

INTO THE VOIDS AND VANISHING POINTS: SPACESHIP EARTH AND SPACE AGE MEDIA THEORY

Barry Vacker

Associate Professor of Media Studies, Temple University,

1. SPACE AGE MEDIA THEORY: NEW KNOWLEDGE OF THE UNIVERSE

2012 marks fifty years since US President John F. Kennedy delivered his famous “moon speech” at Rice University in Houston, Texas. Delivered during the space race with the USSR, President Kennedy’s 1962 speech embraced a utopian vision for the new knowledge to be gained from space exploration:

We meet at a college noted for knowledge, in a city noted for progress, in a state noted for strength, and we stand in need of all three, for we meet in an hour of change and challenge, in a decade of hope and fear, in an age of both knowledge and ignorance. The greater our knowledge increases, the greater our ignorance unfolds ... the vast stretches of the unknown and the unanswered and the unfinished still far outstrip our collective comprehension. ... We set sail on this new sea because there is new knowledge to be gained, and new rights to be won, and they must be won and used for the progress of all people. ... The growth of our science and education will be enriched by new knowledge of our universe and environment, by new techniques of learning and mapping and observation, by new tools and computers for industry, medicine, the home as well as the school (Kennedy, 1962).

In 1969, Marshall McLuhan offered a similar utopian vision for the new knowledge to be gained from space exploration:

I feel that we’re standing on the threshold of a liberating and exhilarating world in which the human tribe can become truly one family and man’s consciousness can be freed from the shackles of mechanical culture and enabled to roam the cosmos. I have a deep and abiding belief in man’s potential to grow and learn, to plumb the depths of his own being and to learn the secret songs that orchestrate the universe (Norden, 1969).

Both Kennedy and McLuhan were channeling the once-utopian spirit of the space age and electronic media theory, the idea that the “new knowledge” learned from space exploration would be transmitted around the world by the media to benefit and transform human civilization and thus make “Spaceship Earth” a better place. For our purposes here, let’s use the term “space age media theory” for this optimistic belief in the power of cosmology and media technology.

Of course, Neil Armstrong and Buzz Aldrin made history in July 1969, by becoming the first humans to walk on the moon and humanity was united in celebration of the achievement, perhaps

the only time humanity has been largely united. Since then, public enthusiasm for space exploration has mostly disappeared, going from excitement (the space race) to ecstasy (the moonwalk) to entropy (the demise of NASA shuttle program). Why the entropy?

Despite the lack of public interest, the space age is still happening. Our mind has been liberated to “roam the cosmos,” for the space probes and space telescopes have extended human consciousness into deep space, permitting us to peer across space and time and map the cosmos with ever greater scale and accuracy. Since 1962, cosmology and astrophysics have experienced an explosion of knowledge, much of which has been summarized for citizens in the works of popular scientists such as Carl Sagan (1980), Stephen Hawking (1988), Brian Greene (1999), Brian Cox (2011), and many others. Many of the books of these scientists have been featured in documentaries on television networks, such as the BBC, PBS, and the Science Channel. That this new knowledge of the cosmos has been made widely available by the mass media fulfills some of the utopianism of space age media theory.

Here is a brief summary of the new knowledge made possible by satellites, space probes, and space telescopes, the cosmic media that look out into the universe. Humans inhabit an expanding universe of staggering scale, in both time and space – the visible universe is estimated to be 13.7 billion years old and stretches across tens of billions of light years. The visible universe contains at least 100 billion galaxies, each with hundreds of billions of stars. The universe is expanding in all directions, with the galaxies held together by unseen “dark matter,” while being thrust apart from each other by vast voids and “dark energy.” The Milky Way may have 100 billion *planets* and our solar system is hurtling through the cosmos at 791,000 kilometers per hour. Every atom on our planet and in our bodies was likely born in an exploding supernova, all of which means humans are self-aware stardust and a single species on Spaceship Earth zooming through the cosmos? Galileo’s telescope dislodged humans from the center of the universe, but the cosmic media technologies have shown much more – we are the center of nothing in relation to the vast voids and immense cosmos.

Given Kennedy’s and McLuhan’s passages about education being “enriched by new knowledge of our universe” and “man’s potential to grow and learn,” just what have humans done in response to this knowledge? As explained in the following three sections and Table 1, humans have responded to the new knowledge in three ways:

- **Cosmic Media:** in representing Spaceship Earth and the scale of the universe, cosmologists and filmmakers have repeatedly shown Earth disappearing into the vanishing point at the center of a vast universe;
- **Social Media:** electronic screens have reversed the vanishing point and allow us to pretend we are the center of everything when we are the center of nothing;
- **Cosmic Doublethink:** most humans have remained in denial of the new knowledge by holding two oppositional cosmic beliefs, one of which allows them to pretend they and their destiny are central to Spaceship Earth and the universe.

2. COSMIC MEDIA: INTO THE VANISHING POINT

In 1968, the same year as Apollo 8 and Earthrise, the artist-architect team of Charles and Ray Eames created one of the most elegantly profound short films ever made, *The Powers of Ten*. From a young couple enjoying a picnic in Chicago, the film zooms out by 24 orders of magnitude

to encompass the galaxies amidst the vast voids of the visible universe. The film then zooms back in to the picnic and then zooms in 16 orders to the vast subatomic voids inside a blood cell of the man. In 1996, Bayley Silleck directed *Cosmic Voyage*, an Imax update of the *Powers of Ten* that included the latest cosmological knowledge and improved special effects. Produced by the National Air and Space Museum, the film was nominated for an Academy Award for best short documentary. In 1997, Robert Zemeckis used the same cosmic zoom idea in the opening scene of the science-fiction film, *Contact*.

In 2009, Carter Emmart directed *The Known Universe*, a stunning and beautiful short film that depicts the visible universe, to scale, as mapped by the latest cosmic media technologies. The film used the data of the Digital Universe Atlas curated by astrophysicists at the American Museum of Natural History. Debuting in the exhibit *Visions of the Cosmos* at the Rubin Museum of Art in New York, *The Known Universe* might be the most philosophically challenging film ever produced.

None of these films attempts to explain what the imagery means for humans living on Spaceship Earth. In each film, our home planet disappears into the vanishing point and all cosmic or earthly meaning seems to be obliterated by the vast voids and scale of the universe. Of course, Spaceship Earth reappears as the films zoom back to our planet, but any cosmic and existential meanings still seem nonexistent or so far distant and abstract that they are inaccessible or incomprehensible. The lack of existential meaning expressed in these films should not be surprising because it seems no physicists or philosophers have been up to the task of theorizing what this “new knowledge” means for global society and the human species on Spaceship Earth, none of which exists at the center of the universe. Abrams and Primack have made a provocative first step, but strangely insist on situating humans at the center of everything in the universe, in terms of various midpoints in scale, space, observation, and time (Abrams & Primack, 2011).

3. SOCIAL MEDIA: REVERSING THE VANISHING POINT

There has been a long parallel between discoveries in cosmic media and innovations in social media, with the innovations in social media seeking to reverse the effect of cosmic media (Vacker & Gillespie, 2012). These parallels and reversals are illustrated in Table 2; on the left side of the table are key discoveries of cosmic media, which are countered by innovations in social media, which began with television and continue with computers, hypertext, and Facebook. In the 1920s, the discovery of the big bang by Edwin Hubble was countered by the electronic screens of John Logie Baird and Philo Farnsworth. Earthrise was countered by hypertext in 1968, the Hubble Space Telescope by the World Wide Web in 1990, and the Hubble Deep Fields by Facebook in 2004. The farther cosmic media peer into outer space, the more social media center us in cyberspace. These parallel patterns can be explained by reference to McLuhan’s theories of retrievals and reversals.

In *Understanding Media*, McLuhan explained that each media technology simultaneously extends our senses and retrieves something previously lost. At the same time, each technology contains the genetic code of its own reversal, the point when the technology is pushed to its limit – overextended or “overheated” – and users lose the enthusiasm for its original functions or benefits (1964, pp. 33-40). Radio and the mobile phone extend our voice and ears around the world, while retrieving town criers and oral traditions. Television extends our eyes and ears around the planet, while retrieving cave paintings and campfire tales. Telescopes extend our eyes

into the vast universe, while retrieving the tiny screens of television, computers, and mobile phones.

In *Through the Vanishing Point* (1969), McLuhan and Parker theorized the electronic media as effecting a reversal of the vanishing point in modern artistic representation. Filippo Brunelleschi's innovation of the vanishing point permitted artists to represent three spatial dimensions on a two-dimensional canvas, with the eye extending toward the distant vanishing point in space. In contrast, Baird's and Farnsworth's electronic screen eliminated (three-dimensional) space and time as constraints on visual representation, thus collapsing space-time via the instant retrieval of images and information. This collapse effects a reversal of the vanishing point, now passing through the circuits and screens, situated upon the trajectory into the eyes and human consciousness. Whereas light is *shining on* the pages of the book and on the canvases of paintings, light is *shining through* the electronic screens, thus making our eyes the screen and consciousness the new vanishing point. Rather than representing a world that extends toward a point on the distant horizon of the canvas, the retrieved images of the world implode toward us through the instant horizons of the screen. The light shining through makes the screen even more seductive, simultaneously suggesting a world beyond while making people feel they are the center of everything, as perfected in Twitter and Facebook.

4. COSMIC DOUBLETHINK

Given these intellectual and technological conditions, should we be surprised at what happened on Christmas Eve, 1968, while Apollo 8 orbited the moon and a global television audience tuned in via their electronic screens?

In a revolutionary moment for cosmology and technology, the Apollo 8 astronauts gazed upon Spaceship Earth floating in the cosmic void and then read from Genesis, supposedly to give meaning to the event for the almost one billion people viewing back on Spaceship Earth. Just think: in a single moment, the technology of television permitted humans to collectively gaze upon their actual existential place in the universe, and ponder its significance and what it means for human civilization and our shared destiny on Earth and in the cosmos. And this "new knowledge" was supposedly given meaning by referring to sacred texts and creation myths born of premodern, pre-scientific agrarian cultures, thus representing a betrayal of the utopian vision of space age media theory championed by Kennedy and McLuhan. If the Apollo 11 moonwalk was a "giant leap for mankind," then the Apollo 8 space talk was a giant leap backward for the human mind. How could the Genesis reading have not signaled a *reversal*, the cognitive and cultural reversals seen today in the global proliferation of creationism, fundamentalism, and anti-intellectualism? As with Facebook and social media, this reversal illustrates McLuhan's theory of technology-triggered retrievals and reversals (Vacker & Gillespie, 2012).

Despite what was present directly in front of the eyes of the Apollo 8 astronauts and on the television screens of the world, the Genesis reading represented a direct denial of the new knowledge and possible new meanings for human destiny on Spaceship Earth. The Apollo 8 telecast was the greatest moment of "cosmic doublethink" in human history. With the term "cosmic doublethink," I am referencing George Orwell's concept of doublethink and extending it to the realm of cosmology, as Orwell did in his masterpiece, *1984*.

The cognitive contradictions of the Apollo 8 astronauts and the television viewers are made possible by what Orwell termed “doublethink” – the method of “thinking” in which people accept and believe that two opposite and contradictory propositions are both true at the same time and in the same respect (1984, pp. 176-177). Orwell explained that the stability and survival of the state regime required that doublethink *must be extended to the cosmos* by placing humans, nations, and their destinies at the center of an imaginary universe. The following dialogue from 1984 includes O’Brien (the state torturer for the nation of Oceania) and Winston (the resistor being tortured):

O’Brien: ‘Before man there was nothing. After man, if he could come to an end, there would be nothing. Outside man there is nothing.’

Winston: ‘But the whole universe is outside us. Look at the stars! Some of them are a million light-years away. They are out of our reach forever.’

O’Brien: ‘What are the stars? They are bits of fire a few kilometers away. We could reach them if we wanted to. Or we could blot them out. The earth is the center of the universe. The sun and stars go round it. For certain purposes, of course, that is not true. When we navigate the ocean, or when we predict an eclipse, we often find it convenient to assume that the earth goes around the sun and that the stars are millions upon millions of kilometers away. But what of it. Do you suppose it is beyond us to produce a dual system of astronomy? The stars can be near or distant, according as we need them. Do you suppose our mathematicians are unequal to that? Have you forgotten doublethink?’ (p. 219).

As Orwell understood, cosmic doublethink allows people to pretend that their nation and destiny is central to the universe and a creator, when 100% of the evidence says otherwise.

5. CONCLUSION: ACCEPTING WE ARE NOT THE CENTER OF THE UNIVERSE

President Kennedy and Marshall McLuhan celebrated the “new knowledge” and the utopian possibilities of space age media theory for human civilization. The films with Spaceship Earth disappearing into the vanishing point are profoundly beautiful, yet cosmologists and artists have failed to explain what the new knowledge of the vast universe means for human civilization. In *The Grand Design*, Hawking claimed that “philosophy is dead” and that philosophers have failed to keep up with modern developments in physics (2010, p. 1). As best I can tell, the artists are failing this task, too.

Despite his space age optimism, McLuhan grasped the existential implications of the new knowledge, precisely as Apollo 11 was generating global euphoria. In *Through the Vanishing Point* (1969), McLuhan and Parker noted that Galileo’s telescope revealed a universe of “ghastly silence,” prompting them to quote Blaise Pascal: “The eternal silence of these infinite spaces terrifies me” (p. 29). They concluded that:

Man in outer space as yet has no means of imagining the nature of his own experience in space. Until artists have provided him with adequate forms to express what he feels in space, he will not know the meaning of the experience (p. 30).

To capture the sense of isolation amidst the cosmic voids, McLuhan and Parker cited the writer C.S. Lewis:

He explains that the model of space created by Medieval man gave one the feeling of *looking in*. In contrast, the modern man feels he is *looking out*: Like one looking out from the saloon entrance on to the dark or from the lighted porch upon the dark and lonely moors (p. 24, italics in original).

In our current era, we can see that cosmic media express the modern human *looking out*, into the vast voids, thus triggering the reversal of social media, expressing the new medieval human *looking in*.

The three responses entail voids and vanishing points precisely because this new knowledge yields a new and radically existential narrative for humanity, the meaning of life, and our cosmic destiny. As McLuhan, Parker, Pascal, and Lewis suggested, the truth of Spaceship Earth floating in the cosmic voids is simply an unbearable cosmology and narrative for most humans, even the Apollo 8 astronauts. In the year 2012, fifty years after Kennedy's moon speech, the new knowledge shows we have no reasonable or plausible excuse for believing we are the center of the universe, though we have developed ways to console ourselves for this cosmic condition. Unable or unwilling to accept our actual place in the universe, most humans have embraced technologies and theologies which fulfill the same existential function – they situate us at the center of everything though we are the center of nothing (Vacker & Gillespie, 2012).

Fulfilling the utopian hopes of space age media theory, there has been an explosion of new knowledge of the universe and it has been made available by the mass media. Yet, this new knowledge seems to have virtually no impact on life on Earth, as evidenced by the daily news of terror and torture, crime and corruption, bankruptcy and bailouts, oppression and exploitation, genocide and tribal warfare, and creationism and anti-evolutionism. How can any of this be considered sane?

Sure, the world is not a complete dystopia, as there are some marvelous things happening in art, science, ecology, and technology. But, given all the new knowledge of the universe, how can it be denied that much of the world is in the throes of a “dual system of astronomy” powered by cosmic doublethink? The Terror War features two theistic tribes with near identical cosmologies, both in a war with modernity and each other over the destiny of humanity on Spaceship Earth, a destiny they believe is ordained by their creator of the universe (Vacker, 2008). Since US political leaders routinely pronounce their allegiance to this dual system of astronomy, should we be surprised that America is home to an Orwellian regime that is apparently committed to torture, political assassinations, and total global surveillance? That this is happening to “protect our freedom” is sheer doublethink. To ignore the cultural implications of these cosmic issues is to remain in denial, to practice cosmic doublethink and embrace the “dual system of astronomy” that permits a society to shut down its minds, silence dissent, and attack the very notion of “reality.”

McLuhan wrote that since Sputnik enclosed our planet within a man-made environment, “Spaceship Earth has no passengers, only crew” (2003, p. 242). Because of these conditions, McLuhan noted that Spaceship Earth also had a “program problem,” specifically in reference to the ecology of the biosphere and the ecology of technology. This paper suggests we have another “program problem,” a problem expressed in President Kennedy's observation that “the vast stretches of the unknown and the unanswered and the unfinished still far outstrip our collective comprehension.”

Humanity faces the philosophical challenge of finding a sense of meaning, beauty, and destiny on Spaceship Earth and in the cosmos – in the universe revealed by our most powerful media technologies, in the universe of Hubble and Darwin, the expanding and evolutionary universe of immense scales across space and time. Either *The Known Universe* has meaning and relevance for living on Spaceship Earth, or it doesn't. If the film doesn't, then that means all human and cultural values are literally divorced from the nature of existence and our place in the cosmos. If so, then there are no empirical grounds for creating any kind of civilization or criticizing its reversal and abandonment.

If *The Known Universe* has meaning, then what is it? That's the challenging question. Perhaps we can begin to embrace the challenge of the vast unknown by first accepting that we do not exist at the center of the vast universe. As Ann Druyan poetically stated: "What is coming of age but realizing that you're not the center of the universe?" (Cheney, 2011) It's 2012, five decades since Kennedy's and McLuhan's space age media theory – so when are we going to embrace their challenge and use the new knowledge to develop a space age cosmology for living on Spaceship Earth?

Table 1
RESPONSES TO THE "NEW KNOWLEDGE" OF THE UNIVERSE

	COSMIC MEDIA	SOCIAL MEDIA	COSMIC DOUBLETHINK
Media Technology - Existential View	Cosmic See Table 2 Modern man "looking out"	Social Media See Table 2 Medieval man "looking in"	Sacred Texts
Media Image	Films <i>Powers of Ten</i> (1968) <i>Cosmic Voyage</i> (1996) <i>Contact</i> (1997) <i>The Known Universe</i> (2009)	Screens The various electronic screens	Texts, Films, Photos Genesis Earthrise All the films in column 1
The Voids	Cosmic Voids The universe of vast voids at the subatomic and intergalactic scales, across space and time.	Cosmic, Cognitive Voids Lack of meaning and not being the center of everything is unbearable.	Cosmic, Cognitive Voids Lack of meaning and not being the center of the universe is unbearable.
The Vanishing Points	Into Vanishing Point Spaceship Earth disappears into the center vanishing point of a vast universe.	Reverse Vanishing Point Electronic media reverse the vanishing point and people are centered in cyberspace.	Into Vanishing Point Reason and logic disappear into the vanishing point situated between two oppositional and irreconcilable views of the world.
Meaning for living on Spaceship Earth	Void None from science and philosophy; meaning seems obliterated as Earth disappears in the vastness of the universe.	Full Meanings are provided as humans pretend they are the center of everything.	Full Total meaning is provided as humans pretend they and their destinies are at the center of the universe.

Table 2
PARALLELS AND REVERSALS IN COSMOLOGY AND MEDIA TECHNOLOGY
 (Vacker & Gillespie, 2012)

	COSMIC MEDIA We Are Not the Center of the Universe We Are the Center of Nothing	SOCIAL MEDIA We Are the Center of the Universe We Are the Center of Everything
1925-1929	Expanding Universe <ul style="list-style-type: none"> • Edwin Hubble uses the Hooker telescope to discover galaxies outside the Milky Way; 1925. • the universe is much larger than previously imagined. • Hubble discovers the galaxies are moving away from the Milky Way; 1929. • the universe is expanding because of what is now known as the “big bang.” 	Electronic Screen <ul style="list-style-type: none"> • John Logie Baird transmits the first live moving images on a television screen: a human face; 1925-1926. • humans are the center of the electronic screen. • Philo Farnsworth transmits the first all electronic images: a straight line, a dollar bill, and a human face; 1927-1929. • humans are the center of the electronic screen, an expanding media universe of power and profit.
1968	Earthrise <ul style="list-style-type: none"> • Apollo 8 orbits the moon and captures the Earthrise image in December 1968. 	Hypertext <ul style="list-style-type: none"> • Douglas Engelbart introduces hypertext in December 1968. • no longer passive viewers, all humans are the central navigators of their place on the electronic screen.
1990	Hubble Space Telescope <ul style="list-style-type: none"> • NASA launches the telescope in April 1990. • the universe is soon to be revealed as much larger and older than expected. 	World Wide Web <ul style="list-style-type: none"> • Tim Berners-Lee introduces the World Wide Web in May 1990. • humans and hypertext placed at the center of the global information network represented on the screens.
2004	Hubble “Ultra Deep Field” <ul style="list-style-type: none"> • completed in January 2004. • thousands of galaxies are found in an “empty” spot in the night sky, revealing a universe of mind-boggling size and scale. 	Facebook <ul style="list-style-type: none"> • launched in February 2004. • humans are placed at the center of a global network, a social media universe created for them, starring them.

REFERENCES

- Abrams, N. E., & Primack, J. (2011). *The New Universe and the Human Future: How a Shared Cosmology Could Transform the World*. New Haven: Yale University Press.
- Cheney, I. (Director). (2011). *The City Dark* [Documentary film]. United States: Wicked Delicate Films.
- Cox, B., & Cohen, A. (2011). *Wonders of the Universe*. London: Harper Collins.
- Greene, B. (1999). *The Elegant Universe*. New York: Vintage.
- Hawking, S. (1988). *A Brief History of Time*. New York: Bantam.
- Hawking, S., & Mlodinow, L. (2011). *The Grand Design*. New York: Bantam.
- Kennedy, J. F. (1962). John F. Kennedy Moon Speech – Rice Stadium. *Johnson Space Center-NASA* website. Retrieved July 25, 2012, from <http://er.jsc.nasa.gov/seh/ricetalk.htm>
- McLuhan, M. (1964). *Understanding Media: The Extensions of Man*. New York: McGraw-Hill.
- McLuhan, M., & Parker, H. (1969). *Through the Vanishing Point*. New York: Harper Books.
- McLuhan, M. (2003). *Understanding Me: Lectures and Interviews*. Cambridge: MIT Press.
- Norden, E. (1969). The Playboy Interview: Marshall McLuhan. *Playboy*, March, 26-27, 45, 55-56, 61, 63.
- Orwell, G. (1984). *1984*. New York: Plume.
- Sagan, C. (1980). *Cosmos*. New York: Random House.
- Vacker, B. (2008). Lone Stars, Lost Amidst the Big Bang. In P. Granser (Photographer), *Signs* (pp. 4-11). Stuttgart: Hatje Cantz.
- Vacker, B., & Gillespie, G. (2012). Yearning to Be the Center of Everything, When We Are the Center of Nothing: The Parallels and Reversals in Chaco, Hubble, and Facebook. *Telematics and Informatics* (Special edition: The Facebook Phenomenon), accepted for forthcoming publication.