

The Minimum Wager

place a small bet on your better self

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A Legacy Passage:

Psalm 19

A song by David for the One who persists

The heavens register the reality of Power
and His handwork lays out space.
The day-to-day utters speech
and one night states knowledge to another.
There is no speech, and there are no precepts.
Even so their voice is heard.

Their measuring rod goes out through all the earth
and their words to the edge of human conduct.
He set up in them a regimen for the sun,
and like a bridegroom going out from his marriage chamber
it is keen like an athlete running the course.
From the apex of the heavens is its moving forth
and its thrust is toward their apex,
and no thing is concealed from the warmth of His sun.

Teaching of the Name touches everything, restoring soul.
Witnessing for the Name is steadfast, instructing the youthful.
Accounts with the Name are straight up. They gladden one's heart.
Order from the Name binds, enlightening one's eyes.

Existing always awareness of the Name purifies.

Judgments of the Name are true. Together they are righteous.
They are more desirable than wealth, even extreme wealth,
and sweeter than honey, fresh honey from combs.
Moreover Your servant has received insight into them
so that observing them matters greatly.

Who can detect wrongness?
Cleanse me from what lies concealed.
Especially keep Your servant from those who deliberately deny,
that they not prevail with me when I become fatherless,
and that I be utterly cleansed from large transgression.

May the words of my mouth and the music of my heart
be acceptable in Your Presence,
The Name,
my Bedrock and my Redeemer.

translated by Phil LeCuyer

What Were They (the Supreme Court) Thinking?

The Real Issue Behind the Division in the Supreme Court

Consider this question: “Why does the Supreme Court have such stark disagreements? And why is the divide so bitter?”

In the abstract, the answer has to do with how to read the Constitution. Some justices hold that the Constitution should be read broadly to allow for growth and change in ever unfolding new circumstances--the “living Constitution” approach. Others argue that the Court should cautiously hew as closely as possible to the original intent of the Framers despite how much our society has changed in 250 years--the “originalist” approach.

One set of precedents that shows the nature of this divide began with a case called *Lochner v. New York*, which was decided in 1905. The New York legislature had passed a law restricting

to ten the number of hours that bakers could work in a day. The majority opinion in *Lochner* struck down that law, reading the word “liberty” in the Due Process clause of the Fourteenth Amendment of the Constitution so as to include “liberty of contract,” *i.e.* the liberty of businesses and employers to make whatever agreements they wanted without the interference of the government. At that time this was considered a conservative position, as it supported the power of business over labor by holding that laws meant to soften harsh conditions in the workplace were contrary to the Constitution.

Justice Oliver Wendell Holmes, Jr., new on the Court, thought the majority opinion was wrong and issued the first of the dissents for which he became famous. Holmes argued that the Constitution did not, as the majority opinion seemed to believe, embody the particular, substantive economic theory of *laissez faire* capitalism as if it were God-given natural law, but instead intended that the legislatures could experiment with all kinds of theories to see what worked. The majority’s recognition of a Constitutionally guaranteed “liberty of contract” prevented legislatures from making those experiments in the field of economics. This, Holmes believed, undermined the larger experiment the Framers were attempting of creating a structure which could govern “people of fundamentally differing views.” Whatever Justices may think of those views, the Constitution requires that legislatures be free to try them.

For the first few decades of the twentieth century, based on the majority opinion in *Lochner*, the Court routinely invalidated any law that infringed on the “liberty of contract” that the *Lochner* Court had recognized in the Constitution. Holmes dissented every time. Then, in the early 1930s, two changes came at the same time. First, Congress under President Franklin Roosevelt enacted a number of experimental laws testing new economic theories in an effort to end the Great Depression. Secondly, Roosevelt threatened to make radical changes to the Supreme Court if those laws were invalidated. Suddenly, the Court came around to Holmes’ way of seeing things and began to sidestep *Lochner*, eventually overruling its analysis.

Some legal scholars drew a very broad conclusion from this chain of events, arguing that the Court had held not only that the Constitution did not adopt any particular economic theory, which was the issue in *Lochner*, but that the Constitution did not intend for there to be any substantive meaning at all for the word “liberty” as it occurs in the 14th Amendment Due Process clause. Instead, they argued, the Constitution allowed legislatures to experiment with any laws they wished, guaranteeing only that the procedures used to enact and execute those laws were proper. The way that understanding eventually came to be expressed was that the Court had rejected “substantive due process” in favor of “procedural due process.” The Constitution allowed legislatures to enact any law, no matter how odd or oppressive, if they did it by the rules.

Starting in the 1960s, the Court's reading of the Constitution, despite its changed treatment of *Lochner*, began again to find substance in the meaning of the word "liberty" in the Due Process clause of the 14th Amendment. Curiously, the conservative and liberal positions with regard to this issue had exchanged places. *Griswold v. Connecticut*, involving a married couple's wish to obtain contraception devices in the face of a state law forbidding them, was the occasion for a liberal plurality led by Justice William O. Douglas to find in the shadow of the Bill of Rights a "right to privacy" which meant that the government could not interfere with the private, intimate decisions of its citizens. For Douglas and this liberal plurality, the Bill of Rights of the Constitution, with its repeated language that forbade Congress to make certain types of laws, was a *substantive* directive generally intended to restrain the power of legislatures to invade a person's private decisions. Justice Harlan, concurring in *Griswold*, referred to his own language in a previous case to put the Constitutional situation this way:

. . . the full scope of the liberty guaranteed by the Due Process Clause cannot be found in or limited by the precise terms of the specific guarantees elsewhere provided in the Constitution. This "liberty" is not a series of isolated points picked out in terms of the taking of property; the freedom of speech, press, and religion; the right to keep and bear arms; the freedom from unreasonable searches and seizures; and so on. It is a rational continuum which, broadly speaking, includes a freedom from all substantial arbitrary impositions and purposeless restraints . . .

So, while the *Lochner* majority was wrong to say that any particular economic theory was in the Constitution, it was right to say that the word "liberty" in the Constitution had some substantive meaning. The word means that citizens are guaranteed freedom in their most private decisions. Under a liberal living Constitution theory, this means further that the zone of a person's privacy can be extended to new places when new developments require it.

The conservative dissenting Justices in *Griswold* were outraged. They saw the right to privacy as an improvised right not stated and not implied in the Constitution, just like the right to contract in *Lochner*. These originalist justices argued that the right to privacy, as a judicially imported departure from the original text of the Constitution, was a power grab by the Court, trampling on the authority of legislatures to make any law they wanted. If the citizens of Connecticut objected to a law against contraception, these dissenting Justices argued, the right thing to do was to go to the Connecticut legislature and get it changed. If, instead, the Court exercised a power to strike down that or other laws that offended this new right to privacy – a right that was in its entirety concocted by the Court--the Court had effectively set itself up to act as a kind of "super-legislature" over the decisions of the people through their proper legislatures. The Constitution's separation of powers had been destroyed.

This divide on the Court over how to read the Constitution has only grown as some of the most controversial cases invoke it, pulling the conflict down from the abstract and into places of very strong feeling. *Roe v. Wade*, for example, relied on the “right to privacy” recognized in *Griswold* to establish a constitutional right to an abortion. Upholding *Roe v. Wade* in *Planned Parenthood v. Casey*, Justice Sandra Day O’Connor cited Justice Harlan’s language quoted above for the claim that “[n]either the Bill of Rights nor the specific practices of States at the time of the adoption of the 14th Amendment marks the outer limits of the substantive sphere of liberty which the 14th Amendment protects.” Conservative justices in that case expressed again their outrage at reading the Constitution in such a way that newly named Court-created rights could be found there, arguing that it was a dangerous and arrogant practice. Justice Antonin Scalia specifically warned that for the Court to supply its own substantive meaning of the word “liberty” in the 14th Amendment would bring on the Court the kind of opprobrium that Chief Justice Roger Taney earned when, just before the American Civil War, he tried to establish slavery as Constitutionally protected in *Dred Scott v. Sandford*.

The abortion issue perfectly displays the Court’s deep divide and also displays what I fear is a deep temperamental gulf that makes it very difficult to bridge. The present so-called liberal side of the abortion issue finds a substantive mandate in the Constitution forbidding legislatures from interfering with a woman’s private right to control her body. Adding a living Constitution approach means that, even though the Framers did not consider how the Constitution would apply to abortion, the Court can find that they would have recognized the right to abortion through the general right to privacy. The present so-called conservative side of the abortion issue argues that the Constitution should be read only as the original Framers wrote it, without adding new rights or addressing questions that were never before them. These justices draw the conclusion that the sole recourse for settling the issue of abortion, which is as highly charged an issue for us as slavery was in the 19th century, is to act through the political process-- that is, through legislatures rather than the Court.

At present there is no way to resolve this core disagreement on how to read the Constitution. On the one hand, a living Constitution is an attractive idea and entirely in keeping with ordinary practice, as courts are routinely required to apply laws that may or may not have been explicitly intended by the legislature to cover facts that arise after those laws were enacted – the world of case law. Furthermore, the Framers wanted the Constitution to create a workable society, which might not be feasible if that society is constitutionally tied to a view of the world that is centuries old. On the other hand, it may be dangerous to allow courts to exercise their own sense of what “liberty” means. Much better to be narrow in construing that word and direct people to the legislature if they want to change the law or the Constitution itself.

One aspect of these two positions brings the quarrel into an even wider realm. A difference between legislatively created law and judicially created law is that legislatures can make law without having to explain themselves, whereas courts write opinions in which they give the reasons for their decisions. Especially for heartfelt moral issues involving the definition of humanity there may be no rational explanations such as courts try to give; perhaps such issues can only be decided by counting unexplained votes in the legislature. To establish and preserve this difference between legislatures and courts is why the Framers separated those powers the way they did. The ultimate clash might come down to whether our society should rely on articulated reasons to make decisions, or on the general feeling of the majority.

Like other difficult and central questions, this one is unlikely to be answered in the abstract. Only as messy factual situations play themselves out before the courts and legislatures, in conversation with each other, will we work out in practice how to read the Constitution.

by Martha Franks

A Scientific Note: Talking Trees

When we think of language we tend to think of recognizable sounds being made and heard, but sonic communication is not the only kind. Some animals change their shape or posture to express themselves: cats communicate their fear by arching their backs, and porcupine fish show theirs by puffing up like a balloon. Other animals communicate through chemical cues: moths send pheromones into the night air to court their mates, and large predators like wolves and mountain lions scent-mark their territories. These silent forms of communication through posturing and chemical signaling are familiar to us even if we haven't given them much thought. But there are other languages which we cannot hear or see or smell--they are hidden, silent languages. One of these is the hidden language of trees.

Picture a forest with a variety of trees--trees of all ages and sizes and species. This would not be a mono-culture lumber lot, but a forest deep and dense and diverse. Until quite recently, conventional science taught us that these trees are competing with each other for sunlight, water, nutrients, and space. This is true--but they are also **cooperating**. The trees in this forest are silently communicating with each other, coming to each other's aid when they are threatened or in distress. How do we know this?

Suzanne Simard, a scientist working in the forests of northwestern Canada, conducted one of the first experiments to probe this question. Her experiment involved tree seedlings from

three different species of trees: paper birches, Douglas firs, and western red cedars. She chose those species intentionally because she had noticed that when Douglas firs were growing “wild” in forests they were often in proximity to paper birches. Yet, standard Canadian forestry practices remove birches (and other non-lumber trees) from their plots, farming firs and pines in a competition-free way. Simard noticed that young firs were much more likely to die when they were separated from birches, despite this lack of competition. So she designed an experiment to see if firs and birches co-operated with each other

She covered each of the tree seedlings with its own plastic bag. Some of the plastic bags were clear, allowing sunlight to reach the leaves, but others were black and opaque, preventing those seedlings from photosynthesizing. Both birches and firs had individuals with both kinds of plastic bags. Then she injected into the clear bags on the birches some radioactive Carbon14 CO₂ gas, and into the clear bags covering the firs some Carbon13 CO₂ gas. By using two different rare isotopes of carbon she could see if there was two-way communication between the birches and firs. She waited an hour so the seedlings could absorb the radioactive carbon and incorporate it into newly formed sugars, which she could then track. Using a geiger counter and a mass spectrometer, she found that the seedlings covered in black plastic registered radioactive carbon uptake even though they had been unable to photosynthesize: shaded firs had taken up the Carbon14 from the neighboring birches, and shaded birches had taken up the Carbon13 from the neighboring firs. The seedlings were helping each other--there was a lively two-way conversation going on! Those having an abundance of carbon shared their excess with those that did not. The two species were interdependent. But, how did they do that?

To understand how, we need to look underground, into the dark world of humus and the red and yellow mineral horizons. The roots of the trees are visible, but they are not alone: intertwined throughout these soil layers, weaving between the roots of all the different trees and plants, are millions of tiny white fungal threads. There are so many of these threads that in places they form a thickened mat so dense that hundreds of kilometers of this web-like substance lie under a single human footprint. This is known as the *mycelium*, the “body” of various fungi, and it covers a much larger area than that covered by the trees’ roots. Mycelium connects the roots of all the different trees and plants together, creating a vast interactive system, a network reminiscent of the internet.

These fungal strands deserve a closer look because they are vital to our inquiry. A single tiny white strand is a *hypha*, and it is a part of the roots of this special group of mushrooms called *mycorrhizae*. Mycorrhizae are symbiotic fungi, meaning that they live in a close physical association with the tree roots for the mutual benefit of themselves and the roots. It is through this vast web of mycorrhizae that the photosynthesizing birch seedlings were able to

send their excess carbon to the shaded firs, and that the photosynthesizing firs were able to send theirs to the shaded birches. The young trees were connected underground through this network comprised of their own roots and the mycorrhizae. It is important to recognize that this sharing of the vital nutrient, carbon, took place between unrelated individuals--they were helping each other even though they are not the same species! Further experiments revealed that there are predictable patterns of sugar sharing in different seasons. In the spring and summer when the birches are leafing out their flat leaves, they capture more sunlight than the needle-leafed firs do--so they send their excess sugars to their neighbor firs to help them out. Later on, in the autumn and winter when the birches are losing or have lost their leaves, the firs, still growing and photosynthesizing, are now the ones sending their excess sugars to the birches.

Something larger than the competitive autonomy of individual trees is occurring here. The seedlings are engaged in social behavior: they recognize that they are more than just birches *here* and firs *there*. They are part of the same community, and it is more than just an ecological one--it is a social community--the forest.

Further research has shown that the forest should be thought of as a single enormous superorganism. All of the trees and plants in a forest are interconnected under the soil's surface, where there is a vast world of biological pathways between trees which allows them to communicate with each other. The largest and oldest trees have the most connections to other trees in the mycorrhizal network. They are connected not only to their children and grandchildren, but also to other genetically unrelated trees, whether of the same species or not. These highly connected trees are the hubs of the communication network, and so are known as "hub trees." They also have another name--"Mother Trees"--because they nurture the trees around them.

Mother Trees are the largest and the tallest trees in the forest, so they capture the most sunlight and correspondingly photosynthesize the most, while the trees around them grow in the shade. Just as we saw with the seedlings, Mother Trees share their excess nutrients--carbon, nitrogen, phosphorus, and water--with the trees and seedlings around them, shunting those molecules along the network of roots and mycorrhizae. They preferentially interconnect with their own family members, recognizing their kin through genetic markers communicated via the underground network: they colonize their offspring with bigger mycorrhizal networks, so they can send them more carbon, and they reduce their own root competition in order to give their offspring more space.

Over their long lives Mother Trees acquire wisdom, enabling them to recognize impending threats like drought, disease, and even insect attacks. They then communicate the appropriate

distress signals so the recipient trees can increase their production of protective enzymes in anticipation of the threats. This is clearly communication. Information is being passed along the mycorrhizal network like nerve impulses in a neural network or messages on the internet, and the recipient-trees change their own behavior once they have received these messages. When Mother Trees are injured or dying they pass along messages to the next generation of seedlings, sending carbon and defense signals down into the network to those seedlings, which then increase the seedlings' resistance to future stresses. This pattern is similar to the complex behavior found in most social animals, including humans.

I have said that all of the trees and plants are interconnected underground in some way, but tracing all the connections is very complicated. There are about a hundred different known species of mycorrhizal fungi, and any single tree might be colonized by dozens of them, each one of which connects it to a unique set of other trees.

It gets even more elaborate and complicated. Remember that first experiment: there were three species of tree seedlings--birch, fir, and cedar. What was going on with the cedar seedlings? Simard hypothesized that the cedar trees would not be part of the birch-fir below-ground web, and they weren't. They did not receive any carbon from either birch or fir. Why not? What isolates the cedar trees in their own other world?

Western red cedars do grow in areas where both paper birch and Douglas fir trees grow, but red cedar is part of a different mycorrhizal network. Mycorrhizal fungi interact with the tree roots in different ways depending on the species of fungus--either by surrounding the root tips or by penetrating and growing within the root cells. Paper birch and Douglas fir are part of an *ectomycorrhizal* network: "ecto" means "outside," and ectomycorrhizae surround the outside of the root cells. Red cedar, on the other hand, is part of an *arbuscular* mycorrhizal network: these mycorrhizae are invisible to the eye, growing *inside* the root cells. The fact that red cedar is connected to mycorrhizae indicates that it is not alone, but as a species is part of a different underground web. The arbuscular mycorrhizal networks of red cedar trees connect with yew trees, ferns, trillium, and pinegrass. Crucially, these different mycorrhizal networks co-exist in the same forest.

Scientists now recognize how the trees benefit from this networking, but why the mycorrhizal fungi transport resources from tree to tree is still a mystery. It makes sense for the fungus to exchange its excess mineral nutrients for sugar from a tree: both individual parties benefit. But, exactly how the fungus benefits from being part of a huge network between trees is unclear. Possibly there are benefits to the fungus having connections with as many trees as possible, so it maximizes its connections by shunting molecules between trees; possibly a healthy forest canopy facilitates temperature or climate control for the large underground

network of fungi; or, maybe the trees reduce their contributions of sugars to the fungi if the fungi do *not* facilitate exchanges between the trees. There is still much that is not known about the “otherworld” underground network (and to me that is wonderful and exciting). Whatever the reasons, these mycorrhizae pass an *incredible* amount of material and information between trees.

This mutually beneficial system of communication and cooperation increases the resilience of the whole community, enhancing the balance of complexity and diversity. A healthy holistic forest-organism needs diversity in both ages and species of trees in order to have the resilience necessary not only to withstand biotic stresses, but also to adapt to global climate change.

There is an intriguing story from Japan that highlights just how important this interconnected network of forests is even globally. Katsuhiko Matsunaga, a marine chemist in Japan, found that leaves falling into rivers and streams leach certain biologically valuable chemicals into the ocean, and these chemicals act as nutrients and stimulate the growth of plankton--the first and most important building block in the marine food chain. Could floating leaves result in more laden nets? He encouraged the planting of more trees in coastal areas, which did indeed lead to higher yields of fish and oysters.

There are material and commercial reasons for striving for healthier forests, but even if there were not, this insight into the language of trees and their familial and social networks is intrinsically valuable. The trees in a forest are not simply large immobile objects: they are living beings with memories, messages, intentions, and reactions. They recognize members of their own family; they nurture other trees; they stick together to weather crises. They engage communally with one another and succeed jointly when they are able. Each tree is more than just a single tree--it is a part of an interweaving of many interdependent species, whose interconnections provide resilience to the community and give rise to emergent phenomena that are only now beginning to be noticed let alone understood.

The forest *is* more than the sum of its trees. It is not a static place or structure, but a magnificent process, an unceasing pattern of activity and communication across an immense network of interconnected beings.

by Janette Fischer

Petroglyph: *Kokopeli's Plant Song*

prehistoric rock art in the Galisteo Basin
drawn by Agnes Sims (1950)



Poem:

Song

Poetry has brought me
to the edge
of speech
where words
grow so few,
I fall into
the deep well
of silence.

Here, I sit
listening
to presence.
I see,
in the dark,
my path.

I follow its thread
to the place between
ground nothing disturbs
and all I once knew.

Here, I begin to sing.

by Liza Hyatt



drawing by Judy Kistler-Robinson

In Memoriam: *After Dancing with Robert Bly (Kirkridge Retreat Center, 1989)*

He told us the story The White Bear King Valemon, a Scandinavian version of Psyche and Eros, and taught us of the need for claws and the ability to feed ourselves as we wander the world, looking for love. And before the story was finished, night came, and so he said it was time to dance and there was bouzouki belly dancing music and someone blowing up balloons, exhalations held in films of color, and we were learning Greek circle dances, and keeping the blue, green, red and yellow balloons aloft, lost, giddy, laughing with him, white haired, in his red vest, in the center of everything.

And as he danced, the walls dissolved, and around us was a forest in the old eastern mountains, and the people who made the trails through these mountains, the People of the Waters That Are Never Still, came to dance with us and we were also on the hillsides of Athens and Delphi, and in the sacred hoop of the Great Plains, encircled by the horizon, and in Druid rings of stone, and the cliff-cleft kivas, and the walkabout song-lines, and the Rift Valley, and the bison-painted hand-print caves.

And there he was, dancing with Psyche and Eros, with Coyote and Crow, with Dionysus and Demeter and Aphrodite, with Loki and Freya, Brigid and Ossian. He brought them all into the room - the warriors, the wanderers, the witches and wizards, the healers, the sages, the teachers, the tricksters, the Great Mother, the Great Father. He brought them all into the room and into himself and into us and then sent them home with us to accompany, play, trick, nag, upend, wreak havoc, inspire, incite, spark insight, and dance with us ever since.

And because they and this dance are eternal, time passes without notice and, a quarter of a century later, we are only just beginning the dance and we still don't know where we are or who we are or how to live or how to die and we are still wandering the world looking for love.

And he is wandering in the widest circles yet, where there is no need to know where or who and all is leaping poetry and two-fold consciousness, three-fold, four-fold, endless-fold, this man in a red vest turning, turning, turning to face the immortal ones, still playing their tricks, still demanding the dark passage, immeasurably far from the snow-banks north of his house.

by Liza Hyatt

Film Review: *Echoes of the Invisible* (2020)

Watching the documentary *Echoes of the Invisible*, directed by Steve Elkins, is much like wading through the numerous possessions of someone's home: at first, the items feel randomly selected and arranged without order. Then you notice patterns. Gradually a story emerges, and you see a portrait of the human being. *Echoes* is filled with so many seemingly eclectic stories that at first it is hard to incorporate them all into a cohesive narrative. Once you notice the ways in which those stories are similar, however, the final product becomes something deeply beautiful and intelligently constructed.

The documentary gradually introduces us to a myriad of people: Al Arnold, a blind runner who has conditioned himself to run in extreme temperatures so that he can traverse Death Valley; Linda Lynch, a painter who gives her reflections on the human condition and need for quietude; and Rachel Sussman, who has spent 10 years documenting the oldest living organisms. One of the main threads of the film follows Paul Salopek, a two-time Pulitzer Prize winning journalist who is embarked on what he calls the Out of Eden Walk, an on-foot journey that began in Ethiopia and will eventually end at the Southern tip of South America. (Yes, he has and will travel by boat when needed.) Several scientists, including those working with the particle colliders at CERN in Switzerland, treat us to descriptions of the work being done in physics to understand components of the universe. Religious practitioners, from Ethiopian monks living in cliff dwellings to shamans in Russia, are interspersed throughout the film, along with descriptions of their practices.

What do these various people have in common? They are all engaged on various missions to acquire knowledge, reflection, or understanding of the world in one way or another. The film makes connections between these often starkly different endeavors in what becomes an impressively constructed cinematic web.

Many of these figures invoke the need for silence, and this emphasis on the importance of silent environments becomes a pervasive theme. Anul Ananthaswamy, science writer and author of *The Edge of Physics*, describes the silent, placid and bare locations needed to conduct work inside the sites of the world's most powerful telescopes. Describing the Hanle observatory in a remote Himalayan Mountain range in India, he remarks on the 400-year-old Buddhist monastery in its proximity:

Both monks and scientists need silence...from television towers, mobile phones, or light pollution, which is a kind of noise. We need to preserve these places, because if we don't, we will end up on a planet that is so noisy...that we will be stranded in

a cosmos without being able to look outwards, to understand our very beginnings -- and maybe understand where we're headed.

Artist Linda Lynch offers similar sentiments, explaining that so many human interactions have been replaced by electronic devices, and that real silence and reflection is more than ever a needed part of the human experience. Describing the Chihuahuan desert landscape where she grew up and feels deeply connected, she reflects: "It's like a cathedral – a place of great beauty and silence.... I like to think about the people who came here before my own passing through, that their echoes are still here as well." The importance of slowed-down human connection, she explains, is the reason she supported Paul Salopek on his journey to walk the world in his pursuit of slow, immersive storytelling.

Journalist Paul Salopek, whose on-foot journey will eventually cover some 21,000 miles, is not walking to pull off some adventure stunt. He is journeying to trace on foot the pathways our first human ancestors took to leave Africa, and along his journey, to document human life in the 21st century. Starting at the ancient fossil site of Herto Bouri, he has made his way across Djibouti, Saudi Arabia, Georgia, and many more countries, accompanied by "Walking Partners" -- people who are familiar with the local cultures and landscapes and who contribute to the stories being written.

Linda Lynch, a founding member of the Out of Eden Walk Project, writes:

Paul's walk comes at a time journalism is pressed on all sides by short attention spans, because of the immediacy of the Digital Age of the internet.... It's the antidote to instant news and the abbreviated viewpoint. Paul's project is a response to the ultra-speed in present-day media: by slowing down to 3 miles an hour, he can more acutely gain an understanding of the human beings along his route and create connections between different stories-- something he would be missing if travelling rapidly by car. Salopek's emphasis on human connection comes poignantly at a time when much of our interactions are made digitally, and when cars insulate us from the actual places and people we travel between. 'I have connected with human beings in ways I could not have conceived of as a reporter crisscrossing maps by jet or car,' says Salopek. 'Modern Saudi Arabia has lost so much memory beneath sleek highways, parking lots, hotels, malls. Herein lies a paradox: as our species becomes more successful, more populous, we fracture the world into ever tighter panoramas, into countries, provinces, neighborhoods. Into houses. Private space. In this way a proportionally larger share of the planet becomes alien, exotic, threatening, unknown. In a sense the car has become a prosthetic for a world that is no longer human in scale.'

Remarking on Paul Salopek's endeavors, Linda says: "What we share is an appreciation for slowing down and seeing the invisible."

Rachel Sussman's work is particularly striking: documenting the oldest living organisms on the planet, she has sought out and photographed 100,000-year-old seagrass in Spain, an 80,000-year-old colony of Aspen trees in Utah, a 12,000-year-old yucca in California, and many others. This, she says, has given her a different relationship to time: a thousands-of-years-old organism, which was already old when humans first began to develop agriculture, is being captured by a photograph which takes place in 1/60th of a second.

Witnessing the journey of the runner Al Arnold, who runs with glaucoma affecting his eyesight (he follows the light of the sun in order to maintain position), it was at first somewhat difficult to understand his narrative in relation to the rest of the film, but then his description of his experience revealed yet another meaning of noiselessness: "All the pain I inflicted to find out about myself..., I have no idea why I do these things. Losing my eyesight, I saw better than I ever saw before.... It was just my world of silence."

The interspersal of religious practitioners throughout the film is quite interesting. The Ethiopian monks living at the tops of cliffs remove themselves from worldly affairs, and Losang Samten, a Tibetan monk and former personal attendant to the Dalai Lama, has spent over 30 years mastering the art of tantric sand mandalas. Describing his work, he says: "I'm simply carrying a beautiful art for the welfare of all sentient beings." Valentina Süzükei, a Tuvan musicologist discussing Tuvan shamans in Russia as they sing, says "he [the shaman] listens to how the river runs, tunes himself to the river, and then performs. People who listen to Tuvan music would say, 'It seems to me that I began to remember something very familiar but long forgotten,-- what exactly it is I can't remember.' I think this must be some kind of ancient genetic memory."

Echoes of the Invisible won the Zeiss Award for best cinematography, and one can see why, especially when viewing it on a large screen: it has breathtaking drone shots of vast landscapes and the night sky, and striking portraits of human beings. At one point, we are treated to a nearly two-minute sequence of the construction of a sand mandala by Losang Samten. Considering some of the lengths the film crew had to go through, which include scaling cliffs and journeying to a physics experimentation site half a mile below the earth's surface (according to an interview with director Steve Elkins), this award is well-deserved.

One means the film uses to tie together its themes is transitional shots that hold thematic continuity: scientist and photographer Rachel Sussman's description of the oldest artwork in the world (a Neolithic-era red dot painting on a cave wall in Spain) is at once followed up by

footage of artist Linda Lynch as she paints on the porch of her house in the Chihuahuan desert in Texas; the words of blind runner Al Arnold, as he describes an injury that paralyzed most of his body, is accompanied by shots of Losang Samten erasing his sand mandala with a brush. Similarly, Paul Salopek's description of how petroglyphs outlast the physical integrity of digital photo files by thousands of years is followed by Rachel Sussman detailing the oldest known living thing (some bacteria in the Siberian permafrost).

Echoes is impressively multifaceted and complex, but this complexity, although it sometimes leaves one wondering about the various people and themes, doesn't feel disjointed or without method. Instead, *Echoes* is experienced as a meditation. If the stories do not present an immediate thematic continuity on the surface, they have a quiet, invisible emotional coherence, and this carries the film. The various scientists, writers, artists, religious practitioners, and others in the film all present a gradually building tapestry of questions: What do we gain from self-reflection? When we cannot access silence - when we do not slow down - when we do not remember - what do we lose?

'Echoes of the Invisible' was selected for screening at the 2020 SXSW Film Festival and was awarded the ZEISS award for best cinematography. *'Echoes of the Invisible'* is available for purchase or rental on iTunes and Altavod, and is being screened in select theaters.

All of Paul Salopek's work is available online at <https://www.nationalgeographic.org/projects/out-of-eden-walk/>. He is currently walking in the countryside of Southern China.

by Raquel Goldman, a graduate student at St. John's College in Santa Fe, NM.

Book Review: Small Gems Recent and Remembered

The Gitanjali: A Hindu Psalm for a Better Democracy, by Rabindranath Tagore

What is the measure of society? Countless material metrics — GDP, DOW, debt, emissions, employment, and interest rates — track the dimensions of a healthy polity. But what marks its inner life?

I envy the longing of the Bengali poet. He offers neither angst nor easy assurance, but sings a psalm of searching civility. It's a bent of heart we rarely see in the commotion of modernity. The saying goes that if you take a pebble and throw it into a random crowd in Bengal you will hit a poet. They're everywhere. Poetry is a strong Bengali currency. The Indian tradition

of Bhakti devotional poetry is a close cousin to the Hebrew psalm. A prayer and a song and a sort of lovely lamentation. But the vast interior worlds of Bhakti grow ever outward.

The Gitanjali of Rabindranath Tagore, the first non-European to win the Nobel Prize for Literature in 1913, presents the kind of longing we need today. He seeks God in summer rains, arid dusts, wet lily pads, and passing clouds, waiting and waiting ... And in this unfinding he yet finds the unnamable mystery. A liberal-minded Hindu, Tagore turns our material languor into cosmic adventure:

"I MUST LAUNCH out my boat... What emptiness do you gaze upon! Do you not feel a thrill passing through the air with the notes of the far away song floating from the other shore?"

But underneath our Western affluence lurks a different kind of longing – the restless chase of the American dream, the race to stand out among those around you. It is a longing of the now. In the 1830s, as he journeyed across our early republic, French thinker and political explorer Alexis de Tocqueville wanted to know what animated these new “democratic times.” With no common basis of moral authority, he found that the democratic personality sinks into itself and becomes the measure of its own notions of the good. And with one eye fixed on the progress of neighbors, democratic strivers thus learn how to be miserable in their success. Much of what de Tocqueville saw in America still stands today.

“It is in themselves or in those like themselves that they ordinarily seek the sources of truth,” he wrote in *Democracy in America*. In this parade of competition, de Tocqueville worried that democratic peoples would lose sight of distant horizons. The cramped crowds look in and look out but are less accustomed to look up. The lights of the majority pose as the sun. Tangled under the tow of ever-revolving comparisons, we need a higher target in order to break out of the cycle, a solitude that swallows up the puddles and throws us into the ocean. *Gitanjali* offers a model for stepping outside the dominant paradigm into an enchanting journey of the soul. He begins with the double eternal vista pointing within and without:

"Thou hast made me endless, such is thy pleasure. This frail vessel thou emptiest again and again, and fillest it ever with fresh life."

In one representation after another, Tagore immortalizes human longing for Brahman – the ultimate ground and good of existence. Amid this stream of beautiful reflections, one poem leaps out of the inner quest and pleads for the highest democratic ideals. It is a wish and a lament and a truth at the same time:

*“Where the mind is without fear and the head is held high;
Where knowledge is free;
Where the world has not been broken up into fragments by narrow domestic walls;
Where words come out from the depth of truth;
Where tireless striving stretches its arms towards perfection;
Where the clear stream of reason has not lost its way into the dreary desert sand of dead habit;
Where the mind is led forward by thee into ever-widening thought and action
Into that heaven of freedom, my Father, let my country awake.”*

Alexis de Tocqueville observed that democracies have the tendency to get stuck in their own horizons. As an antidote, they always need to keep alive their God-given “taste for the infinite and the love of what is immortal.” He so worried that Americans would lose themselves in material pursuits that they would lose sight of the transcendent realm beyond. Even the teaching of the transmigration of souls — a Hindu idea enmeshed in Tagore — is preferable to relentless careerism. Endlessness is a tonic to democracy.

*“On the seashore of endless worlds children meet. The infinite sky is motionless overhead and the restless water is boisterous. On the seashore of endless worlds the children meet with shouts and dances.
They build their houses with sand and they play with empty shells. With withered leaves they weave their boats and smilingly float them on the vast deep. Children have their play on the seashore of worlds.”*

In our secular age, God is something we deconstruct, qualify, resist, and wrestle. We fear religious space for its punishments and judgements. But Tagore reveals a God who reaches toward us as much as we reach toward it. The religious life is a game of love, a partnership, an artistic play between the individual and the Ultimate that re-centers our desires.

*“Thou hast taken me as thy partner of all this wealth. In my heart is the endless play of thy delight. In my life thy will is ever taking shape.
The great pageant of thee and me has overspread the sky. With the tune of thee and me all the air is vibrant, and all ages pass with the hiding and seeking of thee and me.”*

When the horizons of democratic struggle close in and obscure the greater skies beyond, this little volume of poetry from Rabindranath Tagore will launch you into seas unknown and shore up this precarious republic.

by Nathan Nielson, founder and director of Books & Bridges,
a humanities institute of ideas and conversation

Light Touches: The Regular Solids

Humor is not the opposite of logic or rationality; often there is deep rationality embedded in the joke. The impulse to laugh is mostly the surprise connection. We are assuming one pattern and then there is a sudden, substitute pattern that also fits but is not expected.

Years ago in freshman math I arrived early to class. The tutor was up at the chalkboard getting ready. We were studying the five regular solids: geometric shapes where every face is composed of identical equal-sided polygons, meeting at the same angle. The fewest-sided perfect solid is the tetrahedron -- a four-sided pyramidal solid, each side made up of identical equilateral triangles. The cube is composed of six sides, each side made up of equal squares, and so on. The five regular solids quickly become more unusual and more difficult to represent: the octahedron made up of eight triangles, the dodecahedron made up of twelve pentagons, and the icosahedron made up of twenty perfect triangles.

To help the discussion along Ms. Knight was drawing a diagram of each of the perfect solids, with a few key attributes listed underneath each drawing. A few of us who had wandered into the classroom early were there to witness her preparations. She drew all of the solids reasonably well, except the dodecahedron. She drew and then erased her wobbly dodecahedron three or four times, each time leaving a larger smudge on the chalkboard. Finally, below the erased images she wrote "dodecahedron" and turned toward us. "Sometimes," she said, "a word is worth a thousand pictures."

by Robert Bienenfeld