Choices for Sustainable Living

30 YEARS

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DISCUSSION COURSE ON

choices for sustainable living

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Ecochallenge.org
PO Box 14911
Portland, OR 97293
contact@ecochallenge.org
ecochallenge.org

Layout and Typography: Erica Patstone
Cover Design: Deborah Kim and Sarah Russell
Curriculum Development and Editing: Lauren Watkins, Ph.D. and Kerry Grimm, Ph.D.

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table of contents

"Small actions can create big ripples. Each one of us has the power to make a difference in building a sustainable future."

—XIUHTEZCATL ROSKE-MARTINEZ

all of us. one better shared future.

Since 1993, Ecochallenge.org has helped make change more possible, social, and fun by helping people connect with their communities and take action together.

Our Vision. We believe in a better shared future, one with fresh air to breathe, clean water to drink, and a stable climate to live in.

Our Model for Change. We believe that our individual behaviors are pivotal in creating this world, one that is realized by the collective impact of everyday people raising their voices and taking action.

Our Approach. We believe in solutions. Through our Ecochallenge Platform and Discussion Courses, we connect you with research-backed actions and people who want to take these actions with you. We show you how our collective behavior — and your personal transformation — connect with something big, shared, and better.

Our Commitment to Justice & Equity. Our solutions-focused work encompasses upholding and revitalizing just and equitable systems. We know a better shared future can only exist when we hold in earnest all inhabitants on this dot we call home.

Together. We are connecting the dots between our actions, our impact, and our will to create significant global change. Each time our dots are connected, we take another step toward our better shared future. So here we are. Let's begin.

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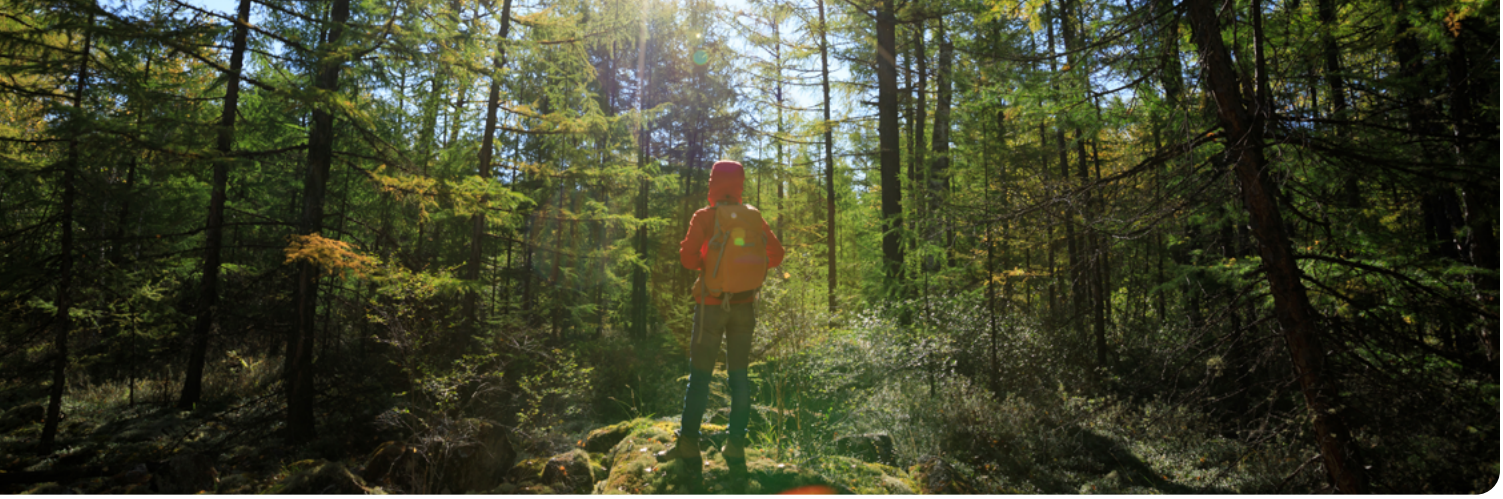
Together, we're connecting the dots.



INTRODUCTION

At this point, the idea of sustainability has infiltrated most of our societies. "Sustainable" products, "sustainable" lifestyles, "sustainable" food, "sustainable" development — the term is used often and widely, and even contradictorily. Regularly, "sustainable" really means "less unsustainable," which can be misleading at best. The definitions and visions of sustainability differ with each culture in which it is envisioned and with the agenda of each person or organization promoting it. Sustainability is a complex and contested concept, but at its essence, it represents the hope for a healthy, just, and bright future for us all.

We offer this 30th-anniversary edition of Choices for Sustainable Living to explore diverse perspectives on sustainability so that we can build a thriving future for everyone. The course focuses less on defining sustainability than envisioning it — what would a sustainable world look like, and how can we create it together?

We also want to explore the idea of "choices" for sustainable living with you. Some of us have more choice or agency than others. As individuals, our choices are often constricted or manipulated by complicated and power-laden systems (for example, recent reports suggest just over 50 corporate and state producing entities are responsible for most of our greenhouse gas emissions). This course book focuses on the choices you have in your individual daily life to contribute to a healthier, more just, and more sustainable world. It also focuses on the choices you have to exercise a bigger positive impact by being a leader or agent of change in your social circles, communities, and larger systems.

To explore the idea of choice, we also have to look at power and privilege. Those with power and privilege have bigger voices in our public conversations and often have a bigger impact on the world. The perspectives of people with power frequently become the dominant ones, and some of them can be or have been quite harmful. But just because a perspective is dominant, it does not mean it is the most accurate one. Not all opinions are equally valid. However, we can come to a better understanding of sustainability that is grounded in evidence, context, and equity. With that in mind, we have exercised intention in selecting articles that represent diverse views of sustainability, but we have

yet to represent them all. We have elevated less dominant perspectives to encourage conversation about what is both equitable and achievable. We have prioritized content that helps you connect with your peers, create a community of support, contrast differing views, reflect on your own values and assumptions, and move to action.

Throughout this course, you will examine and envision sustainability from individual, societal, and global perspectives. The readings are intended to invoke meaningful discussion. As you meet with your group, we invite you to bring your experience and critical thinking to the process. Whether you agree or disagree, you can explore and clarify your views and values. Ultimately, we hope this process inspires you and others to make choices to live with more intention on Earth.

GETTING STARTED

Choices for Sustainable Living is comprised of sessions designed for structured discussion. Each session includes readings, videos, links to interesting resources, suggested discussion questions, one or more suggested group activities, and a reflection prompt. Before you begin, we recommend reviewing the terms below. Familiarizing yourself with these terms will help your group explore them more deeply in your discussions. We recommend creating a group goal or project during the "Visions for Sustainability" session. This last session is encouraged as a way for your group to celebrate connecting with one another through your discussions, share goals and progress, and consider ways the group might continue to work together.

Consumer Culture: A form of capitalism in which the economy and culture are focused on buying and selling consumer goods and spending consumer money. Most economists agree that the United States is a consumer culture.

Culture: The way of life or social norms of a particular people, especially as shown in their everyday behavior and habits, attitudes toward each other, values, and moral and religious beliefs.

Ecological Conservation: The protection and preservation of natural environments and the wildlife that lives there to ensure ecosystems remain healthy for future generations.

Ecological Footprint: A measure of the human demand on Earth's ecosystems. Ecological footprint analysis compares human demands on nature with the biosphere's ability to regenerate resources and provide services.

Equality: Treating everyone the same, ensuring equal access to resources or opportunities regardless of individual needs.

Equity: Fairness or justice in the way people are treated. Equitable treatment includes eliminating barriers that prohibit or limit access to opportunities and resources. While equality gives everyone the same thing, equity considers differences and provides what each person needs to achieve fair results.

Indigenous Perspective: A way of understanding the world that comes from Indigenous peoples.

Resilience: The ability to recover from or adjust easily to difficulties or change.

Social Justice: The fair and equitable distribution of wealth, resources, opportunities, and privileges within a society.

Systems Thinking: A way of conceptualizing and understanding the world that focuses on how various elements within a system — an ecosystem, an organization, or something more dispersed, such as a supply chain — are related to and influence one another.

"Western": Commonly refers to societies shaped by European colonization and industrialization. However, it can be vague and misleading. Terms like "modern industrial society" or "capitalist, extractive systems" are more precise for describing dominant, white-led perspectives, helping avoid oversimplification and colonial biases.

Worldview: The overall perspective from which a person sees and interprets the world. The collection of beliefs and attitudes shapes how they understand life.

FACILITATING CHOICES FOR SUSTAINABLE LIVING DISCUSSIONS

This Discussion Course is designed to be much more than a book; it is designed to be a guide for powerful discourse, community-building, transformative learning, and inspiring action.

When you break big issues into bite-sized pieces and talk through them with others, you discover insights and inspiration that are hard to find on your own. You learn together. You build a personal network of shared stories and support that makes it easy to take action. In short, you become part of a community for change.

On the following page, you will find guidelines for three optional roles participants can play in each discussion: **Facilitator, Notetaker, and Opener**. For each session, one participant brings an "Opening," a second participant facilitates the discussion, and a third participant takes notes on the discussion, optional Group Activity, and Actions group members commit to. *The role of the Opener is recommended for in-person discussions, in particular, or if your virtual session is longer than one hour.*

The roles are designed to rotate each discussion, with a different group member acting as the Facilitator, the Opener, and the Notetaker so everyone can share leadership in the group if they feel comfortable doing so. This process is at the core of Ecochallenge culture — it assumes we gain our greatest insights through self-discovery, promoting discussion among peers, and each person learning with and from each other.

Learn more about organizing an Ecochallenge discussion course at https://ecochallenge.org/discussion-courses/

TYPICAL FLOW OF A SESSION DISCUSSION

Each session in this course includes a Circle Question (to start the insightful discussion among participants), Discussion Questions to reflect on the session content, and suggestions for group activities.

1. FACILITATOR: Welcomes everyone to the discussion and begins the session on time.
2. NOTETAKER: Takes notes throughout the discussion, especially if participants decide to do the suggested Group Activity.
3. OPENER: Share their prepared **"Opening"** with the group.
4. FACILITATOR:
   a. Invite everyone to respond to the **Circle Question** one person at a time.
   b. Select questions from the Suggested **Discussion Questions** (or share questions they create) to engage the group in conversation.
   c. Make space to ask the group if they would like to participate in the Suggested **Group Activity**.
   d. Before ending the discussion, ask for volunteers to act as the next session's Opener, Facilitator, and Notetaker.
   e. Encourage participants to take the session evaluation online at https://www.surveymonkey.com/r/CSLSurvey
5. NOTETAKER: Share the notes with the group members after the discussion concludes.

HELPFUL TIPS FOR EACH ROLE

FOR THE FACILITATOR

As the Facilitator, your role is to stimulate and moderate the discussion. You do not need to be an expert or the most knowledgeable person about the topic.

Your role is to:

- Remind the Opener ahead of time to bring their Opening, and remind all participants to read the session before you meet.
- Begin and end on time.
- Ask questions included in each session, or use your own. The Circle Question is designed to make space for everyone's voice. Be sure to start the discussion with it and encourage everyone to briefly answer without interruption or comment from other participants as they share.
- Keep the discussion focused on the session's topic. A delicate balance is best — don't force the group to answer the questions, but don't allow the conversation to drift too far.

Your primary focus is to ensure everyone can participate and learn from each other. Here are some helpful tips for facilitating discussions:

- Draw out quiet participants by creating an opportunity for each person to contribute. Don't let one or two people dominate the discussion. Thank them for their opinions, and then ask others to share.
- Be an active listener and model this behavior for others. Active listening means trying not only to hear but also to understand what people share. If you are unsure what someone meant by something they shared, repeat your understanding of their comments or ask clarifying questions. Active listening helps people feel understood and creates the atmosphere for a reflective discussion.
- Keep the discussion focused on personal reactions to the readings — personal values, feelings, and experiences. The course is not for judging others' responses. You do not have to come to a consensus on what everyone should say or do. Encourage people to share differing perspectives - we grow and learn together when we do so.

FOR THE OPENER

As the Opener, your role is to mark the beginning of the discussion by bringing an Opening. The Opening should be a maximum of a couple of minutes and meaningful to you or express your appreciation for the natural world.

Examples: a short personal story related to the topic, an object or photograph with special meaning, a poem, a visualization, etc. We encourage you to have fun and be creative!

The purpose of the Opening is twofold:

1. It provides an intentional transition from other activities of the day into the group discussion.
2. Since the Opening is personal, it allows the group to get better acquainted with you, which can be very rewarding.

FOR THE NOTETAKER

As the Notetaker, your role is to record:

- Insights from the discussion
- Resources participants shared
- Commitments people or the group made
- Ideas or comments to revisit

- Other content the group feels they want to keep track of

Send the notes you took to each group member at the end of your meeting. It might be helpful to keep the notes from each discussion in one document if possible.

Ecochallenge.org is a registered 501(c)3 nonprofit under EIN 93-1075047.

Our vision is a better shared future with a sustainable world and healthy planet; your contributions help make that possible. Donations are tax-deductible and greatly appreciated.

SESSION 1

a call to sustainability

"Sustainability is not an option; it's a mindset. We must think long-term and make choices that prioritize the health of our planet."

—ISATOU CEESAY

SESSION DESCRIPTION

While sustainability is a term and concept widely referenced worldwide, it remains elusive and contested. The definitions and visions of sustainability differ with each culture in which it is envisioned, and the term "sustainable" can be used to promote divergent views. For example, sustainable development emphasizes human activity and well-being, while sustainable ecosystems require paying attention to all organisms and their relationships within an ecosystem. In this session, we consider ways of grasping the meaning and vision of sustainability and our roles in creating a sustainable world. We introduce systems thinking as a way to understand interconnectedness and explore more sustainable solutions that meet people where they are.

SESSION OBJECTIVES

- Explore multiple perspectives on how we think about sustainability across cultures.
- Begin to understand and apply systems thinking in your daily life.
- Reflect on your roles in creating the change that matters most to you.

CIRCLE QUESTION

Where do you find your deepest connection to the world?

Reminder to the facilitator: The circle question should move quickly. Encourage each participant to answer briefly without interruptions, questions, or comments from others. Tips for facilitating can be found on page 13.

SUGGESTED DISCUSSION QUESTIONS

1. Did your conception or definition of sustainability change after reading the articles in this session? If so, how is it different?
2. Identify one value, belief, or assumption from your culture that contributes to developing a more sustainable world. What about this value, belief, or assumption aligns it with sustainability?
3. Name and discuss one or more aspects of your culture that you think hinder sustainable practices.
4. How does systems thinking shift your perception of the world? Please provide one concrete example.
5. How sustainable was your life five years ago? How sustainable would you say your life is today?
6. What do you hope to gain from this course? It can be something you want to learn or understand better, a behavior you want to change, or something you can contribute to your group experience.

SUGGESTED GROUP ACTIVITIES

- At the end of your discussion, create a shared definition of sustainability by combining ideas, words, and phrases the Notetaker recorded. Encourage everyone to contribute to the definition. Consider revisiting it after another session or two!
- Use the Iceberg Model in this session to examine an issue your group cares about.

DEFINITIONS

Feedback Loop: These show how something can influence itself through a cycle. There are two types: reinforcing loops make something grow or shrink faster (like population growth), and balancing loops keep things in check (like predator-prey relationships in nature).

Mental Model: Deep beliefs, values, and attitudes shape our thinking and acting. These are often unconscious and influence the structures and patterns in our lives.

Leverage Points: Places in a system where making a small change can have a big impact. Finding leverage points helps us address the root causes of problems instead of just treating symptoms.

further resources

Use this QR code or visit our website to easily access links to resources and videos found in this session: https://ecochallenge.org/discussion-course-resources/csl/

REIMAGINING THE FUTURE OF SUSTAINABILITY

By Kerry Grimm, Ph.D. and Lauren Watkins, Ph.D., 2024

Sustainable development, sustainable living, sustainable agriculture, sustainable energy, sustainable architecture, sustainable clothing, sustainable solutions… "Sustainable" is a word many of us have encountered as it has become a catch-all adjective for lifestyles, products, services, and more. If one Googles the word "sustainable" followed by any letter of the alphabet, a plethora of options arise from "sustainable aviation" to "sustainable zippers." But what does "sustainable" — and the associated "sustainability" — actually mean?

At its most basic level, sustainability refers to the ability for something to continue and maintain itself over time. The concept has long existed in many cultures, informing how people interact with the land and ensuring processes and resources continue for future generations. However, the idea gained global traction in 1972 during the United Nations Stockholm Conference, the UN's first major conference on international issues. In 1987, the UN published Our Common Future, commonly called the Brundtland Report. It provided a formal and much-quoted definition: *"Sustainable development is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* This definition linked sustainability to economic growth, which has beleaguered the concept ever since. Such entwinement captures the paradox of modern concepts of sustainability — ever-continuing growth and development without the environmental degradation that often comes with such growth.

Typical illustrations of sustainability usually feature a three-legged stool or a Venn diagram, representing the intersection of profit (economics), planet (the environment), and people (social factors, such as community and, more recently, equity). Sustainability is found where these three come together. The idea is that to truly achieve sustainability, sustainability must be present in economics, environmental, and social systems.

It has become increasingly clear that unregulated development, consumption, and growth, whether termed "sustainable" or not, is not ultimately sustainable. There are only so many resources available on Earth, and one major concern is that we have reached a point where humans are placing immense stress on Earth's natural systems that could comprise future generations.

Sustainability in the context of modern industrial society has historically been tied to calls for reducing population growth, with the belief that limiting the number of people on Earth is vital to conserving natural resources. This perspective is rooted in eugenics and wrongly attributes unsustainable use of resources to overpopulation - rather than exploring the deeper issues of how resources are extracted and consumed. This harmful perspective has been used to justify coercive policies and further marginalize groups. It ignores "upstream solutions" (proactive efforts to address the root causes of problems) to environmental challenges.

Today, we recognize that HOW people live on our planet has a far greater impact than HOW MANY people inhabit it. Transforming our consumptive behaviors and how people and systems use resources is crucial to achieving a sustainable future. These issues are deeply intertwined with environmental and social justice, highlighting the need to reimagine a future where resources are used responsibly and shared equitably. While the concept of sustainability at its heart is valuable and necessary, the current mainstream vision of sustainability may be falling short. To achieve a truly sustainable future where people and the planet thrive, we need to embrace a paradigm shift that prioritizes social equity and ecological principles.

As mentioned earlier, sustainability, as practiced by many cultures long before it was formally 'named,' was deeply rooted in community, culture, and an interconnected relationship with nature rather than development. By claiming "sustainability" as a new concept, we illustrate a colonist mindset, appropriating other approaches and claiming they first came into existence with the naming of it by dominant cultures. Articles from thought leaders in this session allow us to learn from others who have practiced sustainability in diverse ways. By opening our eyes to different ways of knowing, we can expand how we interact and respect the environment and our communities - both local and global.

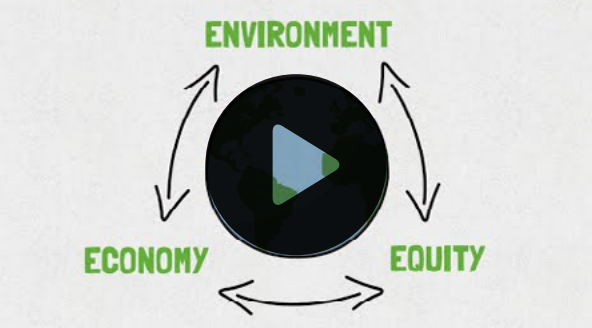
One valuable lesson you will find in this session is to view the world as a system of interconnected parts — an approach rooted in **systems thinking**. Systems thinking gives us the tools to explore today's social and environmental problems with a critical lens that fosters empathy for others and allows us to explore our role in building the future we hope for.

We know we need to take action to address our problems and build the sustainable future of our dreams. But knowing where to start can be intimidating, difficult, or confusing. You might wonder… Will my actions make a difference? Even if I change, will others? How can I influence something that feels so enormous? These concerns are valid, and we hope that the

resources in this course will help you find ideas and answers that enable you to take inspiring, rewarding, and impactful action.

The beautiful thing about sustainability is that there is something everyone can do, and every action builds momentum. No matter how small, each step we take can create a ripple effect that inspires others and paves the way for more significant collective action. You might be more comfortable beginning with individual changes and, over time, feel more empowered to engage at the community or civic level. Regardless of where you are in your journey, when we take action, we begin to feel the power of the impact we can have on ourselves, our social circles and communities, and larger systems. Rather than feeling like you may not be doing enough, focus on the future you hope for and start with what you can, where you can. Remember that, together, our efforts will lead to the paradigm shift we need for a more just and sustainable future.

watch this video!

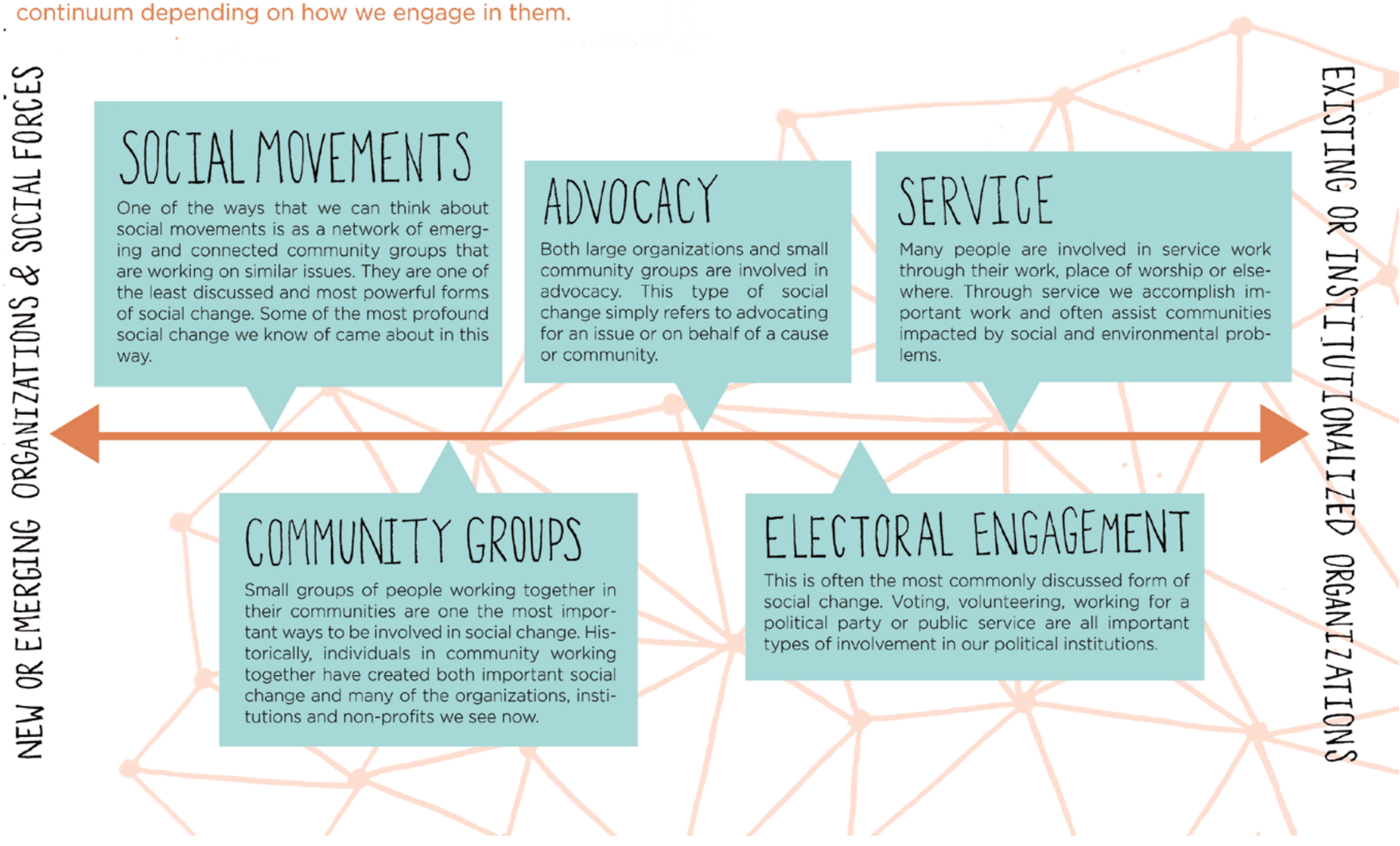


UCLA: What is sustainability?
https://www.youtube.com/watch?v=zx04Kl8y4dE
[3:06 minutes]

Learn more about how sustainability is defined and the interconnectedness of The Three E's: the Environment, the Economy, and Equity.

CONTINUUM OF SOCIAL CHANGE

This continuum helps us think about the different ways to be involved in social change. Over time it is natural to move from one place to another along the continuum. Sometimes it is necessary to shift your position to be able to do the work you want to do. Different types of involvement are placed on particular parts of the continuum to reflect the places where they typically arise. However, it is important to keep in mind how they can shift and might be placed on different parts of the continuum depending on how we engage in them.



Credit: Continuum of Social Change. Appeared in Resource Guide for Continuing Engagement. Created by David Osborn, Portland State University, 2014. Used with permission.

A SYSTEMS THINKING MODEL: THE ICEBERG

Systems thinking is a way of conceptualizing and understanding the world that focuses on how various elements within a system — an ecosystem, an organization, or something more dispersed, such as a supply chain — relate to and influence one another.

Systems thinking helps us approach problems more effectively. Rather than reacting to individual problems that arise, a systems thinker asks about their relationships to other activities within the system, looks for patterns over time, and seeks root causes.

"…we are not seeing a new world, but rather our old world through new eyes."

One systems thinking model that is helpful for understanding global issues is the Iceberg Model. We know an iceberg has only 10 percent of its total mass above the water, while 90 percent is underwater. But that 90 percent is what the ocean currents act on and what creates the iceberg's behavior at its tip. Global issues can be viewed in this same way.

LEVELS OF THINKING

1. The Event Level

The Event Level is the level at which we typically perceive the world: for instance, waking up one morning to find we have caught a cold. While problems observed at the Event Level can often be addressed with a simple readjustment, the Iceberg Model pushes us not to assume that every issue can be solved by simply treating the symptom or adjusting at the Event Level.

2. The Pattern Level

If we look just below the Event Level, we often notice patterns. Similar events have been taking place over time — we may have been catching more colds when we haven't been resting enough. Observing patterns allows us to forecast and forestall events.

3. The Structure Level

Below the Pattern Level lies the Structure Level. When we ask, "What is causing the pattern we are observing?" the answer is usually some kind of structure. Increased stress at work due to the new promotion policy, the habit of eating poorly when under stress, or the inconvenient location of healthy food sources could all be

structures at play in our catching a cold. According to Professor John Gerber, structures can include the following:

- Physical things — like vending machines, roads, traffic lights, or terrain.
- Organizations — like corporations, governments, and schools.
- Policies — like laws, regulations, and tax structures.
- Ritual — habitual behaviors are so ingrained that they are not conscious.

4. The Mental Model Level

Mental models are the attitudes, beliefs, morals, expectations, and values that allow structures to continue functioning as they are. We often learn these beliefs subconsciously from our society or family and are likely unaware of them. Mental models that could be involved in catching a cold include believing that a career is deeply important to our identity and we cannot miss work, that healthy food is too expensive, or that rest is for the unmotivated.

PUTTING THE LEVELS TOGETHER

Look at the diagram on the following page to see the Iceberg Model applied to an instance of catching a cold.

GIVE IT A TRY!

As you go through the course, select a sustainability-related event that strikes you as urgent, important, or interesting. Write the event (what is observable about the event) at the top of the blank Iceberg below and work your way down through the patterns, underlying systems, and mental models, adding as many as you can think of. Moving up and down between levels can also be helpful as you think more about the event. Events to start with could include the inclusion of a favorite animal on the Endangered Species list, the lack of access to healthy food in your neighborhood, a problem you encountered while taking public transit recently, the pollution of your local water source, or any other events you find significant.

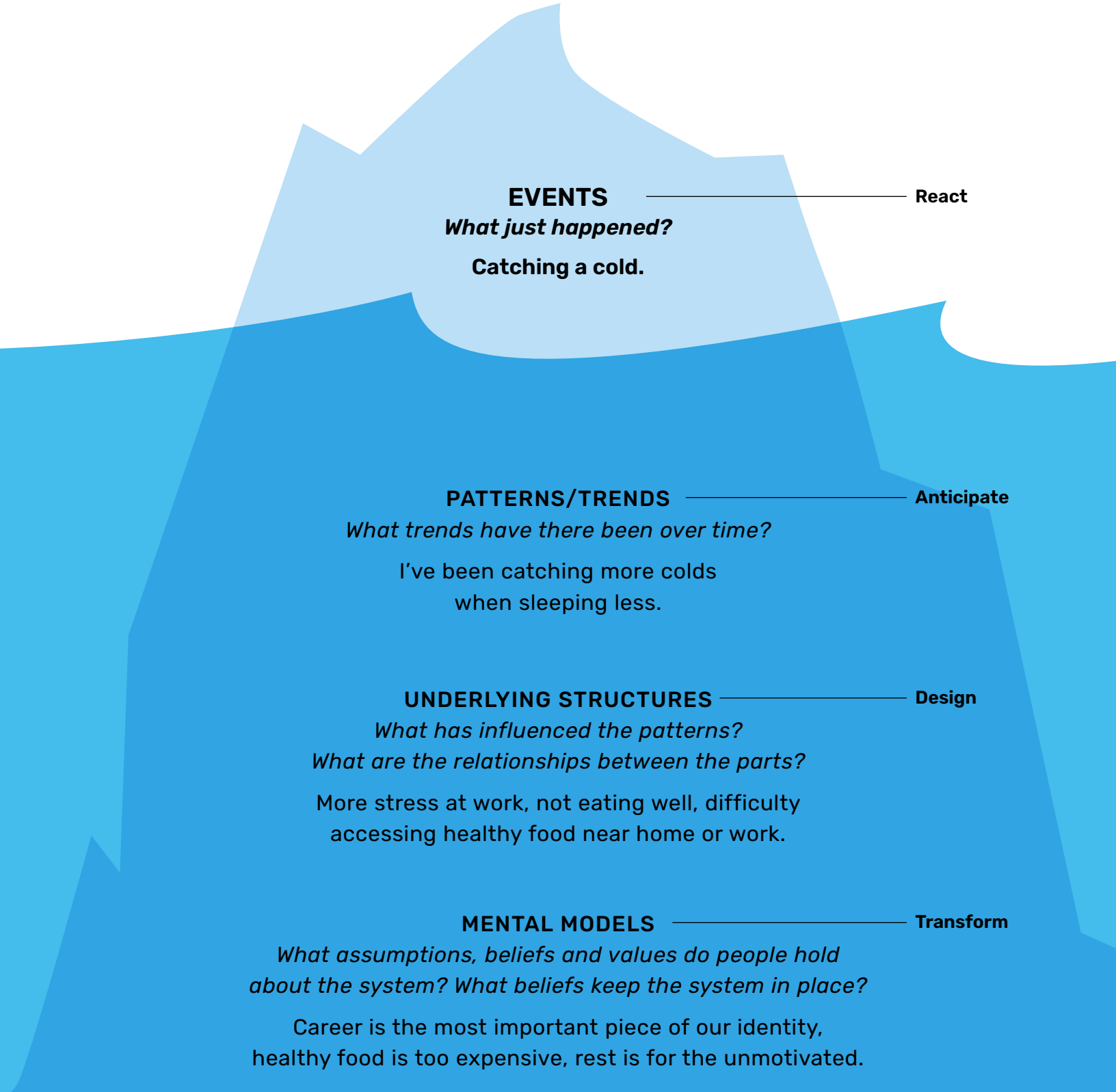
QUESTIONS TO CONSIDER AFTER TRYING OUT THE ICEBERG MODEL

1. Does the Iceberg Model help broaden your perspective? If so, how might this new perspective be helpful?
2. Consider the concept of entry or "leverage" points. These are points where one can intervene in a system to transform the system completely. Does the exercise show you any new entry points at which you are inspired to intervene?
3. What issues have frustrated you that might be interesting to analyze with the Iceberg Model?

Find this exercise online at ecochallenge.org/iceberg-model/

THE ICEBERG

A Tool for Guiding Systemic Thinking



EVENTS — React

What just happened?

Catching a cold.

PATTERNS/TRENDS — Anticipate

What trends have there been over time?

I've been catching more colds
when sleeping less.

UNDERLYING STRUCTURES — Design

What has influenced the patterns?
What are the relationships between the parts?

More stress at work, not eating well, difficulty
accessing healthy food near home or work.

MENTAL MODELS — Transform

What assumptions, beliefs and values do people hold about the system? What beliefs keep the system in place?

Career is the most important piece of our identity,
healthy food is too expensive, rest is for the unmotivated.

CULTURE TREE

By Zaretta Hammond, 2015

It can be helpful to think of sustainability as a cultural framework for viewing and interacting in the world, otherwise known as a "worldview." But what is culture?

Culture, it turns out, is the way that every brain makes sense of the world. That is why everyone, regardless of race or ethnicity, has a culture. Think of culture as software for the brain's hardware. The brain uses cultural information to turn everyday happenings into meaningful events.

LEVELS OF CULTURE

Culture operates on a surface level, an intermediate or shallow level, and a deep level.

Surface culture

This level is made up of observable and concrete elements of culture, such as food, dress, music, and holidays. This level of culture has a low emotional charge so that changes don't create great anxiety in a person or group.

Shallow culture

This level is made up of unspoken rules around everyday social interactions and norms, such as courtesy, attitudes toward elders, nature of friendship, concepts of time, personal space between people, nonverbal communication, rules about eye contact, or appropriate touching. It's at this level of culture that we put into action our deep cultural values.

This level has a strong emotional charge. At the same time, at this level, we interpret certain behaviors as disrespectful, offensive, or hostile. Social violation of norms at this level can cause mistrust, distress, or social friction.

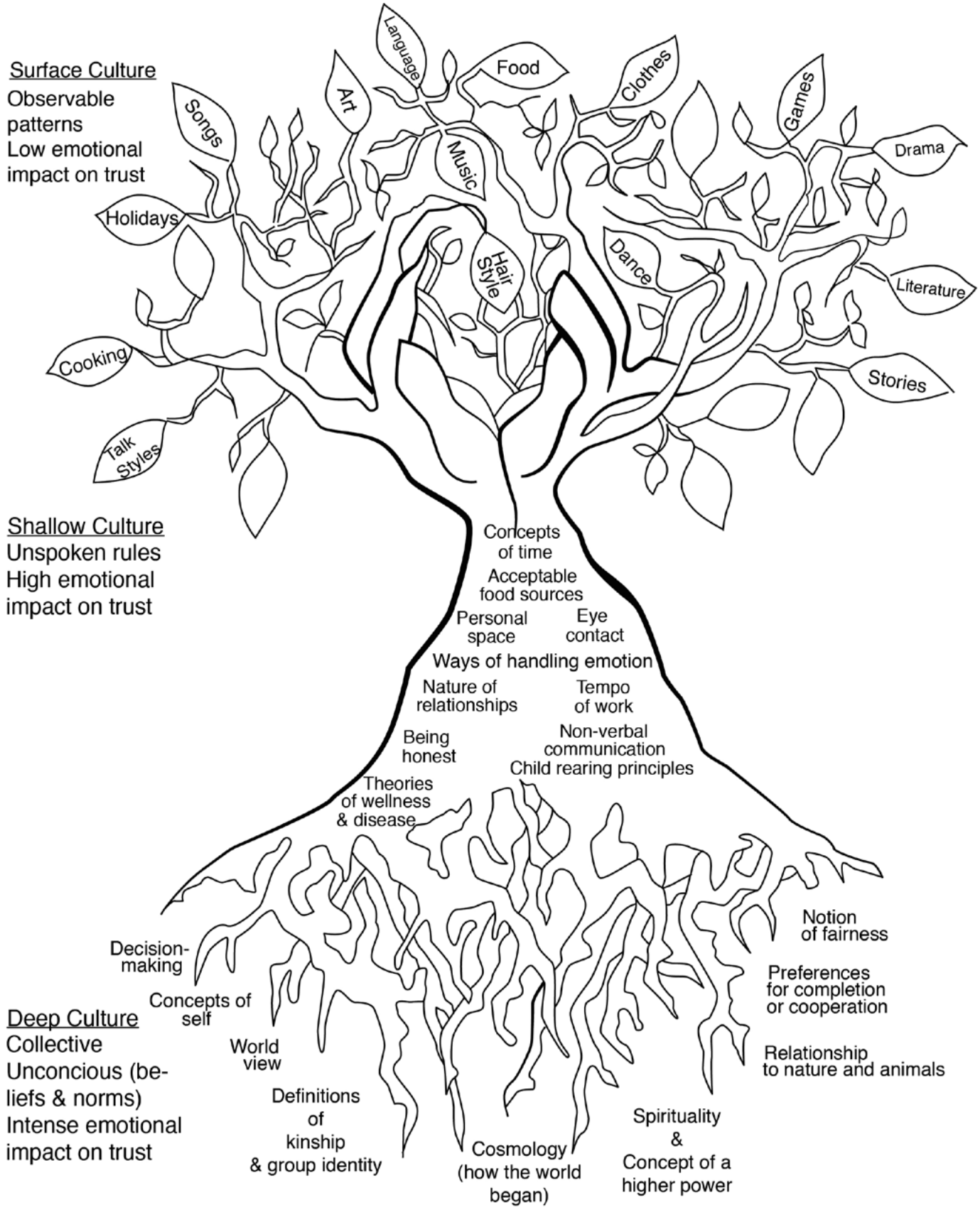
Deep culture

This level is made up of tacit knowledge and unconscious assumptions that govern our worldview. It also contains the cosmology (view of good or bad) that guides ethics, spirituality, health, and theories of group harmony (i.e., competition or cooperation). Deep culture also governs how we learn new information. Elements at this level have an intense emotional charge. Mental models at this level help the brain interpret threats or rewards in the environment.

The culture tree

Compare culture to a tree. A tree is part of a bigger ecosystem that shapes and impacts its growth and development. Shallow culture is represented in the trunk and branches of the tree while we can think of surface culture as the observable fruit that the tree bears. Surface and shallow culture are not static; they change and shift over time as social groups move around and ethnic groups intermarry, resulting in a cultural mosaic just as branches and fruit on a tree change in response to the seasons and its environment. Deep culture is like the root system of a tree. It is what grounds the individual and nourishes his mental health. It is the bedrock of self-concept, group identity, approaches to problem solving, and decision making.

Zaretta Hammond is a teacher educator and the author of *Culturally Responsive Teaching* and *The Brain: Promoting Authentic Engagement and Rigor Among Culturally and Linguistically Diverse Students*, from which this article is excerpted.



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TWO WAYS OF KNOWING: ROBIN WALL KIMMERER ON SCIENTIFIC AND NATIVE AMERICAN VIEWS OF THE NATURAL WORLD

By Leath Tonino, 2016 (Excerpt)

Robin Wall Kimmerer has a PhD in botany and is a member of the Citizen Potawatomi Nation, a Native American people originally from the Great Lakes with a reservation today in Oklahoma. She describes herself as a "traveler between scientific and indigenous ways of knowing," but there is little about her writing, public speaking, or teaching that suggests movement back and forth. Rather, she seems to be standing still, looking simultaneously through two lenses and expressing two worldviews. She founded the Center for Native Peoples and the Environment, whose mission is to promote sustainability through programs that draw on both indigenous knowledge and science. Kimmerer's first book, Gathering Moss, won the John Burroughs Medal in 2005, and her second, Braiding Sweetgrass, received the Sigurd F. Olson Nature Writing Award in 2014.

Tonino: You've always loved plants, but your relationship to them has transformed over time.

Kimmerer: I would describe my journey as a circle, moving out into academia but coming back to the way that I knew plants as a child. I grew up in a rural area, much like where we're sitting today, and I was interacting every day with plants in the garden, the woods, or the wetlands. I couldn't go outside without being surprised and amazed by some small green life. I suppose it was their great diversity of form that first drew my interest: that on a small patch of ground there could be so many different ways to exist. Each plant seemed to have its own sense of self, yet they fit together as a community. And each had a home, a place where I knew I could find it. This inspired my curiosity.

From as far back as I can remember, I had this notion of plants as companions and teachers, neighbors and friends. Then, when I went to college, a shift occurred for me. As an aspiring botany major, I was pressured to adopt the scientific worldview; to conceive of these living beings as mere objects; to ask not, "Who are you?" but, "How does it work?" This was

a real challenge for me. But I was madly in love with plants, so I worked hard to accommodate myself to this new approach.

Later in my career, after I'd gotten my PhD and started teaching, I was invited to sit among indigenous knowledge holders who understood plants as beings with their own songs and sensibilities. In their presence, and in the presence of the plants themselves, I woke from the sleep I'd fallen into. I was reminded of what I'd always known in my core: that my primary relationship with plants was one of apprenticeship. I'm learning from plants, as opposed to only learning about them.

I was especially moved by an elderly Diné woman who told the biographies of each plant in her valley: its gifts, its responsibilities, its history, and its relationships — both friendships and animosities. As a scientist, I had learned only about plants' physical attributes. Her stories reminded me of how I had encountered plants as a young person. That's why I say I'm coming full circle after all these years — because I'm able to stop speaking of plants as objects.

Let me add that my appreciation of plants has been greatly enriched by knowing the beauty of chlorophyll and photosynthesis and hormones and cellular biology. Ideally, the two ways of knowing can reinforce one another.

Tonino: Writer Vine Deloria Jr. has called indigenous knowledge the "intellectual twin to science." Is that what you're talking about?

Kimmerer: Yes. Both Western science and traditional ecological knowledge are methods of reading the land. That's where they come together. But they're reading the land in different ways. Scientists use the intellect and the senses, usually enhanced by technology. They set spirit and emotion off to the side and bar them from participating. Often science dismisses indigenous knowledge as folklore — not objective or empirical, and thus not valid. But indigenous knowledge, too, is based on observation, on experiment. The difference is that it includes spiritual relationships and spiritual explanations. Traditional knowledge brings together the seen and the unseen, whereas Western science says that if we can't measure something, it doesn't exist.

Tonino: What are some other differences between the traditional indigenous approach and the Western scientific tradition?

Kimmerer: When we use the scientific method in an experiment, we look at one variable at a time. In order to really understand how something works, science says, we must exclude all else. We're not going to talk about relationships. We're going to limit ourselves to cause and effect. This notion that you can rigorously exclude all factors save one, and in so doing find the cause, is not part of traditional knowledge.

In the traditional way of learning, instead of conducting a tightly controlled experiment, you interact with the being in question — with that plant, with that stream. And you watch what happens to

everything around it, too. The idea is to pay attention to the living world as if it were a spider's web: when you touch one part, the whole web responds. Experimental, hypothesis-driven science looks just at that one point you touched.

Another important difference is that science tends to want to make universal statements, whereas to the indigenous way of thinking, what's happening between two organisms is always particular and localized, unique in space and time. Take the example of a bee landing on a flower for a sip of nectar. To the indigenous observer, it's not some idealized Bee meeting some idealized Flower. There isn't an attempt to generalize to pollinator ecology, or to say that it's all being driven by certain physical principles. Those principles may be real, but they aren't any more real than this bee on this flower at this time on this day with this weather.

Tonino: But how do you get beyond that isolated moment in space and time to develop a broader understanding? It can't be that you have to start over with every bee and flower. Don't the observations pile up?

Kimmerer: You're asking: Is there an equivalent in traditional knowledge to what science calls a theory? Absolutely. But it's a different kind of theory, one that centers on the idea of responsibilities. All bees, for example, have a responsibility to pollinate. The indigenous observer is asking the bee, How are you living out your responsibility? And what about you, flower?

The individual observer brings findings back to the community to share. He might talk about what happened when he was setting his trapline that day, and someone else might say, "Oh, a few falls ago, I saw that same thing, and the consequence was this or that." And then maybe somebody else chimes in that she saw the same thing, too, but the consequence was a little different. The information isn't published in a professional journal, but it's shared with the community and vetted by that community's collective intelligence. I think of it as the equivalent of peer review.

Tonino: You say that indigenous observers interact with the world they're studying. They participate. Why is that so important?

Kimmerer: Western science explicitly separates observer and observed. It's rule number one: keep yourself out of the experiment. But to the indigenous way of thinking, the observer is always in relationship with the observed, and thus it's important that she know herself: As I watch that bee and flower, as I study how water moves, as I observe the growth of the grass in this meadow, I understand that the kind of being I am colors how I see and feel and know. Furthermore, my presence might even be influencing how the world is working around me.

It's important to recognize the relationship that exists between the observer and the observed. In Western science we believe our technologies and how we frame our hypotheses will eliminate our bias. A traditional perspective instead celebrates the relationship. A young person is going to see things differently than an

old person. A daughter and a mother and a grandmother will see in different ways. All of these perspectives should be brought to bear. Rather than isolate them, we can incorporate them into the learning process.

♦ ♦ ♦

Tonino: You've said that both science and traditional knowledge can be pathways to kinship. Does it matter which path we take, as long as we arrive at kinship eventually?

Kimmerer: No, I don't think it matters how you get there. The scientist peering through binoculars and the native hunter studying tracks in the mud both experience kinship with the living world.

Tonino: So what is kinship?

Kimmerer: It has to do with the realization that we are all beings on the same earth, and that we all need the same things to flourish. Water, for example. When I pay attention to how birds interact with water, or how mosses interact with water, or how lichens interact with water, I feel a kinship with them. I know what a cold drink of water feels like, but what would it be like to drink water over my entire body, as a lichen does?

Kinship also comes from our reciprocal relationship with other species. Sitting here, you can get a whiff of ripe wild strawberries off the hillside. They are fulfilling their responsibility to us, and we will fulfill our responsibility to them. Those berries provide us with food and medicine, and in reciprocity, we perhaps unwittingly disperse their seeds and tend their habitat so they can continue to thrive. It's like a family: we help each other out.

Tonino: Is that what you mean when you write that all flourishing is mutual?

Kimmerer: Yes. What's good for life is good for all life, whether it's green or two-legged or any other kind. Obviously there are trade-offs: the individual fish doesn't flourish when it's being eaten by the fisherman. But human flourishing and fish flourishing must be mutually reinforcing, or we wouldn't both still be here, right?

♦ ♦ ♦

Tonino: What would you say to a non–Native American who is worried about appropriating Native American perspectives and practices?

Kimmerer: Be careful. Go cautiously. It's tough to say at what point appreciation becomes appropriation. Loving and respecting the earth, living by the rules of gratitude and reciprocity — those principles cross cultural boundaries and seem to be the property of our species. But people who go to a place that is sacred to a native community and bang on drums and say words they've read in a book — those people are taking somebody else's culture.

We should be inspired and broadened by other cultures, but we each need to build a unique relationship with our own place.

Tonino: How?

Kimmerer: By paying attention. By imagining what a reciprocal relationship with that place might be like. By asking, "How does this land sustain me, and how do I sustain this land?" By expressing gratitude for the land. By living in such a way that the land will be grateful for your presence on it.

♦ ♦ ♦

Tonino: You've written that it's not the land that's broken, but our relationship with the land.

Kimmerer: The science of ecological restoration — of repairing the damage that humankind has done to the environment — has advanced in recent years. We can engineer ecosystems, and return them to their predisturbance state: for example, returning a cornfield to its original tallgrass prairie, or restoring a degraded stream to a meandering, shaded waterway that supports biodiversity. When we participate in this physical restoration, in many cases, the ecosystems respond beautifully. The land is resilient. It has the capacity to heal itself. We humans can accelerate that process, but even without us, the land will slowly come back around again.

What causes those brownfields, those clear-cuts, those toxic waste dumps in the first place is our broken relationship with the land. And if we don't fix that relationship, we're going to replicate this destruction over and over again, creating more scarred, devastated landscapes. We need to break that cycle.

♦ ♦ ♦

Tonino: Can you talk about the difference between taking what you want, taking what you need, and taking what is given?

Kimmerer: You're referring to the teaching of the Honorable Harvest. To harvest in a nonexploitative way, we have to identify our needs and try to separate them from our wants. The earth provides the materials we need to survive. But heaped on top of that are our thousand wants. And our wants are sneaky. They're good at dressing up as needs in our minds. That's one reason indigenous ceremonies are so important: because they celebrate and name what it is that actually keeps us alive.

The Honorable Harvest tells us to take only what we need and never more than half of what's available, to use everything that we take, to minimize the harm that is done, to share what we've taken, and to be grateful and always return the gift, giving something back in return.

But you also asked, How do we take only what is given? That's a philosophical challenge: How do we know when something is given? The only way to identify an offering is to get to know the giver. And can we receive the offering without causing damage? Can we harvest in a way that is mutually beneficial? I think of an apple tree producing apples. They're meant to be taken. The fruit is the vehicle for transporting seeds — that's why the tree makes it. If the branches are bent low by the weight of dozens of apples, that's an offering. I don't do any damage to the tree or its habitat when I reach up and twist

an apple loose. At the other end of the spectrum would be mountaintop-removal coal mining. The mountain is not offering that coal. The extraction is not easy. We have to destroy so much in order to get at it. That breaks the rules.

Leath Tonino is the author of two essay collections, most recently *The West Will Swallow You*. He lives at nine thousand feet in the Colorado Rockies but spends much of his time even higher, hiking and camping in the alpine zone.

"Action on behalf of life transforms. Because the relationship between self and the world is reciprocal, it's not a question of first getting enlightened or saved and then acting. As we work to heal the Earth, the Earth heals us."

—ROBIN WALL KIMMERER, *BRAIDING SWEETGRASS: INDIGENOUS WISDOM, SCIENTIFIC KNOWLEDGE, AND THE TEACHINGS OF PLANTS*

DRAWING A PATH TO ACTION

By Sarah Lazarovic, 2022

I'd seen others find their climate path quickly. People often recommend volunteering. But there are a million climate orgs—how do you know where your skills will be most impactful?

It took me years to figure out where I could best be of use.

I began to read and retrain.

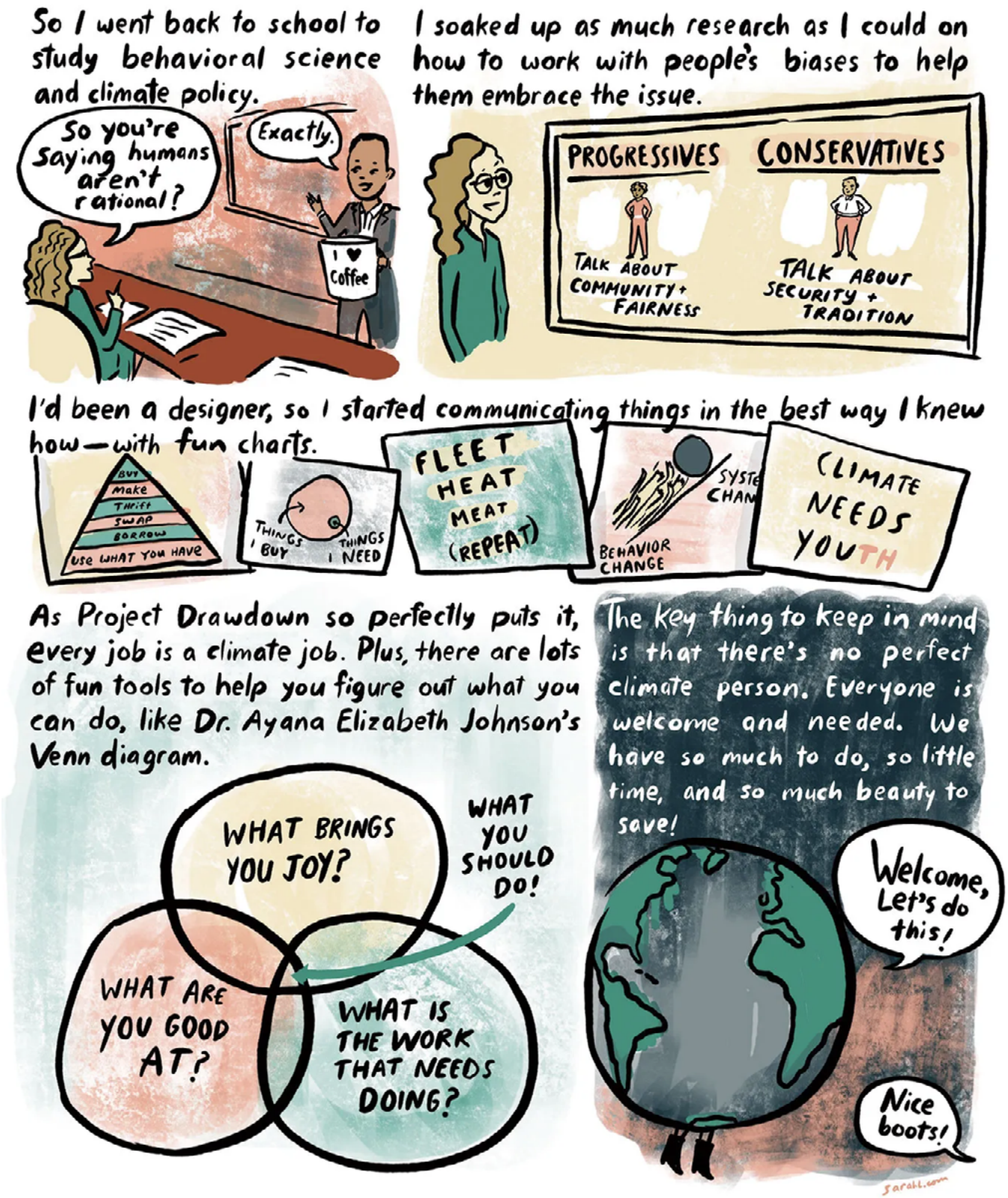
The language of most of the advocacy I encountered seemed earnest, depressing, alienating, and confusing, so I decided to focus on climate communications.

There was an asymmetry between the problem being presented and the solutions offered.

Plus, so many of the climate solutions themselves were misguided, so it was hard to communicate clearly.

The (false) narrative touted to fix things was about extreme deprivation.

It seemed like the wrong way to get people to join the most important team of all time.



Sarah Lazarovic is an award-winning artist, creative director, freelance animator and filmmaker, and journalist, covering news and cultural events in comic form. She is the author of *A Bunch of Pretty Things I Did Not Buy*.

UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS

On September 25th, 2015, world leaders in the United Nations adopted a set of seventeen goals to end poverty, protect the planet, and ensure prosperity for all as part of a new sustainable development agenda. The goals cover global challenges that are crucial for the survival of humanity. Over the next fifteen years, with these new Goals that universally apply to all, countries will mobilize efforts to end all forms of poverty, fight inequalities, and tackle climate change while ensuring no one is left behind. To achieve these goals, everyone must do their part: governments, the private sector, civil society, and people like you. Find a list of suggestions for taking action at un.org/sustainabledevelopment/takeaction/

ecochallenge: putting it into practice

Here are some ideas for putting what you learned this week into action.

- **Connect with nature around you.** The next time you are outside, explore a natural area near you, watch a bird or insect for a few minutes, or simply observe your surroundings. Nature is everywhere — even in the cracks in the sidewalks!
- **Think local.** Find out what local sustainability issues, including social and environmental justice concerns, are most urgent in your region.
- **Have a conversation.** Tell someone else why sustainability is important to you and what your vision is for a sustainable world. Ask about their hopes for the future.
- **Practice civic engagement.** Learn how decisions are made in your community or sign a petition in support of a cause you care about.

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- Participate in an Ecochallenge: https://events.ecochallenge.org/
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"The sustainability revolution will be organic. It will arise from the visions, insights, experiments, and actions of billions of people. The burden of making it happen is not on the shoulders of any one person or group. No one will get the credit, but everyone can contribute."

—DONELLA L. MEADOWS