

Lecture 4: Alberti's improbable image-making technologies.

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Review:

The ability to accurately transmit verbal information in time in space marks the beginning of history. The ability to accurately transmit visual information in time and space marks the beginning of the modern era. The transmission of this information may be described as being either analog[1] or digital[2].

The written alphabet can be seen as a code or algorithm that insures the accurate reproduction of verbal information. It is digital in that information is represented as a sequence of discrete symbols from a finite set, and each copy made is essentially exactly like the original. The alphabet is a replacement for a less efficient analog system of transmitting verbal information: the spoken word.

The oral system is an analog method for transmitting verbal information in that some part of the world, like an event, is “recorded” in an individual’s memory which is more mobile in time and space than the event. These two, the event and the record of it, occupy the same level of abstraction: they are both in the world and can altered by the world. They are both analogs of each other. In this system, each copy made will degrade the original data.

It is perhaps this instance, this shift from oral to written systems that marks the beginning of history, that is the basis of the prevalent assumption that digital forms of transmission are the inevitable evolution of the less efficient analog forms of transmission. A close examination of the details of a more recent shift that into the transmission of visual information, reveals a more complex relationship.

Before mechanical methods of reproduction were developed, images were regarded as an unreliable method of storing and transmitting technical and scientific knowledge. This was due largely to the inherent unpredictability of analog methods of reproduction of the time. In effect, this positioned rhetoric as the preferred means of transmission, while images were to be resorted to only by those without the ability to describe their topic verbally. Still, the need for accurately reproducing images did exist before a technology successfully fulfilled it (the analog printing press), and in the meantime many unsuccessful technologies were floating about: both analog and digital. The inventions of Leon Battista Alberti make a good example.

Alberti’s devices:

In his treatise on sculpture, Alberti doesn’t talk about sculpture so much as he describes a machine for making sculpture. Specifically, he describes a machine for making a precise

copy of the human body, consisting of a large disk and plumb-bob with which points on a live subject can be surveyed. Like Ptolemy's point map of the world, the resulting "map" is simply a set of coordinates that can then be used to reproduce an image of the original object at another time, place, and scale. Clearly, this meets the standard for a digital process (see footnote).

Alberti's first treatise on painting canonizes central (perspective) projection. The techniques described here seem to me to be less of a recording and transmission device, and more of an artistic technique. Still, taken in the context of the later development of parallel projection and the implied position of the viewer to the space of the drawing and the idea of the infinite, it is worth a look.

Alberti's second chapter in his treatise on painting describes devices for representing non-geometric objects, such as landscapes and the human body. The primary method, which has recently been referred to as "Alberti's Window", was to position a frame with a translucent paper inset between the oneself and the subject and simply trace the object through this veil. It has been suggested that, because a grid could be applied to the resulting image and thereby reproduced square by square as "pixels", that this may constitute a digital form of reproduction. However, in that this method does not record and transmit in numbers but in the subjective lines and gestures of the user this is an obviously analog process. When seen in the context of Alberti's sometimes unwieldy image-making devices, however, it is easy to see why this technique has been characterized as "digital-ready". Digitalization might in fact be seen as a logical development of it.

[1] Analog is defined as relating to, or being a device in which data is represented by continuously variable, measurable, physical quantities, such as length, width, voltage, or pressure. In an analog system, some physical quality of some part of the world, like an amount of light, is "recorded" in some other physical quality in a smaller, more mobile part of the world, like a photo-resistor. These two are at an equal level of abstraction, they are both a measurable part of the world, they are analogs of one another. In an analog system, copies cannot be made without degradation of the original data.

[2] Digital is defined as relating to a device that can read, write, or store information that is represented in numerical form; or as a description of data which is stored or transmitted as a sequence of discrete symbols from a finite set, most commonly this means binary data represented using electronic or electromagnetic signals. In a digital system, every copy of the original data is exact, in fact the term "original" hardly applies.