

FOLDING IN FILMS

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Publications: *The Agile Virtual Enterprise*, Quorum Press, 1999.

Abstract: *People reason using all sorts of abstractions and abstraction techniques. Both the manners and types of abstractions employed are continually evolving. A key domain for societal abstractions, their exercise and development, is popular film. We explore some of these abstractions, particularly their geometric structures. The focus is on self-referential or introspective geometric cosmologies. When a geometric feature has two expressions, referents, metaphors or the like, we call that symmetric feature “folding.” This study has ramifications in many disciplines struggling with limits of models, especially those that require assistance through or hosting on computers.*

1 MOVIES

The current era is often called the “computer age,” presumably because they are so prevalent. But digging into how we use computers, one is struck by how strong is the resistance to its computerness. The revolution is not so much that we do many new things, but that we do so many of the old things. For instance, write messages and documents using conventions, even a keyboard which are accidents that predate computers. We create and exchange media and – except for a few relatively minor cases – strongly cleave to media types: music, video and image, that exist outside the world of the machine.

As well, we use physical metaphors for our actions in the machine. “Files” exist, and they can be “on” a desktop or “in” a folder, or “dragged” or “trashed.” I’ve been a student of the abstractions we use in dealing with computers, and those we use in wrestling with complex problems, often as societies. We would expect that one would have something to do with the other, and at the very least that over time, our ability to have supplemented reasoning could be applied to the problems that vex us so. Alas, after 30 years, I must conclude that this gap is as wide as ever, but more in need of closing than ever.

However, there is an area where the way we abstract is extremely nuanced, and precise and complex. In this same domain, we employ societal abstraction. And though the types and manners of abstraction are extremely complex, they continue to evolve and explore new perspectives. I’m talking about movies.

This paper provides an overview of a research agenda to: discover key elements of the naturally occurring abstraction techniques in film (mostly subliminal), model them in some way for study and use, and apply them in overt exploitation in computationally-enhanced, visually-driven computer tools that deal with extremely complex, subtle or dynamic problems.

1.1 Film Supports Our Collective Cosmology

The motivation behind the project is simple. Most of the interesting problems in life, including those in science, seem to elude solution not because of intrinsic difficulty but because we lack the abstractions to deal with them. The interesting work in cutting edge mathematics and theoretical science is a matter of developing new abstractions or extending existing ones in unusual ways. Yet progress by these methods has hit an alarming limit as tracked by most measures.

That’s the “engineered” way to approach the problem of abstractions. Alternatively, there is a self-organizing evolutionary system of abstractions that is sustained by the collective imagination. Much of this is vulgar, to be sure. But a substantial portion of this system is remarkably sophisticated. We suggest that among this huge, dynamic evolutionary system are leveragable abstractions that can be applied to the “grand challenges” faced in diverse disciplines.

Some decades ago, the collective blackboards would be in the written word and discussions related to religious cosmologies. Both of those have been eclipsed by film. All significant religious discussions are now held in cinematic terms, images derived from the Bible having replaced its text.

Our study concerns the abstraction of introspection, which exhibits as the key barrier to many of the grand challenge problems.

1.2 Examples

One method employed in the study is the anticipatory discovery of introspective "folded" abstractions in films. That means we literally watch movies with an eye towards modelling the abstractions therein with some level of formality. Some folding is simply a movie with a movie inside; or some surrogate of a movie: a book, sports event, painting, photography, dance competition. Some folding is incorrectly called "irony;" that's where the stance of the film is related in an overlain way to the subject. Some such folding is unintentional, like when a story is about the value of being unique, but the film itself is strictly formulaic.

Ted's law of folding is that when there is an embedded "play," the "distance" between the reality of the viewer and the reality of the film is exactly the same as the distance between the reality of the movie and the movie within. We have many examples of this. For example, the movie within "State and Main" is placed exactly as far away from the story as the story is from where it assumes we the viewers are.

We have hundreds of examples. Here are three of the more interesting.

"Nurse Betty" is a story about Renee Zellweger, an actress, playing a character who thinks she is a character of a "play within." Because of some trauma, she tries to get back. But in order to do so, she has to pretend to be an actress pretending to be the nurse in question. The entire amusement (mirrored by the viewer's surrogate Morgan Freeman) is in the interplay of the folds

"Moulin Rouge" is edited in a way that is hectic. That's apt as it is a movie about a tour of a city focused on the writing of a book about an absinthe vision in which play occurs. And the play is about the whole thing.

"Adaptation" is something in between: a movie about a book about a magazine article with another set of folds on top: several levels of invented narration (based on the similar levels of "Citizen Kane" made more explicit).

2 THE RESEARCH AGENDA

We plan a comprehensive survey of films. We have already reviewed about 2000 and posted comments to a popular web site. A database has been created mapping many of

these to the various the folding types. A history of folding abstraction in film is incidentally being created with the aid of folks in the industry.

A formal model and reflexive, introspective ontology is being created using standard methods for immediate utility in several applicable projects by others. A specific project is our interdisciplinary international project on "semantic distance."

The vocabulary employed assumes symmetry primitives as the most basic, leverageable tokens for a knowledge representation system. Group theory is a basic underlying mechanism.

We are coding the abstraction mechanisms using a specialized programming language as "functional agents" to make them available as a web service.

Several user interface metaphors are being explored. One leverages the geometric cosmology usually associated with Kaballah but appropriated by many "new age" cosmologies. This is of interest because of its apparent ubiquity, both in the popular mind and in many of the folded predecessors in literature ("Alice in Wonderland," "Finnegans Wake") and song (the Beatles' "White Album," Brian Wilson's "Smile").

Another user interface exploits three dimensional visualization and uses the substrate of what Gaudi planned for his small, unfinished chapel outside Barcelona. The visualization "finishes" the structure using the strings of his model as concept relationships and domes as concept densities.

And yet another user interface, probably the most common one, will use outlining and hypertext conventions in desktop computer applications. We have initiated a column on such display technologies at <http://www.atpm.com/Back/atpo.shtml>.

At the moment, this project is a private initiative, with unsponsored partners. Sponsorship is being sought, together with new partners.