

TIME AND MOTION

Concepts of Time in Film		Application of Concepts of Time in Film	Application of Concepts of Time in Virtual Reality	Application of Concepts of Time in Interior Design
Time Revealing Experience	Objective Time	Time as measured by observable change. The moon rotating around the earth, the earth rotating around the sun. Time as measured by a clock.	A computer works on one level because of the internal "clock" that regulates the speed of the processor. Computers are excellent time keepers. Time can be accurately measured in virtual reality.	Events of observable change can be measured in interior environments. It is possible to measure the time of someone walking across a room or how long it takes to open a cabinet door.
	Subjective Time	"Felt time" regardless of the clock. How events seem to feel fast or slow. Perceived time.	People often express that they are unaware of how much time passes when using a computer.	Subjective time exists in physical environments.
	Event Intensity	How time may feel accelerated in a chase scene or slowed down in a tragic scene. Our emotions and experiences affect the way we perceive time.	Event intensity would seem to hold true in VR environments.	It is often the objective of an interior designer to slow perceived time in a casino or retail store.
	Event Density	When moving quickly through space, the density of the space increases; when moving slowly through space, the the density decreases.	Event density would seem to hold true in VR environments.	Event density would seem to hold true in physical environments.
Time Revealing Motion	Principal Motions Primary	Primary -- Moving Objects	Objects can be perceived as moving in VR.	Objects move in interior environments.
	Secondary	Secondary -- Movement induced by the camera	The person may be understood as the camera in VR.	People as "cameras" move in interiors.
	Tertiary	Tertiary -- A sequence of camera shots.	Camera positions can jump with hyperlinks in VR that are similar to a sequence of camera shots.	You cannot experience interiors as a sequence of camera shots. Time is continuous.
	Reference	Objects can be understood based on how they move in relation to other objects. A person walking in front of a house is understood in scale and movement because the house is a reference.	The unique nature of VR existing without a context makes one hyper aware of the need of a reference. Reference can be explored as a design issue in VR.	References, datum, context, and other objects that "ground" us in the environment are part of interiors. The motion, in relation to these elements, seems relatively unexplored in interiors. People understand the context beyond the frame of the camera. The film maker chooses what we seen in the frame in a movie.
	Speed	Moving objects seem to increase and decrease in perceived speed based on the space and camera lenses. Objects at a distance in a wide open space seem to move slow. While slow moving objects in a narrow space may appear to move fast.	The same concept of speed in film would seem to exist in VR.	The same concept of speed in film would seem to exist in interior environments.
Time Revealing Change	Transition	The mode of change between one camera shot and a second is a transition. Transitions are designed elements in film. Transition can also be thought of as the process of changing the location of the camera. Panning the camera from left to right could transition between subject matter.	Transitions do not exist in VR hyperlinks but they could conceivably exist. It may be more useful to think of transitions as the process of revealing new subject matter when moving in space. Transitions are less predictable than in film; users control the direction of the camera or viewpoint.	Switching between camera shots does not exist in interiors, but designers do talk of transitions. How does the design transition from one room to another? The transition from one space to another is a function of time. (Can VR assist in understanding transitions?) Transitions are less predictable than in film; users control the direction of the camera or viewpoint.
	Differences	By sequencing events, the film can expose differences in idea, emotion, space and form. These sequences can be created by sequencing shots or moving the camera.	Differences can be exposed both through hyperlinks and in the changing movement of the viewer.	Differences as expressed in shot changes cannot be expressed in interior environments, but differences can be exposed by the change in movement through space.
Time Revealing Space and Form	Sequences	Film can reveal ideas of architectural space and form through the movement of the camera. The sequencing of events in a film are uncontrolled by the viewer. The filmmaker determines how we understand the space and form by how they choose, or not choose, to shoot and edit film.	Virtual reality can be created to Sshow a predetermined "animated" film-like sequence or the user can freely determine the sequence of movement in space. The free movement would be more like the actual experience in an interior environment.	Sequencing of events is determined toS a great extent by the user of the space. The designer can influence the sequence by the design of the space, but the user makes the decisions on where to go and what to view.