks "OK, can we talk a bit about group 1. Karen and Kim are here. Do
you have anything related to the original goal (reviewing tools for analysing
```

```
interactions) that could be presented? Did you interact with Mike and Claire
about this>?"
Karen says "'we thought that we would produce an annotated bibliography of key
analytic frameworks and kim and I are collaborating on analysising
collaboration using three analytic tools - using categories of talk and time
based analyses"
Karen says "'you will remember the time-based analytic tool from kim's
talk.part of what we hope to do is to use this tool for different kinds of data
to establish its usefulness - we could do a joint presentation on this"
Pierre asks "Would that not be a repetition of last year talk?"
Kim Issroff says "No because we want to try it at different levels of
granularity and compare what it buys you to other methods of analysing
collaborative interactions"
Pierre says "Ok, we'll see later if Mike and Claire can propose something."
Pierre says "All this sounds good. Now, it is about group 2 and I think I am
the only member of it. I developped some ideas about how we could modify
rulebase system to model the effect of interactions on problem solving. But
these are still rather general ideas. I did not review models of collaboration,
but some work on models of dialogue. But, my new colleague, David Traum, has
developped a computational model of social grounding during his previous
research. I was thinking about bringing him with me in Aix..."
```

The third and last discussion is very much identical to the second one although it seems a bit more focused on organisational details. These major elements of meeting can be completed faster through a synchronous communication mode than through an asynchronous communication system like email.

CONCLUSION

(pre-end of the meeting, schedule of the next meeting, end of the meeting, post-meeting)

```
Pierre says "Right, the other TF5 members who could not make this time asked
me to set up another MOO session. I suggest to set up a second session at a
fix time, by the end of this month, and then to choose some hour in the week
at which you will now that you can find people in the LHM room.""
joze asks "Bob: can we make much more progress?  I wonder if Pierre could review
the interactions and do a sythesis of Actions prior to Aix.  Or do you wish to
meet again this way with (possibly) other actors?"
Kim Issroff says "I think another meeting is a good idea - and perhaps we could
try to arrange smaller meetings in just our groups"
Pierre says "Ok. Here is my suggestion. For the next meeting, we'll meet in
the LHM room but I'll ask Sandrine to create three rooms for each subgroup. I
noticed that some of you left for the library when we were not discussing your
own subgroup!."
Daniel says "I think it would be a good idea for those who felt productive here
to come more often... you can build your offices here (ask sandrine), also you
can use this as non-intrusive tool for collaboration (e.g. I always have the
MOO open and do 10 other things at the same time)"
Pierre says "So, we could start with a joint meeting in the LHM room and then
go in the specific rooms."
Karen says "'I think offices would be a useful idea.....it would certainly be
an"
Kim Issroff says "I'd like to have it open all the time but I think that only
works if you know several people who are likely to be around, but that comes
with time. The reason I went to the library was that nothing seemed to be
happening and I thought I'd use the time to look around"
Pierre agrees with Karen
Sandrine says "I will be pleased to guide you through this moo at any time"
Daniel exclaims "sorry I have to leave, see you sometimes and don't hesitate
to contact us for more MOOing !!"
Karen says "'could we each have an office? "
Sandrine says "yes"
Daniel waves good-bye
Daniel goes home
Sandrine says "this would be the best thing"
Pierre says "This is why I think that a second fixed meeting will help creating
the community, creating the habit of looking at the MOO for taskfivers"
Pierre says "Of course, we can not continue long with 'fixed' meetings. That
would be non sense for a MOO. SO, I'll e-mail to all and ask for a new time
slot. Actually, people did not complain about the time, they were simply not
in today."
Pierre asks "I have to leave as well. Any question left?"
```

The whole session has been recorded through a VCR like MOO object and sent to every participants a few days after by E-Mail. Virtual tapes have been archived at the library and one can have a look at them at any time. (the whole session record is available in appendixes).

The following example shows a consolidation session that aimed to build an office for one of the LHM taskforce 5 participant after the second LHM meeting. This second meeting took place one week or so after the first one:

```
You say to engelbert, "would you like to have a desk here?"
```

```
You say to engelbert, "we could dig one aside joze's desk"
You sense that engelbert is looking for you in LHM.
It pages, "yes"
You say to engelbert, "to do this type @dig engelbert's desk"
You say to engelbert, "and tell me when it's done"

You sense that engelbert is looking for you in LHM.
It pages, "the desk is created"
You say to engelbert, "great, now can you give me the number of the desk #????"

You sense that engelbert is looking for you in LHM.
It pages, "how can i work with my desk ?  #1581 is the number"
You say to engelbert, "we are going to build exits and entrances, I do it"

>@dig Engelbert to #1581
Exit from LHM (#1255) to engelbert's desk (#1581) via {"Engelbert"} created
with id #1582.

You say, "ok now you can enter you desk "
You say, "look first here and type engelbert to enter your desk"
>page engelbert how is it?
Your message has been sent.

>engelbert
engelbert's desk
'No one is listening to the conversation via web.'
engelbert is here.
Obvious Exits: Out (to LHM).

You say, "well, now we have to describe your desk"
engelbert says "ok it's fine"
You say, "to do this you type @describe here as blabla"
You say, "don't use the return command before the end"

engelbert says "ok for the description"
You say, "great "
You say, "you will be able to change it as soon as you want"
engelbert says "by using the same command"
You say, "you can also rename your desk typing @rename here to blabla"
You say, "yes the same command"
You smile, "now you could set your room here so that next time you come in,
you will arrive directly in your desk :)"
engelbert asks "how ?"
You say, "and also, you could type home whenever you wish to come back here"
You say, "type @sethome"
engelbert says "is it possible to have a summary of all these commands on a
small sheet of paper"
You say, "yes all this should be available on the web, on the tecfamoo page"
It pages, "thank you a lot, for the lesson"
You say, "you're welcome"
```

This consolidation session is also a good illustration of a direct working session. Here the MOO can be used as a shared representation. In this example, MOO objects are manipulated but one can easily imagine the work that can be done with text objects like MOO notes, MOO books or MOO board. Actually MOO is a very interesting plateform for collaborative work and it proves to be very effective when working on MOO building and MOO programming.

To conclude this section, we could repeat that the MOO communication system can be used for the following cases:·

- interactive presentation (paper or projet presentation - one character is presenting and others are asking questions);·
- informal discussion during working session (several characters discuss at the same time and at different communication levels);·
- organisational details (several characters discuss at the same time about project organisation);·
- collaborative work (two or more characters are working -writing, building, programming- on the same object at the same time).

2-4 Study of other MOOs

2-4.1 The mediamoo

MediaMoo was announced in 1993. This virtual version of MIT's Media Laboratory was designed to satisfy the need of scientists, scholars or specialists from the private sector to get daily, informal continuity to their community of interests. MediaMOO consists of people who are studying virtual communites.

A text-based virtual environment can provide both a shared place (the virtual world), and a shared set of activities (exploring and extending the virtual world). Like at a coffee break at a conference, there is a social convention that it is appropriate to strike up a conversation with strangers simply based on their name tags. On MediaMOO, you can read descriptions of people's research interests as well as their names, and this can form a basis for striking up a substantive conversation [Bruckman 93].

However, name tags alone are not enough. The best sorts of interactions occur when people participate in a shared activity and not just a shared context. On MediaMOO, this takes the form of constructing and interacting with the virtual world. The Constructionist theory of education emphasizes the value of constructing personally meaningful artifacts [Papert 80]. This theory has guided design decisions made in MediaMOO and everyone is automatically a programmer with full privileges to create new objects and places in the virtual world.

A virtual place to socialize:

Users from around the world connect to this virtual place to socialize, talk about their research projects, interact with the virtual world, and create new objects and places. People from the Media Lab are encouraged to build their own offices; users from other places can build their offices as well and connect them via " Internet ". The system developers constructed basic infrastructure and a few interesting and evocative objects and places, but almost all the building was left to the users.

MediaMOO attracts a community of researchers through advertising on electronic mailing lists devoted to media studies. People are required to submit a description of their research interests to register and while some applicants are refused, it is primarily a self-selection process.

An endless conference reception:

MediaMOO is perhaps best described as an endless conference reception. The conversation fluidly moves between personal and research issues. Some question the value of the sort of interaction which takes place on MediaMOO. One user wrote that "frankly it strikes me for now as a schmooze place for people with nothing better to do, not a place where more productive things will happen than already happen in other communicative modes." Administrators of MediaMOO do not share that perspective for a variety of reasons and they argue asking if spending time at a conference reception is a waste of time. Most veteran conference-goers attest to the fact that the conversation at coffee breaks and receptions is usually more valuable than the sessions attended. The exchange of ideas and networking which take place on MediaMOO are similarly productive. One might question whether these benefits can be obtained with less time commitment through other media—but this analysis ignores other benefits of the MediaMOO. For media researchers, coming to understand this medium may be interesting in itself. There are so personal, emotional benefits that come from participating in a "third place," such as relaxation, friendship, good conversation, and a sense of belonging to a community. In short, if one enjoys it, then one will reap benefits from it which go beyond that pleasure. Some people do not enjoy it, and that is certainly a valid point of view. It is a strength of the medium that the community is self-selected—everyone who is there wants to be there.

Online colloquiums and forums:

The kind of networking and casual collaboration which occurs at conferences does appear to be taking place on MediaMOO. It seems natural to extend the conference metaphor to literally have meetings on MediaMOO. This has been tried several times with mixed results. Conversations in MOOs are often multi-threaded. When large numbers of people all talk at once, each of those threads can become very short—rather like a tailor's scrap bin. Users have experimented with a variety of computational ways to improve the quality of discussion.

Wade Roush organized a forum on Cyberspace and the Humanities, which more than 40 people attended. The forum took place in two different "conference rooms," each with a different method for focusing conversation. In one, users are all allowed to talk at once and tag their comments with a relevant subject line. In another, a limited number of people can talk at a time and there is a queue for those wishing to speak. This increases the coherence of the conversation but takes an already slow medium and slows it further.

Randy Farmer writes: "It seems likely that online meetings will be more successful when networked video and audio systems become more generally available. Text is a tremendously expressive medium and has advantages over graphics and audio for some applications. For example, in less than a moment one can write that "at the top of the hill is a gnarled peach tree," and this conjures up an image in the reader's mind. It would take considerably longer to draw such a tree, and less would be left to the imagination. Audio and video will not replace text-based VR, just as television didn't replace radio or magazines but simply changed what they are used for. Online meetings are one application where the greater bandwidth of audio and video may be needed".

The second design better embodies the participatory philosophy of MediaMOO. It assumes that the community of users have worthwhile things to say; the privilege to comment is no longer reserved for the author of the object alone. Valuing participation and respecting the contribution of each individual are principles inspired by Constructionism.

MediaMOO presentation and entrance:

```
****************************
**  Welcome to MediaMOO!  **
****************************

PLEASE NOTE:
MediaMOO is a professional community, where people come to explore the future
of media technology.
The operators of MediaMOO have provided the materials for the buildings of this
community, but are not responsible for what is said or done in them. In
particular, you must assume responsibility if you permit minors or others to
access MediaMOO through your facilities.  The statements and viewpoints
expressed here are not necessarily those of the janitors, Amy Bruckman, or the
Massachusetts Institute of Technology and those parties disclaim any
responsibility for them.

A note to guests: guests' connection site information is publicly readable,
and included on all mail messages posted.

Type:
'connect <character-name> <password>' to connect to your character,
'connect Guest'    to connect to a guest character,
'help @request'    for information on how to get your own character,
'@who'             just to see who's logged in right now,
'@quit'            to disconnect, either now or later.

*** Connected ***
purple-crayon.media.mit.edu
You are almost to MediaMOO, inside a fiber optic cable. Type OUT to get to the
Media Lab or COMMON to get to Curtis Common.
Obvious exits: out to The E&L Garden, common to Curtis Common, salon to The NI
Salon, and down to media.mit.edu
There's a new edition of the newspaper.  Type 'news' to see it.
```

2-4.2 The BioMoo

The WWW presentation page of this WOO environment contains various introductory points like purpose, frequently asked questions, visit, recordings of meetings and reference files. In the purpose, one can read:"

BioMOO is a virtual meeting place for biologists, connected to the Globewide Network Academy. The main physical part of the BioMOO is located at the BioInformatics Unit of the Weizmann Institute of Science, Israel ".“

BioMOO is a professional community of Biology researchers. It is a place to come meet colleagues in Biology studies and related fields and brainstorm, to hold colloquia and conferences, to explore the serious side of this new medium ".

The BioMOO is one of the most successful MOO for communities of researchers. On a technical level, it has one of the most (if not the most) enhanced environment. Unlike the MediaMOO, it offers a WOO environment using interactive maps, databases with very simple search systems, etc. Since its creation, hundreds of people have registered, and have created lots of objects, through which they tell about their work. There have been many online seminars, and lots of people have made acquaintances. Every day, people meet on the MOO and learn something new. The online seminars may have taken two formats: the posters session and the talks session. Both of them have proved to be really and very efficient for a domain like biology. Indeed, images really are important for this domain and the integration of the WWW interface to the MOO is a major improvement. [Gustavo 93]

Online seminars and workshops:

On the BioMOO, online seminars have been particularly productive and the best way to realize it is to read the MOO session of the BioMOO Neuroscience Journal Club in the appendixes. This meeting took place on the 10th of May, 1995. About 5 scientists attented this session and it proved to be a very efficient number to communicate on the MOO about a serious topic. The purpose of this session was the presentation of an article by its author. Figures of the articles could be viewed from the WWW browser. The speaker showed virtual slides to its listeners and commented them.

This kind of MOOsession do happen frenquently on the BioMoo and one feel very confortable reading the records. This sessions are recorded throught the MOO with the use of the virtual video camera and files are constantly available through the WWW browser.

Distance education:

BioMOO is also a virtual center for distance education as courses are given in the context of the GNA (Global Network Academy) network. These distance courses seem to be an interesting way of using the MOO as an environment for distance education purposes.

BioMOO presentation and entrance on the MOO interface:

```
 Welcome to...

HHH!*%nx.    HM           ~4HHH:      :HHHH~    .xH*""tx.       .xH*""tx.
MMM   `MMM   `"             MMMM:     MXMMX    MMM      #MM.   MMM      #MM.
MMM    MM"  +nn   .n*%x.    M`MMM    M XMMX   MMM       MMM,  MMM       MMM,
MMM!**MX.    MM  MM   4Mh   M ?MMM  X~ XMMX  'MMM       MMMX 'MMM       MMMX
MMM    MMM:  MM  MM   'MM   M  ?MMMd"  XMMX  'MMM       MMM' 'MMM       MMM'
MMM    MMMf  MM  MM   'MM   M   MMMf   XMMX   `MMk      :MM#  `MMk      :MM#
MMMk..HM*"  .MM. `MX..M*  .:M..  MM   .MMMM.    "Mh...xM"'      "Mh...xM"'

                   the virtual meeting place for biologists.

Type:
'purpose'                      to read a statement on BioMOO's purpose
'connect (userid) (password)' to connect, for example: connect Homer stu888ph
'guest (name) (any-password)' to connect as a guest,
'create'                       for information on how to get your own userid,
'who'                          just to see who's logged in right now,
'@quit'                        to disconnect, either now or later.
Multimedia interface (WWW): http://bioinfo.weizmann.ac.il:8888
For human help please email to Gustavo@bioinformatics.weizmann.ac.il.

220 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -->
*** Connected ***
Last connected Mon Sep 11 18:12:57 1995 IDT from fpssun22.unige.ch
There is new news.  Type `news' to read all news or `news new' to read just
new news.
There is new activity on the following lists:
    *Announcements (#89)                154 new messages
Type @nn to see these messages, one at a time.
```

The BioMOO entrance on the WWW interface:

(missing)

The researchers database search formular:

(missing)

2-5 Concluding remarks and recommendations

To conclude this part of the report, one can say that the WOO environment seems to be really relevant for communities of researchers to use it as a communication system, and as a collaborative work place. This environment can be considered as a communication system with usual metaphors of mail, phone, answer phone, etc., but people can also be more imaginative and create new modes of communication allowed by the extensive property of the MOO.

At first people get seduced by the synchronous aspect of communication. It seems to bring them a new sense of belonging to a community. Soon, people can build their own working environment (virtual offices, notepad, books, etc.) and feel they can have some control of the MOO database from the inside of it (people are characters on the moo, they have an object number).

Regarding the various MOO experiments that have been reported. It appears that some communication rules can be more effective than others. Indeed, a MOO meeting taking place with about 5 persons is far more effective and enjoyable than a meeting of 20 characters. This is partly due to the text-based feature of the MOO server. Nevertheless rules can be invented to support such a big meeting of 20 persons. Also, it is more effective to have a communication goal, like a problem to solve, a face-to-face meeting to organise or an article collaborative writing for instance than no goal at all. Indeed, the MediaMOO description of an endless conference reception should be frustrating after a while if no conference has be organised one can talk about.

At this very moment, the MOO and more especially the WOO environments are communication system tools but their main advantage over other CMC products is that all can be remodelled on a current basis according to the user's needs. Would it be the communication features, the social rules, the management of information, etc. This environment is relevant at this point but it can still be improved a lot. MOOs are a first instance of "Cyberspace integrators". A lot of concepual problems of how to organize "virtural environments for research and education" can now be addressed even in purely text based MOOs. WOOs now allow to inspect and manipulate MOO objects from a WWW browser and to use the MOO as flexible and adaptive WWW (HTTP) server. In the very near future, new graphical MOO/WWW clients will without doubt make MOOing easier and add or improve MOO integration with other Internet Services.

To summarize, MOO and WOO environment are adequate for the following activities:

- to exchange information within small groups
- to present short papers interactively
- to follow up a research project
- to animate a research group at a distance (between various face-to-face meetings)
- to discuss of technical and organisational details
- to share a common representation (poster session and collaborative work)
- to test collaborative work situation
- to establish or consolidate relationships
- to create reseach community habbits (share of a common environment)

Nevertheless it seems inadequate for the following activities:

- to discuss within large groups
- to present long and complex papers or research results

- to solve non-text-based problems

2-6 Bibliography

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3. ANNEXES (Moo transcripts)

3-1 First LHM Meeting

```
TecfaMOO ARRIVAL area
  _________
 /___  ___/                                 Grand Opening: this summer
    / /                                     Builders and Programmers Permits
   / /                                      are available to qualified people
  /_/ ECFA MOO   Arrival Area

  A Virtual Space for Educational Technology, Education, Resarch & Life
  at TECFA, School of Psychology & Education, University of Geneva

  'VISIT' (for Visitor Information) 'BUILD' (Builder's Information)
  'Register' (User creation)

  More information: http://tecfa.unige.ch/tecfamoo.html

'No one is listening to the conversation via web.'
You see test, 'No one is listening to the conversation via web.', Strange black
dog, billy, and BUS FOR EDUTECH here.
Daniel and joze are here.
Obvious Exits: Up (to Les Puces de Plainpalais), UC (to Underground Corridor),
VISIT (to Visitor Information), TRANS (to Rond Point de Plainpalais/Taxi),
BUILD (to Underground Construction Office), and Register (to TecfaMOO
Registration Room).

joze says "Hello, Sandrine"
Sandrine says "you come for the lhm meeting
joze says "Yes"
joze says "How can I tell I am smiling"
Sandrine says "you can type 'enter bus' and then 'go', you will join pierre at
the edutech center where the meeting will take place"
Sandrine smiles "just add :)"
Lone Dirckinck-Holmfeld and Annita Fjuk has connected.
Sandrine says "hello everybody"
joze smiles "Bye Sandrine :)"
joze enters BUS FOR EDUTECH.
Sandrine says "see you in a minute$"
Sandrine says "joze is gone to edutech center where the meeting will take place"
You sense that Pierre is looking for you in International Educational
Technology Center.
He pages, "Lone et Joze sont dans l'arrival area. Leur as-tu dis bonjour?"
Shortest alias: Pierre
Sandrine says "we will wait for the bus to come back and we will join him"
>page pierre oui
Your message has been sent.
Sandrine says "ok the bus is back now"
Sandrine says "you can type 'enter bus' and then 'go' to drive to the edutech
center"
Sandrine says "this is where the meeting will take place"
Lone Dirckinck-Holmfeld and Annita Fjuk [Guest] enters BUS FOR EDUTECH.
Kim Issroff has connected.
Sandrine says "hello"
Sandrine says "are you coming for the lhm meeting"
Kim Issroff says "'yes'"
Kim Issroff says "'Sandrine, I am not sure if you are getting what I am
writing'"
Sandrine says "ok, welcome here, type 'enter bus' and then 'go' to go to the
meeting place"
Daniel says to Kim Issroff [Guest], "hello kim, we get everything allright :)"
Kim Issroff [Guest] enters BUS FOR EDUTECH.

--KALIA BRINGS THE CONVERSATION BACK FROM THE RECEPTION HALL--
  (kalia) Pierre says "Ok, nice to have you here..."
>page pierre il manque qqqun?
Your message has been sent.
  (kalia) Kaspar teleports out.
  (kalia) Pierre says "I put a note on the Information board"
  (kalia) Daniel teleports in
```

(kalia) Pierre says "To view the information board, just type 'look information board'
(kalia) Pierre says "You'll find out what to do with that board if you type '@examine infomration board'"
(kalia) Lone Dirckinck-Holmfeld and Annita Fjuk says "hello, have you all seen the nice painting of Picasso on that wall..."

--CHECKING OF PEOPLE AND LOCATIONS--
>@who

User name	Connected	Idle time	Location
Sandrine (#166)	6 hours	0 seconds	TecfaMOO ARRIVAL area
Colin (#93)	2 minutes	3 seconds	GNA Center
Daniel (#111)	a day	3 seconds	Reception Hall
Kim Issroff [Guest] (#151)	4 minutes	8 seconds	Reception Hall
Pierre (#168)	5 hours	18 seconds	Reception Hall
MooBoy (#1324)	a day	28 seconds	Daniel's Office
Lone Dirckinck-Holm (#84)	11 minutes	33 seconds	Reception Hall
Kaspar (#85)	a day	a minute	TecfaMOO ARRIVAL area
joze (#1464)	12 minutes	4 minutes	Reception Hall
Patrick (#167)	5 hours	22 minutes	Reception Hall

Total: 10 users, 9 of whom have been active recently.

(kalia) Daniel teleports Sony in.
(kalia) Daniel consults the manual for Sony.
(kalia) joze says "look information board"
(kalia) Pierre asks "Joze, are you with Bob or alone, will Bob join us later or not?"

>@join pierre
you join Pierre who is delighted to see yo
Reception Hall
You enter a large and nice hall. You can see old paintings on the walls but some people are clearing them, they want to put new ones, modern art... There is an information board in this hall on which you feel you could find interesting information for a newcomer. Type 'look board' to view the posted titles, type 'read <number> on board' to read the message.

'No one is listening to the conversation via web.'
You see Information Board, How to send MOO mail, kalia, vcr, video, tv, tape, and Sony here.
Patrick (dozing), Pierre, joze, Lone Dirckinck-Holmfeld and Annita Fjuk [Guest], Kim Issroff [Guest], and Daniel are here.
Obvious Exits: Out (to International Educational Technology Center), C (to Common room), Lib (to Library), and Cafet (to Cafeteria).

joze says "Yes, Bob is here with me.""
Colin has arrived.
Colin says "hello "
Pierre exclaims "Hi Bob!"
Lone Dirckinck-Holmfeld and Annita Fjuk says "Hello from Denmark"
Sandrine turns on camera to begin recording. . .
Daniel . o O (we got multimedia here !!!)
Pierre says "Our conversation will be recorded in order to inform the others about what we said. I hope you don't mind being recorded."
Daniel drops Sony.
Daniel turns on camera to begin recording. . .
Daniel pans the camera left and right over Reception Hall. . .
Daniel zooms the camera in on joze. . .
Daniel zooms the camera in on Lone Dirckinck-Holmfeld and Annita Fjuk. . .
Pierre says "Let me present you those you don't know. Daniel and Kaspar are the (single) guy who developped this"
Pierre says "moo originally. Sandrine is the architect of the building in which you are."
Daniel says "well actually this is an international project ... am I just the initiator"
joze says "Bob asks if anybody is interested in TF5""
Pierre says "We are still waiting for Karen, Eengelbert and Rolf to join... Let's say we chat until 5.30 and"
Sandrine smiles "just a point: only what is said pubicly will be recorded, if you don't mind :)"
Pierre says "then we start discussing TF5"
Daniel says "remember, if you want to have private conversation, just use 'page ..... ' right"
Daniel asks "anybody needs some technical explanations ?"
joze says "Yes"
Daniel says to joze, "go ahead !"
Daniel . o O (sorry I meant you could ask me questions)
Kim Issroff says "Karen is stuck in reception - could someone go and help her

```
- I have her on the phone but I don't know what to tell her"

--CHECKING OF PEOPLE--
>@who
User name                    Connected    Idle time    Location
---------                    ---------    ---------    --------
Sandrine (#166)              7 hours      0 seconds    Reception Hall
Colin (#93)                  12 minutes   2 seconds    Reception Hall
Kaspar (#85)                 a day        2 seconds    TecfaMOO ARRIVAL area
Kim Issroff [Guest] (#151)   15 minutes   13 seconds   Reception Hall
Daniel (#111)                a day        18 seconds   Reception Hall
joze (#1464)                 23 minutes   44 seconds   Reception Hall
Lone Dirckinck-Holm (#84)    21 minutes   a minute     Reception Hall
Pierre (#168)                5 hours      a minute     Reception Hall
MooBoy (#1324)               a day        10 minutes   Daniel's Office
Patrick (#167)               5 hours      32 minutes   Reception Hall

Total: 10 users, 8 of whom have been active recently.

Pierre says "I don'see Karen..."
Kim Issroff says "sorry she is in the arrival hall not the reception"
Sandrine says "she is disconnected it seems"
Lone Dirckinck-Holmfeld and Annita Fjuk says "Hej Kim, How are you? How is your
work progressing? "
Daniel says to Kim Issroff [Guest], "no she is not, she is BEFORE login, so I
can't see here, tell her to type 'connect guest' or something like that"
Pierre asks "Yes, she is not there. Kim, could ask her to try again?"
Kim Issroff says "she thinks that she is connected "
Kim Issroff says "she has just had permission denied to enter the bus"
Pierre says "shre probably was not very polite with the bus driver"
Kim Issroff says "She is laughing but insists that they won't let her on"
Kim Issroff says "Daniel she is using the www interface"
Sandrine says "she should propably try again, she can be disconnected and still
view the moo interface"
Kim Issroff says "Thanks Sandrine - she is trying again"
Daniel says to Kim Issroff [Guest], "ok with that it is hard to talk and VERY
hard to use artifacts (most of that stuff does not work yet, tell her to use
another client, e.g. telnet or the tinyfugue connection (password = calvin99)"
Sandrine says "she's there"
Kim Issroff says "but she says that she has disconnected but is coming back"
Pierre asks "Did karen log in as Ken Schweller?"
Sandrine says "yes"
Daniel says to Kim Issroff [Guest], "no she REALLY should not use the www
interface alone ... you need another client side by side"
Daniel says to Pierre, "no ken schweller is somebody else ... actually a
mythical figure in the moo world"
Kim Issroff says "she is trying again - she said she logged in as a guest"
Kim Issroff says "what does this mythical figure do"
Daniel says to Kim Issroff [Guest], "like he programmed a lot of artifacts ...
e.g. the camera we are using here ... and he is a "wizard" on a few famous MOOs"
couqui teleports in.
Daniel says to Kim Issroff [Guest], "no she is still using the www interface
only ... that never will work"
Pierre asks "what does she have to do then ?"
Daniel says "I am giving Kim some instructions ... but right now the www
interface is rather for looking at things or for sending short messages, that
is all, however if you have both www and another client the 2 will work together
for registered users"
joze is now a programmer.
Kim Issroff asks "she is now trying on telnet which hasn't worked and is just
clicking on the Tinyfugeu connection - what is a tinyfugue connection?"
Daniel says to Kim Issroff [Guest], "tinyfugue is a unix MOO client, I set it
up so that people can use it remotely from anywhere in the world"
Daniel says "this is a message from the www interface, but it only works with
netscape 1.1"
Kim Issroff asks "she now is back on the very first page of tecfamoo stuff
again - will you help her now?"
Daniel says to Kim Issroff [Guest], "tell her to type 'connect guest'"
Kim Issroff says "cancel that last one - we are not communicating very well -
she has just found the tinygugue connection again and is launching telnet"
Daniel frowns "as long as she is outside I am stuck, sorry :("
Kim Issroff says "I know - she says that Telnet is being launched several times
now"
Daniel says to Kim Issroff [Guest], "so again: the username is 'tiny' (the www
tells you that) and the password is 'calvin99'"
joze asks "Daniel, some  people here would like to know how many participats
can use MOO at a time?"
Kim Issroff says "she is just typing the password. What does the camera do? "
Daniel says to joze, "depends on the machine you got, I would say on this one
about 200"
Lone Dirckinck-Holmfeld and Annita Fjuk asks "Hi Kim, Are you in the reception
Hall?"
Pierre says "OK, while Daniel is fixing Karen's problems, I would like to start
```

talking about ESF"
Sandrine asks "the camera is recording, do you want to stop it?"
Pierre says "Remember we ahd very ambitious - and probably sincere - plans in SItges"
joze exclaims "Bob says: Pierre, hurray!!"
Kim Issroff says "I don't mind at all but my computer seems to record everything and I can scroll back through it so I was wondering what more the camer does"
Pierre says "But now, I guess not much has been done, we have only 3 months lefts and these are holidays (at least a part of it) and conferences"
Kim Issroff says "Daniel - Karen's computer has now crashed so she is starting again"
Daniel says to Kim Issroff [Guest], "you are right of course, but with a camera you can do more, like putting up the sessions on display in a "TV" here"
Lone Dirckinck-Holmfeld and Annita Fjuk asks "Hej, What do you do with the camera?"
Daniel zooms the camera in on Lone Dirckinck-Holmfeld and Annita Fjuk. . .
Daniel says to Lone Dirckinck-Holmfeld and Annita Fjuk [Guest], "filming you ;)"
joze asks "How can Lone and Annita act together?"
Lone Dirckinck-Holmfeld and Annita Fjuk asks "Hello, what do yoy do, Daniel?"
Kim Issroff asks "Daniel - Karen's computer now says Host not on host site: tecfamoo ????????"

Lone Dirckinck-Holmfeld and Annita Fjuk says "Annita is a Ph.D.student from Oslo University. She has been in Aalborg since February. We are writing a paper together for the Aix-seminar."
Kim Issroff asks "what is the paper about?"
Pierre says "I don't feel too guilty about the fact that we did not do much about ESF, since there is no real monney for research projects, but only for meetings. The original idea was to have a joint pilot project per task force.""
Pierre asks "yes, what is thios paper about ?"
Lone Dirckinck-Holmfeld and Annita Fjuk says "the title of the paper is: Problemorientation as a method, and as a fundamenet for computer mediated collaborative distance learning. "
Pierre asks "what is 'problem orientation'?"
Lone Dirckinck-Holmfeld and Annita Fjuk says "we are using a method called Soft Dialectics which is based on dialectical analysis and Soft System methodology (Checkland)"
Lone Dirckinck-Holmfeld and Annita Fjuk says "Problem orientation is work method and a fundamental principle for critical pedagogy."
Pierre does not understand
joze says "Bob says: I wish that I could see the bubbles coming out of Patrick's head"
joze asks "Bob says: what are you really thinking about?"
joze says "BOB says: but Patrick is still daydreaming!! what can I do to bring him into this virtual world"
Daniel pokes Patrick! Patrick makes a sound that resembles that of the Pillsbury doughboy.
Lone Dirckinck-Holmfeld and Annita Fjuk says "Our work again: We are using Soft Dialectics to structure our discussion on collaborative learning at distance here at Aalborg University. "
Daniel says to Lone Dirckinck-Holmfeld and Annita Fjuk [Guest], "anything of that on a www server by any chance ?"
Lone Dirckinck-Holmfeld and Annita Fjuk says "Yes, of course we can...when it is finished"
Daniel says to Lone Dirckinck-Holmfeld and Annita Fjuk [Guest], "it is useful to have it there before, so people could comment, unless it is secret or really in its VERY beginning stage"
joze asks "Bob says: ok, to be serious. I expect that only Pierre can create a practical framework into which folk in TF5 can do something useful before Aix. Does anyone have any ideas about what this practical thing might be?"
Daniel says to Kim Issroff [Guest], "hey that is strange ... telnet is one of the most basic internet services ! ... can she connect to any other machine she knows ?"
Lone Dirckinck-Holmfeld and Annita Fjuk says "If you are interested: we will be happy to mail you information about Soft Dialectics and abour problem oriented project"
Pierre asks "Ok, I thnik the best strategy we can have for Aix is that we try to discuss things that we do anyway, and preferably which is connected to the goals that were allocated to the three subgroups. Let's for instance talk about the subgroup 3 since it included Lone, Bob, Joze who are here (and Stevan who is not). Its goal was to review tools for supporting collaborative learning. Would Lone's paper fit to that goal?"

Pierre asks "Did Joze and Bob plan to do something about that goal during Joze's visit in Lancaster?"

Lone Dirckinck-Holmfeld and Annita Fjuk says "Yes, because we are reviewing and exploring the use of the conferencing system FirstClass. This anlysis is a fundament for design of tools and pedagogical strategies."

Sandrine says "karen is here for true"
A warning light flashes on video: << Tape Full >>
A warning light flashes on Sony: << Tape Full >>

joze says "Bob says: would it be a start to identify the functionalities that we need of tools first. Each of us is a member of this group (and probably others). Hence, we should be able to compile a list of things we want to do 'at a distance'. One dimension which influences this will be the 'nature of the collaborative task'. This is an area in which McGrath and Hollingshead claim that little work has been done."

Pierre asks "Sandrine, could you change the tape ?"

Sandrine says "yes sure"
A warning light flashes on video: << Tape Full >>
A warning light flashes on Sony: << Tape Full >>
Sandrine teleports tape out.
A warning light flashes on video: << Tape Full >>
A warning light flashes on Sony: << Tape Full >>

Daniel says to Kim Issroff [Guest], "now she is here, but won't talk :)"

Daniel picks up Sony.

Pierre asks "Do you mean to identify the needed functionnalities at a theoretical level?"

Sandrine turns on camera to begin recording. . .

Sandrine write protects tape.

-----SANDRINE GOES OUT AND TALKS ARE TRANSMITTED BY KALIA ----------
(kalia) Pierre says "Actually, despite the fact that I am in the subgroup 2, we had here to review various groupware, more precisely whiteboards (plus audio) that we need for the BOOTNAP project. We tested ShowMe, Belvedere, Kansas and are trying now LBL, Collage and Groupkit. We could make a synthesis about that..."
(kalia) joze says "We are using LBL video, audio and wb tools in COST 14 project and we have some experiences with these and similar tools"
(kalia) Pierre asks "How does it work?"
>lib
(kalia) joze says "Bob says: I have no problem about looking at tools, but I would be worried if we didn't start with some real needs, contexts, and aims of the collaboration."
joze says "Bob says: I have no problem about looking at tools, but I would be worried if we didn't start with some real needs, contexts, and aims of the collaboration."

Library
The Library is still underconstruction...but some html references are already available from the WWW MOO interface.

'No one is listening to the conversation via web.'
Obvious Exits: RH (to Reception Hall) and C (to Common room).
(kalia) Sandrine leaves for the lib.
(kalia) Pierre asks "Learning isn't a goal?"

(kalia) joze says " Our main problem represents limited througput of our international connection (from Slovenia). But we used the m localy and we foung them easy to use."

(kalia) Lone Dirckinck-Holmfeld and Annita Fjuk says "Hello again, during our analysis we have indetified some interesting phenomenon to be explored more deeply. Some of them are: Commitment is a critical aspect in various forms in Computer mediated collaborative learning (at distance). Articulation work (See Kjeld Schmidt and Liam Bannon) is another interesting phenomenon. There are som other aspects, e.g. what consitutes the virtual room and the interplay between the organisational elements and the design of the artefact (functionality and aestetics)."
(kalia) joze says "Bob says: learning is a goal in intensional situations. In our case as researchers, yes we are learning all the time but much of it is contextual and not necessarily directly intentional."
(kalia) Lone Dirckinck-Holmfeld and Annita Fjuk exclaims "To Pierre: For us, learning IS the goal!"

(billy) Colin teleports David Traum [Guest] out.
(kalia) Colin teleports David Traum [Guest] in.
(kalia) Pierre says "David, the guy who just arrived, is precisely my colleague who spent much time trying these various whiteboards""
(kalia) Lone Dirckinck-Holmfeld and Annita Fjuk says "Our interests are intentional learning. However, the principle s"
(kalia) Lone Dirckinck-Holmfeld and Annita Fjuk says "ok, we contin. ...of problemorientation is to a large extent intereting in relation to work practice in general."
(kalia) Pierre says "By the way, the guy who wrote the 'yellow pages of CSCW', the most comprehensive survey of exisiting tools, is in Calle's lab. I metz Calle last week. He said he could ask him to prepare something as well"
(kalia) Karen says "'am I talking to you?'"

(kalia) joze says "Bob says: a key dimension here is motivation; one might link this closely to the nature of the problem. Is this a real problem with which we can directly associate (say as part of our day-to-day work) or does it seem artificial - like an exercise. Unlike Pierre, I hate jogging but given a real challenge to get up a hill (which motivates me) then I will make the effort (and enjoy it)."
>page karen hello karen, don't need to use '
Your message has been sent.
You sense that Karen [Guest] is looking for you in Reception Hall.
It pages, "'thanks - as you can tell I am new to this!'"
Shortest alias: Guest5
>page karen you're not alone today, that's nice
Your message has been sent.
(kalia) Lone Dirckinck-Holmfeld and Annita Fjuk says "According to group 3, I think it is important that this survey includes in-depth studies of exemplary use-situations (out of labs!)"
(kalia) joze says "Bob says: I agree with Lone (et al) about naturalistic settings."
(kalia) Pierre asks "Do you remember this chapter that we wrote when preparing the ESF proposal. We described task features which impact on the effects of collaborative learning (e.g. the importance of regulation, the conceptual opnesss, etc.). COuld you use these criteria in your analysis Bob ?"
(kalia) joze says "Bob says: thanks Pierre, I would need to revisit that document"
(kalia) Pierre asks "OK, can we talk a bit about group 1. Karen and Kim are here. Do you have anythin related to the original goal (reviewing tools for analysing interactions) that could be presented? Did you interact with Mike and Claire about this>?"
(kalia) Karen says "'we thought that the goal of offering a complete paper was perhaps"
(kalia) Karen says "'oops - hang on"
(kalia) joze leaves for the lib.
joze has arrived.
(kalia) Pierre says "Karen, type you text continuously, without retrun, until the end of your message"
joze asks "Bob says: hey, Sandrine are you reading me?"
>"yes bob, how are you?

You ask, "yes bob, how are you?"
(kalia) Lone Dirckinck-Holmfeld and Annita Fjuk says "We have to leave now. We have enjoyed to be MOO-ed, and hope to continue this discussion during the summer. Thanks to Pierre for intiating this meeting and organising it. So bye to all of you."
(kalia) Karen says "'we thought that we would produce an annotated bibliography of key analytic frameworks and kim and I are collaborating on analysising collaboration using three analytic tools - using categories of talk and time based analyses"
joze asks "Bob: great to find you. Just an off-line remark. I would be pleased to talk to you about VMDL when I come back to NL next week. Maybe you could confirm with me your best email address?"
(kalia) Patrick leaves for the lib.
Patrick has arrived.
>"well I guest my neurope lab email address is still valid
You say, "well I guest my neurope lab email address is still valid"
>"I still receive nectar messages
You say, "I still receive nectar messages"
Patrick says "He Bob what are you doing here"
(kalia) Kim Issroff says "We have had some communication with Mike and Claire but it has been erratic"
(kalia) Pierre says "Comparing three tools is interesting. It has not to be exhaustive"
joze says "Bob: just having a VMDL chat with Sandrine!!]"
Patrick says "You are in OUR lib"
Patrick asks "After if you want you can visit my office ?"
(kalia) Kim Issroff says "part of what we want to show is that some tools are useful for some things and others for other things - seems obvious but neither of us have ever seen direct comparisons"
joze says "Bob: didn't know it was prohibited but anyway, I'd better go back and join Pierre on ESF issues. A bientot."
>"ok
You say, "ok"
joze leaves for the RH.
(kalia) joze has arrived.
>page joze bob, so what do you think of this?
Your message has been sent.
Patrick leaves for the RH.
(kalia) Patrick has arrived.
(kalia) joze says "Bob: hope I didn't miss a question. Just been off to the Library to chat with Sandrine. As you can see I'm back"
(kalia) Karen says "'you will remember the time-based analytic tool from kim's talk.part of what we hope to do is to use this tool for different kinds of data to establish its usefulness - we could do a joint presentation on this"
>page joze with a puppet I can hear everything that is said on your room :)
Your message has been sent.

```
  (kalia) Pierre asks "Would that not be a repetition of last year talk?"
You sense that Lone Dirckinck-Holmfeld and Annita Fjuk [Guest] is looking for
you in Reception Hall.
It pages, "How do we exit, we have to leave for supper"
Shortest alias: guest
>page guest "type @q
Your message has been sent.
  (kalia) Kim Issroff says "No because we want to try it at different levels
of granularity and compare what it buys you to other methods of analysing
collaborative interactions"
>page guest "just if you want to leave
Your message has been sent.

-----CHECKING OF PEOPLE AGAIN-------
>@who
User name                    Connected    Idle time    Location
---------                    ---------    ---------    --------
Sandrine (#166)              8 hours      0 seconds    Library
Lone Dirckinck-Holm (#84)    an hour      6 seconds    Reception Hall
Kim Issroff [Guest] (#151)   an hour      13 seconds   Reception Hall
Pierre (#168)                6 hours      a minute     Reception Hall
Karen [Guest] (#146)         35 minutes   2 minutes    Reception Hall
Daniel (#111)                a day        2 minutes    Reception Hall
joze (#1464)                 an hour      2 minutes    Reception Hall
Patrick (#167)               7 hours      3 minutes    Reception Hall
David Traum [Guest] (#145)   21 minutes   5 minutes    Reception Hall
Kaspar (#85)                 a day        5 minutes    TecfaMOO ARRIVAL area
Colin (#93)                  an hour      21 minutes   Reception Hall
couqui (#162)                an hour      an hour      Reception Hall
MooBoy (#1324)               a day        an hour      Daniel's Office

Total: 13 users, 8 of whom have been active recently.

  (kalia) Pierre says "Ok, we'll see later if Mike and Claire can propose
something.""
  (kalia) Lone Dirckinck-Holmfeld and Annita Fjuk says "type @q"
 (kalia) Kim Issroff asks "Are they coming later to this or do you mean another
day?"
>page guest "without quotes
Your message has been sent.
  (kalia) Karen says "type @q""
  (kalia) Lone Dirckinck-Holmfeld and Annita Fjuk has disconnected.
 (kalia) The housekeeper arrives to remove Lone Dirckinck-Holmfeld and Annita
Fjuk.
 (kalia) Kim Issroff says "Karen comes out with some very profound statements"
  (kalia) Karen says ""oops again!!!""
  (kalia) Patrick goes out.
  (kalia) Colin leaves for the lib.


  (kalia) Pierre says "All this sounds good. Now, it is about group 2 and I
think I am the only member of it. I developped some ideas about how we could
modify rulebase system to model the effect of interactions on problem solving.
But these are still rather general ideas. I did not review models of
collaboration, but some work on models of dialogue. But, my new colleague,
David Traum, has developped a computational model of social grounding during
his previous research. I was thinking about bringinh him with me in Aix..."

  (kalia) Colin has arrived.
  (kalia) Pierre says "Right, the other TF5 members who could not make this
time asked me to set up another MOO session. I suggest to set up a second
session at a fix time, by the end of this month, and then to choose some hour
in the week at which yuo will now that you can find people in the LHM room.""
  (kalia) joze asks "Bob: can we make much more progress?  I wonder if Pierre
could review the interactions and do a sythesis of Actions prior to Aix.  Or
do you wish to meet again this way with (possibly) other actors?"
 (kalia) Kim Issroff says "I think another meeting is a good idea - and perhaps
we could try to arrange smaller meetings in just our groups"
  (kalia) Pierre says "Ok. Here is my suggestion. For the next meeting, we'll
meet in the LHM room but I'll ask Sandrine to create three rooms for each
subgroup. I noticed that some of you left for the library when we were not
discussing your own subgroup!."

  (kalia) couqui has disconnected.
  (kalia) Daniel says "I think it would be a good idea for those who felt
productive here to come more often... you can build your offices here (ask
sandrine), also you can use this as non-intrusive tool for collaboration (e.g.
I always have the MOO open and do 10 other things at the same time)"


 (kalia) Pierre says "So, we could stardt with a joint meeting in the LHM room
and then go in the specific rooms.""
```

(kalia) couqui has connected.
(kalia) Karen says "'I think offices would be a useful idea.....it would certainly be an"

(kalia) Kim Issroff says "I'd like to have it open all the time but I think that only works if you know several people who are likely to be around, but that comes with time. The reason I went to the library was that nothing seemed to be happening and I thought I'd use the time to look around"

(kalia) Pierre agrees with Karen

(kalia) Sandrine says "I will be please to guide you through this moo at any time"
(kalia) Daniel exclaims "sorry I have to leave, see you sometimes and don't hesitate to contact us for more MOOing !!"
Daniel exclaims "sorry I have to leave, see you sometimes and don't hesitate to contact us for more MOOing !!"

(kalia) Sandrine smiles "of the day :)"
(kalia) Karen says "'could we each have an office? "

(kalia) Sandrine says "yes"
(kalia) Daniel waves good-bye

(kalia) Daniel goes home.
Daniel goes home.

(kalia) Sandrine says "this would be the best thing"
(kalia) Pierre says "This is why I think that a second fixed meeting will help creating the community, creating the habit of looking at the MOO for taskfivers"

(kalia) Pierre asks "Ok for private offices, but also meeting rooms for the 3 subgroups?"

(kalia) Kim Issroff says "how about making it tuesday evening."

(kalia) Pierre says "as a new father, I prefer now to go home in the evening"

(kalia) Daniel teleports in.

(kalia) Sandrine asks "we may try to use the www interface the next time don't you think?"

(kalia) Patrick has disconnected.

(kalia) Karen exclaims "'I would appreciate it as my e-mail is very temperamental..but it would be a good way of making sure we get things done and get collaboration really moving offices and meeting rooms for sub groups would be good - so each group could arrange times to meet!"

(kalia) Kim Issroff says "ok how about just specifying a lunchtime - a late one for you so that it is reasonable for us"

(kalia) joze asks "What do I need to be able to use www interface?"

(kalia) Kim Issroff says "I meant latish in that last message"

(kalia) Karen says "'WWW is an excellent idea'"

(kalia) Karen says "'lunchtimes are good - so do we need a restaurant to have working lunches in this MOO!!!!'"

(kalia) Sandrine smiles "ok I have to leave as well, don't hesitate to come back before the next meeting :)"
(kalia) Pierre says "Of course, we can not continue long with 'fixed' meetings. That would be non sense for a MOO. SO, I'll e-mail to all and ask for a new time slot. Actually, people did not complain about the time, they were simply not in today."

(kalia) Sandrine smiles "bye :)"

(kalia) couqui has disconnected.

(kalia) Pierre asks "I have to leave as well. Any question left?"

>@q

3-2 BioMoo Seminar

```
SEMINAR (5th NSJC, May 10, 1995. )

Gustavo turns the seminar recorder on.
Gustavo says, "Now we're in the air. ;)"
Norm nods to Lurker,Carlisle, and EJP
Carlisle disappears suddenly for parts unknown.
Carlisle materializes out of thin air.
Gustavo [to Norm]: ok, you can start whenever it suits you.

Norm shows slide #1.

***************************************************************************
WELCOME TO THE BIOMOO NEUROSCIENCE JOURNAL CLUB (#5)

                 ..oOQOo.   ..oOQOo.
                /+!+!+!+:. .:+!+!+!+\
               (+!+!+!+!+. .+!+!+!+!+)
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***************************************************************************

Norm says, "Hello all, Welcome to the journal club.""
TJ thinks Norm's brain is commissurotomized
Norm says, "I appreciate your coming today....I just wanted to see if anyone
else show up.."
Norm Chukles at TJ's reading of my coronal MRI...Missing it's corpus Callosum!
Norm says, "Anyone who would like to speak during the Journal CLub (JC) can do
so at any time, but you must first type: request"
Norm says, "Not a Huge turn out, but High quality I can tell. Ok. Here is the
article for today:"

Norm shows slide #2.

***************************************************************************
          Neuroscience Journal Club #5

Article: Regeneration into the spinal cord of transfected dorsal
  root axons is promoted by ensheathing glia transplants

Authors: Almudena Ramon-Cueto and Manuel Nieto-Sampedro.
  Neural Plasticity Department, Instituto Cajal,
  Madrid, Spain.
Journal: Experimental Neurology, 127:232-244, 1994

BioMOO Presentation by: David McKalip, M.D.(Norm), Division of Neurosurgery,
University of North Carolina at Chapel Hill.




***************************************************************************

Norm says, "BTW, anyone who would like to see the actual figures from the
articel may do so with their WWW browser:"
Norm says, "Just use it to get to the BIoMOO page and click on my poster."
Norm says, "The general topic again is on ways to promote/study regeneration
in the CNS."
Gustavo . o O ( shortcut: open http://bioinfo.weizmann.ac.il:8000/33/view/4454
with your web browser )
The housekeeper arrives to cart Taffy off to bed.
Norm says, "THese authors were experimenting with a glial population from the
olfactory bulb:"

Norm shows slide #3.

***************************************************************************
```

Goal: To determine if the ensheathing glia (EG) of the olfactory bulb can promote regeneration of Dorsal Root Ganglion (DRG) central axons if the EG cells are transplanted into the spinal cord.

****

Norm Allows everyone to read the slide. "Any questions about the goal of this study?"
TJ thinks Norm should remind everyone that olfactory cells can regenerate, probably the only cells in the mammalian CNS that can
Norm says, "okay then. Here's how they studied this:"
Norm agrees woth TJ.
Norm says, "Excellent point. "
Norm holds for a second to hear any other comments/querstions.
Norm hears none and proceeds.

Norm shows slide #4.

****
METHOD
1. 13 Adult Rat T10 dorsal root was transected and reapproximated with suture.

2. Cultures of Olfactory Bulb Ensheathing Glial (EG) cells were purified and grown using standard techniques.

3. EG Cultures were transplanted into dorsal root entry zone to depth of 0.2 mm (30,000 cells in 3 ul).

4. Lesion areas examined for EG cell survival, and length/location of any axonal outgrowth.

****

Norm says, "This slide demonstrates the techniques used by Ramon-Cueto and Nieto-Sampedro for this study."
Norm says, "Basically, T10 roots were transected and reattaced..."
Norm says, "Ensheathing glial cultures were created and transplanted into the spinal cord in the region of the DREZ."
Norm says, "THen axon growth and Ensheathing glia (EG) survival was examined."
Norm says, "Here are the various experimental groups usd in the study."
TJ says, "I'm unclear why they used NGF receptors as the criteria for ensheathing glial cells. They did not seem to mention it, but I assume that earlier work had shown olfactory glia have NGF receptors?"
Norm holds and reads.
Norm hmmms..
Norm says, "I am not sure and I don't see a reference. let me see."
Norm says, "no, no reference. Interesting poiinbt though because:"
Norm says, "It implies that they may produce NGF, much like Schwann cells. Don't schwann cells also have NGF receptors?"
TJ says, "Oh, there's one: #53 Eur J Neurosci 5:1172, 1994."
Norm looks.
John has disconnected.
TJ thinks Norm is right about Schwann cell NGF receptors.
Norm says, "I see. I should take a look at that. I'll have to look into the Schwann cell question."
Norm says, "Anyway, here's the experimental groups they used:"

Norm shows slide #5.

****
EXPERIMENTAL GROUPS

*Ensheathing Glial (EG) cultures:
     3 labelled with the nucleur fluorochrome: Hoesht 33342
     5 unlabbelled
*13 adult male Wistar rats
     5 control (lesions and not transplanted)
     8 experimtal
          3 transplanted with flourochrome labelled EG cells

```
          *These three examined with imunocytochemistry          (anti-
Growth Associated Protein (GAP))
          5 transplanted with unlabbelled cells
               *These 5 examined with DiI labelling
                to determine axon extension

***************************************************************************
```

Norm says, "13 animals total with 5 controls (non-lesioned/non transplanted), 8 experimental.."
Norm says, "The EG cultuers were mainly unlabelled (n=), but 3 had a labelled nucleus."
Norm . o O (unlabelled EG = 5.)
Norm says, "the 8 experimental animals (lesioned/transplanted) EG transplants: 5 unlabblelled and 3 labelled."
Norm says, "Three Weeks latere, the Spinal cord were examined."
Norm says, "Before we go into their results, I just wanted to review the Rexed's lamina of the Spinal cord gray matter:"
WatsonCrick (working on mcd) has arrived.

Norm shows slide #9.

```
***************************************************************************
     REXED's LAMINAE/GRAY MATTER OF SPINAL CORD
----\_
DREZ _\
--- /I \              /  \    DREZ = Dorsal root
    |II|              |  |           entry zone
    |III\            /   |
    | IV \          /    |   I-V: touch, pain, temp.
    |  V  \ _________/     |   VI: proprioception
     \  VI     X        /    VII: dorsal-spinocerebellar tract
      /       ----      \         Intermediate- autonomic
     /        |  |        \   X:   autonomic/pain
    /   VII   |  |         \  IX: medial-axial muscles
   |IX     VIII  |           |     lateral- limb muscles
   |  IX    IX|  |           | VIII: Receives descending axons
    \______VIII   \___________/        from brain.
***************************************************************************
```

Norm lags
Norm Smiles at Wats. "Hey there."
Norm says, "As you can see, the dorsal horns are mainly sensory, the intermediate autnomic and the ventral motor."
Norm says, "Now, here is a summary of the ingrowth seen after transplantation:"

Norm shows slide #6.

```
***************************************************************************
                        RESULTS
                DEGREE OF AXONAL EXTENSION
        CONTROL (n)                     LESIONED (n)
----------------------------------------------------------------------
DiI:    Up to DREZ (3)                  Lamina I, II, III, IV, V (5)(ILDH)
                                        CLDH

CGRP/
GAP 43: Lamina I of ILDH (2)            Lamina I-V (3) (ILDH)
                                        Dorsal commisure and medial
                                        lamina IV and V in CLDH
----------------------------------------------------------------------
IL=Ipsilateral, CL=contralateral, DH = Doral horn, DREZ= Dorsal Root
Entry Zone, "Lamina" refers to Rexed's spinal cord gray matter laminae.
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-===
***************************************************************************
```

Norm says, "Oops, forgot to mention how they studied the axon growth:"
The housekeeper arrives to cart John off to bed.
Norm says, "For those spinal cords receiving _unlabelled_ ensheathing glia (EG), DiI labelling was used."
Norm says, "For those receiving flourochrome labelled EG, anti CGRP and anti GAP43 was used."
Norm says, "As you can see, the axons _appear_ to grow accross the lesion/Drez and into the dorsal horn and some into the Contralateral Dorsal horn:"
Norm shows a schematic:

Norm shows slide #8.

```
***************************************************************************
REXED's LAMINAE/GRAY MATTER OF SPINAL CORD
DREZ
    /I \              / *\    DREZ = Dorsal root
```

```
    |II|               | *|           entry zone
    |III\             /  *|
    | IV*\           /**  |
    |  V *\ ________/**   |   * = site of axon regeneration
     \  VI**   X  **     /
     /       ----        \
    /        |  |         \
   /   VII   |  |          \
  |IX     VIII  |           |
  |  IX    IX|  |           |
   \______VIII   \__________/
```

****

Carlisle says, "Contralateral is a *long* way to go!"
Norm says, "The extent of axon growth is indicated by the asterisks. THe lesion was on the right side (as you see it)"
Norm says, "Yes it is...if it is real!"
Carlisle says, "exactly"
Norm says, "If anyone wants to see a slide again, just say so...."
Gustavo sees a very long axon under the schematic. ;)
TJ thinks Norm is doing a groovy job with the ASCII art
Norm chuckles at the extracorporeal regeneration....
Norm says, "Took me about 3o minutes...I just did it on Word perfect and pasted it here..used the tinyfugue client and did an "/quote "'filename"."
Norm says, "anyway...."
Norm says, "The EG cells seemd to be related to the axons as you see here:"

Norm shows slide #7.

****

RESULTS
ENSHEATHING GLIA LABELLING

Hoechst 33342 labelled glia cells found in:

Laminae I, II, III, IV
medial lamina V
Dorsal Commisure

Not in:
Ventral Horns
Appeared to be associated with:
GAP-43 and CGRP + axons
=-=

****

Norm says, "So,it appears that the EG have lead to axonal regerneation, however, the following questions come to mind:"

Norm shows slide #10.

****

QUESTIONS FOR DISCUSSION

1. Is the GAP and CGRP positivity related solely to transplanted axon growth?

2. Is putative axon growth due to ensheathing glia?

3. What molecular factors are responsible for putative axon growth?

****

TJ says, "OK, the $64,000 question: are these connections *functional*? They never say, and it seems pretty important to me."
Pas materializes out of thin air.
Norm says, "They did not appear to test for function..."
Norm says, "That is always a drawback to many regeneration studies..."
Norm waves to Pas
Lurker says, "My question too. Is lamina IV an appropriate target for the axons and which axons?"
Pas waves
TJ says, "Why T10, do you think? If they had done lumbar cord, they could have

tested for reflexes more easily, and I would be more convinced if they had some data on recovery of normal reflexes."
Norm says, "These axons alledgedly started from the dorsal root, croseed the DREZ and the lesion (gliotic tissue-not shown) and then entered the grey matter."
Norm says, "Lamina IV usually receives axons from:"
Norm says, "Dorsal root affernts"
TJ says, "However, the fact that the axons crossed a glial scar is significant...axons hardly ever do that in patients, do they Norm?"
Norm says, "And initiates spinothalamic tract."
Norm says, "No, not hardly ever..."
Norm says, "Unfortunaltey, they did not put pictures of that in their article."
Norm says, "I agree with you TJ on the reflex model..would have been very convincing then."
Norm says, "However, you think they still could have tested for pain senstaion:would have been hard though with a thoracic dxermatome."
TJ nods in agreement with *everything* Norm says, as usual
Norm says, "One other question:"
Norm says, "I think CGRP activity can be pretty non-specifically increased following a Spinal cord lesion:"
Lurker says, "I don't recall what all goes into the thoracic segments. Shouldn't the intercostal somatic sensory fibers be able to affect respiration?"
Norm says, "That may not have been a good way to check for ingrowth of axons."
Norm says, "However, GAP 43 is:"
Norm says, "The question then becomes, are these axons truly coming from the dorsal root or from local, intact tissue."
Carlisle says, "evoked potentials might have been a good way to test for functionality"
Norm says, "Yes, they may have been., but again, may have been difficult to localize it to one dermatome..."
Norm says, "You could do an open incision and put the electrode righyt on the nerve root then."
Carlisle says, "couldn't they have picked a better dermatome?"
Carlisle says, "yeah, norm!"
Norm says, "Maybe, I have not worked much with rat spinal cord, so I don't know if anatomy limits things."
Lurker says, "but if you want to do that then why not use the lumbar segments? There the motor neuron pools are pretty well defined. I don't understand why the thoracic segments were used."
Norm says, "I should have asked these folks to come to the meeting: We have the technology."
Carlisle says, "Yeah, the lumbar segs were the way to go."
Lurker says, "I don't even know if the thoracic segments have DRPs."
Norm says, "For the sake of argument, let's assume regeneration did occur, the question then becomes: why:"
Norm . o O (DRP's?)
Norm says, "Would the presence or abscence of DRP's ahve affected things?"
TJ was just reading a paper from McGill that claimed myelin-associated glycoprotein (MAG) is responsible for inhibition of neurite outgrowth. Anyone know if olfactory
Carlisle says, "presumably the glial cells are infiltrating the cut surfaces and releasing growth factors, right?"
Norm says, "I suppos that's one explanation."
Lurker says, "they would indicate functional connections and intact relexes without the necessity of looking specificly at motor responses."
Carlisle says, "and acting as a physical bridge, too."
Norm says, "If it is real though, I am biased to say it is due to ECM factors or cell surface antigens."
Norm says, "They point out that EG's produce laminin"
TJ finds himself agreeing with Norm again about the ECM/cell surface idea
Norm says, "and NCAM,L1,and fibronectin."
Carlisle says, "well then you ought to be able to just inject ecm molecules, right?"
Norm says, "I think the anatomical benefit of an *ENSHEATHING* glial cell may play a role too."
Norm [to Carlisle]: they are trying that here in our labs:not very successful
TJ thinks exogenous ECM may be degraded, it would be good to have cells making it.
Carlisle [to say]: Oh, yeah...
Norm [to TJ]: I agree completely.
Norm says, "That's why I want to introduce such molecules with viral vecotrs...."
TJ says, "This might be the connection between this paper and Rusty Gage's work we covered earlier, with the fibroblasts...they would both secrete ECM, right?"
Norm Smiles.
Norm says, "Well, Gages' fibroblasts excreted NGF..."
Norm says, "But, when I run these things I always let my bias of ECM's role be pretty transparent."
TJ in a mocking tone, says, "but that's not all they secreted, is it? :-)"
Carlisle jeez, we'd better get to the library and read Gage's paper..... ;)
Norm says, "The authors do postulate a role for NGF here though...."
Norm [to Carlisle]: That is NSJC #1 I believe.
TJ is sorry, he thought Carlisle was *at* NSJC #1

Norm [to Carlisle]: you can get the transcript of that journbal club here!
Norm says, "The authors point to some circumstatnial evidence indicating EG cells produce NGF."
Norm says, "As far as an *ensheathing role*"
Carlisle says, "Oh, yeah, well, Alzheimer's is a difficult thing to deal with.... ;^)"
Norm says, "The authors speculate that enveloping of the regenerating axons was important."
Carlisle says, "Anyway, it's not like there aren't a zillion *other* growth factors that we could be considering"
Norm nods in agreement.
TJ says, "What about inhibition of axon outgrowth? Don't some people think myelin-associated glycoprotein (MAG) inhibits axon outgrowth? I think ensheathing cells of the olfactory bulb are more like Muller glia of the retina, just wrapping around axons without "
Norm says, "The author's point to the locations of the EG cells:"

Norm shows slide #7.

```
*************************************************************************
*
                          RESULTS
                ENSHEATHING GLIA LABELLING

Hoechst 33342 labelled glia cells found in:

        Laminae I, II, III, IV
        medial lamina V
        Dorsal Commisure

Not in:
        Ventral Horns
Appeared to be associated with:
        GAP-43 and CGRP + axons
=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=-=

*************************************************************************
*
```

TJ says, "myelinating them, right?"
Norm says, "I guess a psuedo-myelination yes:"
Norm says, "They imply it will promote axon guidance: they also examine wheather these cells migrated after injection."
Norm says, "The points raised were: did these cells migrate before regeneration and the axons went where they were, or:"
Norm says, "Did they follow the axons along: migrating with growing axons."
TJ . o O (hmm...)
Norm says, "back to the ensheathing point: Did ensheathing "insulate" then from local inhibitory factors?"
Carlisle . o O (cool idea)
Norm says, "Well, I still think it points to the role that the environment plays ion CNS regeneration (or lack there of)."
Irit goes home.
Norm says, ""TJ, I know you work in this field. DO any of you other folks do reseach on th"
Norm . o O (Research on this topic?)
TJ . o O (think hmm^2)
Norm Watches TJ's mind work.
TJ says, "No, we are interested in *normal* development, but have not looked at regeneration. Yet. :-)"
Norm nods.
Carlisle says, "We (Steve, Melinda and I) gotta split...cool paper! Sorry we have to leave. Catch ya on the flip."
Norm says, "I think all of the molecular principles of the developing nervous system can be applied to overcoming the lack of regerneation in the CNS."
Norm waves. "Thanks for coming.
TJ waves goodbye to Carlisle, Steve and Melinda
Carlisle has disconnected.
TJ . o O (I hope so)
Norm nods.
Norm says, "Well, any comments Lurker?"
Lurker says, "regeneration isn't my field. "
Norm says, "Ok, Well, It might be interesting to exmaine these cells in culture."
Lurker says, "what little I know I learned while at Calgary. Stem cells and all that."
Norm says, "Using various antisense genes to ECM or other cell surface molecules."
TJ . o O (Norm is getting ready to ask Lurker to do the next NSJC, I bet :-))
Gustavo chuckles.
Norm [to Lurker]: OK, no biggy. I just wanted to giver everyone a chance since it looks like we are winding down.
Norm is pretty transparent.

```
WatsonCrick nods enthusiastically
Norm chuckles.
Norm [to WatsonCrick]: Were you enthusiastically nodding to do the next
NSJC??????
WatsonCrick says, "of course :)"
Norm says, "Polly, do you think any of this can be applied to Cetacean studies?"
Norm Does a double take at Wats.
Pas says, "certainly, I can't be specific since I haven't read this article
yet :)"
Norm says, "Well, we shall see what develops. Unless there is more discussion,
I supposw we can call it wquits?"
Norm nods to Pas with a smile.
TJ nods.  Good Journal Club, Norm!!!
Gustavo . o O ( as usual! )
Norm says, "thanks TJ. "Thankls' all for coming....Hope we can take something
back to our labs from this.!"
Lurker says, "ciao!"
Lurker has disconnected.
TJ says, "Bye."
Gustavo turns the seminar recorder off.
```

3-3 TecfaMoo Working Session

```
From the outside, David knocks politely and wonders if it may @join?

>page david yes sure
Your message has been sent.

You sense that David is looking for you in The Tecfa Atrium.
It pages, "where is the conference room?"

>@exam here
Conference Room (#1302) is owned by Sandrine (#166).
Aliases:  Conference Room and conf
There's a blackboard on the front wall and a clock above it. Type @status to
get the state of the room. Do not forget to use 'speakup <anything>', or stand
to be heard throughout the room. To use the blackboard, type 'writeb
<anything>', and to erase, type 'cleanb'. If you need help, just type 'help
here'.

>page david @go #1302
Your message has been sent.

David teleports in.

David says, "hi. I'm still getting used to this stuff :-)"

>"hi david
You say, "hi david"

David says, "I remembered reading all this nifty social commands like knocking
and something that was supposed to take you to where someone else was, but
couldn't figure it out when I needed it :)"

>"it comes with some time
You say, "it comes with some time"

David says, "Anyway, I'm trying to get up to speed on the moo, and hoping you
could help maybe."

>"yes, what's your question
You say, "yes, what's your question"

David says, "I watched the TV from the Mooseum, and am wondering what to look
at next, aside from the programmer's manual."

>"Well, there are lots of objects you can watch
You say, "Well, there are lots of objects you can watch"

David says, "I still don't understand events or different types of rooms very
well. Also, I need to try out robots some more, particulrly talking ones."

>"the best robots are the ones that bring back conversation, naughty ones
You say, "the best robots are the ones that bring back conversation, naughty
ones"
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David says, ";)"

>"I made one that can talk and bring back conversation
You say, "I made one that can talk and bring back conversation"

David says, "hmm, I thought I was supposed to wink that?"

David says, "maybe my emotions have left somehow?"

>"don't say that, it's too hard for me to ear this
You say, "don't say that, it's too hard for me to ear this"

David says, "I still need to know what things can do so as best to set up a
mystery. Of course I still need to think up the mystery itself :)"

>"well you can use objects that move by themselves
You say, "well you can use objects that move by themselves"

>"let me think
You say, "let me think"

>"something like Mr X appear round the corner and goes est
You say, "something like Mr X appear round the corner and goes est"

>"sorry appears and goes east
You say, "sorry appears and goes east"

David says, "I think that might be a bit more complex than we want for the
first try."

>"so what do you want for the first try
You say, "so what do you want for the first try"

David says, "I think we coulod do with just objects that stay still but need
to be examined and or questioned for people to find out enough information to
solve the mystery."

>"so that's fine, you need genering thing object and conversational robot
You say, "so that's fine, you need genering thing object and conversational
robot"

David says, "My 0th attempt was to just write the whole thing in one note in
a room."

David says, "But we want more rooms and things, and perhaps some tricky robots,
that don't say everything they know right off, or maybe even lie!"

David says, "I also wonder whether events might be useful?"

>"what do you really mean by events?
You say, "what do you really mean by events?"

David says, "well, I saw something about event-triggered rooms, though I don't
really understand it. I guess the built-in ones are exiting and entering
rooms."

>"yes colin has done some things like that
You say, "yes colin has done some things like that"

David says, "but I think, also, some other events can be defined, such as
picking something up maybe, or looking at it?"

David says, "but maybe that could wait until "phase two" :)"

>"yes that's fine, you can do this easily
You say, "yes that's fine, you can do this easily"

David says, "so do you have a conversational robot I could play with?"

>"it can ease the process for users to get feedback
You say, "it can ease the process for users to get feedback"

>"best thing is to create your own
You say, "best thing is to create your own"

>"I show you how
You say, "I show you how"

David says, "yes, that's something I hadn't thought much about, Pierre had this
idea of a truth machine,..."
```

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>"what kind of truth machine you mean some tool that detect if the robot says
the truth
You say, "what kind of truth machine you mean some tool that detect if the
robot says the truth"

>"it seams complicated
You say, "it seams complicated"

David says, "I guess so, or the players can enter their suspicions and find
out if the solution is correct."

>"ok
You say, "ok"

>"actually, you can use verbs attached to conversational robots or similar ones
and attach them to a generic thing
You say, "actually, you can use verbs attached to conversational robots or
similar ones and attach them to a generic thing"

David says, "attach the verbs from robots to generic things?"

>"well not attach but copy
You say, "well not attach but copy"

David says, "why is that better than just having the robots?"

>"because you can adapt your verbs better
You say, "because you can adapt your verbs better"

>"or you can adapt the robot's verb and call the robot truth machine
You say, "or you can adapt the robot's verb and call the robot truth machine"

David says, ""okay. To start off with, is there an easy to use robot that has
some interesting things to say, that I could play with?"

David yawns widely.

>"let's begin by examining the robot
You say, "let's begin by examining the robot"

David says, "sorry about that yawn, I'm still wondering why these other social
things don't work the way I remember them."

David says, "I have one like that I think, that can monitor."
David teleports out.

You sense that David is looking for you in Sandrine's office.
It pages, "I'm in your office. I don't know how that happened"

David has arrived.

David says, "Hmm, very strange. I think I accidently activated a hangglider,
whatever that is."

David says, "I'm not sure how I got back either, through several rooms."

>@move #1427 to here
  (kalia) Conference Room
  (kalia)
  (kalia) There's a blackboard on the front wall and a clock above it. Type
@status to
  (kalia) get the state of the room. Do not forget to use 'speakup <anything>',
or stand
  (kalia) to be heard throughout the room. To use the blackboard, type 'writeb
  (kalia) <anything>', and to erase, type 'cleanb'. If you need help, just type
'help
  (kalia) here'.
  (kalia)
  (kalia) 'No one is listening to the conversation via web.'
  (kalia) You see Big Table, Bulletin Board, and Moderator's Desk.
  (kalia) You see Sandrine, Patrick, and David standing about.
  (kalia) You see kalia.
You teleport kalia.
  (kalia) Sandrine teleports you.

>ignore kalia
  (kalia) Sandrine stops monitoring.
>hush kalia
Sandrine hushes kalia.

David smiles happily.
```

```
>-david this one is both, you can monitor her and its a robot
You say to David, "this one is both, you can monitor her and its a robot"

David checks kalia's vocabulary.

>"no it responds to here, I have to change that
You say, "no it responds to here, I have to change that"

>-david you can teach one word at a time to a robot, no more
You say to David, "you can teach one word at a time to a robot, no more"

David says, "what does it mean by responds to here? That means whenever anybody
says anything with the word "here in it?"

>"yes
You say, "yes"

David says, "what if you say soemthing with two of the robot's words?"

>"that's why it is interesting to adapt the verb
You say, "that's why it is interesting to adapt the verb"

>"it takes the first one
You say, "it takes the first one"

>"let see
You say, "let see"

>wake kalia
Sandrine taps kalia on the shoulder.

kalia says, "hi, happy to see you, can I help?"

>"hello, here
You say, "hello, here"

kalia says, "[to Sandrine] hi, what a surprise, happy to see you "

David says, "so if we adapt the verb, we could look at multiple words, or even
parsing?"

David says, "hello"
kalia says, "[to David] hi, what a surprise, happy to see you "
David says, "hello bye""
kalia says, "[to David] hi, what a surprise, happy to see you "
David says, "bye hello""
kalia says, "[to David] Good bye! Come back again!"

>"see, you have to invent something like the sphinx question and ask one word
in answer
You say, "see, you have to invent something like the sphinx question and ask
one word in answer"

David says, "I guess it's the first word,..."

>"yes if you adapt it could work better
You say, "yes if you adapt it could work better"

David smiles happily.
David grins.
David says, "that's better, I look like an idiot smiling so much :)"
David says, "I like the sphynx part."

David says, "wait kalia is a fancy puppet not a conversational robot. Is she
adapted with those verbs?"

>"yes kalia is both because I add the verbs of the conversational robot to
those of the fancy puppet
You say, "yes kalia is both because I add the verbs of the conversational robot
to those of the fancy puppet"

>"let me show you something
You say, "let me show you something"

>command kalia to go out
You transmit the command "go out" to kalia.
  (kalia) auditorium
  (kalia) You find yourself in front of a huge door which should give access
to the
  (kalia) conference room. Before entering, have a look at the TimeTable to
see if the
  (kalia) conference room is empty or not. If you wish to use this room with
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a group,
  (kalia) please, post a message on the TimeTable, with: date, time, group
name, public
  (kalia) or private status and subject of the conference. Thank you.
  (kalia)
  (kalia) 'No one is listening to the conversation via web.'
  (kalia) You see Conference Room and TimeTable here.
  (kalia) Obvious Exits: Out (to Common room) and Conf (to Conference Room).
Kalia goes out.

>command #1427 to go Conf
You transmit the command "go Conf" to kalia.
  (kalia) Conference Room
  (kalia)
  (kalia) There's a blackboard on the front wall and a clock above it. Type
@status to
  (kalia) get the state of the room. Do not forget to use 'speakup <anything>',
or stand
  (kalia) to be heard throughout the room. To use the blackboard, type 'writeb
  (kalia) <anything>', and to erase, type 'cleanb'. If you need help, just type
'help
  (kalia) here'.
  (kalia)
  (kalia) 'No one is listening to the conversation via web.'
  (kalia) You see Big Table, Bulletin Board, and Moderator's Desk.
  (kalia) You see Sandrine, Patrick, and David standing about.
  (kalia) You see kalia.
Kalia has arrived.

David says, "hello"
  (kalia) David says, "hello"

kalia says, "[to David] hi, what a surprise, happy to see you "

>hush kalia
Sandrine hushes kalia.
  (kalia) Sandrine hushes kalia.

David says, "hello"
  (kalia) David says, "hello"
David says, "I see,..."
  (kalia) David says, "I see,..."

>"you have to wake her before she can talk
You say, "you have to wake her before she can talk"
  (kalia) Sandrine says, "you have to wake her before she can talk"
David taps kalia on the shoulder.
  (kalia) David taps kalia on the shoulder.
kalia says, "hi, happy to see you, can I help?"
  (kalia) kalia says, "hi, happy to see you, can I help?"
David says, "here"
  (kalia) David says, "here"
>ignore kalia
  (kalia) Sandrine stops monitoring.
kalia says, "[to David] Welcome here. Nice of you to visit our center. It has
been built for communities or researchers working on educational technology
matters. It is part of the VMDL project (Virtual Mobility and Distributed
Laboratories)."

David says, "I'm looking at the code for "tell on kalia. It looks like it should
be simple to make a more sophisticaed parser."
  (kalia) David says, "I'm looking at the code for "tell on kalia. It looks
like it should be simple to make a more sophisticaed parser."

David says, "that is if I can undwerstand these utilities properly :)"
  (kalia) David says, "that is if I can undwerstand these utilities properly :)"

>ignore kalia
  (kalia) Sandrine stops monitoring.

>"yes I guess so
You say, "yes I guess so"
David says, "that sounds sort of up my ally as computational linguist :)"

>"exept that there is a tell verb for every player and it's a dangerous thing
to change
You say, "exept that there is a tell verb for every player and it's a dangerous
thing to change"

David says, "I'm not sure I understand that - wouldn't I just be changing for
a subclass?"
```

>"well I am not sure either but I add trouble when I changed that one
You say, "well I am not sure either but I add trouble when I changed that one"

>"I could not speak anymore
You say, "I could not speak anymore"

David says, "I also wonder, is it possibel to "hide" the keys of a robot, so you can't tell what will trigger them, or what the range of things is that they could say?"

>"yes verbs have attribute, they can be visible or not
You say, "yes verbs have attribute, they can be visible or not"

David says, "so if we made the keys invisible on kalia, we couldn't inspect what she could say?"

>"in this case only the owner can watch but beware of the role of the player
You say, "in this case only the owner can watch but beware of the role of the player"

>"guest can't do much, easy
You say, "guest can't do much, easy"

>"player can't see sereval thing, they can not programm
You say, "player can't see sereval thing, they can not programm"

David says, "that might be the solution -force people to be guests."

>"player should be enough
You say, "player should be enough"

>"guest is annoying
You say, "guest is annoying "

>"you can't teleport
You say, "you can't teleport"

David says, "yeah, I was guest for a while and couldn't do much."

>"and you cannot join anybody
You say, "and you cannot join anybody"

>"problem is for administrators and wizards
You say, "problem is for administrators and wizards"

David says, "Daniel created my charecter when I first got here, but there was a bug, so I didn't really get a password. Problem was it prevented me from getting a new one until we figured this out and he fixed it."

>"you can do nothing against them they're naughty
You say, "you can do nothing against them they're naughty"

David says, "what are the types of people?"

David says, "there's guest and player and builder and programer and wizard?"

David says, "is that right?"

>"guest, player, programmers, administrators, wizard and that's all
You say, "guest, player, programmers, administrators, wizard and that's all"

>"player can build
You say, "player can build"

>"you know the wizard?
You say, "you know the wizard?"

David says, "to be in the experiment. If so, then we could put artificial limits, create new characters, with one-shot passwords, etc."

>"it might be difficult to evaluate the effect of the moo with only non-moo people
You say, "it might be difficult to evaluate the effect of the moo with only non-moo people"

David says, "if we want moo people to also be in the thing,m then I have to try to be careful so that they don't see things beforehand."

>"ok, best thing is to take moo player
You say, "ok, best thing is to take moo player "

>"and no programmers

You say, "and no programmers"

David says, "right. It's taken me a while to get up to speed. I also watched the tv you made from the task force, and saw how much troubloe they had,..."

>"at least, these people must have training on the moo
You say, "at least, these people must have training on the moo "

>"about communication, navigation and habbits
You say, "about communication, navigation and habbits"

David says, "I'm not quite clear on what programmers can do that players can't. is it only write programs, or are there other operations, that they can't do, like snooping?"

>"well, don't really know, they can watch program of others as well
You say, "well, don't really know, they can watch program of others as well"

David says, "right, I was thinking we'd have to give some training on all of (1) moo (2) drawing tools (3) the task itself. though hopefully some of this could be done together. "

>"you know, people can be programmer but you can ask them to enter the moo with just a player status for your experiment
You say, "you know, people can be programmer but you can ask them to enter the moo with just a player status for your experiment"

David says, "controlling for moo experience might also be tough - presumably some people will know better how to get around, whoch might screw up the results."

David says, "If they are programmers, could they program things in an environment that didn't belong to them?"

>"not easy to set up, better to distinguish between roles
You say, "not easy to set up, better to distinguish between roles"

>"what do you mean by an environment that did not belong to them
You say, "what do you mean by an environment that did not belong to them"

>"you can program objects anywhere
You say, "you can program objects anywhere"

>"and drop them anywhere exept in locked rooms
You say, "and drop them anywhere exept in locked rooms"

>"but people can not enter in locked room either exept the owner
You say, "but people can not enter in locked room either exept the owner"

David says, "well, I meant that they couldn't reprogram a robot or room that didn't belong to them."

>"no they can look at verbs code but it readable only for them
You say, "no they can look at verbs code but it readable only for them"

David says, "right, I geuss all the rooms would have to be locked, with keys held only by the players."

>"yes, what you could do is use 'zone'
You say, "yes, what you could do is use 'zone'"

>"it's a group of room that belong to the same project
You say, "it's a group of room that belong to the same project"

David says, "I read about these domains in the mooseum."
David says, "I should have used them to create the stuff I already did if I knew about them."
David says, "so If I made a zone, I could put the same lock and keys on all the rooms at the creation level?"

>"I don't really know if you can do that, we have to see
You say, "I don't really know if you can do that, we have to see"

>"you can also use channels for your experimentation
You say, "you can also use channels for your experimentation"

David says, "what are channels?"

>"channels of communication
You say, "channels of communication"

>"each player connected to the same channel receive the same information

```
You say, "each player connected to the same channel receive the same
information"

>"anywhere in the moo
You say, "anywhere in the moo"

David says, "hmm, that sounds nice, though actually, it might be good for our
players to be able to go to different places and then have to communicates
their findings to each other."

David says, "but these would be good, maybe for supervisory information."
David says, "l"
David says, "oops"

>"yes or for clues
You say, "yes or for clues"

David says, "yes, though I was thinking the clues could come to the individuals
who would maybe have to share them with each other."
```