

From Architecture to Interacture

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Places in Cyberspace

Metaphors play an important role in our understanding of the world. They can both broaden our conception of a phenomenon by transferring understanding from familiar areas to new domains, as well as restrict our understanding of new phenomena by working as boundaries for our thoughts. (Lakoff & Johnson, 1980) Cyberspace – a term coined by science fiction author William Gibson (1985) – is a widely used spatial metaphor for the Internet. We conceive of cyberspace as the place we peek into through our computer monitors when we for instance browse the web. It is irrelevant to us that all the data has to exist in the local computer's memory before it can be viewed. We think of the webpage as residing somewhere “out there”. In the same manner we think of telephone usage as direct conversations. It doesn't matter that the sound of our voices often is converted several times between different kinds of signals before it is rendered back to speech at the receiving end. When we talk on the phone, it is as if our minds occupy a shared space somewhere in-between here and there.

Through the technological advances in graphics rendering and network communication it is now possible to dress this metaphor in colors, textures and sound. Where there once only existed an abstract idea of space, there are now concrete – although virtual – places that we can enter and interact within via avatars. They can be general purpose meeting places like most worlds built using the *Active Worlds* system or made for specific purposes like the *Everquest* gaming world. But these places do not emerge spontaneously. Before they can exist they have to be thought out, designed and constructed. In the process of doing so, we encounter some rather interesting questions. How do we represent ourselves and our environment in the absence of all the benefits and limitations of an a priori physicality?

This is where the field of virtual world design emerges. There is no consensual definition of the concept ‘virtual world’ and I have no wish to indulge in the issue of different possible or proposed definitions here. But for the sake of clarity, let me just mention that I will be talking about places in cyberspace which exist for extended periods of time and can be accessed by multiple participants simultaneously. They are also based on some kind of spatial metaphor

although they can be very weird geometrically, and have some kind of representation to indicate the positions of the present participants. There are text-based systems (e.g. MUDs) that fill these requirements and I do indeed consider them to be virtual worlds, but here the term is used to denote the graphical variety exclusively.

Realism vs. Fantasy

The rest of this paper describes my journey through a number of virtual world design projects which eventually ends in the formulation of the interculture model, a model for virtual world design based in social interaction studies. The journey begins with a look at what is presently out there and the first 3D virtual world design project I was involved in, which was something of an antithesis to the dominating realism paradigm.

The Trouble with Realism

When facing the challenge of virtual world design, realism seems to be the most common approach. *Active Worlds* is a widely used virtual world system where participants interactively build their environment. Roaming through the many worlds in the *Active Worlds* universe, I have noticed that many designs tend to mimic the physical world. The basic assumption seems to be that it is best to make the virtual worlds as “real” as possible. Another explanation is that it is the act of building rather than the result that is the focus of attention behind these creations. Perhaps the participants mainly were interested in exploring the possibilities of the system and in a rather non-reflected manner just built whatever came to mind.

It is not very surprising that people come up with environments reminiscent of physical cities since the system itself has some inscriptions pointing in that direction. It is up to every world owner to decide what building blocks to make available in a world but there is a standard set of objects that is used unless something else is specified. The standard set consists of walls, roofs, flowers, roads etc. In fact, when a new world is started there is only one object in the whole world and that is a piece of road located at the center point of the world. The world also has a ground plane which is a prerequisite for simulating gravity in the world. It is as if the system designers wanted to say that you can build anything you want but you will probably want a flat ground plane, gravity and a road. Especially the road is a bit surprising since there are no cars included in the standard set of building blocks.



Figure 1. A typical building found in the *Active Worlds* system. (This building is located in the world *AWSchool*.)

Consequently you will find many virtual towns that look like physical towns, with streets leading to houses similar to buildings seen in the physical world. The houses are built with walls, roofs, windows, and nice lawns in front of them, just like the ones you might find in your everyday physical environment. (fig. 1) Beyond hinting to a realistic building style, there is a distinct touch of western, even American, yes perhaps even Californian culture to everything from the surfer dude avatar to the building blocks of suburbia.

A tour through the existing virtual worlds also tells us something about the consequences of this design approach. The worlds are often virtual ghost towns. Walking around on roads where no cars will ever pass, looking at flowers that does not grow or peeping into empty houses cautiously fitted with roofs sheltering from rain that never falls gives a strange and somewhat desolate feeling. These replicas of everyday physical environments do not seem to be very successful when it comes to attracting visitors or being the place for frequent activities. On the contrary, worlds that very closely reflect the physical reality seems destined to quickly become abandoned and fade into oblivion.

When trying to transfer physical environments to the virtual we also import physical limitations and constraints so why try to create a copy of the physical reality when we already have the original? The copy can not measure up to the original and will not offer the same functionality. Physical environments are designed for doing physical things and when they are reproduced virtually, a gap reveals itself between the activities that might be meaningful to engage in within a virtual world and what the environment supports. The only activity that the worlds in *Active Worlds* support very well is building. It is very easy to build things as long as you use the pre-made building blocks, and the process is often seen as both fun and engaging. This explains why *Active Worlds* has kilometer after kilometer of uninhabited environments. They were not designed to support any activities. The meaningful activity was the construction of the environment. But does it have to end with that? Is it impossible to design environments that support other activities? To do this we will have to reconsider the claims for realism and instead focus on the medium as such, its characteristics and possible use.



Figure 2. *ACCD World.*

Fantasy

In 1998 and a couple of years onwards I was involved in the virtual world design team at Art Center College of Design, led by Dr. Michael Heim. While I to some degree participated in the design work, I was primarily there to study the design process and the world that was being built. *ACCD World* was an attempt at bringing the unique properties of virtual worlds to the foreground. The designers were specifically asked to avoid influences from the outside and focus on the particulars of the technology and the medium they were working with. (Heim, 1998:1, p.5;

2001) The result was a world quite unlike anything seen anywhere else. Although the *Active Worlds* system by itself puts a number of limitations to the design, the group was successful in creating an astounding as well as confusing experience for the visitors. (fig. 2)

Some of the features of *ACCD World* include hyper-travel by clicking on nodes by the entrance that teleports the participant to the different places of the world, sculptures that the participants can pass through, bringing up issues about the departure from a fixed perspective. The world was built without a ground plane and does not have gravity. This inspired avatar designs that look more like birds or bugs than humanoids and encourages the participants to fly. Some areas of the world deal with immersion in different ways showing that there is more to feeling immersed than having many of one's senses engaged. In some areas, the designers have played with the technological constraints of the system, such as the narrow clip plane, to evoke feelings of surprise, disorientation and entrapment.

Striking a Balance

By moving outside of the boundaries of physical architectural design, as with *ACCD World*, we discover that virtual worlds offer both new possibilities as well as new restrictions. As Bridges and Charitos (1997) points out, there are no rules to dictate the dynamic nature of virtual environments. There is no gravity or friction unless we put it there. Space is noncontiguous and multidimensional, violating the principles of real space.

If these are some of the many potential benefits with designing virtual space, one should also consider the constraints within this new environment. The technology that mediates our experiences as participants in virtual worlds is limited in many respects. While having five senses to experience the physical environment, most output devices connected to virtual world systems only provide feedback for two senses (visual and auditory). In addition, the feedback given is not sufficient to give the user a satisfactory notion of the representation of their body in the virtual world (Bridges & Charitos, 1997). Virtual worlds cannot be compared to the physical reality when it comes to achieving multi-sensory experience, which again underlines that they should not be designed as a duplicate of the physical world, i.e. not primarily aim at realism.

Let us begin the search for a design approach for virtual worlds by considering the antithesis of the realism approach. We can think of this as the fantasy approach. Entering a virtual world with no similarities to the physical reality we usually live in would most likely be a confusing experience. *ACCD World* gives a pretty good hint at what it might feel like. Having lived our entire lives in a physical world, it would be very hard to comprehend an environment with no reference to that world. We would try to orient ourselves in the environment, looking for landmarks, signs, buildings, anything that could help us understand what the place was all about. As stated in traditional environmental design (Lynch, 1960) we need those clues to orient ourselves in any environment and in their absence we would probably end up being paralyzed, unable to interact with the environment since we would not know how to do.

Cyberspace theorists such as Anders (1999) and Heim (1998:2) accordingly conclude that although the real can not be reproduced in a virtual space one should not try to replace realism by pure fantasy. We need some points of reference to previously experienced environments in order to understand the virtual space. Also in the perspective of Gibson's (1986) ecological approach to perception, which puts emphasis on the embodied nature of our way to perceive our environment, the extreme non-realistic approach to design does not appear to be a good solution.

According to Heim, virtual worlds should strive for something in-between pure fantasy and photo-realistic reproduction of the physical world. (1998:1, p.3; Heim, 1998:2, p.48-49) The path between the two extremes leads to a concept where the qualities of the virtual world are in balance with the maintaining of references to the physical world. While realizing that we do need to incorporate clues from the physical reality to enable users to comprehend the virtual environment, the opportunities for innovative design still remain. This design concept comprises an understanding of the intrinsic qualities of virtual worlds, aiming at a design with features that match those qualities.

By balancing realism with fantasy we open up for possibilities to transcend the physical world. By incorporating imagination and fantasy into the design process we can make virtual worlds that are more attractive by offering something extra to the participants. Heim describes this as letting us have less gravity as avatars than as primary beings. (Heim, 1998:1, p.3) Even when a virtual world has a work-related theme, the avatars will still offer a fictional displacement. People will perceive the “lightness” of the environment that will reflect in their behavior. (Heim, 2001)

The discussion about realism can also benefit from a comparison to other art forms. In the book *Understanding Comics*, Scott McCloud makes a very strong case for what he calls amplification through simplification. By focusing on the significant details, an artist can amplify meaning in a way that realistic art can't. Concepts are prioritized over detail to enhance the function of the representation. Leaving realism behind also paves the way for things to happen that usually does not happen in the physical world. Just as the animators at *Disney Studios* know that if a coffee cup is going to start singing, you should concentrate on giving it the possibility of an identity rather than making it look as much as a physical coffee cup as possible. (McCloud, 1999, p.30-41)

In the same way it is possible in virtual worlds to construct buildings where doors are portals to other parts of the world, or different worlds, where walls talk to us, and where a small room can contain a much larger one. And it is probably a good idea to somehow try to prepare visitors to these possibilities through the style of the building. So while the essence of virtual worlds lies in its unique characteristics and can't be derived from comparisons with other media, there is valuable input to gain by studying everything from game design to animated film.



Figure 3. Virtual World designs should balance realism and fantasy.

The first step in the search for a virtual world design model is to acknowledge the need for a balance between realism and fantasy. While most virtual worlds have too much realism, ACCD World proves that it is possible to tip over to the fantasy side as well. (fig. 3)

Structure vs. Function

Knowing that it is a good idea to balance realism and fantasy is not enough. Realism is easy; it is basically what crops up if we just start building. Fantasy is harder, and to strike the right balance between the two out of the blue verges on the impossible. Our model needs to be more informative about which the fundamental issues are so they can be addressed at the outset of the design process. In this section I will develop the model further through a little thought experiment and a look at the second *Active Worlds* design project I was involved in.

Introducing the Function Centered Approach

Let us consider for a moment what the differences actually are between building a virtual house and a physical one. This comparison is very hard to do without having some kind of context for the task, but bear with me please. Let us say that we want a place where people can meet for different types of intellectual interchange, a conference center of sorts. Unless the virtual environment has a working ecosystem we will not have to have walls and roofs for the sake of keeping the participant sheltered from rain, wind, snow, or cold weather. So why would we need a wall? For one thing, if we had nothing showing where people should gather, they would probably have a hard time finding each other. So the walls would serve as designators of a place, something that could be marked out on a map or referred to in a route description. But we would not need walls for this; a simple “X” on the ground would suffice.

But walls can also isolate an area so that sounds from the outside are kept from coming in and vice versa. This is a very desirable feature in a conference center where you want to be able to have different activities going on at the same time without interference. Unfortunately a virtual wall cannot stop talk from flowing right through it if the talk is typed-in utterances in a separate chat box. Another important aspect of walls is that they contribute to the atmosphere of the room. If you for some reason want to evoke claustrophobia you should probably put the walls really close to each other, but you can probably also create an atmosphere of intimacy by keeping people in close proximity together. Walls will of course also have color and texture that will affect the atmosphere of the room and can be used e.g. to show images on.

So walls are much more than just shelter from the storm and we will probably continue to want them also in virtual environments, but what will they look like? Normally walls are very straight and upright but perhaps that mostly has to do with the characteristics of gravity. In a virtual environment, where gravity might affect only the avatars and not the buildings, or perhaps not exist at all we might want to experiment more with shapes and curves. And if the material we use has no weight we can build vertically just as easily as horizontally.

This might make us wonder why *Alpha World* (one of the largest worlds within the *Active Worlds* system) looks so similar to Los Angeles but there are more reasons for this than those I accounted for in the previous section. There is a very tight limit to how much you are allowed to build within any given cell in *Active Worlds*. A cell is ten times ten square meters in the horizontal plane, but infinite (within the confines of the system) in the vertical plane. This means that there are severe restrictions to how high you can build but not to how wide. Similarly the fondness for objects of fairly simple geometry with sharp edges and flat surfaces is connected to the fact that other objects would put a harder strain on the rendering engine that translates information in the world database to a graphical environment on a participant's screen.

Yet another possibility in zero-gravity architecture is to give up the idea of "up" and "down". This could be done partially, as in *2001 – A Space Odyssey* where "up" is in different directions in different parts of the space ship, or full out without any decision made by the designer as to how the body ideally should be aligned in reference to the room. There are, however, indications (Charitos, Bridges & Martakos, 1999) that this kind of freedom is more distracting than liberating and that people try to find an "up" and a "down" based on angles, size of surfaces etc. although no such clues have been deliberately put there.

This thought experiment points in a direction where the function of the environment is the starting point of the design. Since it is easier to say beforehand what we want to do in the virtual world we are about to design rather than what it should look like, why not take the activities themselves as the starting point for a function centered design approach. Again I find support in Heim who says that the value of the virtual worlds cannot be measured by how much they look like the physical world, but by how well they can serve the functions that we attribute to them. (Heim, 1998:1, p.3; 2001, p.2-5)

Confuse

The function centered approach was taken as the starting point when I led a group of designers in the creation of a virtual environment called *Confuse*. By forming the name of the world from its intended function: *conference use*, we alluded to the fact that we tried to build a function rather than a building structure. By looking at *ACCD World* we could see that the reaction against structural realism into the area of structural fantasy can lead to interesting revelations but also new problems. Without a ground plane or other structural entities mimicking the physical world, especially inexperienced participants easily run the risk of feeling a bit disorientated and overwhelmed by the experience. This is perfectly acceptable and even desirable in a place like *ACCD world* which was created to make a statement about, among other things, alternatives to structural realism.

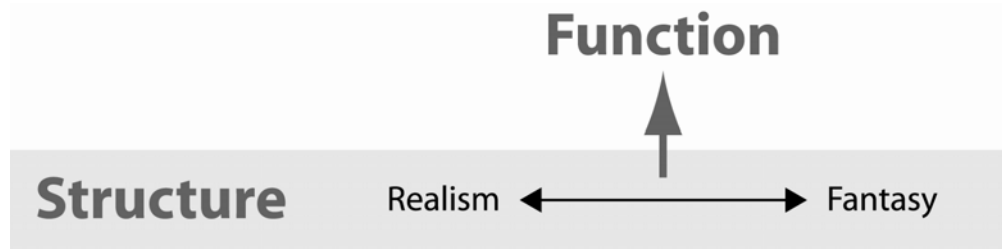


Figure 4. The Function synthesis.

In Confuse, on the other hand, we wanted something less confusing (excuse the pun) that still was alleviated from the clutches of structural realism. Instead of only focusing on positioning the design correctly on the line between fantasy and realism, we focused on providing functions instead of structures hoping that we had found a synthesis beyond the dichotomy of realism vs. fantasy. (fig. 4) This triggered us to use a standard non-descript building material that could be easily remodeled in an iterative prototyping design process. It is no coincidence that the building blocks of the world bares a striking resemblance to Lego™ since another research issue we investigated was how physical models could be utilized in the design process and the physical building material we used happened to be Lego. The function we wanted to accommodate for was meetings. We divided this into four categories, small meetings between two to four people, medium sized group meetings with four to eight people, presentations with eight to sixteen people and a general pre/post meeting mingling area. (fig. 5)

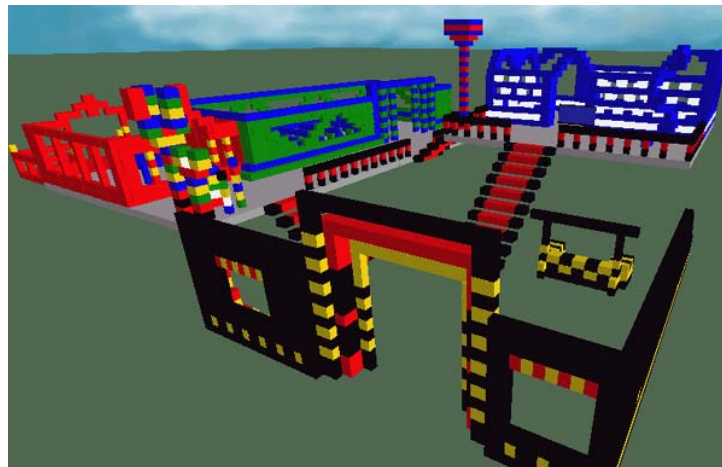


Figure 5. Confuse.

Each function corresponded to a room in our building. For the small meetings we wanted to enhance the intimacy of the meetings by making the room small. We also placed a table in the middle that we hoped would work as a subtle positioning cue to make people position themselves at an appropriate distance each other and in the field of view of the other participants. Since walls do not stop an avatar in one room from seeing what someone in another room types in the chat window, we did not make the walls solid. The holes in the walls were intended as a reminder to the participants that these walls lacked the function of enclosing the communication, that everyone in the building could “hear” you. (fig. 6)

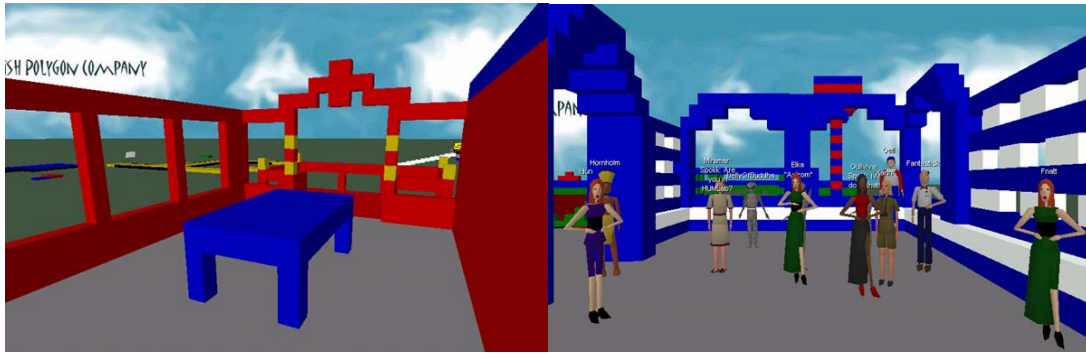


Figure 6. The small room and the blue room

At the ground floor we put a mingling area for people to interact more informally, wait for others to arrive etc. To signal to the visitors that this was something more than an entrance hall that you only pass on your way to the other rooms we put a small bar and a couple of chairs there. Although it was not possible to get a drink from the bar or sit on the chairs, we saw them as filling a purpose in signaling the function of the room. (fig. 7)

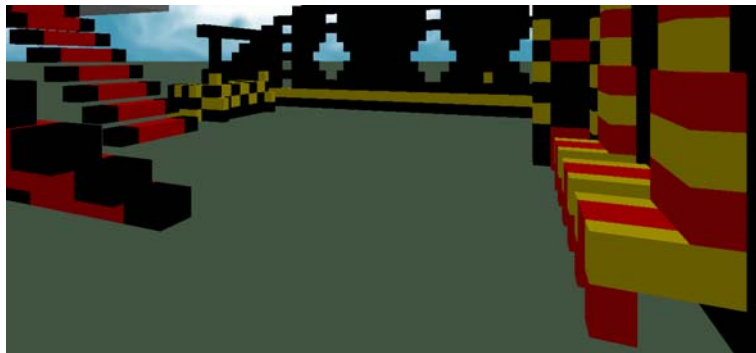


Figure 7. Mingling area with symbolic chairs (fg, right) and bar (bg, left).

The room for eight people and above was designed as a lecture hall with one person standing on a podium in the front, facing the others. I had on earlier occasions noticed that when virtual world presentations are given in open spaces, the audience tend to move around and talk among themselves during the presentation which in turn tends to make less experienced presenters freak out. Therefore we placed railings in the room to make the audience distribute evenly in the room and stay put with their attention directed towards the speaker during the presentation. We had noticed a general feeling of restlessness in the interaction between avatars in *Active Worlds* and this was an attempt to bring some peace by providing a functional context. (fig. 8)

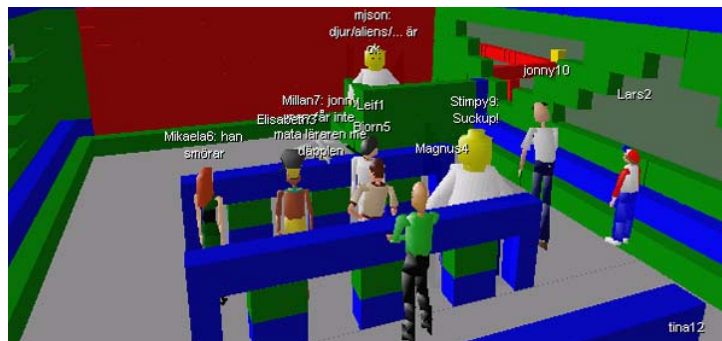


Figure 8. Lecture hall

Beyond Confuse

Our idea was not to create a complete finished environment, but to create something that could be altered and added to indefinitely, but we did reach a point where we felt that the foundation was in place and we could start using our creation. That was when we realized that all was not well in *Confuse*. It was not that people did not like the building. Being immersed in *Lego* leaves very few people unaffected. But it was not utilized at all as we had expected. My first lecture there had not even started properly before I realized that there was no chance of me giving a forty-five minute presentation with the students listening quietly to what I had to say.

It slowly dawned on me that it is not possible to take a function, e.g. a lecture, out of its physical setting and implement it the same way in a virtual setting. It is not just the structural aspects that change, functions are also transformed. In fact, we had made the same mistake as the people importing structural realism but on another level. We had tried to import functional realism. So once again we find ourselves faced with the problem of having to strike a balance between realism and fantasy. At the same time as we want to make use of the participants' understanding of what it means to be in a learning situation we have to transform the function to fit in, and make use of the properties of, the medium.

Confuse never became the hit we had hoped for as a virtual meeting place. Since it only was put to sporadic use, it is hard to tell how well the specific design solutions worked in practice. The only thing I can say for sure is that the participants do not adhere to position markers in the way we had intended. I have used the small meeting room at a number of occasions, and almost never have the participants lined up around the table in the manner we had predicted. While the people I meet with often do keep "eye contact" with my avatar, they seem just as happy standing in the doorway or halfway out on the balcony during discussions. I guess the lesson here is that avatars do not take furniture as "serious" as humans do which is in line with the idea that the building structures are subordinate to the functions. The problem was just that we did not know how to support the function properly. The really observant reader might have noticed that while the avatars in the blue room (fig. 6), which does not have any directional cues, are facing in all directions while the avatars in the lecture hall (fig. 8) are all facing the podium. This behavior is perfectly in line with our intentions, although they did not distribute as evenly as I had planned for in the lecture room, but since the environment did not function as intended anyway, we did not use it enough to tell if this behavior was consistent.

But although the *Confuse* world was unsuccessful, all it needed to become a success was a reformulation of its purpose. Since we all agreed that the process of building the environment in virtual *lego* had been tremendous fun, we decided to make a clone of the *Confuse* world, and make that clone open to the public so that anyone could have a go at the wonders of virtual *lego* building. That world – named *Ogel* – proved a big success. We have used it for several courses in teaching virtual world construction and design, people from all over the world have taken advantage of the possibility of making their own creations in the world, and it has received honorable mentions within the *Active Worlds* community. (fig. 9)

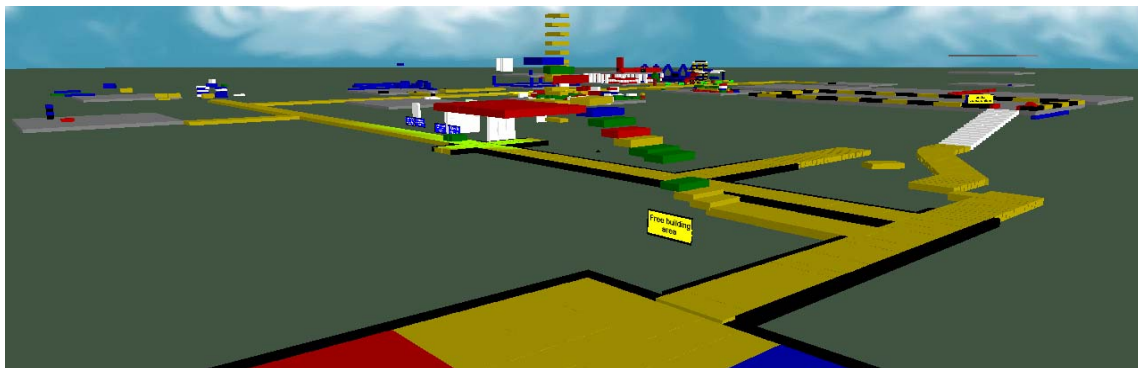


Figure 9. View of the free building area in *Ogel*.

So once again the point that it is fun to build virtual worlds – and it is seldom more fun than in *Ogel* – but it is hard to make worlds that support other activities was proven. The situation very much resembles the one we were in before the confuse project. Just as on the structural level, there is a balance to strike that seems just as elusive as the former. Where do we go for guidance in transforming functions so that they can be successfully executed in virtual worlds? Are we doomed to constantly repeat the process of trial and error for all functions we want to transform for virtual arenas? (fig. 10)

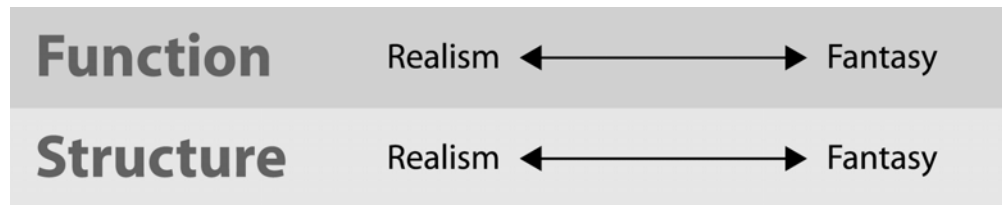


Figure 10. Realism vs. Fantasy revisited.

Function vs. Interaction

Heim has suggested that it is in the event-based interactions that we locate the “substances” of virtual worlds. An idea can be traced back to Heidegger’s notion of a world as a “context of involvements”. (Heim, 2001, p.2) This re-wording of the concept of functions opens up for a more detailed understanding of what a function actually is. One part of a function is the event and one part is the interaction. The character of the event will change from instance to instance, but the interaction is a more stable component.

All the different contexts I have studied, including conferences, design work in groups, recreational social interaction in groups and development of close social relations in and around virtual worlds share some interaction characteristics. There is a layer of interaction that is more fundamental than the layer of function. It does have the same division between realism and fantasy and the same call for balance is still valid. But the interrogation into the nature of social interaction in virtual worlds promises insights that are more general and thus can work as helpful advice in all kinds of virtual world design projects. It is time to introduce the final level of my model and the design approach that comes with it.

Interacture

The interacture approach to virtual world design entails two things. First of all it suggests that the design process should begin at the interaction level as opposed to the function or structure levels. Beginning at the correct level is not enough, however. It is also, as on the earlier levels, a question of striking the correct balance between realism and fantasy.

Beginning with the process issue, we can look at the interacture model as an inversion of the path we took in the process of coming to terms of the different levels of virtual world design. (fig. 11 & 12) Instead of ending up at the interaction level, this is where the design process should depart. Interaction issues are at the very core of virtual world design. Knowledge about social interaction in virtual worlds also transfers well between different contexts and affords some dearly needed stability to found the design on.

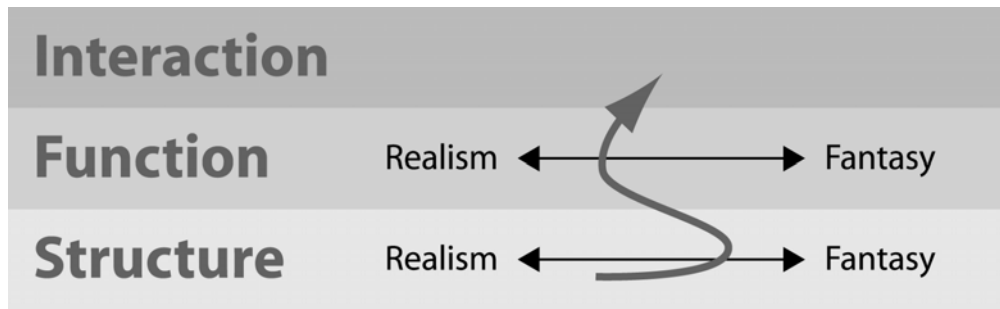


Figure 11. The path towards interactivity

Then comes the function level, and as the last link in the design chain we have the issues of material structures. The interactivity approach does not alleviate the designer from dealing with the issues of function and structure. The function will have to be implemented somehow, and knowing that function should be addressed ahead of structure, that the balance between realism and fantasy should be considered and that the implementation might look very different from how we “implement” functions in physical contexts has perhaps not taken the designer that much closer to a good solution, only away from a bad one.

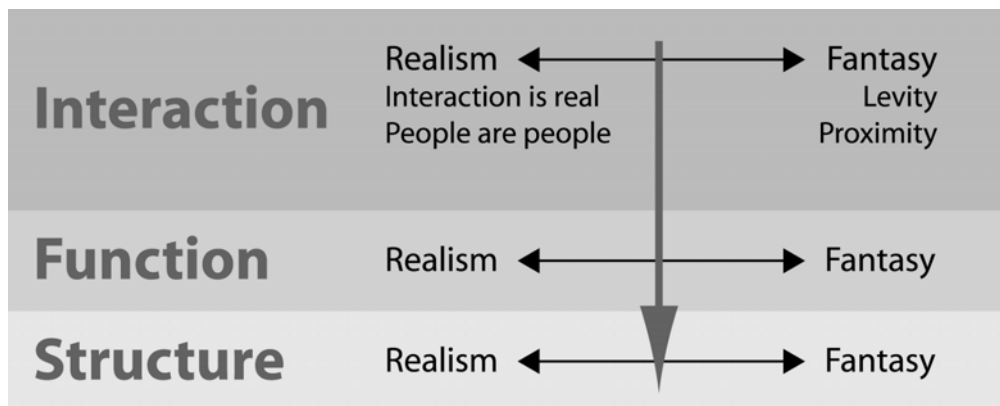


Figure 12. The interactivity model.

Now that I have established the interaction level of my model as the heart of virtual world design, let us take a closer look at what interactivity has to say about this level. Striking a balance between realism and fantasy on the interaction level is about understanding what is new and what is not within the social interaction. Bringing up this subject is like coming home for me since I have been spending most of my time the last couple of years doing ethnographic studies of social interaction in virtual worlds and I can talk at length on this subject. But this is not the time and place to do that, and I have done so elsewhere. (Jakobsson, 2001; Jakobsson & Popdan, 1999) Instead I will jump straight to some of the conclusions of that work.

On the realism side, I have found that much of the social structures that exist in the physical world also exist in virtual worlds. This goes counter to suggestions that anonymity, a decentralized technological foundation, and a fleeting, shallow nature of the medium would, for better or worse stop social hierarchies from forming. I found that people are not really anonymous. While they use pseudonyms instead of their given names, they do stick to these online identities in order to be able to build up a social capital and thus also accept accountability for their actions through that identity. This way, social hierarchies are formed also in virtual worlds, but the criteria for social status are different.

I have also found that social relations formed and upheld exclusively online *can* be the very opposite of fleeting and shallow. There are many reasons for the misconception that they could not. These include the game like first impression that virtual worlds emit to the casual observer

and the nonsensical, hacked up, and unfulfilling character of the first attempts at text-based chat that are often conducted in “portal” areas where, as Saarinen (2002, p.54) points out, mostly inexperienced users and researchers tend to end up. There is also a widely spread and deeply rooted assumption that physical face-to-face interaction is complete, and can be taken as the standard that all other forms of social interaction should be measured against. In the end all these reasons boil down to a need for long-term in-depth engagement with people in virtual worlds as a pre-requisite for making claims of understanding them. This is what I have termed, the inside view, which has been lacking in e.g. computer mediated communication research.

So for good and bad, social interaction in a virtual worlds, even if that world happens to be a game world is *real*, and should be granted that status by the designer, which for instance entails, not taking the position that what goes on in a virtual world only has effects within those boundaries and does not have any “real” consequences. But what about fantasy then? While I do not think that fleeting or shallow are true inherent properties of this medium, I do think there are properties of the medium that are unique, and that shape the social interaction in virtual worlds to become different from social interaction in physical settings. The particular properties of virtual world systems seem to open up a new space of possibilities for social interaction. In order to clearly convey the impact this new interaction space has, I have tried to compile my observations about the character of this interaction space into the two categories, levity and proximity.

Levity

Michael Heim claims that lightness is a key-factor in virtual world design. By incorporating imagination and fantasy into the design process we can make virtual worlds that are more attractive by offering something extra to the participants. Heim describes this as letting us have less gravity as avatars than as primary beings. This advice can be taken literally to mean that virtual worlds should not have gravity, or only partial gravity. But it can also be interpreted metaphorically, staking out a direction for design of virtual worlds that allows for a touch of whimsy and playfulness, not as ends in themselves, but as means for achieving the goals of the worlds. (Heim, 1998:1, p.3)

What I have found is that the sense of less gravity, what I have chosen to term levity, is a natural component of most social interaction in virtual worlds. I have taken part in, and studied, a large number of more or less formal meetings between colleagues discussing work issues in groups of all sizes, and invariably the interaction has taken on a more playful nature than I can imagine that it would have if the meeting had been held fact-to-face. It can for instance take the shape of a leveling effect where students interact with their professor in a more relaxed way than normally. As Heim suggests, the levity effect should not be counteracted by the designer. Instead of putting in all kinds of restrictions in the students abilities to move around or interrupt the lecturer, the solution is to create learning situations that utilize the levity. In this respect the idea about touring reverse memory palaces (Heim, 2001) seems much more rewarding than building lame Lego lecture halls.

Proximity

Once upon a time, the heralds of the Internet age were telling anyone that cared to listen that in cyberspace we were no longer bound by restrictions of space and time. My guess is that the people who came up with that idea all lived in California and only used the net to communicate with others from the golden state. In reality, the fact that people live in different time zones makes synchronous interaction between the different corners of the world very complicated. However, on those occasions that we in spite of this do meet people from far away places, we can immediately confirm that the magic works. It really does feel as if you are in the same room as the people you meet even if they physically reside thousands of miles away from you. In this respect there is a clear difference between text-based and graphical systems. Although there is a

sense of mutual presence in both cases, the avatars add immediacy to that presence, a kind of face-to-face feeling, although it is avatar faces.

But the concept of proximity does not only denote the sensation of being physically close. Many virtual world participants can also testify to a certain kind of emotional closeness that seems to have a strong connection to the characteristics of the system. A common way that participants express this phenomenon is by saying that they feel that they are able to be themselves more in the virtual worlds than in the physical world. One of the main reasons for this effect is the mask effect. There is a saying that “the mask does not hide, it reveals”, and that is certainly true for avatars. Many people feel that by interacting through an avatar, they avoid any preconceptions people might form about them based on their physical appearance. In the process of getting to know other participants better, more and more information about the physical person is normally exchanged, so the difference is not that one personality is exchanged for another separate personality. Instead it is about reversing the process of getting to know someone from outside-in to inside-out.

The mask effect also has a more psychological side. The absence of direct face-to-face contact seems to make people more open in their interaction. In this respect, the medium shares a feature of the Catholic confession booth and the psychoanalyst’s couch. One might think of this effect as a closer proximity to others through a distancing of the self from the representation of the self.

Proximity, like levity, also has its drawbacks. While participants feel close to each other, the system can also distance participants from people outside the system. The examples of this effect are numerous and range from my girlfriend feeling distanced from me by her lack of interest in and knowledge of the technology that is a pre-requisite to come in contact with a substantial part of my friends, to the popularity of the *EverQuest-Widows* online forum.

Also the flaming phenomenon can be seen as an effect of proximity. The mask effect that makes the interaction more open and direct does of course make us more open about negative feelings as well. While it is important to utilize the properties of the technology that widen the possibilities of interaction to, it is also important to recognize the fact that the virtual world system in turn is part of a larger system, and that unreflected decisions about the design of the virtual worlds can have negative effects to the wider system.

Is this it?

Whenever you add a third layer to a model someone will invariably ask if that is the final level, if there might be a fourth or if the number of levels might even be infinite. This model does not aspire to be exhaustive. We might very well imagine more layers above, below or perhaps to either side of the ones I have presented. But as a designer I am interested in knowing what to consider my working material. And in that respect I think that interaction is the most fundamental level to consider.

I also believe this to be quite enough of a challenge for any aspiring virtual world designer. Already the idea to not primarily think in structures when designing a virtual conference center was hard for us to wrap our heads around, and to have to give up the idea of virtual meetings as something functionally equivalent to physical meetings is even more challenging.

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