Table of Contents

1- Design domain
   a. The role of design(ers) in today’s synchronous events

2- Context domain
   a. The interface in online environments

3- Problem domain
   a. The transfer of ‘real-time’ ‘natural’ interactions into the digital realm
   b. The collapse of linearity in virtual space dominated by image and media
   c. The interface stagnation in online learning environments
   d. Media, medium interface unified: the information society
   e. Towards breaking the multi-modal stagnation

4- Implications domain
   a. The agent doing things in a collaborative environment
   b. Social role of agents
   c. Delegating – user-agent-agent-user
   d. Augmented authorial responsibility
   e. Facilitating scenarios

5- Envisioning the next steps of defining fluid information in design
   a. The physical depiction of an agent
   b. Automatic re-presentation interface design: CHARTROOM
   c. Interface construction based on “Constructivist” typologies
   d. Transitions: in-formation process design – a concept model
DESIGN DOMAIN

The role of design (ers) in today’s synchronous events

As a product of communication and interaction has shifted from concrete to the digital realm, design principles for information products that we can refer as to interfaces structure and display is been questioned in this paper. Designers are faced with central issues in dealing with the presentation of ‘information’ in today’s digital age. Since increasing complexity on the interactions between human and the real/digital systems derived from and mediated by advanced technologies are lacking of a well-structured framework for design, it is our aim to approach to some theoretical foundations. As Bruinsma states “technology seems to have caught up the demands designers make on the degree of manipulation and the quality of detail in their tools and presentation media” (Bruinsma 2003). In the last sentence, we have introduced with key concepts that have a vague understanding across disciplines: We still do not have coherent valid and even stable explanatory theories of such concepts. It is of importance to understand what is the role of a designer(s) to advance the future of a knowledge culture. By doing so, we need to focus in answering ‘basic’ questions such: What really means being a designer and to design in the digital age? To what extend is user involve in the control and manipulation of ‘smart’ interfaces? What does really mean ‘smart’ information in the digital age? To design and being a designer in the digital age means to be more like authors that add value to a specific kind: meaning. Meaning is embodied in the mind of the user (Lakoff and Johnson 1999). However, much of the role of the designer is to be a co-author in designing tools to transfer meanings. As such, how can information design provide the basis for knowledge based tools in the digital age? We hope to address these questions within this paper. Based on our experience in iVisit, we have chosen the context of online learning environments to advance problems, solutions and tangible examples.
interface stagnation and the fluidity of information presentation in online e-learning environments
CONTEXT DOMAIN

The interface in online learning environments

In this section we will describe the experience of communicating online with the actual interfaces of WebCT and iVisit software packages. This is the personal depiction of a student enrolled in the online class at NCSU.

“Let us go back to the first day of classes on January of 2003. I was at school. I turned on my computer - laptop. I have cable connection, good bandwidth to say. It is quite fast. It is ten minutes to 9 am (my time). I have opened iVisit software, which you can download it free. iVisit is ‘conferencing’ software. You can video-audio-chat interact with many people ‘at the same time’. People can be ‘distributed’ in different places. For example, my professor is from Netherlands. In addition to this software interface, I have opened WebCT. WebCT is different. First, at all, it is a formal ‘educational’ tool provided by my university, North Carolina state University. With the software you can chat with people, post messages, shared files. However, you cannot see other people. That is to videoconference. That is why we are using two softwares, thus (in a way) we are interfacing and coupling the softwares to have a ‘complete’ interaction with every ‘body’ and ‘thing’. Actually, just with everythings, because all people are reduced to a set of disrupted objects in the shape of windows, icons and more importantly text. I can talk to ‘some of them’. I know that we are around 15 people on the class because I can see the names of people who have ‘entered’ on the chat. But this is not entirely true, because some people are sharing computers. Others have ‘written’ to experience some problems with passwords. So, when someone name ‘Kristina’ is talking, is not really “Kristina”, It is ‘Heather’. Confusing, right? I do not know who is labeled as ‘ruby’ but I know he is a well-spoken person. Is he really he? I really do not know. I cannot see everybody. Even, I do not know everybody. I know who is ‘Amanda’, because she is in the videoconference. But not really. Even though her ‘attitudes’ and ‘expressions’ pixilated and faceted lost in the virtual space, she manages really good is showing her personality. For example, I can ‘infer’ she is a cautious person. She never commits mistakes in her writing. However, is that ‘cue’ enough to Asses people in my class? I am learning from total hybrid strangers. Most of them are pretending to see me, even thought that they are not looking at me. I have non-coordinated objects in my screen. I thought I was the choreographer of my screen, however many things are occurring at the same time. I cannot count how many windows are opened at my computer desktop. I am trying to talk and nobody responds. It took me long to realize that I need to press a button labeled ‘talk’ in order to talk. Is this intuitive? Probably, yes. However, is this interface smart? Here is where I realize the interface is not as intelligent as I thought. The interface seems not to have flow with my needs and goals. Furthermore…hello!..hello! is anyone somewhere out there? Ups! I forgot to press the button again!

PROBLEM DOMAIN

One of the core problems is to understand until what extend we can transfer our ‘real-time’ ‘natural’ interactions into the virtual space. (Rheingold 1993) is an expert in understanding the impacts of the ‘cyberspace’- which is also referred as to virtual space- in our communication experience through and of the real world. He believes that we are social beings ‘extending our natural interactions into a virtual community that he has labeled as to an ecosystem of subcultures: “People in virtual communities use words on screens to
exchange pleasantries and argue, engage in intellectual discourse, conduct commerce, exchange knowledge, share emotional support, make plans, brainstorm, gossip, feud, fall in love, find friends and lose them, play games, flirt, create a little high art and a lot of idle talk…people in virtual communities do just about everything people do in real life, but we leave our bodies behind…you can’t kiss anybody and nobody can punch you in the nose, but a lot can happen within those boundaries… virtual communities served as a bridge, time and again, to people whose language and customs differ…places I visit in my mind, and the people I communicate with from one moment to the next, are entirely different from the content of my thoughts or the state of my circle of friends before I started dabbling in virtual communities” In this regard, we argue that it is not much about extending, but mainly ‘re-creating’ our communication interaction experiences in the virtual culture.

Within this statement, we argue two points. First, that the virtual space is creating a distortion of the traditional human reality. In leaving behind, most of our physical cues to express and communicate are lost. In that sense, we need interface mechanism to speak on behalf of the user. A faceted or pixilated image from a depiction of a camera is not sufficient to establish an interaction in online learning environment. Furthermore, there is a need of augment the natural human communication capabilities. In the human-to-human communication mediated by computers, our perception, thought, vocabulary, appearance, personalities, and identity is different. We as human beings and personalities are changing in the virtual space with the need of recreating intentions within a new set of visual facilitators to represent the self.

Dennis Puhalla >> This is new theater

The question is a matter of how our natural human interface is allowing us to map this emergent “digital boundaries.” Obviously, we urge an interface construction that enables “action on our behalf.” We believe that we cannot mimic the natural communication in real spaces into the virtual environment. However, it is to augment it into meaningful accounts of information with user authorial responsibility.

In the past, designers developed solutions that were strongly influenced by a minimalist approach. In this type of environment “users” become quickly productive with a limited amount of instruction (Carliner 2000). This statement is counter to what is occurring the online environment where the interface is hidden. A minimalist design approach requests the user to do much of the work to build connections – conceive mental maps. Navigation on the Web is done through the use of hyper-links. The user must imagine and build the connections for understanding information. While the minimalist approach is acceptable, ways need to be found that properties of facilitating cognitive processes. In this regard, we might think about giving intelligence to the interface. In addition to physical representation, the tools for transferring meaning include other components. The users cognitive processes should be invisible. A smart interface could track the number of times a type image or word were coupled thereby assisting the user understand and reference position in time and space.

In the digital era however, the goal is to practice design in reverse of the concepts that form design as a seamless concept. There is a need for designers to make interfaces more explicit, expressive and ‘graspable’, in terms of visible controls to enhance the human-to-human communication interaction mediated by computers. In the chat environment is it really necessary to type “…“ to continue a sentence. This is a process that interrupts thoughts and sentence structuring. In this regard the users involved mental process of remembering the input to express meaning. It is the aim to use design as a means of controlling when, where, how user can interface in time and space in a networked and integrated digital structure. The prob-
lern of this interface is a result of linear thinking. As such, currently it is more essential to make the design process visible and understandable through systems that support non-linear thinking. Much of the beauty of the designer is to map the non-linear behaviors. Mapping means to grasp the interface. “Design needs to be about making complex, abstract ideas visible” (Dubberly 2001). We believe that we have much to learn and resemble from the ‘natural’ physical environment to use it as a metaphor to make the augmentation of digital spaces visible.

<maxb> So how do designers deal with tha?
<maxb> How to design for codesigners?
<maxb> we are less making products now, and more initiating processes...
<maxb> which, coming back to our earlier excursion into Latin...
<maxb> makes designers more like authors...
<maxb> they ad value of a specific kind:
<maxb> meaning.
<maxb> but generally, I’d say that the study of processes needs more emphasis...
<maxb> in sum - more bias toward learning to design structures, than to flesh out visually the endresult of those.
<maxb> of course. But I like to stress the idea of ‘adding meaning’...
Gary Pikovsky>>meaning visually filtered
Gary Pikovsky>>less noise less links more clusters and nodes with ordered information

The collapse of linearity in a virtual space dominated by image and media
<maxb> this means that the 'recipient' (a quite passive term) becomes a 'participant'.
<maxb> 'structure', here, means that you help the visitor in finding meaningful paths through information - you leave the end-form open to a point, but you map the ways through it... and then of course you outline a set of formal parameters that make the map
<maxb> 'readable'...

The digital era brings about new ways to deal with information, in contrast to print-media which presents information to the user. The involvement of the user is passive. Information is presented in constant change. It is referred to as the pace of navigating information in the form of interactive systems (Bruinsma 2003). Also, it is referred to as the manner in which the same account of information is synchronously represented according to user preference. The interface video could reflect the name of the individual user, other users may wish to arrange the videos according to age or culture. We transform from being an observer of information to “servers” of information. Information seems to really mean in-formation. Much of that formation is from the end user’s perspective. Design behaves as a process tool to support the “formation” of content.

The traditional means of information as fixed ‘and smooth–static’ does not hold true to the moment and is not valid. (Rushkoff 1999) brings a perfect metaphor to describe the actual coercive society: skiing vs. snowboarding that can be applied to the online interfaces that deal with information. Skiing requires training, perfection, precision, pools, smoothness for a successful experience on the down the slope on the snow. In contrast, snowboarding intentionally does not require training, seeks obstacles to pass. Interferences and exploration is the key for success. Discontinuity emerges as the key point to ‘understand’ patterns underly-
ing the information interface. The aim is to get to the understanding of dynamical systems that share a conceptual system. It is getting the sense of the entire pattern and being able to easily create/predict information. This is much about an inner-formation of the in-formation presentation system. (gives a clear explanation of what information is, not only how its behaves). Complexity multiplies and broadens posing design as a moderator for a new kind of dynamism.

The new kind of dynamism is intangible. To this end, it does not have foundations constructed from the real environments to make the interactive structure an understandable system. This concept could be interpreted through hidden meanings or path-links on the screen in a rollover using the mouse. Non-linearity is represented in ways not supported by laws and physics of the physical world. It sounds courageous to formulate that the physics of the world should be re-conceived. Rather, it should be assessed as what are the commonalities and anomalies influencing and explaining the behavior of ‘virtual’ entities. The physical sciences have achieved understanding the theory of planetary motion as natural organization -organic behavior- to be able to project and predict phenomena. Scientific research should be viewed broadly to aid the core of future of interface design.

How can the physical world and sciences inform the virtual space dominated by image and media? Natural phenomena can dramatically influence theoretical foundations for interface design in order to achieve coordination and predictability of user-centered perspectives. The intriguing part here is the collapse of non-linear behavior in complex systems such as online environments. In order to predict weather, cues and properties of the real environment including temperature, light conditions, cloud formation, wind velocity, barometric readings, etc. can predict future behavior. What are the cues that can help predict on-line behavior? The multi-accessible virtual space can be understood only by the interactions and connections of its parts; and not merely from its individual parts. This is the beauty of non-linear systems that are proportionally associated with chaos in a world of dynamic, random and unpredictable behavior cues in online environments. The predictable behavior cue can only be understood by its interactive connections to related components. That is, how cues flow from one state to another. Otherwise, we would be operating on complicated environments; which do not mean the beauty of organized complexity. How would you characterize the actual online interface: complicated or complex?

The interface stagnation in online e-learning environments

Why are we experiencing the interface stagnation? According to the dictionary to stagnate means to become stagnant: not flowing or moving, not developing or growing; inactive; static; stop moving or developing. It seems that we have been trapped and fall into the static visual presentation of fixes media. “We seem to have settled on the WIMP (windows, icons, menus, pointer) model, and there is very little real innovation in interface design anymore” (Gentner 1996).

How are we learning in online learning environments? Furthermore, how are we communicating in online learning environments?

Interface stagnation occurs at the dynamic level of parts are related to the whole. No dynamic connections exist between video, content or nomenclature. Multiple redundancy does not reflect the user intention. Is it necessary to have a name redundantly repeated during the course of a message instance?

<maxb> especially in the context of new media, online media...
<maxb> context is (almost) everything...
I mean: the web, online media, are such a volatile environment...
that neither authors, nor editors nor designers can afford to stick to their old job descriptions...
First: their autonomy is greatly undermined by the instability of new media...
Instability in terms of the dissolving characters of ‘users’ and ‘content providers’
On the web, the ‘user’ is co-author, co-designer...
The user (or visitor, player, reader etc...) is a partner...
A participant...

Cognitive scientists Lakoff and Johnson work with three key concepts of how the cognitive minds relates to the outside stimuli. First, the mind is inherently embodied. Second, thought is mostly unconscious. Thirdly, abstract concepts are largely metaphorical. Within this approach, we can say that the mind absorbs information and meaning that is grounded and through our bodies (Lakoff and Johnson 1999). The problem with interfaces nowadays is that we can no longer think about a fix product. Rather it is time to think about how can designers can design processes.

Effective communication requires that the message can be both sent and received. In a sense, users in online environments are autistic experiencing impairment in sending and recognizing their message. With the exception of creative minds, where they have the ability of actively imagine ‘intended’ messages an creative expression of intentions through the use of ‘self designed’ vocabulary in the shape of ‘emoticons’ (pace internet site with countless list of expressing messages through re-invented text), many users experience a result of ambiguous assumptions of the resembling the human-human communication interaction. At this point in time, the lack of effective and expressive interfaces results in a distortion of time with the break of continuity of the message; confused relationships based on the ‘self interpretation’ of the message. As such, the ‘intended’ message is nevertheless a result of miscommunication and misunderstanding. The interface seems to experience a counter-productive understanding of the meaning of learning experiences. Designers are in a transition period that is moving from a focus on the tools used to produce content (like help authoring tools and desktop publishing programs) to a focus on the content itself” (Carliner 2000).

Media, medium interface unified: the information society

Information should be represented in a dynamic accelerated constant ‘renovation’. Renovation occurs at the level of interpretation of the media. In order to explain renovation we could look to our related experiences in the online environment. Natural real time communication involves reactive body cues from individuals expressing disgust, joy, agreement, etc. These actions are spontaneous. In online environments, those cues are lost. The user must renovate the expression to a new graphic display through words as opposed to a coupling mechanism representing forms of expression using color as a smart tool coupling the expression. Furthermore, consider what might happen if the interface-cue mechanisms would couple for multiple users. New content emerges through constant renovation. Media, medium, interface are unified. As McLuhan, a visionary, stated at the beginnings of the electronic era, the medium itself is the message. The medium is creating the ‘avenue’ of information (McLuhan 1994). The presentation is the result of a human interaction process. The interface is the result of users interactions.

This theoretical foundation addresses the individual as a cognitive processor that is part of an intelligent network mediated communication interaction. “A process that is not cognitive simply because it happens in the brain, nor a non-cognitive process simply because it happens through the interactions among
many brains.” It is an approach referred to by Hollan as “distributed cognition.” “In distributed cognition, one expects to find a system that can dynamically configure itself to bring subsystems into coordination to accomplish various functions…a cognitive process is delimited by the functional relationships among the elements that participate in it, rather than the spatial collocation of the elements” (Hollan 2000).

Distributed cognition is a distributed system which addresses the cognitive processes distributed by the individuals operating the interface. Cognitive processes involve the coordination between internal individual and extended external structure; and cognitive processes are distributed through time where products of earlier interactions transform the nature of later events (Hollan 2000).

The argument is that individual information is part of a shared control, a social construction of information (meaning resides in the interactive representation of the user). Information structures involve ‘flows’ – paths, trajectories of transformation – embodied in the interface. The flow is an ‘emergent’ representation.

Towards Breaking the Multimodal Stagnation

Max Bruinsma>>a sense of “resistance” or “rub” between information objects and the way they are interfaced.

“Design needs to be more about making complex, abstract ideas visible” (Dubberly 2001). We believe that we have much to learn and resemble from the ‘natural’ physical environment to use it as a metaphor to make the augmentation of digital spaces visible. Information is not only considered as a multimedia component but as a multimodal account. To this end, in multimodal systems, the user changes his function of passive subject to a dynamic participant in the interaction with computers. It has been said that the power of the network (medium) of the future will be awake, responsive, adaptive, price smart, eco-sensitive, real-time, flexible, humming and interconnected with everything else.

Max Bruinsma>>I mean, in real life we do not tend to ‘see’ process - we take it for granted…

maxb: Of course we are used to looking, talking and even taking noted at the same time in ‘real life’…

maxb: But in this technological environment this combination is complicated by the added functional actions we have to perform…

maxb: Things like “press ‘talk’“, or “enter chat line” or “switch window”…

maxb: …this tends to distract us. So, in the end, are we really communicating, or are we playing a technodriven game, along the rules the software laid out for us?

To this extent, media finalizes its actions as a modal. Multimodal systems are based on the use of sensory modalities by which humans interact with information. Multimedia systems refer to users’ adaptation of a system’s perceptual capabilities, and multimodal systems support users multiple ways of response according to their preferences and needs (Pavlovic 1998). Turk draws a distinction between multimedia and multimodal user interfaces based on the system’s input and output capabilities (Turk 2000). That is to say that the main difference between multimodal and multimedia systems can be based on the perspective of the interactive experience. “Multimedia systems refer to users’ adaptation of a system’s perceptual capabilities”; and “multimodal systems support users multiple ways of response according to their preferences and needs” (Anastopoulou 2001).
Interaction is the challenge of dealing with information. Information can be broadly defined in set on multimodalities, as earlier described. As such, Interaction occurs at many levels. Bonsiepe defines interaction as “… a manner of presenting information to a community of users in a non-linear way, i.e. as hypertext or information in form of branched structures composed of semantic nodes with choices for the user to move through this net of nodes” (Bonsiepe 2000). Nodes can be understood as modes of interaction. In real circumstances if I am trying to touch something at the same time someone else is doing it I get into an obstruction. However, in virtual environment we never get in contact with the medium. The interface seems to have only one way. Actual access to information in online environments has static properties, which collides with the non-linear contemporary theory of the digital age behavior. For instance, in a fluid multimodal interface you should not type the intention. The machine should be in charge of ‘reading’ the user. In this sense the user is ‘delegating’ functionality to the machine. If I want to speak I do not need to enter or press ‘speak’ to do it. The purpose of the interface should focus on the content of the task rather than the input mechanism in which the interaction occurs. We need to learn how to communicate online and through designing processes which aids the interaction. How?

IMPLICATION DOMAIN

Multiplying through fluidity flow
Enhancing Information representation through color permits visual cues of emotion and expression; the flow of video getting bigger to express the person talking. Designing as a smart process tool with out literal representation of the intention.
The importance and meaning of fluidity in dynamic interfaces controlled through or by:
- Mechanism to access history of actions
- Track/record/generate/ catalogue of information
- Mapping interaction
  The meaning of flow: animated conversation

The agent – doing things in a collaborative environment

What role do agents play within the interface? What can an agent do? How an agent can be represented in the interface?

Agents have different definitions. We will visit them from experts in the topic. However, it becomes a necessity to underline its capabilities and power within the structure of the interface design. Properties of the agents are cooperators of the user acting in his behalf. As such “Agents promise to decrease human workloads and make the overall experience of interaction less stressful and more productive. Agents may assist by decreasing task complexity, bringing expertise to the user (in the form of expert critiquing, task completion, coordination), or simply providing a more natural environment with which to interact” (Maybury and Wahlster 1998).

Agents are defined as proactive, and adaptive to user preferences. Agents are “… software elements with the intelligence to take care of some set of specific tasks…these tasks require great sophistication in understanding the user’s needs and integrating information” (Wilson 2002). As such, agents are smart instances that are able to augment capabilities and create ‘ecological’ connections and transitions in
the virtual space. They have the ability to help filtering information, negotiating, recommending, remembering.

Agents (Nielsen 1993) are another approach to aid the user of the burden of having to explicitly command the computer in which autonomous processes in the computer act on behalf of the user in some specified role.

Much of the question at this point is not understand which one is the role of agents in the interface. If agents acts on our behalf, it can be infered that agents are extensions of the user. How the self is represented in the interface? We will not be approaching to answer this questions from what will be the items to represent identity. However, it is paramount to understand that agents have a social component. The social perspective taken in our view, it is towards understanding how different users id-entities are transferred in the interface as physical entities. The aim is to consider how the entities ‘play’ and build the interface as a ‘group’, commonly known as collaborative environments (Dix 1998)

**Social role of agents**

Bonsiepe tries to acknowledge the meaning of information as useful knowledge when is converted from: ‘mere data’ to ‘processed data’ (information) to ‘verified information’ (knowledge) to ‘validated information’. He refers to the last one as ‘wisdom’. (Bonsiepe 2000) However, the last link of this process should be referred as to understanding. From his perspective, information and knowledge resides in a person that can be transmitted, thus extended to a other ‘physical’ representations. In this paper, that physical representation falls into the real of agents. The discussion poses the question if an agent can represent understanding. If so, how is represented?

Agents not only act on behalf of user actions but also mainly augment the capabilities of the user. Knowledge is the result of distilled information framed and embedded into previous experiences. As such, knowledge can be understood as ‘historical’ record of actions. A knowledge agent can hold

Digital technologies bring many new way to enhance our realities. There are many arguments based on the attribute of how technology is improving our communicational and social interactions. The objective is to find and extend our ability to communicate and work within the on-line, e-learning environment. The advancements of information technologies (IT) are impacting and transforming the way society communicates and exchanges ideas within the environment; within space and time; within societal interactions; The notion of community and communicational tasks in online environments is fluid and evolving.

**Delegating - User-agent-agent-user**

“The user’s environment will no longer be completely stable, and the user will no longer be totally in control” (Gentner 1996). As suggested, it is time to give computers a more “co-operative” role. Instead of advocating that the user should be always in control, users should delegate actions to the computer. Agents do this for us.

Max Bruinsma>>i mean: in 'real time' communication, we do not have time to embellish our content...

Agents augment our communication. The purpose of having a cooperator is to enhance and facilitate is sending out cues that are meaningful to our message. Presently, we have emoticons behaving as simple agents with quick fast representations of meaning. Agents can externalize and map attitudes.
Augmented authorial responsibility

At this point, people would be delegating tasks to ‘agents’ to ‘bi-communicate’ not only with the user in the ‘human’ language but mainly within the task with other agrants in the ‘computer’ language. The principle interaction permits users to focus on the task rather than on the operation of the input system. Understanding is distributed and linked through knowledge presentation—distributed cognition.

Facilitating Scenarios

Max Bruinsma >> what is a process? ..
Max Bruinsma >> situation, context, time, behaviour, facilities, systems, rules...
Max Bruinsma >> how can you design something that you don’t know?
Max Bruinsma >> that’s i think the most interesting question behind thinking in terms of process rather than product.
Max Bruinsma >> so, in a sense this proposal outlines the practical problems of designing (for) processes...

The process of communication among the users is delegated to agents to process information. That process is the result of presentation. Consequently, how the presentation communicates to each other is designed intervention. The acts of mapping comprise “conceptualizing, recording, representing” (Cosgrove 1999). As such, design here becomes an integrative approach of envisioning conceptual tools for mapping the multimodal interface, and creating spaces graphically.” It has become necessary to make the design process visible and understandable. This statement is counter to what is occurring in the online environment where the interface is hidden. “Design needs now to be more about making complex, abstract ideas visible” (Dubberly 2001). We believe that we have much to learn and extrapolate from the ‘natural’ physical environment to use it as a metaphor to make the augmentation of digital spaces visible. Designed artifacts create possibilities that redefine the task. “Scenarios help designers identify and develop correct problem requirements by being at once concrete and flexible. They help designers to see their work as artifacts-in-use and, through this focus, to manage external constraints in the design process” (Carroll 2000).
ENVISIONING NEXT STEPS OF FLUID INFORMATION IN DESIGN

The physical depiction of an agent-designer’s actions

Kim Garza>> we need a hub, that really controls all of those things...

Kim Garza>> pulls on the things you need when you need them... Max Bruinsma>> yes! now the design thing is: how to patch them, how to make them accessible... Max Bruinsma>> not technologically (we assume that’s being solved)... Max Bruinsma>> but in terms of directing flows of manipulation...

Max Bruinsma>> i.e. how you go from one ‘stage’ or status’ to another...

Effective communication depends on the use of resources that are intrinsically connected with aesthetics (Bonsiepe 2000). The use of a technology: the alphabet with intrinsic meaning and grammar create the interconnected aesthetic of understanding. The role of a designer in the digital era is to bring about processes rather than objects.

Automatic re-presentation interface design – user’s actions (CHART ROOM)

Max Bruinsma>> how to visually represent ‘flows’...

Max Bruinsma>> in short, what kind of ‘artifacts’ (i.e. interfaces, approaches to interface design) would facilitate ‘process’?...

In general, information design has been transformed from being information as “form” (Sless 1990) to information as “tools” (Wurman, 1999). Users have crossed the line from being passive receivers of information to dynamic constructors of information. Jacobson states that with the “… powerful technologies of communication, media that dramatically highlight and shorten the links between those who generate information designs and those who receive and act on designed information” (Jacobson 1999). As such, the role of the information designer today is to provide “tools” for them to interact with. Tools are understood to be a facilitator for user control and intention.” As Dubberly describes, “In the past, design has been mostly about the form of things and, to a limited degree, their function. In the internet world, the designer does not have complete control over the ultimate form—the user’s experience, and this condition pushes the design process at least as much as toward defining the rules within the system as toward the elements that constitute it” (Dubberly 2001).

Interface Construction based on Constructivist Typology: COUPLING

Coupling is a connection type derived from Chernikhov’s typology found within the architecture known as “constructivism.” The function of the different connection types enables the combination of all types of different objects into a single unified entity. The fundamental rules of constructivism consist of all the various possible kinds of unions by which elements can be combined into a structure and the principal ones are as follows:

Penetration: one form is inserted into another (nail in wood)
Clamping: one form is seized by another, which grips it (vice grips).
Embracing: One form is “hugging” another form (trailer hitch).
Mounting: a series of volumes come together with a single crowning body uniting the form (post and beam).
Interlacing: each form is represents a single part of a more complex system of many elements (woven fabric or shoelace tie).
Coupling: each form remains separate but participates in constructive unity and joining activity (hook and eye).
Integration: a single form that matches and fits directly into another unique form (puzzle pieces or zipper).
By definition, coupling stands for singular parts. Each single part is a form that remains separate but participates in constructive unity and joining activity (the hook and eye). Coupling implies a structure that combines parts through pairing and union. Coupling occurs in astrology, biology, physics, chemistry etc.

Interface construction, operation and function could take cues from action coupling. The interface can try limited combinations of both content and context aspects of the e-learning environment. Limited and restrained operational functions might couple naturally and invisibly to enhance the flow of communication that occurs of sight, sound and motion in e-learning environments. Through the use of agents in the e-learning environment, recording comments or notations might couple with other appropriate interface components. “The individual design agent is sensitive to changes in its context, including the information itself, the goals of the information recipient, and other design agents” (Ishizaki 2003). “The designers task is anticipating changes in the context and specify the communicative forms that design agents should perform according to their immediate situations” (Ishizaki 2003).

What is needed is not more information but the ability to present the right information to the right people at the right time, in the most effective and efficient “form.” So then, information ‘formal’ presentation consists more of a set of techniques for analyzing, organizing, sequencing and displaying the various units of information from the user perspective. (Horn 1999) Conceptualizing information is something that describes an ordered reality and has some knowable, or at least, idealized, isomorphic relationship to that reality (i.e., it represents in an identical way the form and content of reality)…which instructs the user about the nature of the world they live in: its history, its future, its functioning, our place in it, our possible actions, and the potential consequences of those actions. Then, information is a tool designed by human beings to make sense of a reality assumed to be chaotic and orderly (Dervin 1999). As it was stated earlier, the question is what kind of information as ‘material’ is involved and how is valued and assessed by the user, since they are the result of tangible and intangible and even ephemeral experiences in the user-product interaction. As information serves a specific function, understanding that form and function is the most important aspect of efficiency that can be referred as usability.

**Transitions: in-formation process design – a concept model**

Max Bruinsma>>so we’re back at the question of ‘transitions’...
Max Bruinsma>>how to ‘interface’ one state of a text (or an information/communication object) to another...
Max Bruinsma>>through motion, pacing, typographic and audio accentuation, etc.
Max Bruinsma>>of connecting live flows with edits on the spot or afterwards...
Max Bruinsma>>How can you connect the different experiences of producing content (which is what you do when acting in a live environment)...
Max Bruinsma>>and reflecting on it, reorganising it and ‘archiving’ it?
Max Bruinsma>>when you talk about "presentation of simultaneous information"...

Design is not about the beginning or the end product. It is about designing the transitional points. The leading future of agents, delegation, shared control; augmentation will be successful by means of cooperation, integration and visibility. In this paper, we have attempted to describe some problems of a grounded example of the actual online classroom environment. In the same extent, we have described how design should be approached as a “facilitator” of making from the interface a more fluid experience. We believe a design approach that builds the new user interface from the understanding of transitions will support the need of network-distributed cognition in synchronous environments. A visualization of the conceptual framework follows.
References


by exploring alternative interfaces that transcend the principles behind conventional graphic interfaces, a human computer interface emerges that is based on language, a richer representation of object, expert users and shared control.


