Technology vs. Art in Today’s Cinema VR

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powering SILICON VALLEY
We are suddenly in an era where technology is driving the art of the Cinema.

Is this a good idea?
Can the future of Cinema Boxoffice success be built solely on technological innovations?
In the past, Film success was driven by the need to tell a compelling story with visual images.

But now?
The importance of story to film success

- I know that we can't directly influence whether a film has a good storyline or compelling acting, but we should focus on these goals.

- Despite the existence of more and more film schools, the actual directorial polish of many of today’s films is declining because most film schools teach a mostly film criticism and critical studies curriculum. They mostly do not teach film producing and directing skills.

- The result is more scholarly dissertations on the films of Alfred Hitchcock and yet another *Citizen Kane* analysis.

- With the recent increase of TV reality shows, we are losing our internship training ground for writers. TV is where our earlier screenwriters learned their craft.
We are facing major challenges in TV writing & this affects films too

- The shortage of experienced TV writers is the reason that current TV shows have such extreme plots. And they contain more melodramatic twists in their fast paced action-packed plots.

- This spills over to the cinema. As movies hire ex-TV writers in their search for new story material and new writers.
Myths about young audience attention span:

- Conditioned by the internet, and TV plot pacing, today's young people are more worried about the pace, then the story (plot) of a movie.

- If asked, they will tell you that fast paced equals exciting and slow pace equals boring in films.

- And they decide which film to see by its trailers.

- Today's Internet movie reviews (and film Wikipedia articles) give plot details right down to the smallest sub-plot. My students know the film’s story before they see it.

- But if you give them a film with a great plot, they don't mind it being long.

- I have shown my students *Lawrence of Arabia* (3h 48 min) and *Dr Zhivago* (3h 20 min), and they like them both, and stayed interested until the end.
Each time audience interest wanes, studios examine cinema imaging technical innovations.

- Technology used to be driven by a director and a cinematographer’s desire to broaden their artistic story-telling options.

- Now the idea is that technological breakthroughs will “transform” the film industry and then lead to huge profits for the inventing company.
Let’s examine the current drive to Virtual Reality.
or VR…
Forbes says about VR: “While 2016 was the year that many of those sky-high expectations crashed and burned, 2017 saw things beginning to turn around.”

And, Forbes is referring only to gaming applications not films...

What next?
- 300+ Start-ups exist, 90% have failed.
- Billions are already invested.
- Consumer units are finally selling, but only at deep discounts.
For Gaming, OK … But For The Cinema?

Apparently that is the plan…

AMC Entertainment has invested $10 million into Los Angeles-based location-based virtual reality (VR) startup called Dreamscape Immersive.
So how will AMC and other location-based VR work for filmmaking?

Like “The Void” and other location-based VR startups, Dreamscape is also betting on completely untethered VR experiences.

This means that participants will be wearing VR headsets powered by a computer carried around in a custom backpack, which allows them to walk through a stage and allows them to interact with other players in a virtual world.
Spielberg’s New VR Film: *Ready Player One* – in 2045

Promoted as: 
“Virtual reality is everyone's savior”

This film script started as
a Competitive Video Game

“Slaying your boss was a popular element of the game” — The Guardian reviewer
Storytelling in the First Person and Virtual Reality
First person narratives don’t work well in cinema, but they must be in VR...

- In current VR scenarios, you are a solo person engaging many new characters — or shooting them.

- In narrative films, you are not a character in the action, you are a neutral observer. You are well... YOU.

- You know yourself well so you are no mystery, other people are the mystery for you to unravel. Who wants to fall in love with themselves?

- This is the difference between a First Person Shooter game and a great film. In the film you come to know characters well, but you never know the history (back-story) of the the victims that you shoot in a game.

- Film Director’s know that even in a conventional film plot, the more you know about characters in a film, the more empathy you have for their emotional distress and/or their joys.
You can study a dramatic environment in Walk-Around VR such as the new *Carne y Arena — VR*.

A VR experience can contain other characters, but it is still a solitary experience and it requires a lot of space for very few audience members.
There is something eerie about your role in the *Carne y Arena* Walk-Around VR. As you walk, stand or sit, the world visually behaves the way you expect it to. But as soon as you try to touch something or someone, your invisible hand goes right through them, like a ghost.

A Walk-Around VR experience must be complex. Like a game, you must have choices and those choices must be interesting. You must be able to choose where to go and who to interact with. If that character is an actor, all desired options must be possible.

VR requires choices because you know yourself, so the uncertainty of what's behind the door is the only drama (surprise).
VR is a *solitary* experience — and not really a dating experience. Kind of like a game of Laser Tag with actors.

You wouldn’t want to read a novel in a group aloud with a book club, but you might want to discuss it with the group after reading it alone.

Audiences aren't pulled in by a better illusion, they are pulled in by a good-enough illusion and a better story.

What is good-enough changes with time. The illusion is never the key factor, it is a tool to tell the story. If it is not sufficient, then it becomes the story.
Emotional stress & empathy
Is it the same as being “carried away” by a good film?
Studies say “No!”
Emotional stress — is VR the same as being “carried away” by a good film?

- Researchers from the University of Bonn studied brain activity in heavy users of first person shooting games, who were shown both real and gaming depictions of violence.

- When the subjects regarded the real negative pictures, there was greatly increased activity in their amygdalas. (This region of the brain is strongly involved in processing negative emotions.)

- But the left medial frontal lobes were clearly less activated in the experienced users of violent games (Gamers) than in the control subjects. (This is the brain structure humans use to control their fear or aggression.)

- “First-person shooter users do not respond as strongly to real, negative image material because they are used to it from their daily computer activities,” Dr. Montag (who led the study) concluded. “One might also say that they are more desensitized [to violence] than the control group.”

Dr. Christian Montag
Differentielle und Biologische Psychologie, Institute of Psychology,
University of Bonn
“Uncanny Valley syndrome” and Virtual Reality
So what is Uncanny Valley Syndrome?

Uncanny Valley is the relationship between a humanoids resemblance to a real human being, and our emotional response to this object. Humanoid objects which appear almost, but not exactly like real human beings elicit uncanny, or strangely familiar, feelings of eeriness and revulsion in observers. The “Valley” denotes a dip in the human observer's affinity for the replica, a relationship that would otherwise increase with the replica's human likeness.
Uncanny Valley Syndrome and cinema VR...

This can account for the film audience’s favorable reaction to some film characters and negative reaction to others. It is often hard for filmmakers to tell which super-real character will seem creepy to the audience...
So how does Uncanny Valley Syndrome* relate to VR filmmaking?

For a virtual person to be believable they must be real, but too real and they become “creepy”. Audiences don’t relate to creepy characters…

* This concept was identified by the robotics professor Masahiro Mori as Bukimi no Tani Genshō (不気味の谷現象) in 1970
Since VR requires a convincing simulation of reality, a negative audience reaction to virtual film characters can effect empathy and emotional engagement with them.

This response was obviously true for many people with the film, *The Polar Express*.

Uncanny valley is an issue because our ability to accurately model actors and sets is so poor, and the resolution and data bandwidth is so limited, in VR at the present.
A quick refresher of the other issues with using VR in the cinema
People make movies, and their skills communicate the emotionally moving stories that keep audiences going to the cinema.

To do this they must be behind the camera.

They can’t be when the VR camera sees 360 degrees in all directions.
And then there is editing. Editing is where a film’s story really takes shape.

The great films of history were well-paced and moving because of their carefully-crafted images that were combined by skilled editing.
Cutting within scenes is needed to tell an engrossing story on film.

When the audience is watching a VR environment, editing is impossible! Switching between virtual image sequences is very disorienting to the audience, even to the point of causing nausea.
And then there is the issue of Nausea and VR Sickness...

- In 1995, Nintendo released the “VR Gameboy” which was withdrawn due to complaints of customer nausea and hand-eye coordination issues.

- A recent study by Dr Michael Korpi of Baylor University called: How Far to “Perfect”? concluded that we are at least 10 to 15 years from visually correct (unflawed) VR, and listed the many psychophysical issues of imperfect VR.

- NASA and the USAF has also extensively studied “VR Sickness” cases in pilots after extended pilot training on VR Simulators.
So after hearing so much about VR, why are we now hearing mainly about AR?
Because Apple likes it…
And because early demonstrations of VR were underwhelming!
Augmented Reality - Why?

Being unable to do VR in sufficient resolution to impress (and eliminate artifacts and nausea), AR allows low rez virtual images to be combined with high rez photographic images of “real” reality.
And because...

One floating image in virtual-space is less disorienting than a virtual environment that is geometrically and spatially incorrect.
And because it is closely related to Cinema CGI EFX which we have already fully mastered...

As an imaging composite art form, it is more forgiving of distortion then VR. And, it rarely enters the Uncanny Valley.
Lastly...

Contemporary VR images are disorienting because they have extreme curvature of field, and severe geometric distortion. What is even worse is that they are always created from “stitched together” separate images and that creates very distorted perimeter boundaries.
And remember the “stitching together” of even two images using multiple projectors for occasional event presentations have always been problematic.
If you take away one message from this talk, it should be this: A movie is NOT a rollercoaster ride!

Because a rollercoaster ride soon gets boring… And a great film is fascinating forever!
More on the impact of technology on cinema is contained in my new book: 

THE DEATH & REBIRTH OF CINEMA: 
MASTERING THE ART OF 
CINEMATOGRAPHY IN THE DIGITAL 
CINEMA AGE is available from good 
booksellers and from Amazon in Kindle 
and Paperback editions. 

It has been well reviewed with comments including: “Simply put, Harry Mathias has done it again. The Death & Rebirth of Cinema” solidifies Mathias’s standing as THE great translator of film-to-digital imaging technology.” 

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Thank You

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