Spiral

2018

THE FUTURE IS FLUID

THE RUBIN

Maira Kalman draws on her past

David Eagleman on living in the moment

Buckle up: Time traveling with James Gleick

Is Westworld Buddhist?
Our shared survival. And though it may seem far-fetched, Alexandra Horowitz, director of the Dog Cognition Lab at Barnard, describes the uncanny way our canine friends tell time. Throughout it all, neuroscientist and author David Eagleman—the Museum’s first Future Fellow—guides us through ideas of time and the overlapping concepts of past, present, and future.

Can we create the future by harnessing the power of the present moment? How do the timeless ideas expressed in Himalayan art help us understand and better cope with our contemporary predicaments and future uncertainties?

A full year of programming at the Rubin Museum, coupled with Spiral, will enable us to explore these ideas together. Indeed, the future is in your hands.

Jorrit Britschgi
Executive Director
Rubin Museum of Art

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ALL SIGNS POINT TO THE FUTURE

QUESTIONS ABOUT the future cross eras and cultures, as we’re all curious—sometimes slightly overwhelmed—about what awaits us.

The Indian-born Buddhist master Padmasambhava, known to Tibetans as the Second Buddha, was believed to have lived in the eighth century. He had the ability to see all of time, and he foresaw moments when his teachings would need to be renewed and reintroduced. Projecting his teachings into the future, he left a cache of hidden teachings (terma) to be discovered and unlocked by future revealers (terton) with whom he had a karmic connection.

Not all of us can be Buddhist masters, so we rely on more mundane methods to peer into tomorrow. Written a thousand years after Padmasambhava secreted his knowledge, the White Beryl, a comprehensive Tibetan astrological treatise from the eighteenth century, was compiled to examine the future through divination. A copy of the White Beryl resides in the Rubin Museum’s collection, and its richly illustrated calculation charts on birth, marriage, obstacles, health, and death offer predictions while proffering ways to mitigate negative outcomes. It puts the future in your hands.

In this issue of Spiral, we’ll explore themes of the future and time from the perspectives of artists, neuroscientists, Buddhist practitioners, writers, and illustrators. We’ll look at analogue and virtual reality, try to understand why people in various circumstances may perceive time differently, and learn how Padmasambhava is surprisingly relevant to popular culture today. James Gleick takes us on an out-of-this-world journey through the history of time travel in film and literature, while French writer and Buddhist monk Matthieu Ricard writes passionately about advice he received in the past and how it relates to our shared survival. And though it may seem far-fetched, Alexandra Horowitz, director of the Dog Cognition Lab at Barnard, describes the uncanny way our canine friends tell time. Throughout it all, neuroscientist and author David Eagleman—the Museum’s first Future Fellow—guides us through ideas of time and the overlapping concepts of past, present, and future.

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Let us know what you think. Send your thoughts, comments, or questions about Spiral and the nature of time to conversation@rubinmuseum.org, and you’ll be entered to win a one-year membership to the Rubin Museum of Art.

The conversation continues: Post your favorite quotes from Spiral using the hashtag #TheFutureIsFluid.
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FIND ADDITIONAL CONTENT AND EXPERIENCE MORE AT RUBINMUSEUM.ORG/SPiral
As I was working on the exhibition The Second Buddha: Master of Time and thinking about how the past shapes our present and future, I was captivated by Westworld, the HBO television series. I was struck by how the ideas explored in Westworld resonate with big existential questions addressed in Buddhism, including the interconnected nature of the past, present, and future, a core concept of the Second Buddha. The exhibition focuses on the legendary Indian Buddhist master Padmasambhava, an important figure in Tibetan Buddhist culture. He is known as the Second Buddha, as he is thought to have introduced Buddhist teachings to Tibet in the eighth century.

Padmasambhava is also credited with concealing his teachings as treasures, called terma, in Tibetan, throughout the Himalayas in caves, within solid rock, under piles in temples, in statues, and even in the minds of his disciples. He intended for his reborn disciples to discover these treasure teachings in the future when they were most needed and the circumstances for their discovery were ripe. These teachings, like a source code, permeate the Himalayan landscape. They can be retrieved only by those who have access to the “source code” through a prior karmic connection with the source of the teachings—Padmasambhava—and the teachings themselves. The so-called treasure revealers then master these teachings and practices and share them with others.

I set out to conceptualize the rich but complicated narratives about Padmasambhava from traditional Tibetan Buddhist culture and present them to our twenty-first-century visitors. I wanted to make connections to the stories from the twelfth-century literature and the visual materials dating to the thirteenth through nineteenth centuries that relate to these un-familiar stories. With these thoughts in mind, I watched the narratives of Westworld unfold and saw that the notion of existence presented in the series is comparable to the Buddhist perspective on existence and reality. One important connecting point is the Buddhist belief that a human life is part of a much greater continuity of life that includes numerous past and future lives, not just the current one.

Westworld is set in a Wild West-themed high-tech fantasy world that perfectly approximates reality, where wealthy guests go up to engage their alternate personalities as players and interact with the android hosts who are part of this created world. (Warning to those who haven’t seen yet the show’s first season: spoilers lie ahead.) The main character, Dolores, is an android, though she believes she is human. Although this point is essential to the show’s plot, I became more interested in the fact that Dolores had a previous existence as a different version of herself, which she is trying to remember. Dolores struggles to remember her past, as she is programmed to experience her life in the past over and over again targeting each time the plot begins anew. This cycle is similar to living out your karma until this karma is exhausted and something new develops, or a new state of consciousness begins. In her monologue, Dolores often talks about a path that allows her to see everyone as a collection of teachings in sync with the Buddhist view of human existence.

Dolores’s journey serves as an allegory for a person searching for a former identity to understand who she is now and what she is meant to do. Moments of recollection, like flashes of memory—one might call them visions—aid her progress in remembering and learning who she is. The question of identity is her driving force, and only by remembering her past life can she understand herself and move forward.

Over the course of the show, Dolores, compelled by external and internal circumstances and guided by visions, Dolores searches for a maze. By discovering it, she learns who she once was. This story powerfully connects to the stories of Padmasambhava’s reborn disciples searching for his hidden treasure teachings. Like Dolores, the treasure revealers have visions; often these are glimpses of their previous lives as Padmasambhava’s disciples, and they learn they are meant to find terma, the hidden treasure teachings. External and internal circumstances shape their lives. They have to accept the imperative to search for terma and embark on journeys of self-discovery and terma revelation.

Dolores’s visions eventually bring her to a place she remembers, where she finds and unveils the maze. It turns out to be a simple child’s toy, a small handheld maze with a rolling pinball. When she holds it, the object unlocks her memory, and she remembers her previous existence and past experiences. In that moment, everything changes. Her revelation alters her present and ultimately the future of this world. The maze is the key that unlocks her mind, similar to a found terma that unlocks the past life experiences of a treasure revealer, who then makes the discovered teachings accessible to current and subsequent generations, affecting both the present and the future.

This structure for a quest—remembering the past to change the future—is a known plot device in science fiction literature and movies. For example, Pynchon’s 2003 film based on Philip K. Dick’s short story, drawn on this concept. The protagonist, Michael Jennings, is hired to build a machine that can predict the future, but he must work in total isolation and commit to erasing his own memory once the project is complete to protect the technology. Just before finishing his work he glimpses the terrible outcome his employers will bring about by using this machine. Knowing what the future holds, Jennings sets out to prevent this catastrophe. He sends himself an assortment of seemingly random items to be delivered after he is wiped out. This is a bit more intricate, but these simple items—a paperclip, gum, a fortune cookie, and others—unlock his memories and guide him to use each object at the right moment. He avoids a series of fatal encounters, gains a new, better life for himself, and changes the future for everyone. Like the treasure revealers who discover terma at the times they are needed, Jennings’s past changed the present and enabled a different future.

These two examples from contemporary visual culture and the stories of Padmasambhava and its treasure revealers from Tibetan culture illustrate the notions that the past, present, and future are interconnected, and that we can influence the future, demonstrating that these ideas are part of our shared thinking and perspectives on existence. While the past gives us a sense of perspective that helps us shape in the now, everything we do is related to the future.

As wacky of an idea as this sounds, it is part of what is possible, and it is something we need to consider when we try to understand our reality. The exhibition The Second Buddha: Master of Time is on view through September 18, 2022. For more information, visit rubin.org/exhibitions.
According to the terma, or treasure tradition, Padmasambhava was born on a lotus in Dhanakosha Lake as an emanation of the Buddha Amitabha. He is believed to have helped the king of Tibet convert his people to Buddhism in the late eighth century. According to the terma, or treasure tradition, Padmasambhava was born on a lotus in Dhanakosha Lake as an emanation of the Buddha Amitabha. Able to foresee periods of strife, he projected his teachings (terma) into the future by hiding them for treasure revealers (terton) to discover, ensuring the continued flourishing of his ideas and practices. Padmasambhava is credited with leaving countless footprints and handprints throughout the Himalayas, whether seared into stone or fixed on the surface of water. In some legends Padmasambhava melted ice by shooting fire from his hand. In others, Padmasambhava emerged unscathed on a lotus after being burned at the stake. Padmasambhava is said to reside on an island once populated with demons. There, south-west of Tibet on the Copper-Colored Mountain, the Second Buddha holds court within a three-storied palace.

Padmasambhava helped bring Buddhism to Tibet, secreted his teachings for future generations, and subdued demons and volatile gods that got in his way.


Padmasambhava is said to have played a key role in the construction of Samye, the first Tibetan monastery. Tibetans call him the Second Buddha, as they consider him second only to Buddha Shakyamuni, the founding teacher of Buddhism, who lived many centuries earlier in ancient India.

A tantric wizard and master of ritual magic, he is thought to have perceived time as it really exists, seeing the past, present, and future. To this day, tertons seek the knowledge that Padmasambhava concealed over a thousand years ago in the jagged, rough landscape of Tibet, the sky above, and in the minds and dreams of disciples.

Padmasambhava helped to subdue local gods and prevented spirits of the land, mountains, and lakes from interfering with the spread of Buddhist culture. Having a karmic connection to Padmasambhava allows the tertons to discover the concealed teachings. It is not random. You know only if you are a person destined to discover the terma.

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For the arachnophobe, eternity is a spider. Because our conscious perception of time is a construct that relies on its ability to be relative, it is, like memory, malleable—vulnerable to distortion by emotion, attention, pharmacology, temperature, and sweat. Stimulants speed it up. Depressants and anesthetics slow it down, as do fear, sadness, and pain. Though our happiest instants may be experienced as relatively fleeting, we attribute, in retrospect, as if by some sanitizing mechanism, far more time to them than perceived eons, lingering longer on vacations, love affairs, and first experiences than traffic jams, bladder states, or bad jokes. The valence of tadpole naively amoral. Amongst a lifetime of tears, the boredom-induced rank low.

Models for the subjective perception of time, or interval timing, propose an internal pacemaker that produces pulses—units which accumulate, ultimately to be compared to stored reference time durations. What is the basal ganglia spiny neurons, with their repetitive firing rate? Maybe. Or the anterior insular cortex, which seems to integrate information of all things self? Levin and imaging studies present many possible candidates for the location of pacemakers and accumulators. The finding, or its lack, of a single time-sense organ suggests that time is perceived over distributed regions, perhaps in a number of ways.

quantity (how positive or negative), underestimating the benefits of positive experiences with strangers and the pain of being socially excluded or mildly insulted. Can goldfish be impulsive? Bacteria patient? Do self-sabotaging starlings procrastinate their migration? Because we can conceive of a future, we can plan for and anticipate one, foregoing immediate rewards for ultimate payoffs. Delayed gratification is context dependent and follows a delay discounting rule: the larger the reward, the longer we can wait. Imaging a positive future self is more difficult for the depressed and stressed. Patience and tenacity are blunted. Projects and diets are readily abandoned. The focal length of an addict’s horizon is limited to the next hit.

THE NATURAL ORDER

TIME IS TIED to metaphor, bound in space. We move through it, flows over us. The sun rises in the east, the moon waxes and wanes, but the way we know night follows day, death follows birth, and more crucially, lunch follows breakfast—the formation of our spatiotemporal maps—is less influenced by the anatomy of the heavens and more by the language we speak. Time cells and place cells are neighbors in the brain, both residing in the hippocampus, the brain structure essential for memory. Charting time with space is universal across cultures, but the direction we write dictates our mental timeline: English is left to right, and Mandarin can be both horizontal and vertical. For larger epochs, all cultures think dorsal-sagittal, looking ahead to the future with the past behind us. All cultures apart from one: Aymara speakers see the future as behind them, because the future is unknown. Elderly Aymara people refuse to talk about the future on the grounds that little or nothing sensible can be said about it. They’re right. The future is imagined, hypothetical. But hypotheticals exist in all tenses. Our mind is a constellation of conditionals and counterfactuals. If it is a love, then truth is a vector. Imagining the future is remembering the past. The processes are symmetrical, engage the same brain structures, and develop in parallel. An amnesiac can do either. We reconstruct our semantic memories (which we know about the world) and our episodic memories (what has happened to us) and recompose them with intention. We remember what hasn’t happened. To conceive of who we were, are, and will be is essential to the construction and continuation of the self. We can mentally time travel abstractly—chronosthesia—to think of a past and a future, but it is our automatic awareness, our synthesis of personal memory and intention, that enables us to not only conceive of the future but to project ourselves into it, with feeling. To maintain selfhood, we overlap considerably with our nearest iterates, but the further we project in time, the more tenuous this imaginary thinning of selves becomes, until it threatens to be severed, such that we appear other. Order lies arrow into chaos. But humans love to order. As molecules sequently arrange themselves into structures of increasing complexity, we temporally arrange movements into gesture, language, and narrative. Life defies decay, Narrative defies forgetting. Both continue to defy erasure.

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HOW DOGS TELL TIME

Heightened senses help man’s best friend negotiate the world

Alexandra Horowitz

IT’S EVENING. You relax on the sofa. Your dog lies at your feet or by your side, lazily away the hours. But is your pup having the same experience as you? Is time passing at the same rate for you both? What is your dog’s experience of time?

As a researcher of dog cognition—and a person who lives and shares sofas with dogs—I seek to understand how the world is perceived differently by this seemingly familiar animal, or by any nonhuman animal. We humans see, hear, and smell only a fraction of what there is to be seen, heard, or smelled, as other animals’ organs are tuned to different wavelengths, frequencies, and compounds than ours. Given their perceptual abilities, the very pace at which time passes is different for animals.

Consider how dogs see. We know that dogs’ vision is different than ours; in contrast to our trichromatic vision, they have dichromatic, two-color vision. Does it change how they sense time? The rate at which cells of mammalian eyes transduce light is called the flicker fusion rate. It’s akin to the number of “snapshots” of the world that the eye can take in every second. The human flicker fusion rate is about sixty hertz; we see anything above sixty “frames” per second as a smooth, continuously running image. Old movies took advantage of this rate to convince the eye that a series of still photographs was really a moving image. But slow those films down and we see the frames—a “flicker.”

The flicker fusion rate for dogs is around eighty hertz. For dogs, the old movie would appear as a sequence of still images. They see more frames per second, as if seeing a bit more of the world each second, and they see motion a split second faster. Your dog may be brilliant at catching a Frisbee or a cube of cheese suddenly tossed her way: she sees it before you do. Her seconds are measured differently than ours.

Of fraction, the primary sense of dogs, may similarly change time, but on a larger scale. Highly attuned to odors that we cannot or simply do not notice, dogs perceive how the smell of a room changes throughout the day, as the room warms and air rushes to the ceiling. Stepping outside, the dog smells the past, in odors resting on the ground, as well as the future, in odors carried by air currents from down the street or across a river or field. What counts as the present moment for dogs is extended to include odors of events from down the street or across a river or field. What counts as the present moment for dogs is extended to include odors of events from down the street or across a river or field. What counts as the present moment for dogs is extended to include odors of events from down the street or across a river or field. What counts as the present moment for dogs is extended to include odors of events from down the street or across a river or field. What counts as the present moment for dogs is extended to include odors of events from down the street or across a river or field.

By Alexandra Horowitz

Alexandra Horowitz is the author of Being a Dog: Following the Dog into a World of Smell and Everyone’s View of the World Is Different. She teaches at Barnard College, where she runs the Dog Cognition Lab. She lives with her family and two large dogs in New York City.
Contemporary artists reimagine the aesthetics of science fiction, amplifying the visual imagery of posters created beyond the confines of Western cinema and storytelling.
The artist’s virtual reality work Kalimpong layers ideas and media linking Buddhism, technology, art, and historical and speculative narratives.

Howard Kaplan: Jawaharlal Nehru, India’s first prime minister, called Kalimpong “a nest of spies.” When did this modest hill town in West Bengal—a politically charged hotspot, as well as a meeting point of history, religion, espionage, and cryptography—first catch your eye?

Shezad Dawood: I first learned of Kalimpong as a teenager reading Alexandra David-Niéle’s Magic and Mystery in Tibet (1910). There she describes meeting the Thirteenth Dalai Lama on the outskirts of Kalimpong in April 1912. David-Niéle also wrote about meeting scoundrels, predatory monks, and clowns in the caves above the city. I didn’t come back to Kalimpong until I was in my thirties and came across the story of Tom Slick—one of my favorite rabbit holes—a Texas oil millionaire who had a passion for cryptozoology, which is the search for mysterious, speculative animals. He funded three expeditions in the mountains above Kalimpong in search of the Yeti.

What inspired you to use virtual reality (VR) to tell a story about Kalimpong?

I have a few friends who are (somewhat) maverick coders and developers, and they had been encouraging me for a few years to experiment more and more with the form. I had been waiting for the technology to get to where I wanted it to go, and for the right story idea to present itself. Kalimpong became the perfect first vehicle to present my work in VR more publicly. And given the whole backdrop of Esoteric Buddhism to the narrative and geography of Kalimpong, this became a great philosophical point of entry to discuss the whole nature of reality and illusion. In a certain fashion, Esoteric Buddhism has been talking about reality being a projection hologram—what might be interpreted in contemporary terms as a hologram. Philosophically, the idea of virtual reality is not new, but mechanically, we’re still working through the clunkiness of VR and figuring out what context is best realized through this medium.

You’ve said that Kalimpong is about time displacement and how the past can anticipate the future and the future can anticipate the past. Can you talk a little about these ideas?

Well in some ways it’s quite pragmatic. For example, I’m interested in foreign interests conspiring with and against each other in the Himalayas, from the Russians and the British as part of the nineteenth-century Great Game and, later, the Japanese. Then, in the post-Second World War period, I’m interested in the coalescing of postcolonialism and the Cold War, with competing interests from China, India, and the United States playing out their intrigues, all of which continue to fix and displace the present, in terms of governances putting on their masquerades, while still competing for resources and trade routes in the way they have been doing for millennia. It is this quite logical loop I’m also interested in, as they provide clues for the future to anticipate the past.

When the viewer “walks through” the Himalayan Hotel in the virtual reality experience of Kalimpong, there’s an image of Padmasambhava from the Rubin Museum’s collection. How does this Buddhist master fit into the story?

It was very kind of the Rubin to allow me access to the collection in the development of the work, and of course Padmasambhava is the key to understanding what the work sets out to do. It is really speaking to an idea of collapsing various times and narratives, and in so doing questioning the whole construction of what one might term the “real,” particularly the cognitive structure of linear time we use to make sense of it.

The idea of layering seems to be part of the DNA of your work, be it in painting, textile, or immersive VR. How do you work with layers of time and media?

It’s very structural. This idea of consonant layers and ideas that can coincide and interface is very much how I start to think of depth; whether that’s in painting, where I see it almost as a series of planes or rectangles that emerge out of a painting and at the viewer, or in film, where I see them line up as frames that cut and dissolve into one another.

Sound is integral to the VR experience. After working in experimental film and video, what were the challenges in creating sound in a virtual space?

I’m interested in sculpting sound and how you can use sound as an aesthetic process as a method to explore meanings and forms. Dawood trained at the University of Westminster. And to go back to the bards, I ended up structuring the whole VR experience around the three stages and six states of the bardo that occur between waking life and rebirth. Well, in some ways it’s quite pragmatic. For example, I’m interested in foreign interests conspiring with and against each other in the Himalayas, from the Russians and the British as part of the nineteenth-century Great Game and, later, the Japanese. Then, in the post-Second World War period, I’m interested in the coalescing of postcolonialism and the Cold War, with competing interests from China, India, and the United States playing out their intrigues, all of which continue to fix and displace the present, in terms of governances putting on their masquerades, while still competing for resources and trade routes in the way they have been doing for millennia. It is this quite logical loop I’m also interested in, as they provide clues for the future to anticipate the past.

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It was very kind of the Rubin to allow me access to the collection in the development of the work, and of course Padmasambhava is the key to understanding what the work sets out to do. It is really speaking to an idea of collapsing various times and narratives, and in so doing questioning the whole construction of what one might term the “real,” particularly the cognitive structure of linear time we use to make sense of it.

The idea of layering seems to be part of the DNA of your work, be it in painting, textile, or immersive VR. How do you work with layers of time and media?

It’s very structural. This idea of consonant layers and ideas that can coincide and interface is very much how I start to think of depth; whether that’s in painting, where I see it almost as a series of planes or rectangles that emerge out of a painting and at the viewer, or in film, where I see them line up as frames that cut and dissolve into one another.

Sound is integral to the VR experience. After working in experimental film and video, what were the challenges in creating sound in a virtual space?

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IT’S EXTRAORDINARILY DIFFICULT for a human to live in the present. I recognize this is the goal of many spiritual practices, but what makes our brains special is our capacity to unhook from the present and transport to different points in time. We spend time in the world of counterfactuals, questioning, “Where would I be if I had done that instead of this?” We travel these other roads in time. It is a big part of what makes us successful as a species. If you can play out possibilities, future and past, then you can simulate the effects of a new hunting strategy, an improved way to plant crops, or a novel social maneuver. Instead of attempting everything in the real world, you can test it in the dark safety of your skull. As the philosopher Karl Popper said, this capacity “allows your hypotheses to die in your stead.”

Children don’t have the same prospective view as adults. As adults, we’ve had a great deal of experience, so we have a rich notion of the future and past. Children don’t have the same experience and long timescale to draw on, so they live closer to the moment. I don’t mean this in a spiritual way; I simply mean they don’t yet have the capacity to think about consequences or options, or even chew over past outcomes. Instead they experience what is happening right now. As they grow, they lay down an increasingly wide lawn of the future and the past, eventually growing into all of the joys and sorrows of adulthood.

How do you live more spiritually in the present, given that you have a brain that is always dancing around in time? I don’t know if it’s possible.

WE LIVE BEHIND THE TIMES. THERE IS NO SUCH THING as now. We live in the past by about half a second. Why? Because the brain is always collecting information from all the senses: from your eyes and ears to your fingertips and toes. These pathways process information at different speeds, so information comes streaming into different parts of your brain at slightly different times. The job of your consciousness is to collect the information, stitch it together, and serve a story of what just happened. It takes time to put everything together, and as a result, we are always living in the past. By the time you’ve processed all the information about a moment, the moment is long gone. Your conscious perception of the world is always lagging, so your experience of the moment right now is actually a delayed reality. It is similar to a live TV show like Saturday Night Live, which is not truly live but slightly delayed in case someone causes an actor to fall, or a clothing mishap occurs. It mirrors our perceptual experience: we are always living in the past.

The distance you live in the past can change. When you are a child, it takes a certain amount of time to send signals out to your limbs and have sensory feedback return to the brain. As you grow and your body gets larger, the round-trip time for signals is longer. Adults therefore live slightly further in the past than children. For that matter, I suspect that tall people live further in the past than short people.

THE BRAIN RECALIBRATES THE NOW. THE BRAIN CONSTANTLY recalibrates its notion of now. Imagine you are in a dark place and you step into the sunlight. It now takes a different amount of time for the cells in the back of the eye to send signals to the brain. But the bright light has no effect on the amount of time your inner ear requires to send signals to the brain. Your sensory systems are always adjusting in relation to one another to figure out correlations of events in the outside world.

Living in the present is probably impossible
by David Eagleman

DAVID EAGLEMAN

ON TIME
time differently? Describe your experience of the situation and we’ll publish your favorite submissions in the online version of SPIRAL.

In my lab I showed that people with schizophrenia don’t appropriately recalibrate their timing. Imagine that you slightly misfire the commands you send to your limbs and the information you receive through your senses. This mismatch would change your interpretation of the world. Think of how you continuously generate an internal voice and listen to that voice. If you misread that timing, even by a few milliseconds, it would become an auditory hallucination. You would attribute the voice to someone else, because you would think you heard it before saying it. A common symptom of schizophrenia is credit misattribution, which involves not taking credit for your own actions, saying, “That wasn’t me. I didn’t do that.” The same issue is at hand: taking credit is fundamentally a temporal judgment—as in, “I made an action, and I got the proper feedback.” If your timing is miscalibrated, then credit misattribution is an expected outcome.

With a number of experiments, I showed that the cognitive symptoms of schizophrenia are related to a miscalibration of timing.

**TIME IS NOT A RIVER THAT FLOWS THE SAME FOR ALL.**

**EINSTEIN DEMONSTRATED** that time is relative. As an example, imagine traveling to outer space at an incredibly high speed, say half the speed of light. You have an identical twin who remains back on earth. When you return to this planet, you will be a bit younger than your sibling, because you have been travelling at a much faster speed, so time has ticked forward for you more slowly. I think neuroscience will make Einstein’s theory of relativity even more strange. For seventeen years I have studied what I call neurorelativity, the concept that you and I can perceive time will be distinct from mine. When your brains later read out denser memories, they presumed the event must have taken longer, and must have proceeded in slow motion. In a way, time and memory are always intertwined, and it is impossible to study how long something seemed to have lasted without understanding how much memory was laid down. We have memory to take notes about what is important. When you are in a life-threatening situation, your brain captures as much data as possible. In contrast, when you are sitting down the sidewalks on your way to work, your brain is not writing down a lot of detail. Hence why you remember it taking a long time. In high school I took a physics class and calculated that the whole event lasted 0.6 seconds. I couldn’t understand how the fall was so rapid yet seemed to have taken so long; I had clear thoughts during the fall. I became a neuroscientist and started investigating this phenomenon. I put the word out that I was studying this issue, and I received dozens of emails from people who had been in car accidents or experienced other traumatic events. They also said time had moved in slow motion.

I created a scientific test, putting people in a terrifying situation and measuring whether they could actually perceive time in slow motion. Specifically, I dropped them from a tower a hundred-and-fifty feet high, backward, in free fall. A net below caught them as they moved seventy miles per hour. The fall is extraordinarily scary; I did it myself several times in preparation for the experiment. I measured several things about their perception of time during and after the fall. Long story short: it is all about memory. The people falling were no faster in perceiving information than someone on the ground. But because the event was scary, their brains lay down more memories. When their brains later read out denser memories, they presumed the event must have taken longer, and must have proceeded in slow motion.

In this way, time and memory are always intertwined, and it is impossible to study how long something seemed to have lasted without understanding how much memory was laid down. We have memory to take notes about what is important. When you are in a life-threatening situation, your brain captures as much data as possible. In contrast, when you are sitting down the sidewalks on your way to work, your brain is not writing down a lot of detail. Hence why traumatic events seem, retrospectively, to have lasted a long time. (V)}
Aria Drolma left her career as a fashion model, embarked on a traditional Buddhist three-year and three-month silent retreat, took the vows of an ordained Buddhist nun, and learned how to live in the present moment.

Howard Kaplan: Was there a difference in how you perceived time before and after you entered the retreat?

Lama Aria Drolma: Yes. A big difference. While living in New York City, the value of time is material, and you often hear the phrase “time is money.” Likewise during the three-year retreat, time was very important, but in a different way. We contemplated “Time and Impermanence,” one of the four Buddhist thoughts that turn the mind to change. It teaches that everything in this world is impermanent. The next breath may be our last breath, so we contemplate the impermanence of life.

Did the time pass differently during each of the three years?

Lama Aria Drolma: It lasted one more year. The first year felt very slow. The second year was a little faster than the first, and the last year zipped by! The first meditation began at 4:00 a.m. I had an alarm, but I always woke up a minute or two before it rang. I developed an internal clock that I had lost when I lived in New York City. I think that’s true for many people. We don’t depend on our internal abilities; we tend to look outward instead.

What emotions are associated with time, specifically in terms of the future?

Before the retreat, when I thought of the future, the unknown was quite daunting, and yet at the same time, it was exciting since the canvas was so huge to fill. By nature, I’m a very positive person. I was confident I could set any goal and achieve it. But there came a time when I felt I was at a crossroads—my spiritual seeking was overpowering. Everything that seemed exciting became overwhelmingly meaningless and senseless. My life goals that had at one point been all-consuming and overwhelming became unbelievably meaningless and senseless. My life goals that had at one point been all-consuming and overwhelming were meaningless and senseless. My life goals that had at one point been all-consuming and overwhelming.

When did you begin your meditation practice?

The year 2008 was a time of soul searching. I found myself asking the time and he’ll tell us. When did you begin your meditation practice?

Howard Kaplan: When you were younger you spent time in solitary confinement. Did time move differently then? Did that change your feelings about time passing?

Sean Kelley: Solitary confinement is a peculiar experience for sure. When I got to Graterford I started getting into a little trouble at first, and I ended up in a restricted housing unit known as the Hole a few times, usually for ninety days at a time, sometimes twenty-four hours a day, every day. It was really tough. I had just three meals a week, a shower three times a week, and if I chose I could go outside for one hour to another cage, basically from one cage to another. That’s how you break up the day. I didn’t have a watch. Nobody in solitary really knows what time it is. So we schedule time around events. Basically we know what time it is by when the meal is passed out, shift changes, and mail and medications are passed out. That’s how you break up the day.

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In Shambhala, the land of bliss, a battle rages between karma and ignorance

**King of Shambhala, Eastern Tibet (Kharta Gardo painting style), 18th century; mineral pigments on cloth; Rubin Museum of Art; C2004.5.6 (HAR 65297)**

**SPIRAL / THE RUBIN MUSEUM OF ART / #THEFUTUREISFLUID**

**KALACHAKRA, SHAMBHALA, AND THE FUTURE**

**IS TIME OUR ENEMY?**

**Buddhism Defines Time as the measurement of change. The Kalachakra system presents three cycles of time, and its teachings assert that change can be measured by the motion of the heavenly bodies or the number of breaths we take. Both are driven by the uncontrollable force that Buddhism calls karma—the inertia that perpetuates heavenly motion and the compulsiveness that perpetuates our habitual behavior. Karma—both universal and individual—is therefore the real enemy, not time. Even more harmful is the ignorance with which, over time, we compulsively act out our neurotic social and individual karmic tendencies, producing all the problems we experience throughout life.**

The cycle of Helmes, one after another, filled with problems and culminating each time in death, is known as samsara. It persists until our perceived enemy, the passage of time. But the Kalachakra teachings offer a profound method for overcoming the grasping of time due to karma and ignorance. Instead of samsaric Helmes ending with death, we can end our samsaric existence with the attainment of liberation and enlightenment. We can replace a dismal future, filled with unending problems, with a blissful, bright future, filled with unending compassion, wisdom, and the ability to guide others to enlightenment.

But what do we mean by the future? In contrast to Western conceptions of past, present, and future, Buddhism speaks of what is not yet happening, what is presently happening, and what is no longer happening. Your death is not yet happening; you reading this article is presently happening; your childhood is no longer happening. Your childhood isn’t sitting off stage, having played its part; your death isn’t sitting in the wings, waiting to come onto stage. You reading this article won’t go somewhere else once a new scene starts in your life. Similarly, your enlightenment isn’t sitting somewhere in a place known as the future, nor is it reading deep inside your head. We will only attain enlightenment by ridding ourselves of the ignorance that drives us to compulsively act out our neurotic karmic tendencies over and again.

**LAND OF BLISS**

**Attaining Enlightenment Is Therefore a Battle Against Karma and Ignorance, a Battle Against the Forces of Time. It Takes Place in Shambhala,** literally “the land of bliss” and the source of the Western conception of Shangri-La, represented in James Hilton’s novel Lost Horizon (1933) as a spiritual paradise found in an inaccessible, hidden valley in Tibet. Kalachakra represents Shambhala and this ultimate battle on multiple levels—external, internal, and spiritual. This is in keeping with the Kalachakra vision of the universe, where the body and the spiritual path run in parallel. What happens in the universe and the body occurs under the influence of karma and ignorance, marked by the samsaric cycles of time. What happens on the spiritual path occurs under the influence of compassion and wisdom, bringing an alternative to these samsaric cycles: enlightenment.

Externally, in the land of Shambhala, a battle will take place many years from now. The forces upholding spiritual values will defeat an invading barbarian horde bent on destroying all opportunities for spiritual growth. Their defeat will mark the end of an age of darkness and herald the start of a new golden age. Internally, Shambhala is the heart chakra, the location of our life-sustaining energy winds. Here a battle is waged against the invading horde of sickness and the forces of medicine and a healthy lifestyle. Overcoming sickness, we attain a golden age of perfect health.

On both the external and internal levels, the so-called winds of karma drive the invasions, passing through repeated cycles of time. On the spiritual level, Shambhala is the subtlest level of the mind, the clear light mind. When we can access and reach this deepest Shambhala, we will be able to employ sophisticated spiritual methods to stop the flow of the winds of karma. We will then attain enlightenment—the state beyond the control of samsaric time.

The defeat of the horde of invading barbarians, sickness, and winds of karma has not yet happened, and like tomorrow, what will happen during these battles is not determined or fixed. It is certain, however, that tomorrow will happen, though when it begins depends on our location on earth. But in the case of these external, internal, and so-called alternative spiritual battles, it is not certain they will take place, let alone when they will occur. After all, what is not yet happening is not sitting somewhere already fixed, waiting for its turn to be presently happening. The future isn’t happening now.

What is not yet happening can only arise dependently on cause and effect. To defeat an external invading horde of barbarians, our society needs to come together in peace and harmony to present a united front. To defeat an invading horde of sickness, our bodies need to bring all their systems into balance so they work together to ward off disease. To defeat the deepest invading horde of the winds of karma, our minds need to gather all the spiritual forces of the Kalachakra path, as united they have the greatest strength.

What is not yet happening—the future—lies in our hands. If we work to bring harmony to our societies, bodies, and minds, we can make what is presently happening be for the benefit of all.
ALA SKATED ACROSS the surface of time with long, even strokes, scoring fine, shallow grooves in it with every stride. The science of it didn’t much trouble her; it was for others to take time’s temperature, for others to wonder at how they themselves could move through space in time while also standing on its surface. How often does a historian seek to understand the physics of why the sky is blue above a battlefield?

Ala was a historian.

She wove carefully, effortlessly through her colleagues, looking for the patch of her study. She was very keen on a density of time that contained a tense knot of 17th strata politics, where information technologies had begun to outpace people’s capacity to reckon their effects. “Imagine,” she’d written in her prize-winning doctoral thesis, “a blade so sharp it could bleed you dry before you knew you’d been cut.”

She was looking forward to puzzling over one correspondence in particular, riddled with much-debated ambiguity thanks in part to an awkwardly placed bubble occluding the strata. But just as she was finishing her last session, the bubble shifted—infinitesimally, but enough—so with a different set of tools she could extract truly unprecedented readings.

She had those tools ready now, and the snow skimming from her skates’ speed might well have built an alternate timeline.

She stuttered to a stop, though, when she saw Umu at her patch.

Umu. Once her rival, then her friend, then her rival again, to their mutual frustration...
sorrow. Umu was brilliant—there was no denying it—but they’d never been satisfied by history; they would insist, not on observing the facts and interpreting them, as all sensible folk did, but on elaborating scaffolds of theory from which to hang their colleagues’ work. Where Ala focused on who, what, when, why, how, Umu focused on their colleagues’ method, their ethics, their assumptions. To Ala, Umu always seemed to be arguing that the enterprise of studying history was inherently flawed, because how could one study time without melting it, even by unobservable degrees, under one’s hands or breath?

All of which, to Ala, was pointless sophistry, and she’d stated—acerbically, and more than once—that Umu might be happier studying philosophy or physics. “Both of those have histories,” they’d say, with irritating calm, “and anyway, I’m perfectly happy. Now, about the ramifications of your auger on deep strata—”

And now Umu was here, scrutinizing her patch. And they weren’t alone: two individuals stood nearby with a strange tool, a conical tube mounted on a tripod and pointed at the sky. “Ala,” said Umu, who looked, as always, placidly unruffled in the face of Ala’s oncoming storm. “There you are. Please allow me to introduce Lyl-her and Rir-him, from the Faculty of Futurisms.”

Ala raised an eyebrow, but to her credit, did not actually say *those cranks*? “Charmed. But what are you doing on my patch? I have important work to be getting on with.”

“Yes, about that,” said Umu, looking at Lyl and Rir, who held each other to keep from wobbling. They weren’t used to historian skates. Lyl coughed, then said, in a voice so gravelly they were occluded. “I was going to reassess the correspondence Strata 17-234-51, in light of new clarity,” she said, testily, arms folded. “All perfectly above board, surely?”

“I thought,” said Umu, “that correspondence between the principal actors in the events of Strata 17-234-51, in light of new clarity,” she said, testily, arms folded. “All perfectly above board, surely?”

“I thought,” said Umu, “that correspondence was occluded.”

“It was,” said Ala. “But the occlusion—” she frowned, looking down at her patch. “Wait.” She sank to her knees, drew out a magnifying tool, squinted. The bubble’s shift was no longer infinitesimal. It was a whole observable inch over from where it had been her last session.

How could one study time without melting it, even by unobservable degrees, under one’s hands or breath?

Ala looked up, confused and troubled. “This is impossible.”

“I have been theorizing,” said Umu, and Ala gritted her teeth, but listened. “We accept as true that we must study history in order to keep from repeating it. I say this is necessary but insufficient; if we study history carelessly, it will shape us into tools for iterating itself. If we study and extract and mine frozen time without interrogating our means and ends, we will build channels for it to flood us with itself.”

Ala blinked. “Flood? Surely that’s excessive hyperbole.”

Umu shook their head. Lyl looked at Rir, then at Ala, before murmuring, “I read your thesis, Ala-her. You write very well. The line where the blade so sharp—it has haunted me for sessions, driven my own research.”

Ala could not help but soften in the face of praise for her work. “Thank you.”

“But I always wondered—how could you see that and not relate it to the world around you? How could you be so focused on plunging your gaze deep into the time beneath that you ceased to look at the time around?”

She shrugged. “I try not to take my work home with me.”

“They are not as separate as you think,” said Umu. “Look.”

They pointed one gloved hand upward, at the sky.

Ala narrowed her eyes at it. “I don’t understand. It’s cloudy. That’s normal.”

“He guided her toward the narrower end of the conical tube, and directed her to place her eye against it. She did—and gasped. The sky’s cloudiness was not the uniform mass of opacity it had seemed to her naked eye; there were thin, whisking lines, some of them appearing even as she watched, with a long, lazy pace that struck deep familiar chords in her.

She pulled back—blinked—looked around at her historian colleagues. She put her eye back to the conical tube.

The lines in the sky appeared at the same pace as her colleagues’ skating.

“The prophets say, ‘every action has an equal, opposite reaction,’” murmured Umu. “That heat we make—it ripples through time. Below us—and above.”

Ala’s throat was full, but she had nothing to say. She was still looking up at the sky when it began to rain. ❄️
INTERVIEW

BECAUSE THE PRESENT ISN’T ENOUGH:

Howard Kaplan: Why do we need time travel? James Gleick: We need it to cope with regret. We need it to explore history, to think about the past, not necessarily in a scholarly way, but what brought us here—we want to experience it. Some time travel is the desire to do something over. Above all, we need it to escape death. It’s our chance at immortality. We are, apart from any science technology, already time travelers. All time travel stories, in one way or another, are about trying to evade the inevitability of death.

Tell me about H. G. Wells and his novella The Time Machine (1895). Wells thought of himself as a futurist. People were full of excitement about the future and wondering what the year 1900 would bring. Science was bringing modern wonders, and an author like Jules Verne was very much about modern wonders—boats that can travel under the sea, ships that could take us to the moon. The funny thing is that it’s not what H. G. Wells was interested in. When you read The Time Machine, you realize it’s a peculiar book. The time traveler only goes to the future, and the future that he discovers is not at all marvelous. It’s degenerate; there’s a kind of misery and a kind of bifurcation of the race into Morlocks and Eloi. It’s really a chance for Wells to explore some of his ideas about social evolution and human evolution—another new theme in our scientific toolkit thanks to Charles Darwin.

In addition to George Pal’s 1960 film adaptation of Wells’s book, what would you consider the best movies about time travel? An absolute must is Le Jetée by Chris Marker from 1962. It’s thirty minutes, it’s black and white, it’s obscure, it’s brilliant, and rarely seen. A lavish remake of that movie is 12 Monkeys (1995). It’s really good. I loved it.

It seems like there are two types of people in the time travel world: those who want to go back, and those who want to go forward. Has there ever been a consensus? I think there’s a real divide. Personally, I always asumed that everybody would want to go to the future. I always wanted to go to the future. H. G. Wells sent his guy to the future, even though he was interested in history. On the contrary, I started asking people, and as far as I can tell, it’s fifty-fifty. But people have definite preferences.

What would your preference? I always wanted to go to the future. H. G. Wells sent his guy to the future, and the future that he discovers is not at all marvelous. It’s degenerate; there’s a kind of misery and a kind of bifurcation of the race into Morlocks and Eloi. It’s really a chance for Wells to explore some of his ideas about social evolution and human evolution—another new theme in our scientific toolkit thanks to Charles Darwin.

What would a time travel machine look like to you? We, the Internet is our version of a time travel machine. It enables us to visualize the past, to project ourselves into the future—our images and our messages. It connects us with the past in surprisingly vivid ways, especially now that it’s being mixed with augmented reality and virtual reality technologies. I think it’s sort of fair to say that the Internet is our version of a time machine or a time gate. It’s the closest thing we’re ever going to have.

You’ve written that “Time travel opens our eyes.” In what ways? We could quote Virginia Woolf: “For what more terrify us than the future? That we survive the shock at all is only possible because the past is shelved on one side and the future on another.” It goes back to your first question: Why do we need time travel? Because the present isn’t enough. The present by itself is a prison. It’s confining, and then it’s gone. Opening these doors to the past and to the future makes us human.

In your book you write, “Time traveling while black or female poses special hazards.” Who are these particular travelers? As in every other part of our culture, diversity has been slow in arriving in the science fiction business. There have been lots of women writing about time and time travel. Of course, Virginia Woolf, of the great writers, was one of the very first, along with Marcel Proust and James Joyce around the same time, to suddenly focus on time as her principal mission. Her book Orlando (1928) is a gender-bending time travel masterpiece. A terrific recent time travel book that makes the point that it might be more dangerous for a black person to appear in sixteenth-century England, let’s say, is Dexter Palmer’s Version Control (2016). We’re getting more diversity in our art as well as our lives, belatedly.

What would a time travel machine look like to today? Could the Internet fill that role? Yes, the Internet is our version of a time travel machine. It enables us to visualize the past, to project ourselves into the future—our images and our messages. It connects us with the past in surprisingly vivid ways, especially now that it’s being mixed with augmented reality and virtual reality technologies. I think it’s sort of fair to say that the Internet is our version of a time machine or a time gate. It’s the closest thing we’re ever going to have.

JAMES GLEICK ON TIME TRAVEL

• Time Makes For Dramatic Effect
by David Eigenberg

There are many films that illustrate the malleability of our perception of time. Bonnie and Clyde (1967) was the first movie to introduce slow motion in a more changed filmmaking. In the climactic ending, Bonnie and Clyde are shot down in a hailstorm of bullets, and the director put the scene in slow motion. No one had ever done this before. Some critics jumped on the director, Arthur Penn, calling it gratuitous. But as a cinematic technique it caught on. Why? Because everyone understood it. Every- one intuited that when something happens after a dramatic event, you experience it in a different way. You are not seeing more data in time, but you are remembering it differently. When you ask yourself what happened after a dramatic event, your brain re-_Playback (2016). There are many films that illust- rate the malleability of our perception of time. Bonnie and Clyde (1967) was the first movie to intro- duction of slow motion filmmaking. In the climactic ending, Bonnie and Clyde are shot down in a hailstorm of bullets, and the director put the scene in slow motion. No one had ever done this before. Some critics jumped on the director, Arthur Penn, calling it gratuitous. But as a cinematic technique it caught on. Why? Because everyone understood it. Everyone intuited that when something happens after a dramatic event, you experience it in a different way. You are not seeing more data in time, but you are remembering it differently. When you ask yourself what happened after a dramatic event, your brain re-
In her virtual and object-based artworks, the New York-based, new media artist Morehshin Allahyari reimagines future landscapes, inventing new narratives while transcending the boundaries of gender, sex, and race. Born in Tehran, Iran, in 1985, Allahyari is also an educator, curator, and activist. She appropriates imagery from her own personal and cultural mythology and critically questions the present while contemplating the future.

I spoke with Allahyari to discuss her most recent project, She Who Sees the Unknown (2017–18), which examines the dark goddesses, monstrous and djinn female figures of Middle Eastern origin. She “re-figures” these mythological creatures by creating them with 3D scanners and printers. Their “dark” feminine powers are appropriated to fight the effects of colonialism and other forms of contemporary oppression. The work also incorporates elements of performance in the form of ritual ceremonies in which the artist activates her army of dark goddesses and propels them into our world. Allahyari’s archive of dark goddesses—neither preserve, protects, and celebrates their feminine powers but also secures their relevance for future generations.

Anna Cahn: What is the “unknown” element in your work She Who Sees the Unknown?

Morehshin Allahyari: DJINN (Arabic for genies) have a very specific place in Islamic culture. A djinn can be evil and good at the same time, or choose to be one or the other. It can make decisions for you, it can read your future, and it can influence your future. So the unknown is this element of future reading and having an awareness of things that regular people don’t. It’s information only available in this other world.

What is the significance of using 3D scanning technology in your most recent work?

When I 3D scan the data it comes to life pixel by pixel. There is a certain kind of magic embedded in these technologies. I’ve been doing a lot of research on digital colonialism and how these very technologies are being used as tools for colonizing different cultures and histories. We are now experiencing data ownership, and digital colonialism in ways we haven’t before.

You use the terms “Digital Colonialism” and “re-figuring feminism.” Can you explain what these terms mean to you?

Digital Colonialism is a term that hasn’t really been used before; it’s not just about cultural or historical heritage. It can simply be the way Google Maps works, in terms of the way information is presented or hidden, and then access to that. You can use re-figuration as a powerful way of repoliticizing and appropriating stories, images, and figures. I am specifically interested in re-figuration as this act of going back and looking at forgotten female figures very old mythical ancient narratives and texts, and bringing them back. Through acts of re-figuration certain acts of decolonization can happen.

How does activism inform your practice, and how does your art inform your activism?

I don’t think about activism and art as separate spaces. Growing up in Iran until I was twenty-three, politics was everything. Born in Tehran, Iran, in 1985, Allahyari is also an educator, curator, and activist. She appropriates imagery from her own personal and cultural mythology and critically questions the present while contemplating the future.

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Buddhist thinkers say that the cycle of rebirth itself will never end; its limitless population is decreased by one by one each time someone follows the Buddhist path to nirvana. Buddhists therefore tend to regard the future with fear, knowing they have accumulated the causes of infinite lifetimes in the future. Lifetimes that might be spent as an animal or insect, as a ghost, or as a denizen of one of the many hot and cold hells, where lifetimes are measured in millions of years. Much Buddhist practice over the past two and a half millennia has been devoted to the good deeds that produce merit, the good omens, to attain rebirth as a prospective human on one of the gods who populate the many Buddha heavens.

Buddhists have another reason to regard the future with dread. Buddhist theories of time explain that the length of the human lifespan varies in cycles, as the lifespan wanes. It becomes worse, with times of pestilence, chaos, and war. Buddhists appear in the world on the downward slope of the curve, our Buddha appeared in the world when the human lifespan was at its peak, and long before that time, for as long as one hundred years. The future is therefore marked by an inexorably growing gap in time since the advent of the Buddha, making it harder and harder to follow his teachings and traverse the path to enlightenment.

Indeed, the future is said to be marked by degenerations in five areas: Iepect, philosophical views, negative emotions, sentient beings, and the environment. It will become more difficult for monks and nuns to keep their vows, the yellow robes of the monk will slowly fade until they become the white robes of the lady. Exactly how long this process will take is the subject of much speculation and prophecy. In one text, the Buddha predicts that his teachings will last only for five hundred years. He says that had he not ordained women they would have lasted for a thousand years.

In the Pali tradition of Sri Lanka and Southeast Asia, it is said the teachings will last for five thousand years, disappearing in five stages, each lasting a millennium. In sequence, we will see the disappearance of the Buddha’s ideas, the decline of monasticism, the obliteration of the Buddha, in Japan, Buddhist monastics calculated that the degenerate age began in 1502, causing such famous masters as Honen to declare that seeking enlightenment through one’s own efforts is futile, and that we must rely on Amitabha, the Buddha of Infinite Light, to take us to his pure land.

Many Buddha traditions predict that the last thing to disappear will be the Buddhist relics. In one of the more dramatic scenes in Buddhist literature, the relics break free from the stupas, pagodas, and chortens around the world that have held them for centuries, reassembling under the Buddha Tree, where the Buddha achieved enlightenment, to be worshipped by the gods one last time before burning into flames.

Yet Buddhists also have reason to regard the future with hope and anticipation. In some sutras, the Buddha—who is said to have complete knowledge of the past, present, and future—predicts that all sentient beings will one day become buddhas themselves. In a sense, even the gradual loss of the dharma after his death is a reason for hope, as the disappearance of his dharma is necessary for the most important of all future events to occur: the coming of the next buddha, Maitreya.

Buddhists believe that there have been many buddhas in the past and there will be many bud- dhhas in the future. There is no reason, however, for a new budhha to appear in the world while the teachings of the previous buddha remain. Thus, the next buddha will descend from the Joyous Heaven into our world only when the teachings of the previous buddha have been forgotten and the relics of the previous buddha have burnt into flame. Yet the existence of the next buddha is certain; we even know his name. Over the centuries, many have engaged in all manner of practices—from prayers to longevity techniques—as they might be present in our world when Maitreya preaches the dharma.

Buddhism is known for its remarkable ability to coexist in Buddhism.

How the past, present, and future coexist in Buddhism

by Donald S. Lopez, Jr.
A SPACESHIP SPLASHES down in the middle of a lotus pond in rural Bengal. A latch opens and out comes a rather kind creature, whose first human friend is a young village boy. The alien's friendliness is anathema to the genre: people from outer space are supposed to be evil and wreak havoc on earthlings. Not this fellow. He’s friendly, playful, and a bit mischievous. You may be scratching your head at the moment thinking, this storyline sounds familiar. Well, aside from the location, it may.

The Alien is based on Satyajit Ray’s short story “Bankubabur Bandhu” (Mr. Banku’s Friend), written in 1962 and published in Sandesh, the Bengali children’s magazine founded by Ray’s grandfather Upendrakishore Ray Chowdhury in 1913. While in London in 1965, Ray met with sci-fi great Arthur C. Clarke on the set of 2001: A Space Odyssey. They had been corresponding for a few years, as Ray had asked Clarke his opinion on starting a science fiction club in Calcutta. He also told Clarke that he wanted to make a sci-fi film, and he shared his idea for a screenplay about the kind, playful extraterrestrial. Though best known as the most important Indian filmmaker of the last century, Ray also wrote science fiction stories. His first appeared in 1961, titled “Byomjatir Diary” (Diary of a Space Traveller).

After the screenplay for The Alien was completed, it was circulated among Hollywood studios, along with drawings Ray drafted of Mr. Banku and his friend. Columbia Pictures became interested in the script, and Ray traveled to Los Angeles in 1967 to sign a deal. Casting began. The English actor Peter Sellers signed on to play the role of an Indian businessman. Marlon Brando also had a role, but then dropped out. Later that year, Ray and his associates scouted locations in the Bankura and Birbhum districts of West Bengal. But for various reasons, the project fell through, and Ray returned to Calcutta, disillusioned. The film was never made.

In 1982, Steven Spielberg released E.T. the Extra-Terrestrial. The similarities between this movie and The Alien did not escape Ray, who told the Indian press at the time that E.T. “would not have been possible without my script of The Alien being available throughout America in mimeographed copies.” Spielberg denied the allegations, but to this day, not everybody is convinced. The story of the making—if not the unmaking—of The Alien is one of cinema’s mysteries of the latter part of the twentieth century. Did he or didn’t he? Film critics and fans still wonder if Spielberg co-opted the earlier script, while contemporary artists who explore cross-cultural narratives and speculative futures, including Matti Braun and the Otolith Group, contemplate the significance of the “lost” Ray film.

Howard Kaplan is the former editor in chief of Asiatica, the annual magazine of the Freer and Sackler Galleries, Smithsonian Institution. For his writing he has received fellowships from the MacDowell Colony, the Bread Loaf Writers’ Conference, and the Edward Albee Foundation among others. He currently divides his time between New York and Washington, DC.
MY GRANDMOTHER

A meditation on what is passed down to future generations

by Maira Kalman

My grandmother was not chatty. By not chatty, I mean she never spoke. She was quite beautiful in photos when she was young. But then her legs swelled up and they were as big as tree trunks. And she always looked sweaty. Haggard. Weary. Beleaguered. Constantly cleaning or washing or ironing or cooking. So much cooking. She would wipe the hair away from her brow with hands thick from work. If she smiled it was pained. As if she was ashamed of smiling.

She was kind to me. She bought me treats. My favorite soda. My favorite ice cream. She baked every Friday. Cinnamon rolls. And babka.

Actually she was not always kind. When the neighborhood children drove her nuts with their noise downstairs, she would stand on the terrace and throw a bucket of water on them. Really?

Or maybe it was the cats she was trying to chase away. There were so many cats in Tel Aviv.

My grandmother was an orphan from Belarus. She fell in love with a dashing man in the village. But she was deemed not good enough for him, and was offered his brother. My grandfather. They left Belarus and came to Palestine. Did they ever speak? Impossible to say. They had four children. My mother Sara being one of them. My grandfather loved to eat potatoes. He burnt them in a pot. My grandmother scolded him. Well that’s talking.

In my family, not talking was our way of talking. It was dangerous to talk. If you uttered something mean, it could never be taken back. If you boasted, you were tempting the evil eye. Better not to talk.

Of course there were people who spoke in the family. But it is not part of my memory. I am left with a sense of silence.

And in that way, we were all left to our own devices. By devices, I mean mistakes. And by mistakes, I mean life.

And in general, I think that is a fine way to live. Not to know and not to be told anything and just to figure it out. From books. Or other people. Or instinct.

Was my grandmother happy or sad? Contented or disappointed? A prisoner of a patriarchy? If she could have told the story of her life, what would she have said?

Now I really wish I could hear that. But it might complicate things.

This is what I know.

You have your work to do. You have your family. And that is the whole story.
Advice from the women in his family helped Matthieu Ricard seek out a life of wisdom and compassion.

WHEN I WAS YOUNG, my grandmother and mother often told me that kind- ness is the most admirable quality a human can possess. My mother demon- strated kindness constantly through her actions. Many other people I respected as a French interpreter for His Holiness the Dalai Lama, who often states, “My inspiration; they opened a field of possibilities beyond self-centered preoccupa-
tions and increased my wish to live a good, meaningful life. My spiritual masters also urged me to be kindhearted. Their words and actions were a source of

The only concept that harmoniously connects the economic challenges of the
short term, our quality of life in the main term, and the future environment in the
long term. Selflessness will not do the job.

To foster altruism, we must first recognize the banality of goodness—the idea that most of the time, most of the seven billion human beings on our planet be-
have decently toward one another. Let us therefore assume that, besides a few

decades, and the number of authoritarian regimes has diminished from ninety in 1975 to twenty today. The mortality rate of malaria has decreased by sixty percent in fifteen years, saving more than six million lives, thanks in part to the exceptional work of Ifra

THE ALTRUISM REVOLUTION

Advisement

Altruism is neither a utopian ideal nor a luxury that we can afford

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When I was young, my grandmother and mother often told me that kindness is the most admirable quality a human can possess. My mother demonstrated kindness consistently through her actions. Many other people I respected as a French interpreter for His Holiness the Dalai Lama, who often states, "My inspiration; they opened a field of possibilities beyond self-centered preoccupations and increased my wish to live a good, meaningful life. My spiritual masters also urged me to be kindhearted. Their words and actions were a source of wisdom and compassion.

Over the years, I became increasingly passionate about researching altruism and compassion. I came to realize that altruism is neither a utopian ideal nor a luxury that we can afford only under the best circumstances. Rather, altruism is neither a utopian ideal nor a luxury that we can afford only under the best circumstances. Rather, altruism is neither a utopian ideal nor a luxury that we can afford only under the best circumstances. Rather, altruism is neither a utopian ideal nor a luxury that we can afford only under the best circumstances. Rather, altruism is neither a utopian ideal nor a luxury that we can afford only under the best circumstances. Rather, altruism is neither a utopian ideal nor a luxury that we can afford only under the best circumstances. Rather, altruism is neither a utopian ideal nor a luxury that we can afford only under the best circumstances. Rather, altruism is neither a utopian ideal nor a luxury that we can afford only under the best circumstances. 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I’m anxious because new beginnings.

• I’m hopeful because I feel I have many more years and decades left to live and contribute to my life.

• I’m anxious because too many people don’t listen to others, especially if they disagree.

• I’m hopeful because young people are exposed to more and more sensitive discussions on treating others ethically and nonviolently.

• I’m anxious because I see such a high level of tension and distance between people of differing opinions.

• I’m hopeful because there’s always something around the corner that could be wonderful.

• I’m anxious because my husband’s health is deteriorating and I’m carrying too much responsibility.

• I’m hopeful because there’s always a new beginning.

• I’m anxious because I’m starting a new period in my life, work, love, living. It’s all so new.

• I’m hopeful because I enjoy following along with life’s surprises. It will all be new.

• I’m anxious because the threat to the environment becomes more real every day.

• I’m hopeful because there are a lot of people waking up and becoming more loving.

• I’m anxious because the world is changing, with daily traumas and hateful intentions. Where do I go? How can I get any peace of mind?

• I’m hopeful because we are all united through a primal humanity.

• I’m anxious because there are many things I can’t predict or control about the state of our country and how it will affect my family and friends.

• I’m hopeful because I am; as long as I breathe...

• I’m anxious because of kindergarten.

• I’m hopeful because so many of the young people I know are shining for justice and equality for all.

• I’m anxious because there is too much pain and suffering.

• I’m hopeful because crazies rule the world at the moment the things I love.

• I’m hopeful because there is possible change in the future. Because melanomas are spreading.

• I’m hopeful because my physical body is a little scary. I’m hungry.

• I’m hopeful because of Thea. I’m anxious before I don’t look up anymore.

• I’m hopeful because our leaders.

• I’m hopeful because I have a bright future ahead of me, if I don’t look up.

• I’m anxious because of global tensions.

• I’m anxious because nothing can be done on my own.

• I’m anxious because I’m a little afraid.

• I’m anxious because I want my daughter to be in less physical pain.

• I’m hopeful because of the humanity in all of us.

• I’m anxious because I have no idea what I’m doing ever.

• I’m hopeful because of the artists, the writers, the composers, the progressive.

• I’m anxious because I keep putting off physical exercise. I’m hopeful because the days are getting longer.

• I’m anxious because of my two kids.

• I’m hopeful because I’m good at making things with the person I love.

• I’m anxious because I want my daughter to have more love in her life.

• I’m anxious because I hate to say goodbye.

• I’m anxious because I’m feeling more teachable!

• I’m anxious because I forget to trust.

• I’m hopeful because I have a job interview tomorrow.

• I’m anxious because my boss won’t answer my emails.

• I’m hopeful because humanity seems to grow increasingly educated, compassionate, and understanding.

• I’m anxious because I’m realizing it’s okay that I don’t know what the hell I’m doing with my life!

• I’m hopeful because of Thea. I’m anxious because I’m not sure what I’m good at...

• I’m hopeful because my boyfriend left me after a moment. I’m hopeful because I’m learning to let go.

• I’m anxious because I have no idea what I’m doing ever.

• I’m hopeful because of my faith—always positive.
Exhibitions

Gateways to Himalayan Art

Start here for an introduction to the rich artistic traditions of the region, illuminating the primary figures, symbols, materials, and techniques presented throughout the Museum. Masterworks of Himalayan Art Journey across geography and more than a thousand years of history, tracing artistically and historically significant works from the Rubin’s collection, as well as new acquisitions and gifts.

Chitra Ganesh: The Scorpion Gesture and Face of the Future

February 2, 2018–January 7, 2019, and February 2, 2018–November 4, 2018

Artist Chitra Ganesh reimagines the permanent collection galleries and the visual languages of sci-fi and fantasy. Activate site-specific video animations that reflect and respond to images and stories of the Second Buddha (Padmasambhava) and the Future Buddha (Maitreya). In addition to showcasing her own work, Ganesh has invited seven emerging artists to expand and redefine the aesthetics of science fiction by creating posters displayed in our theater level Art Lounge.

Sacred Spaces: The Road To... featuring the Tibetan Buddhist Shrine Room

November 17, 2017–October 15, 2018

What journeys are sacred to you? Sculptures by Ghora Aharoni and mesmerizing videos by Jawahri Arthur Liu challenge you to consider the sacred in your own life. Engage all your senses in the Shrine Room with flickering butter lamps, incense, and an installation of more than 150 objects.

A Lost Future: Shezad Dawood, The Otolith Group, Matti Braun

February 25, 2018–January 28, 2019

Transport yourself to immemorial, virtual, and imagined worlds as award-winning contemporary artists dissect layers of time in this exhibition trilogy. Put on a headset to visit Kalimpong by way of virtual reality, as artist Shezad Dawood links a haunting nostalgic portal to a future alternative reality, accessing multiple places and times (February 23, 2018–May 21, 2018).

Watch films created by the Otolith Group that challenge scenarios of linear time and explore India’s history, science fiction, and potential futures (June 1, 2018–September 17, 2018).

Walk across Matti Braun’s other-worldly immersive lake, whichsums a 1960s-era notion of the future by evoking Satyajit Ray’s unrealized science fiction film that is said to have inspired E.T. (October 5, 2018–January 29, 2019).

The Second Buddha: Master of Time (February 2, 2018–January 7, 2019)

Find hidden content in the galleries and use augmented reality to reveal the stories and legacy of eighth-century Buddhist master Padmasambhava, known as the Second Buddha. He is believed to have traversed time, concealing treasured teachings for future discovery.

Public tours are offered daily and are free with admission.

PROGRAMS

PARTICIPATORY EXPERIENCES

Your Hopes, Your Anxieties

Candy Chang’s interactive installation A Monument for the Anxious and Hopeful welcomes you in the Museum lobby. Share your anxieties and hopes for the future on an outsized message board. Over the year, the wall will shift and change, acting as a visual barometer of a shared state of mind.

Letter to A Future Visitor

What if you could transmit your museum experience through time? On your visit, you’ll receive a letter with cues and clues, written by a past visitor. Write your own letter to shape a future guest’s experience.

Dream-Over

Sleep beneath a work of art chosen just for you and see what your dreams have to say about the future. Dreams are not only tools for transmitting visions but are associated with prophetic meaning in many cultures.

MUSIC & PERFORMANCE

Spiral Music

Wander the galleries as live music enamels from the base of the Museum’s spiral staircase. Each Wednesday evening, hear from rotating artists who specialize in music from the Himalayas and South Asia.

Naked Soul

Hear performances from some of the country’s top singer/songwriters without microphones or amplifiers, as if the music were, acoustically speaking, naked. The musicians in the series draw on the universal themes inherent in Himalayan art—spirituality, peace, tolerance, wisdom, compassion—and select Friday evenings.

Rhythms of India

Performers explore the varied traditions of Indian music from timeless ragas to contemporary fusion.

Face of the Future

In this performance art series, three artists present works in progress that confront different aspects of femininity, with each artist envisioning the possibility of a more diverse, inclusive future.

All programs subject to change.

TALKS

Brainwave

Our longest running series is all about understanding the mind and what makes us who we are. This talk series brings together neuroscientists and notable personalities for engaging conversations and presents related films and workshops.

Karma: The Original Instructions

How can we maintain and sustain life on earth? Director for the Center for Earth Ethics Karenna Gore draws ideas from world cultures, bringing together a diverse set of voices for this series of on-stage conversations and experiences.

FILMS

Cabaret Cinema

These Friday night screenings of classic films from around the world explore themes featured in the Museum galleries. Each screening is introduced by a special guest. Check listings for special screenings, including premiers and art and history films that are rarely shown elsewhere.

As a space for mindful, cultural exchange, the Rubin is driven by the desire to challenge, surprise, and provoke—we want to bring you into the fold to expand the limits of what an art museum can be.

The Rubin presents on-stage conversations, workshops, live musical performances, film screenings, and other innovative public events to expand on the themes in the galleries. For current listings, visit RubinMuseum.org.

Through the lens of Himalayan art, we journey with all who are curious to explore our shared human experience and consciously and insightfully navigate the complexities of our world today.
More Than a Museum

CAFÉ SERAI
Enjoy the aromas and flavors of the Himalayas at Café Serai, an inviting spot for your next meal. The café is open to anyone during Museum hours and does not require an admission ticket.

EVENING HOURS
Acoustic Wednesday Evenings Museum Open Late, 6:00-9:00 PM Peruse the galleries accompanied by the sounds of Spiral Music. Café Serai offers a Himalayan Happy Hour with special discounts on drinks, shared plates, and more.

K2 Friday Nights
Free Museum Admission, 6:00–10:00 PM During K2 Friday Nights, Café Serai becomes the K2 Lounge, offering a special pan-Asian tapas menu to accompany the evening’s DJ and new visitors with the Himalayas at Café Serai, offering a 10% discount on all purchases. RubinMuseum.org. Members receive a 10% discount on all purchases.

THE SHOP
Take a memory of the Museum home with you, or give a gift from the Rubin. The shop is a selection of jewelry, artisan items, books, and other treasures that bring the Rubin experience home. Become a member or give the gift of membership. Members get more! Benefits include invitations to exclusive previews and tours, free admission to Mindfulness Meditation and Cabaret Cinema, unlimited entry to the galleries, and much more. Membership to the Rubin Museum of Art is also a special gift that friends and family of all ages can enjoy throughout the year.

Make a donation
Your support helps make art and timeless wisdom come alive for thousands of people each year, bringing inspiration and meaning into our visitors’ lives.

Volunteer or become a docent
See the inner workings of the Museum and contribute your valuable time and service. Docents connect new visitors with our art and programs as they present thematic tours, gallery talks, and other educational initiatives. Apply to be a volunteer or docent online.

Thank you to our distribution partners!
Organizations in New York City and beyond help make Spiral possible. Find the full list of our partners, as well as exclusive content and distribution locations, at RubinMuseum.org/Spiral.
A yearlong exploration and a magazine to guide you
Step into a world where past, present, and future exist all at once. At the Rubin in 2018, we’re bringing together a full year of exhibitions, talks, programs, and experiences that examine our commonly held ideas about the future. By exploring various perspectives—from an eighth-century Buddhist master to Einstein to contemporary artists—we invite you to consider a future that isn’t fixed but fluid. Are you ready to form a new relationship with the future? Take a look at what’s happening, and join us this year at the Rubin.