

## Interactivity Part 2

### Robert Edgar

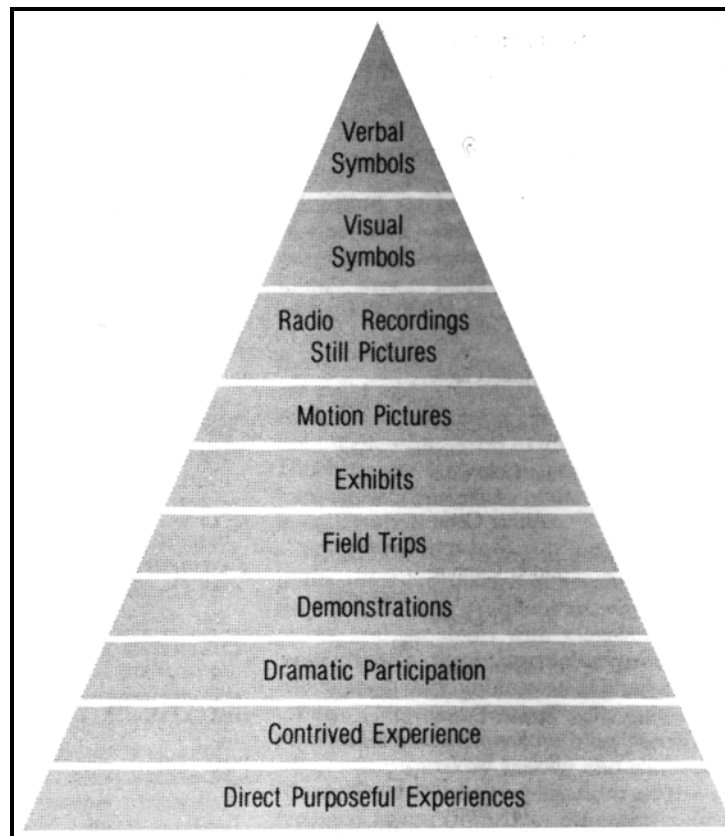
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In my last article, I noted that the word “interactive” is so misused as to be worthless for describing artworks. Many new-tech works claim to be interactive in order to rhetorically better their acceptance as high-tech art. As long as we don’t have tools for measuring the interactivity of an artwork, we are susceptible to such hype. This column is an attempt to provide a few tools that will allow us to better understand interactivity, and so demystify its role in an artwork

### Edgar Dale’s Media Pyramid

Some of the most intelligent writing on media is dated and limited by references to them as if they had standard configurations or formats. Much written about television, film, computing, painting etc. Assumes characteristic attributes, or essential qualities, that function as bases for categorization comparison, evaluation and generalization.

For example, in the 1950s, Audio Visual Methods, an admirable book by Edgar Dale offered a model for relating a variety of media to each other. His media pyramid arranged media by levels of abstraction, from “direct, purposeful experience” to “verbal symbols.” One aspect of this hierarchy is interactivity, with the most comprehensively interactive media beginning at the bottom, and the least interactive being at the top.



As useful as this pyramid is for suggesting a hierarchy of interactivity among media, it can't serve as a useful tool for examining a contemporary artwork's interactivity because:

- 1) Many contemporary media aren't included in the pyramid, although we could make an attempt to insert them in appropriate places.
- 2) An art work may mix media.<sup>1</sup> This means that its placement is problematic due to a need for multiple representation on the pyramid.
- 3) Media today change very quickly, and at a given time display a wide range of configurations. Television ranges from live black and white to recorded color, to VCRs, to 80-channel receivers that encourage aggressive channel flipping, to multi-image sets that assume active perceptual switching between simultaneously presented images and narratives. No simple example is definitive, and different examples would belong in different places.
- 4) Most importantly: this, like most media categorizations, cannot accommodate hardware that is configured through software. There is no answer to the question "How interactive is a computer?" It depends on the program. Computers are not a medium, they are unfinished, open-ended systems, awaiting 50% of their structure. In fact, no medium can be so categorized, because media have no essential qualities. There is no essence to video, or film, or painting, or computing. Any discourse based on the assumption of such an essence signifies zip.

### **Videodisc Interactivity Categories**

A more recent attempt to create a hierarchy for interactive media resulted from the categorization of differing videodisc configurations:

**Level of interactivity:** the potential for interaction prescribed by the capabilities of videodisc hardware

**Level one:** usually a consumer model videodisc player with still/freeze frame, picture stop, frame address-ability, and dual-channel audio, but with limited memory and less processing power.

**Level two:** an industrial-model videodisc player with the capabilities of level one, plus on-board programmable memory and improved access times.

**Level three:** level-one or level-two players interfaced to an external computer.

**Level four:** a theoretical configuration with more advanced equipment wherein all things are possible. 2.

This is a step in the right direction, because it gives specific information about each configuration, so that someone could easily recognize where a given system would fit. However, it registers the complexity of the hardware instead of the nature of the interaction with an individual. This is useful, but doesn't go far enough for our purposes.

## The Interactive Checklist

Below is a checklist for examining the interactive nature of a medium. Of course, it is itself the result of an examination of interactivity. It is not by any means complete, and is offered only to begin the development of a new-tech vocabulary with which to examine new-tech artwork. Below the checklist is an explanation of the categories.

### Edgar's Interactivity Checklist

**Edgar's Interactivity Checklist**

**Adaptation**

- Measure and adaptation to knowledge level
- Measure and adaptation to psychomotor skill level
- Testing and adaptation to language traits

**Communication**


- Resolution of media
- Resolution of content
- Range of channels
- Source of content
- Context sensitivity

**Development**

- Branching
- Tracking
- Self-modifying code
- Nature of interactive interface

**Output**

- Range of output channels or media
- Modification of non-theatrical environment
- Report(s) on interaction

 Clip and Save

### The Elements of Interactivity

Four headings to help handle the elements of interactivity. These are:

- ( ) Adaptation
- ( ) Communication
- ( ) Development
- ( ) Output

**Adaptation:** the extent to which a system adjusts itself to the individual's traits.

**Communication:** The range of information and sensory channels the system uses during interactive operation.

**Development:** Mechanisms built into the system which allow auto-modification of its structure, content and /or operation.

**Output:** Any final product form the system that is not used to further modify the system, or the system / user interface.

Each heading introduces a list of items that may be used to examine the interactive nature of the artwork. Each item is a focus for questions concerning the scope of the interactive implementation. Although I refer to this as a checklist, the items do not stand for

attributes simply present or not present, they rather indicate ranges that may be implemented at some level.

## **Adaptation**

Measure and adaptation to knowledge level

To what extent does the artwork test the preliminary knowledge base of the individual? Once measured, to what extent does the artwork shape its interface as a result of such a test?

Measure and adaptation to psychomotor skill level

If psychomotor skills are involved (such as with most video games), does the artwork test for them and adapt, or otherwise accommodate and change according to the individual's skills?

Testing and adaptation to the individual's language particulars such as vocabulary, dialect, and accent.

To what extent does the artwork determine the individual's language set, and adapt to it through verbal stylization?

## **Communication**

Resolution of media

How much sensory information does the artwork supply and/or react to? What is the speed of that delivery and/or sampling?

Resolution of content

How incomplete or scrambled is the content provided to the viewer? This refers to conceptual, rather than perceptual, communication.

Range of channels

How many sensory channels does the artwork use for communication?

Source of content

Is the content supplied by the artwork, or by the individual?

Context sensitivity

Does the artwork interpret extra-verbal or verbal elements as meta-communication about a denoted subject?

## **Development**

Branching

Does the artwork offer a variety of presentations, only some of which are delivered to a given individual?

Tracking

Does the artwork keep a historical record of its interactions with an individual?

Is such a record offered to the individual?

### Self-modifying code

( ) In the case of software-based artwork, can the software modify or extend itself as a result of its interaction with an individual? A model for such self-modification can be found in expert systems.

### Nature of interactive interface

( ) Is interactive behavior limited to the individual's making choices from a list, or are there other mechanisms used, such as analog hardware or software-based control structures?

## **Output**

### Range of channels or media

( ) What media and sensory channels does the artwork use to provide a final communication to an individual?

### Modification of non-theatrical environment

( ) Does the artwork modify the real-world environment in any way that can affect the life of the individual?

### Report(s) on interaction

( ) If the artwork does track the interaction with the individual, does it make this record available to the individual?

## **Conclusion**

Some of these items may seem a bit strange. Perhaps it doesn't seem like I'm wring about art. That's ok in a few years it will look like aesthetics.

1. Dale, Edgar: Audio-Visual Methods
2. Daynes, Red: "The Videodisc Interfacing Primer," BYTE June 1982, p.59

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