

## **VIRTUAL STORIES**

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April 1992

Correspondence on the use of rhetoric in the design of virtual worlds.

## **READING AND WRITING VIRTUAL STORIES**

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**Problem Statement:** Virtual reality technology has the capacity to transfigure traditional notions of how stories are built and used. By providing a new site for the production of fictions, a new flexibility in characterizations, physical and temporal locations, and a new level of engagement in the story, virtual reality technology can greatly expand the range of narrative experiences. This new range and the overall versatility of virtual stories will lead to important applications in education, entertainment, and literary studies. This project will begin to describe and explore the potential of virtual stories by building a virtual mystery called Storytime.

**Research Goals:** Contemporary virtual reality and interactive entertainment technologies implicitly accept the distinction of the Russian Formalists between *fabula* (the basic story stuff, the events to be related) and the *sjuzet* (the story as actually told). Existing computational theories of drama likewise make that distinction and rely on current work in natural language programming that ignores the flexibility of the *fabula* and manipulates the *sjuzet* by altering tone and register and "saying the same thing in many ways to achieve various effects" (Hovy, 1987). Such a distinction misses the interesting capacity in virtual realities to blur representation and reality, to create synesthetic representations and multiple characterizations of users, to build representations that themselves reflect different qualities of discourse. In my research, I am interested in developing a computational theory of narrative that will encode shifts in the rhetorical choices (the narrative statement) in the virtual images and episodic sequence of the narrative succession. This project, therefore, will explore the capabilities and consequences of building virtual stories by fulfilling the following goals:

- to build a deeply engrossing, fun, and educational virtual mystery;
- to describe the range of rhetorical and narrative choices composers and reader-players might have in creating a virtual mystery;
- to choose among these choices by building some of them and applying the criteria of pleasure (intellectual, emotional, and physical engagement)

to evaluate their efficacy;

-- to explore a variety of modes of presentation and pacing first by borrowing from traditional fictional, film, and dramatic conventions and second by inventing new rhetorical strategies of selection and arrangement that might be peculiar to this new medium. Such modes would include, for example, close-up shots, lap dissolves, repetitions, flashbacks, in medias res as well as new means of altering "visual rhythms";

-- to build a computational theory of narration that will respond to the virtual reader-player's movements (and nonverbal discourse). Such a theory should guide shifts in pacing, order, quality of discourse, media of presentation, and points of view.

## **REPRESENTATION AND REALITY (William)**

Got the email version. I like the content.

We'll need to flesh out the actual VR story approach, bringing in inherent capabilities and constraints of the VR environment. I can provide a description of the technology and how it intersects with the project in general.

I am particularly interested in the blurring of representation and reality. There is a lot of intellectual work on semantics and syntax, and we might be able to begin to address a new concept of meaning, at least for the computational formalists.

I've got some work on multiple valued logics, which provide a formal framework for maintaining multiple interpretations and divergent worlds. The idea of crossing literature/narrative with imaginary logics is particularly appealing. A blurring of science/literature that exemplifies the blurring of symbols/meaning. (Have you seen Jerome Bruner's Virtual Worlds, Actual Minds?)

So, a proposal: embody the dramatic and interpretative elements in a simple logic which permits context dependencies and multiple interpretation.

Another motivation: I really want to demonstrate a world with broad narrative characteristics, for research, for "look-what-we-can-do", and for growing the potential of VR. We have to face these issues in our curriculum development projects.

And another: no one has assembled a listing of narrative tools for building worlds. We have several (weak) projects attempting to define the tool sets for constructing realities, and you and I should be thinking in terms of "what does the author need as tools to build VR stories?" Your "rhetorical

strategies". I suspect that identifying a basic tool kit of understood techniques will come before discovering new rhetorics. Are there generic techniques for "visual rhythm", or are the techniques context/task/story dependent?

To understand these issues, we'll need to discuss a particular story and the way you envision it unfolding. It might be beneficial to play with parts of a story, to see if we can get independent aspects of structure in a VR. Personally, the technique I understand best for the project is "embedded narrative", which also might be called "behavior dispositions", that is rules which drive an entity to respond to particular circumstances in its environment. The orchestration of many entities with many different dispositions is currently left to magic. I personally agree with the artificial life finding that lots of interactive entities, each with a small simple disposition, is the route to vitality.

By the way, my own bias is to do the easy tasks first, and to postpone the hard ones like deep characterization, real-time story interactivity, and photorealism. And we have a lot of the infrastructure mechanism already in place in VEOS. We also need to get clear about what is VR, and make some distinctions between literature, interactive games, and inclusive environments.

I read your dissertation several months ago. It helped me greatly to understand poststructuralism and the issues of your community. Was greatly pleased with the emphasis on constructivism, a torch I have carried for many years. Enjoyed the Telephone Book piece too.

We can extend your constructivist/objectivist ideas into the code, since VR provides digital context. Is Bates cognitivist? I'm aggressively non-cognitivist, it is a really dumb idea. We should also explore materials, processes, and locations in the context of VEOS models of entities, behavior, and spaces.

## **COGNITIVISTS (Sarah)**

Thanks for your earlier comments about our joint project exploring narratives and virtual realities by taking "an experiential route."

I share your lack of faith and conviction in the paradigms of cognitivists and objectivists. No, I haven't yet read Jerome Bruner but will do so this summer. No, Joe Bates is not a cognitivist; I think his models are harder to categorize. In my conversations with Joe, he has been consistently open to other ways and models of understanding narrative and interpretation. However, whenever we talk about how contextual epistemologies might be embodied in computer texts, he typically says, "I don't know how to build that."

So here goes: rough, unfinished, on the fly. More thoughts on our Virtual Story (VS) project. I agree with you that we should tackle the easiest questions first. Here's some more thoughts towards the possible shape of the project.

OVERVIEW: Let's take my rhetorical probes of "materials, locations, and processes" as a starting point for understanding and building VR narratives. This project will concentrate on developing a set of possible "processes" for building stories in VR. We'll leave "materials" and "locations" for another project. In particular, this project will explore the composing processes of authors and readers of VR.

### **Composing Processes of Virtual Story "Readers"**

STARTING POINT: First, we should commit to a particular set of narrative theories to guide our design of a virtual story. I'm comfortable using the theories of Seymour Chatman, Jim Phelan, and Wolfgang Iser as a starting point; these critics are all people I used in my dissertation and they talk about a text as a transaction between readers and writers who are influenced by their social and cultural contexts.

In particular, Chatman gives me a way of looking at the particular strengths and weaknesses of the VR medium (for example, are its visual [or oral?] representations of changes in place and time easy or hard?); Phelan gives me a way of understanding and designing representations of narrative progression over time; and Iser gives me a way of shifting from discussions of an ideal reader to discussions about lots of different kinds of readers. Basically, by using this set of narrative theories, we are committing to a transactionalist and social constructionist view of how narrative works. I'm comfortable with that.

META-READING: I never met a reading I didn't like. Second, as we ask and answer questions about how to compose this new set of narratives, we need to understand clearly our potential readers and players. Who is our audience?

As we've discussed, I'm wondering whether we might not embed possibilities for different kinds of readings in the actual objects of the story; we could embed not only different interpretations in particular objects but also suggest different narrative strategies (how the player interacts with the story over time). For example, Should we embed in our stories a capacity for multi-layered readings--including readings our critics might enjoy? Should we embed an implicit criticism in the text itself? How should we negotiate the tensions between multiple readings, between the user's freedom and constraints?

TOOLS: Third, we need to look at another whole set of questions about how these narratives can engage users. I want our narratives to support a true

multiplicity of interpretations. What will evolve as VS conventions in the representations of traveling between places or worlds and traveling across time (flash forwards and flashbacks)? What are some possible hypotheses for how these conventions might look?

What tools does a reader need to engage richly and fully in the virtual world? How should the distance between body representative and self be negotiated or played with?

How will we instruct the new user or reader in her use of these tools? (How will we embed instructions? At the beginning, like giving directions in a videogame pre-game display? Embedded within particular objects? At the beginning of the story, demonstrate some of the user's capacities?) How will we instruct the readers to use our interactive narrative structures while at the same time we are granting them as much freedom and support for variant readings as we can muster?

OTHER RANDOM QUESTIONS FOR VS READERS: How can rhetorical strategies be embedded in the narrative and the objects themselves? What are the flexibilities we want to build into the story? Where do we want to model depth and range? Where doesn't it matter? What is field and what is ground and how do they shift in VS? What are the new ranges of points of view for user and writer? What learned narrative strategies are already operating in users' minds, and how can we respond to them in this new medium? How can the system "read" the nature of the user's interaction and respond appropriately? What are the tensions of engaging with the virtual world over time, and of returning to the same "place" again and again? How can this be exploited?

Now I'm turning from the processes of reading a responsive text to writing one.

### **Composing Processes of Virtual Story "Writers"**

STARTING POINT: We need to invent the best set of tools and rhetorical strategies possible to help writers compose interesting and engaging dramas for VS readers. It seems to me we must work on some of these questions:

What are the tools?

What are the methods?

What are the metaphors and analogies we are implicitly or explicitly accepting? (Are we looking to film and print? Do we accept the current definitions of "body" and "human" in our body representatives? I'm thinking of Mark Johnson's book on how the body constrains all our metaphors--The Body in the Mind.)

What are our working definitions of story, narrative progression, character, place, etc.?

How do objects become a rhetorical language? What is the VR equivalent of "voice" and "point of view" in narrative and how shall writers modulate them?

TOOLS: These decisions about composing tools and, later, composing processes, are a kind of "meta-writing" or "meta-authoring" that needs to be fleshed out. What do the composition tools look like? Sketch pads? Sample discourse? Objects? What does a rough draft look like? How do we rehearse writers?

We need to define a set of composing tools that will allow this medium its maximum playfulness, depth, multiplicity, and rich unfoldings. I think I need to learn much more about what the current materials are for building worlds before I speculate on what tools, what manner of ways of manipulating the medium needs to be available.

OTHER RANDOM QUESTIONS FOR VS WRITERS: How will we modulate the rhetorical "voice" of the presentation? How will we direct its sequencing, pacing, and its narrative conventions of representation? What's the operative metaphor for the presentational voice: guide, friend, mentor, enemy? How can we play with narrative representations, rhetorical presentations? What limits our range?

### **Two Other Ideas: Ratios and Glossaries**

I'm working on the composing problem of building interactive narratives that genuinely respond to different sets of users, such as expert and novice readers. What are the actual ranges of freedom, body representatives, kinds of readers, that we hope to accommodate? How can we describe usefully the range of audiences our stories hope to engage? How can these descriptions be accommodated by our compositions; what leeway, flexibility, looseness, do we need to build into our interactive stories? What specific parts of stories need to be extra flexible?

RATIOS: Could we conceive of the tensions in interactive narrative as a series of flexible ratios? I'm imagining the iris on a camera widening and shrinking according to the light available. Could we have the loose equivalent of a light meter that would measure the user's level of experience or type of interest in virtual worlds and then have the voice and depth shift to accommodate that user? Some of the tensions of an interactive virtual story that could be flexibly negotiated or governed by "ratios" would be:

-- tension between freedom and constraint (Broadly stated, beginning "readers" would be more rigorously constrained.)

-- tension between actual user and her body representative (more experienced readers and critics might enjoy some unusual pairings, odd matchings)

-- tensions among purposes in reading (people read to be entertained, to learn, to solve a problem, for catharsis, to learn a language, etc.).

Ratios are just an off-the-top-of-my-head idea. Another, more easily implemented plan is for us to compile an evolving glossary as we solve some of these narrative questions. We could even begin talking about new ways of defining terms today!

### **Compiling an Ongoing Glossary**

As the project evolves, it seems to me one useful tool would be a glossary that evolves as well. This glossary would include definitions of traditional rhetorical terms and narrative strategies in their new VS manifestations. The glossary would also include new definitions, vocabulary, and terms that capture VR's new capacities and capabilities to engage users.

Some terms that might be included in such a glossary:

#### **TROPES:**

What figurative language, metaphors, hyperbole can be embedded in the object-discourse of the virtual world? How, for example, can exaggeration be embedded in the objects of the world?

#### **METAPHORS:**

It seems to me that there is a new and rich potential for using metaphor in these VR interactions. How does double-voicing become embedded in these new forms? How do we embed multiple meanings? When can an object be more than one thing?

#### **CHARACTERS:**

Should we rely on the stereotypes of characters such as those designed by Theophrastus? Richard Brautigan wrote a novel that had as its villain a tiny dot of light. What is our new working definition of character? Who are they and what is the ratio or range we're working with?

### **NARRATIVE TOOLS (William)**

I'll trust your judgment about narrative theory and theorists. We both come from the same epistemological camp.

I really identified with your section on TOOLS, that is what I've been thinking about. And we have a substantive tool base in place. To a

significant extent, the implementation will be driven by the capabilities of our system (I'll forward documentation as soon as it exists). So one thing I'm curious about is how well the tools we have designed fulfill your design needs.

We'll have to choose a couple of your questions for focus, but the approach of generating the questions is excellent for looking at the broad picture.

Issue: are multiple interpretations imposed by different participants on the same (plastic) base, or is ambiguity inherent in objects, independent of participants. That is:

interpretation as a relationship between participant and object  
or  
interpretation as inherent in objects

We can program objects, not participants...

I need to understand what you consider a "narrative". How is it different from an experience? Can a writer be a designer of environments (in which case, good teachers are "writers").

Good question: who is the audience? How does the system know the situation (history) of a participant? (It can't.) Can we rely on stereotyping in an individualized experience?

I suspect your drift is to get some theoretical/definitional focus before trying to implement. I agree, but I tend to be atheoretical (or at least contextual). The programming tools will input into the theory, just as the writing medium has, in the past, defined writing theory.

I have no difficulty imagining how to get hyperbole, time travel, etc. into VR. The hard part is to know how and when to use it. And, of course, coming to an agreement that the implementation achieves what the author means by "hyperbole".

That is, I think we can figure out how to write, but I have no idea what to write. When we write, I suspect we will find our vocabulary limited (so we do Hemingway rather than Calvino).

Glossary is a great start.