

Real-World Camera-Based VR

notes on surveying the territory

news, live events
virtual travel, tours, rides
documentary, ethno/anthro, heritage
nature footage
ambience

Michael Naimark

Real-World = actual places, possibly unstaged, nonfiction, dealing with real places and often real people

Camera-Based = "cinematic", possibly live, not requiring 3D models, though possibly hybrid solutions

4 different modes / 4 different opportunities

1) Being

Sitting on a park bench, standing in Tahrir Square, looking out over Yosemite, in Sistine Chapel

Like history of Cycloramas

Like webcams (remember them? what happened?)

Cameras can be temporary or permanent

Realtime motion and sound are important

360 degrees (or near 360) is desirable

Importance of registered position (time artifacts as feature)

Importance of engaging local help ("giving back" a/o not getting shot at)

Emotional factors of camera height, "eyeline"

MN Examples

[Be Now Here](#) (1995-7)

[VR Webcams: Time Artifacts as Positive Features](#) (ISEA 2002)

[Here Forever Cam proposal](#) (2007)

[Be Now Here Triptych](#) (2008)

[Displacements](#) (a stretch but wanted to squeeze in) (1984/2005)

2) Moving

City streets, hiking trails, river journeys, city tours, balloon rides, thrill rides

Like Street View and earlier "surrogate travel" / "virtual travel" examples

Constraints may be a feature (most tours are "guided")

"1.1D" interaction

Browsability versus realtime motion and sound

Unclear if 360 degrees is always needed

Importance of distance coding (on a per-recorded-frame basis)

Importance of image stabilization ("wheels and backpacks, sensors and skill")

Importance of "honest" user-interface

MN Examples

[Aspen from the street](#) (1978-80)

[Paris from the sidewalk](#) (1985)

[San Francisco from the air](#) (1987)

[Karlsruhe from the rail](#) (1990)

[Banff from the trail](#) (1994)

3) First-Person Perspective

"Virtual eyeballs," "Rent a guide", teleconferencing, drones

Like "First-Person POV" cinema (albeit rare)

Importance and inevitability of wearable ortho-stereo cameras

Dealing with 180 degree maximum / who controls where-to-look?

Pro and DIY opportunities

Magic of eye contact

Designs for cameras on-axis with eyes

The camera drone question

Easily live

MN Example

[May Day on Wall Street](#) (2012)

4) Integrating Images into 3D Models

Global "bounce-arounds", using Earth models for transitions, as "glue"

Magic of spatial contiguousness

Magic of registration (like perfectly shot [rephotography](#))

Not about using images to make 3D models

["Respecting the integrity of the image"](#) (2011)

MN Example

[USC Viewfinder project](#) (2008)

+++++

See also:

"IMU"* VR Camera (First-Person VR Design Sketches)

*Credit for the name goes to Siri: I spoke "IMU VR camera" and it/she wrote "I am you VR camera."

"Stereo Pano Cin  " (slideshow), presented Feb 2015, coming soon.

"VR Cinematography" (slideshow). Excerpt of keynote for the [First International Symposium on Immersive Creativity](#), Montreal, May 2014.

"Place Representation and the 'One Earth' Model". MIT Media Lab presentation, May 2011.

and

MN [Bio.](#)