Environmental Justice

ENVIRONMENTAL JUSTICE

An Open Student Anthology

DERON CARTER; COLLEEN SANDERS; AND ENVIRONMENTAL JUSTICE STUDENTS @ LBCC

Environmental Justice Copyright © by Deron Carter, Colleen Sanders, and LBCC Environmental Justice Students is licensed under a Creative Commons Attribution 4.0 International License, except where otherwise noted.

CONTENTS

Part III. Student Works

INTRODUCTION

Welcome to our living anthology of student-generated research, creativity, and activism on environmental justice issues! We're so glad you're here.

We developed and use this open educational resources (OER) in a classroom project in G209: Environmental Justice at Linn-Benton Community College. The text grows every term as new students contribute their final projects to supplement the core learning materials.

The open pedagogy project cycle behind this text was developed by Deron Carter and Elizabeth Pearce in the HDFS201/GS106 co-teaching collaboration captured in the open textbook Contemporary Families. Thank you to Open Oregon Educational Resources and the Linn-Benton Community College Foundation for the grant support required to develop this project.

The book is structured around how we teach in our 11-week term. The first chapter outlines the final project, which we introduction to students in week 2. It also includes chapters from the Open Pedagogy Student Toolkit, as we spend multiple class sessions exploring open pedagogy for students who are new to publishing their works with open licenses. Further support materials for that scaffolding are available in an ancillary folder.

The second chapter is instructional content exploring climate change as a social problem through the lens of colonization, power, intersectionality, and justice-seeking. It is from Who Gets Environmental Justice? The Social Problem of Climate Change by Patricia Halleran; Kimberly Puttman; and Avery Temple in Inequality and Interdependence: Social Problems and Social Justice, facilitated by Open Oregon Educational Resources.

The third chapter is the growing anthology of works students produce for the final project.

We hope you find inspiration in the following pages. If you adopt this resource, please let us know! We're especially keen for feedback, notifications of broken or outdated content, and seeing what remixes

-Deron Carter & Colleen Sanders

PART I
FINAL PROJECT INFORMATION

This section includes the final project assignment description, grading criteria, and instructional materials about publishing your work with an open license.

1.

FINAL PROJECT DESCRIPTION

Final Project Purpose

The purpose of this project is for you to research and analyze a topic in order to help solve an environmental justice issue in the United States. You will accomplish this by publishing your work in this college-level open access e-book. This book is an **open educational resource (OER)**, which you will learn more about in the next section. You will learn how to do this from previous class projects and your instructor will provide you with a highly structured set of assignments to help you support your success in this project. By completing this project you will contribute to scholarly work and knowledge about environmental justice to the broader community and build your academic confidence. This process you will engage in is called **open pedagogy**[1], which we'll learn more about in the next sections.

Your work can be created in your choice of media and will be shared with peers during the final exam period. Examples from past students include (but are not limited to):

- GoogleSlides
- ArcGIS StoryMap
- A case study
- A short narrative topic/analysis
- Game
- Podcast
- Comic strip**
- Infographic**
- Song**
- Painting, Sculpture, or sketch**
- Poetry**
- Original research on EJ using Geographic Information System like EJScreen
- Interviewing a local EJ activist, tribal member, government official, scholar

1. https://www.lib.iastate.edu/research-and-teach/teaching-class-support/use-open-educational-resources

If you have another media that you would like to present your project in, just run it by your instructor!

* You may choose to make your work "anonymous," use a pseudonym, or use your own name.

If you decide that your work will not be available to future students, this will not affect your grade.

**These types of projects also require a short "artist's statement" that allows you to explain how you have synthesized course concepts in your creative process.

Knowledge and Skills You Will Use:

- Analyze and synthesize course concepts.
- Apply course concepts to real-world situations.
- Create learning materials that can be used to benefit future students and the community at large.
- Choose an open license so your work can be used by future students.

Tasks:

1. Choose a topic related to environmental justice in the United States that you are interested in. You can view some examples of possible topics here.
2. Feel free to consult with Deron while you are choosing the topic!
3. Submit proposed topic and format (Week Seven). Research tools from the LBCC library will be introduced Week 7 in class.
4. Draft an outline/rough draft/raw footage/and submit it on Moodle (Week Nine). This is your chance to draft your ideas, identify sources, and consider the best format for your project
5. Cite your sources using any citation style (such APA or MLA). If you are unclear about how to do this, please ask your instructor for guidance.
6. Upload your final product to Moodle. Share your work with students during the Finals period (Week Eleven).
7. Learn about different types of open licenses and choose how you would like to license your work.

Note: student/creator may decide at any time that they do not wish to publish final project work, and grade will not be affected.

Final Project Rubric

Criteria	Weight	Doesn't	Partially meets	Fully meets	Exceeds	Excels
Topic is defined and relevant to course	5% or 2.5 pts.	Does not submit work	Topic is not clearly defined and/or lacks relevance to course student is enrolled in	Topic is clearly defined and relevant to the course the student is enrolled in.	Topic is clearly defined and relevant; course concepts are integrated	Topic is clearly defined and relevant; course concepts are integrated seamlessly or other above and beyond work
Who is affected/ intersectionality	30% or 15 pts.	Not attempted	Describes population but does not elaborate on which groups are disproportionately affected.	Describes population and includes where it is, its demographics and which groups are disproportionately affected.	Describes the population: where it is and demographics. Applies course concepts to explain why groups are disproportionately affected.	Describes the population: where it is and demographics. Analyzes which groups are disproportionately affected and why they are impacted using data, historical examples, and/or institutional/ policy factors.
Completion	30% or 15 pts.	Not submitted	Partially completed.	Project completed in a surface way.	Project thoroughly completed.	Final project reflects thoughtfulness and intentionality; the student follows through on agreements with Instructor.
Uses data and evidence -based reasoning	30% or 15 pts.	Not included	Few sources of evidence and/or data.Sources are not clearly linked to the topic. Sources are not cited.	Adequate sources of evidence and/ or data included. Sources are clearly cited if not the student's own work.	Multiple sources of evidence and/ or data included. Sources are clearly cited if not the student's own work.	Multiple sources of evidence and/ or data included that are used for analysis. Sources are clearly cited if not the student's own work.
Conventions and Licensing	5% or 2.5 pts	Unreadable	Readable, but with errors and/or lacking citations.	Few errors and all sources acknowledged; uses open sources or all original work.	Error-free and sources fully cited; uses attributed open sources or all original work.	Error-free; excellent use of selected citation style; uses attributed open sources or all original work.

Final Project Checklist

1. Turn in the final project on Moodle and present it to students during finals period.
    1. Sharing your work may vary based on project format. For example,
        1. If it is an infographic or cartoon, make six copies and bring those to class (or email it to the instructor who will make the copies for you.)
        2. If it is a narrative (e.g. mostly words) select about one page double spaced (about 300 words) to be shared. Make six copies and bring that to class(or email it to the instructor who will make the copies for you.)
        3. Be ready to talk about the purpose behind your project, what your experience has been, and give feedback to other creators.
2. Make sure to openly license your work.
    1. Select the license you want to use.
    2. Copy and paste the license icon onto the first page of your project.
        1. Here is an example icon for a CC-BY license.
3. If you are presenting art, like a painting, you are welcome to handwrite your license and attribution on the back of your painting, and include it in your artist statement.
4. Include an attribution statement, "by your name-license." Example: "by Deron Carter, CC-BY."
5. Share your final project with the instructor in google doc editable version by placing it in this folder. Be sure it has your name and topic title at the top.

Grading distribution:

Points	What	When	Grading
10	Topic Proposal	Sunday night, November 12, Week 7	Completion
20	Outline	Sunday night, November 26, Week 9	Qualitative grading
10	Present and participate in others' presentations	Tuesday, December 5,, 2:30, Week 11	Completion
50	Project submission	Tuesday, December 5, 2:30, Week 11	Qualitative grading

"Final Project Description" By Elizabeth Pearce and Deron Carter is licensed under CC BY 4.0.

2.

CREATIVE COMMONS LICENSING

Now that you know your rights as a creator, part of working in the open deciding is if you are comfortable with openly licensing your work or not. Understanding the different rights that Creative Commons licenses grant is an important part of making the decision of whether to openly share or not.

Open Educational Resources (OER)

What you're reading right now is an open educational resource, or an OER. It has an open license on it, specifically a Creative Commons license, which we'll learn more about in the next section. OER are course materials created by professors, scholars, and researchers that are free for students to use. Even better, because they have open licenses, faculty and students can add to the OER, customizing it and improving it through use.

OER Defined

Open educational resources are course materials that are shared with an open license so that faculty can do the 5 R's: revise, remix, reuse, redistribute, and retain. You can download the material, tailor it to your course, save a copy locally, and share it back out with attribution. Students can access the material for free online or in print at low cost.

Open educational resources are abbreviated as "OER."

Common misconceptions about this term:

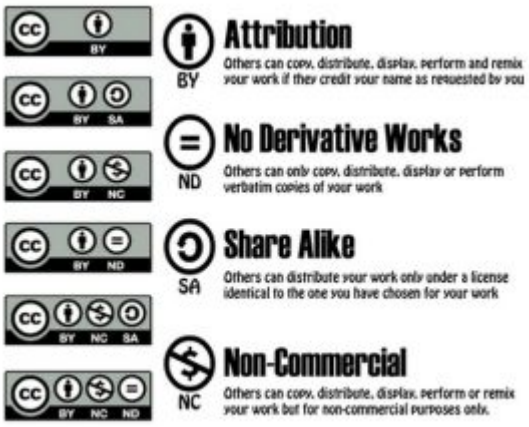
- OER are free – OER can be accessed for free online, but print versions will cost money to cover materials, printing, and overhead.
- OER are online – OER can be accessed in print or online (the "O" is for "Open," not "Online")

- OER is a recognizable term – the term "OER" is jargon and might not mean anything to students, colleagues, and administrators. Try "affordable textbooks" or "openly licensed materials" instead.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=81#oembed-1

Creative Commons Licensing

Creative Commons licenses give everyone from individual creators to large institutions a standardized way to grant the public permission to use their creative work under copyright law. From the reuser's perspective, the presence of a Creative Commons license on a copyrighted work answers the question, *"What can I do with this work?"*.[1]



Check out the video "Open Licensing For Student Authors" to gain more understanding on this topic.

1. [2]
2. [1]

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=81#oembed-2

"Open Licensing for Student Authors" is licensed under a CC BY 4.0 license by Abbey Elder.

The Creative Commons Licenses

Let's review the 6 different license types:

An interactive H5P element has been excluded from this version of the text. You can view it online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=81#h5p-2

License Options and Descriptions Source:
Creative Commons. (n.d.). *About CC licenses – The CC license options*. Accessed September 6, 2023. https://creativecommons.org/share-your-work/cclicenses/

Choosing a License

The six licenses and the public domain dedication tool give creators a range of options. The best way to decide which is appropriate for you is to think about why you want to share your work, and how you hope others will use that work.[3] Your instructor should be creating an environment in which you feel comfortable either enthusiastically openly licensing your work **or** deciding not to. You should never feel coerced into openly licensing your work.

If you decide you want to add a Creative Commons license to your work, the following flowchart can help you decide which Creative Commons license is right for you:

"Which Creative License is Right for Me?"

3. [4]
4. [2]

You can also try out the Creative Commons License Chooser, which walks you through choosing a license and provides link to the license so you can add it to your work.

Remember, the decision of choosing to openly license your work is yours and yours alone.

---

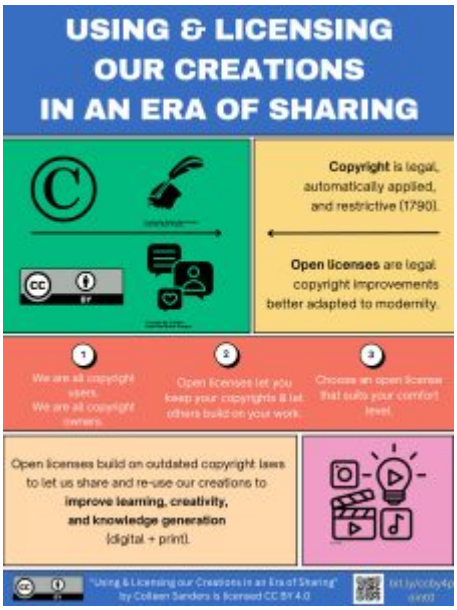
1. Creative Commons. (n.d.). About CC licenses. Accessed September 6, 2023. https://creativecommons.org/share-your-work/cclicenses/ ↵
2. Creative Commons. (n.d.). About CC licenses – Choosing a license. Accessed September 6, 2023. https://creativecommons.org/share-your-work/cclicenses/ ↵

Adapted from OER Defined by Open Oregon Educational Resources and Creative Commons Licensing from The Open Pedagogy Student Toolkit Copyright © 2023 by The Open Education Network, both licensed under a Creative Commons Attribution 4.0 International License, except where otherwise noted.

3.

STUDENT PROJECT OPEN LICENSING GUIDE

Student Project Open Licensing Guide



View a higher-resolution version of the poster above.

Sharing Your Work

Faculty invite students into a different **relationship** with knowledge when they create assignments that can be openly licensed. Rather than completing an assignment that you will never look at again, you can create a project that helps future students and communities to learn, grow, and change. You will share your work with a specific audience.

When you create an openly licensed project, you become a **collaborator** and **creator**. You are creating something that will be used in future classes, by students, faculty or both. Many students find this new approach to learning exciting and rewarding.

To learn more about open educational resources (OER), consult this short guide.

Planning your Project

Think about how you will begin an openly licensed project, considering the following questions:

- What could the project include? What do you want future students or faculty to be able to do after engaging with your project?
- What content do you want/need to cover?
  - It can be helpful to map your content to ensure that nothing gets lost.
- What is the process for this work going to look like?
- Think about what the final format of this project might be and work backward in order to determine what is necessary to create it. For example, if you want to produce a video to go with an OER textbook, you may need to talk with your instructor about video accessing software.

Student consent

Once your project is finished, it's time to license your work.

- You may have a variety of legitimate reasons for not wanting to share your work openly. You have choices about how you wish to share your project. You may wish to share your work under a pseudonym. You may also decide not to openly license your project.
- Please choose a creative commons license for your work that best suits your goals for future use. Please refer to Open Educational Resources and Accessibility Guide for help in choosing your license.
- Use this tool to attach the license to your work. We recommend this license: CC BY 4.0.
    - Please note: if you choose to opt out, it will not impact your grade for this course.

Attributions

This work is adapted from "Quick Guide to Open Pedagogy for Students" by Veronica Vold for Open Oregon Educational Resources, which is remixed from:

- "Designing a Renewable Assignment Worksheet" by Stacy Katz and Abbey Elder, which is licensed under CC BY 4.0,
- "The Open Pedagogy Project Roadmap" by Christina Riehman-Murphy and Bryan McGeary, licensed CC BY-NC 4.0,
- "Open Pedagogy" by the Rebus Community, A Guide to Making Open Textbooks with Students, licensed under CC BY 4.0.License..

Adaptations by Elizabeth Pearce and Deron Carter include focus on student agency and user-friendly language.

Image source: "5Rs of student sharing" by Colleen Sanders is adapted from "5 Rs of open pedagogy" by Rajiv Jhangiani, CC BY SA 4.0. Adaptation includes substituting user-friendly language.

"Student Project Licensing Guide" by Elizabeth Pearce and Deron Carter is licensed under CC BY-NC 4.0.

4.

THE OER LANDSCAPE

Before we dive into open pedagogy, it's important to know a little of the history and background of where open pedagogy comes from. In this chapter, we'll briefly talk about Open Education and Open Educational Resources (OER), as the foundation that open pedagogy is built on.

Open Education and Open Educational Resources

The Open Education Movement stems from the need for an updated, global approach to learning and education. The global expansion of the internet has made the possibility of knowledge sharing and access to information easier and more affordable than ever before, but it is still not a perfect system. Open Education seeks to remedy this by providing resources that promote increased access to education without any financial, technical, or legal barriers.[1]

The foundation of the Open Education Movement is built on Open Educational Resources (OER). OER are defined as teaching, learning, and research materials that reside in the public domain or have been released under an open license that permits their free use and re-purposing by others.[3] This means that OER can be any kind of educational material (like a textbook, course module, lecture slides, etc.) that anyone can copy, mix, share, keep, edit, or use – all for free! OER use open licenses (something we'll talk more about in Chapter Six) to specify which of those six different rights and permissions apply.

As citizens of the world, open education should matter to all of us. Watch the video below for more information on why open education matters.

1. [2]
2. [1]
3. [4]
4. [2]

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=65#oembed-1

Why Open Education Matters by Blink Tower.

---

1. SPARC. (n.d.). Open education. Accessed September 6, 2023. https://sparcopen.org/open-education/ ↵
2. Creative Commons. (n.d.). Open education – Open educational resources (OER). Accessed September 6, 2023. https://creativecommons.org/about/education-oer/ ↵

The OER Landscape from The Open Pedagogy Student Toolkit Copyright © 2023 by The Open Education Network is licensed under a Creative Commons Attribution 4.0 International License, except where otherwise noted.

5.

WHAT IS OPEN PEDAGOGY?

OPEN PEDAGOGY

First, let's break down each part of the term, open and then pedagogy.

In the last chapter, you learned about the open education movement and OER. In the case of *open* pedagogy, open is based on the same principles of sharing information publicly and globally and that the rights to access this information comes without financial, technical, or legal barriers.[1]

And the word *pedagogy* means the practice and theory of teaching and learning.[3] There are different types of pedagogies, like constructivist or collaborative. Open pedagogy is another type of pedagogy, but one that is inclusive, engaging, and rooted in social justice principles.[5]

If you were to Google "What is Open Pedagogy?" you would get a myriad of definitions and explanations. Here are some of them:

Open Pedagogy is the "Use/reuse/creation of OER and collaborative, pedagogical practices employing social and participatory technologies for interaction, peer-learning, knowledge creation and sharing, and empowerment of learners." – Catherine Cronin[7]

"Open pedagogy, also known as open educational practices (OEP), is the use of open educational resources (OER) to support learning. When you use open pedagogy in your classroom, you are inviting your students to be part of the teaching process, participating in the co-creation of knowledge." – BC Campus[9]

"Open pedagogy is the practice of engaging with students as creators of information rather than simply

1. [2]
2. [1]
3. [4]
4. [2]
5. [6]
6. [3]
7. [8]
8. [4]
9. [10]
10. [5]

consumers of it. It's a form of experiential learning in which students demonstrate understanding through the act of creation." – Iowa State University[11]

Did you notice anything these definitions have in common?

> They all center around the idea of empowering students and inviting students to be content and knowledge co-creators. Open pedagogy sees students as whole people with different perspectives, ideas, and skills that are valuable to the classroom and lend authenticity to the learning process.

---

1. SPARC. (n.d.). *Open education*. Accessed September 6, 2023. https://sparcopen.org/open-education/ ↲
2. "Pedagogy" (2023). In *Wikipedia*. https://en.wikipedia.org/wiki/Pedagogy ↲
3. Bali, M. (2017). "April open perspective: What is open pedagogy?" Year of Open. https://www.yearofopen.org/april-open-perspective-what-is-open-pedagogy/ ↲
4. Cronin, C. (2017). "Openness and praxis: Exploring the use of open educational practices in higher education". *The International Review of Research in Open and Distributed Learning*, 18(5). https://doi.org/10.19173/irrodl.v18i5.3096. ↲
5. BCcampus. (n.d.). What is open pedagogy? Accessed September 14, 2023. https://open.bccampus.ca/what-is-open-education/what-is-open-pedagogy/#:~:text=Open%20pedagogy%2C%20also%20known%20as,%2C%20professional%2C%20and%20individual%20level. ↲
6. Iowa State University. (n.d.). *Why open education? – Build engagement with open pedagogy*. https://open.lib.iastate.edu/open-education/pedagogy#:~:text=Open%20pedagogy%20is%20%22the%20practice,through%20the%20act%20of%20creation. ↲

[Open Pedagogy](#) from [The Open Pedagogy Student Toolkit](#) Copyright © 2023 by The Open Education

---

11. [12]
12. [6]

Network is licensed under a Creative Commons Attribution 4.0 International License, except where otherwise noted.

6.

BENEFITS OF OPEN PEDAGOGY

Now you know that Open Pedagogy:

- centers the student experience
- embraces students creating content
- creates a transparent and inclusive learning environment.

Let's explore how these principles create some pretty amazing benefits for students.

Centering Care

Right now you might be thinking, "Okay, I'm expected to not only learn new information in this class, but also create and contribute to the learning? That's a lot!" And you would be right! Open pedagogy has a lot of benefits, but it also expects a lot of you. This prospect might seem a bit frightening, a bit frustrating, a bit exciting, or all three!

A major benefit of engaging in open pedagogy is that your instructor is taking all of these different feelings into account and creating a learning environment that centers care, empathy, and flexibility. A recent article found that, "according to students...the processes of OP [open pedagogy] encourage students and teachers to be attentive, responsible, competent, and trust-building".[1]

Here's a visual representation and breakdown of how students experience care in open pedagogy:

1. [2]
2. [1]

Visual representation of participant perspectives of care in open pedagogy. (Maultsaid, D. and Harrison M. Licensed under a CC BY 4.0 License.)

Part of open pedagogy involves centering care, so navigating these new experiences can lead to your own empowerment and growth.

Student Agency

Another benefit of engaging in open pedagogy is the **agency** you'll have over your work in so many different ways. Open pedagogy centers your agency so you can make decisions about how you might express your intellectual property rights (something we'll talk more about in Chapter Six), or the submission format for a project, or how you choose to participate in certain activities.

When you authentically engage in open pedagogy work, each step of the process is transparent, flexible, and builds in opportunities for choice. As your instructor is laying the foundation for working in the open, ideally, each part of the class will be **scaffolded** so that you are consistently learning new skills and then building on those skills.

Take a look at this visualization which lays out a process for how your instructor might build your class. You can click on the purple plus signs for more information about each step.

An interactive H5P element has been excluded from this version of the text. You can view it online here:
https://openoregon.pressbooks.pub/environmentaljustice/?p=70#h5p-1

"Scaffolding Roadmap for Open Pedagogy Assignments" by Amanda C. Larson licensed under a Creative Commons Attribution 4.0 International License.

This process of scaffolding skills will keep you from feeling overwhelmed as you learn to work in the open and have a brand new learning experience.

Exploring Digital Tools

In the "Scaffolded Experiences are Integral" graphic above, you'll see stop 3: Tool Training. Open pedagogy projects and renewable assignments go hand in hand with digital learning tools. This is because a lot of different tools offer students the opportunity to easily create, collaborate, and share their work with their class and potentially a more public audience. Getting to learn new technology and tools is a huge benefit to working in the open because technology is never going to stop evolving and innovating.

Common Digital Tools used in Open Pedagogy

- Hypothes.is
- Pressbooks
- Google Suite
- Padlet
- H5P

For a robust list of popular tools your instructor might incorporate see the Learning Tools Documentation.

Even out in the workforce or in daily life, technology plays a big role in how we go about accomplishing our goals. Being familiar with the basic architecture of digital tools can help build a foundation for using other types of technology in your future.

One tool/technology that is becoming increasingly popular is Artificial Intelligence (AI). AI tools like ChatGPT, Bard, Dall-E, and others have added a whole new layer of possibilities when it comes to working with digital tools. The use of AI will continue to grow, so understanding how to use it effectively and ethically adds to your skillset as a technology user and consumer.

Engagement and Critical Thinking

Although the research on open pedagogy is still growing, preliminary research shows that engaging in open pedagogy can positively impact students. Students have reported increased engagement and motivation when engaging in renewable assignments and other forms of open pedagogy.[3] This makes sense, right? When you have more say in your educational experience and how you complete a project, you take more pride and find more enjoyment in your work.

3. [4]
4. [2]

Let's also think about the type of work you're doing; when you're creating content, you have to really understand what you're talking about. Open pedagogy creates opportunities for deeper learning because you are engaging in a dynamic learning process where critical thinking is essential. In one study, students reported that open pedagogy made them really understand and synthesize the material better than a traditional quiz or test and that the cognitive rigor was much higher than they have experienced in classes without open pedagogy assignments.[5]

All of these benefits work in concert to reinforce the goals of open pedagogy: empowering students as learners and creators and building engaging and inclusive learning experiences for all.

---

1. Maultsaid, D. and Harrison M. (2023). "Can open pedagogy encourage care? Student perspectives". *International Review of Research in Open and Distributed Learning*, 24(3), 77-98. https://doi.org/10.19173/irrodl.v24i3.6901. Licensed under a CC BY 4.0 License. ↵
2. Clinton-Lisell, V. and Gwozdz, L. (2023). "Understanding student experiences of renewable and traditional assignments". *College Teaching*, 71(2), 125-134. https://doi.org/10.1080/87567555.2023.2179591. Licensed under a CC BY NC 4.0 License. ↵
3. Hilton III, J., Wiley, D., Chaffee, R., Darrow, J., Guilmett, J., Harper, S., & Hilton, B. (2019). Student perceptions of open pedagogy: An exploratory study. *Open Praxis*, 11(3), 275-288. DOI: https://doi.org/10.5944/openpraxis.11.3.973 ↵

Benefits of Open Pedagogy from The Open Pedagogy Student Toolkit Copyright © 2023 by The Open Education Network is licensed under a Creative Commons Attribution 4.0 International License, except where otherwise noted.

---

5. [6]
6. [3]

7.

SO YOU'RE THE CREATOR - NOW WHAT?

Open pedagogy and renewable assignments bring much more to the classroom than traditional assignments. Open pedagogy gives you and your instructor the opportunity to work together to create meaningful educational experiences. But now you are the creator – what does that mean and where do you go from here?

There are two key elements to taking on the role of a creator in your class: your rights as a creator and your responsibilities

> If this is your first time working in the open, you may not have had a conversation before about your rights as a creator. These rights start with copyright and intellectual property.

Your Rights as a Creator

Copyright

Copyright law in the United States grants a creator control over certain uses of their work. In order to qualify for copyright protection, a work must be an "original work of authorship" and fixed in any tangible medium of expression.[1] This means it could be written on paper, typed on a computer, recorded as a video, or any other form of media, and must also have "at least a modicum" of creativity and be an independent creation of the creator.[3]

When you begin creating content for your renewable assignment, you own that copyright over your work. What is wonderful about working in the open is that you get to decide how you want to express your copyright.

1. [2]
2. [1]
3. [4]
4. [2]

You can choose to keep your work under "All Rights Reserved" which is traditional copyright, meaning if someone were to use your work without your permission in ways that are not covered under copyright law, then there is legal misdoing. Or you could choose to openly license your work with Creative Commons licenses, which allow you to intentionally choose how someone could use your work in the future. We'll talk more about Creative Commons licenses in the next chapter.

As we talked about in the Student Agency section of the toolkit, engaging in open pedagogy means that this distinction of choosing how to express your copyright is completely up to you.

Student Privacy

When making your decision about whether to openly license your work or not, you might be wondering about your own privacy. Posting something publicly, whether to an open repository or even on a class website, might feel a bit scary; everyone could see your work! Again, this is why the decision to openly license your work is up to you, but there are ways that your instructor can help mitigate some of the discomfort you might feel about sharing your work.

For example, you could choose to openly license your work anonymously or under a pseudonym. This way, if you really want to share all the hard work you've put into creating, you can do so without the fear that anyone will know it was you who created it. As you work throughout the semester you should carefully consider and reflect on your privacy rights so that you feel comfortable with the decisions you're making. You might want to reach out to your instructor to ensure you're both on the same page. You can also collaborate on signed agreements so you can be sure to exercise your rights in the way that make sense for you. At the end of the toolkit, there is a collection of sample student work agreements so that you can have a better idea as to what one might look like.

Authentic engagement in open pedagogy leads to spaces where you should feel comfortable expressing any thoughts, concerns, or questions you might have.

---

1. U.S. Copyright Office. (2021). *Copyright basics*. Accessed September 5, 2023. https://www.copyright.gov/circs/circ01.pdf ↲
2. U.S. Copyright Office. (2021). *Copyright basics*. Accessed September 5, 2023. https://www.copyright.gov/circs/circ01.df ↲

as a creator. In the next two chapters, we'll go into more detail regarding your rights and responsibilities as a creator.

Student Creator Rights from The Open Pedagogy Student Toolkit Copyright © 2023 by The Open Education Network is licensed under a Creative Commons Attribution 4.0 International License, except where otherwise noted.

8.

STUDENT CREATOR RESPONSIBILITIES

Not only do you have rights as a creator, but you also have responsibilities. Whether you decide to share your work publicly or not, it should still be built on principles of accessibility and Universal Design for Learning.

Accessibility

Accessibility can be viewed as the "ability to access" something.[1] For our purposes, we typically think of accessibility in terms of Web accessibility.

"More specifically, Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web. Web accessibility also benefits others, including older people with changing abilities due to aging."[3]

Making something accessible also means making it readily available and easily understood. When you begin creating content, it is important to keep in mind accessible design so that anyone could access your work as intended.

There are many sites that walk you through not only accessibility principles but also provide checks on your work to ensure it is accessible. Check out the following sites for more information:

Experte Accessibility Checker and Experte Accessibility Checker Mobile

Important Accessibility Features

1. [2]
2. [1]
3. [4]
4. [2]

- Using Heading levels
- Ensuring that all images have alt text and captions
- Color contrast and Font choices
- Descriptive text for Links/ URLs

WebAIM – Contrast Checker Tool
WCAG – more guidelines on web accessibility
FLOE – Flexible Learning for Open Education

Watch the video Creating Accessible OER for Student Authors by Abbey Elder (both closed captioned and with a transcript on YouTube) which sums up all this information about accessibility in a quick and easily digestible way:

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=85#oembed-1

Universal Design for Learning

Universal Design for Learning is another concept that helps to ensure that your work is accessed easily, readily, and as intended.

Universal Design for Learning (UDL), is "a framework to improve and optimize teaching and learning for all people based on scientific insights into how humans learn".[5]

UDL moves beyond accessibility standards to create learning resources that meet the needs of all users regardless of ability. For example, while providing a transcript for a video is important because it can help users who may be hard of hearing, it can also help people who are visual learners. As a visual learner being able to read a transcript might help you understand the material more quickly and effectively then listening to a video.

UDL works to design resources in a variety of ways so that users can engage with the material in a process that works best for them.

Understanding and implementing accessibility and Universal Design for Learning into your work ensures that you are fulfilling your responsibilities as a creator.

5. [6]
6. [3]

This page is adapted from the chapter "Accessibility and Usability" – The OER Starter Kit by Abbey Elder at Iowa State University. Licensed under a CC BY 4.0 License.

---

1. "Accessibility" (2023). In *Wikipedia*. https://en.wikipedia.org/wiki/Accessibility ↵
2. W3 Schools. "Web accessibility." Accessed Sept. 14 2023. https://www.w3.org/WAI/bcase/soc.html#of ↵
3. CAST. "About universal design for learning." Accessed Sept 14, 2023. http://www.cast.org/our-work/about-udl.html ↵

Student Creator Responsibilities from The Open Pedagogy Student Toolkit Copyright © 2023 by The Open Education Network is licensed under a Creative Commons Attribution 4.0 International License, except where otherwise noted.

PART II

WHO GETS ENVIRONMENTAL JUSTICE?

"Who Gets Environmental Justice? The Social Problem of Climate Change" by Patricia Halleran; Kimberly Puttman; and Avery Temple, Open Oregon Educational Resources, is licensed CC BY 4.0.

9.

WHO GETS ENVIRONMENTAL JUSTICE? THE SOCIAL PROBLEM OF CLIMATE CHANGE

I am grateful to the land, to the forces of life that guide me to where I need to be, to my ancestors who have come before me. I know that nothing I do is done alone. I thank my chosen family, my grandmother, and my more-than-human companions who are beside me on this journey. – Avery Temple

Chapter Overview

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=31#oembed-1

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=31#oembed-2

Figure 8.1 and b. 36 Inches: Understanding the Jordan Cove Energy Project [YouTube] and Rogue Climate, Klamath Co. landowners 'excited' as Jordan Cove project halts after years-long fight [YouTube] show the beginning and the end of the Jordan Cove Energy Project. Please watch all 9 minutes of these videos. As you watch, consider how this experience fits the basic definition of a social problem. Also, look for ways that people responded in an interdependent way.

Our exploration of social problems continues with an examination of the ways that members of a community can work together to solve environmental justice issues, as shown in the opening videos in figure 8.1 a and b. In 2005, Native American tribes and other community members throughout Oregon and northern California learned that a Canadian corporation was actively pursuing permits to construct the

Jordan Cove Energy Project (JCEP). The JCEP included a large coastal terminal and refinery site and a 229-mile-long pipeline that would pass through tribal, forest, and agricultural lands. This project would cross 400 streams and rivers and six miles of wetlands. Over 600 private landowners would be threatened with eminent domain––the seizing of property normally reserved for projects thought to benefit the public, such as hospitals or roads. The ancestral territories, cultural resources, and burial grounds of five Oregon and three northern California federally recognized tribes would also be threatened. Community members from diverse backgrounds came together. They forged a campaign to stop the project once they learned about the risks it presented to themselves, the environment, and the climate.

Opponents of the JCEP argued that the project would hardly benefit Oregonians economically, considering it would only produce around 250 permanent jobs. They would not benefit from the energy either since nearly all the gas would be shipped to international markets in Asia.

Many residents were concerned about environmental and health risks posed by the JCEP. The risks of placing a pipeline carrying an enormous amount of highly explosive fuel in an area already inundated with catastrophic wildfires each year. They also worried about placing a refinery and export terminal in an earthquake and tsunami-prone area on the coast.

Environmental groups noted the inevitable impacts the JCEP would have on rivers and streams along with numerous plants and animal species, including already threatened and endangered species. If built, the JCEP would also become the state's largest greenhouse gas emitter––the equivalent of adding 7.9 million passenger cars to Oregon's roads annually (Oil Change International 2017) at a time when humans should be investing in sustainable and renewable energy sources.

Lastly, the gas would come from Rocky Mountain states and northern Canada where it is extracted by a resource-intensive and highly controversial process called fracking. Communities located near fracking sites have an increased risk of developing cancer and other diseases due to contaminated groundwater, air pollution, and radioactive and toxic waste (Short et al. 2015).

Figure 8.2. This bright orange banner, woven through the trees in a forest, says "No pipeline, No LNG" (Liquid Natural Gas). Protesters used multiple tactics to engage support.

As you might imagine, very few residents supported the JCEP development. They resisted it by any means

available to them every step of the way. Protesters filed lawsuits. They attended state hearings and government hearings. They demonstrated in front of the Oregon Capitol. They decorated trees with protest signs like the one in figure 8.2. They organized numerous events to raise awareness, such as hiking along the proposed pipeline route to show the project's potential environmental impacts.

Tribal communities were at the forefront of the resistance movement. They considered the JCEP yet another method of colonization that disregarded their cultural and human rights. After 17 years of tireless resistance, this unified and large coalition won their fight. The JCEP was officially canceled in December 2021.

Wealthy multinational companies rarely withdraw from a project of this size. Often, they have invested millions of dollars and may stand to earn billions more. In this case, perhaps it became clear that they would lose in the long run. People would never give up the fight to stop them. This campaign was only one of far too many to name taking place across the US and internationally to put an end to industries largely responsible for causing the climate crisis in hopes of creating a safer and more just future for all.

We share our planet with far more than just members of our species. Because a great deal of our daily life is centered around the world humanity has built, it's easy to forget that we are part of a greater whole––a whole in which we are but one of the billions of life forms that inhabit Earth, all equally dependent on a healthy and safe environment to live and to thrive. Human society and the natural environment are interconnected parts of this whole. However, the world we share with the larger circle of life is increasingly impacted by human activity. These impacts are so pervasive that scientists around the world name the current geological period of Earth's history the Anthropocene, or the age of humans.

Learning Objectives

After reading this chapter, you will be able to do the following:

1. Explain how climate change is a social problem as much as an environmental problem.
2. Discuss how the historical experiences of colonization contribute to the environmental crisis.
3. Compare Indigenous and Western worldviews to explain the climate crisis and offer opportunities for innovative solutions.
4. Analyze intersections between race, class, gender, and other social locations to understand the causes and consequences of climate change.
5. Assess whether all human groups are equally responsible for causing the climate crisis.
6. Evaluate whether changes in individual behavior or collective action are more important in applying environmental solutions that support environmental and social justice.

Focusing Questions

The questions that guide our curiosity include:

1. Why is climate change a social problem as much as an environmental problem?
2. How do historical experiences of colonization contribute to the environmental crisis?
3. How do differences in Indigenous and Western worldviews contribute to the climate crisis and offer opportunities for innovative solutions?
4. How can an understanding of the intersections between race, class, gender, and other social locations help explain the causes and consequences of climate change?
5. Are all human groups equally responsible for causing the climate crisis?
6. Are changes in individual behavior or collective action more important in applying solutions that support environmental and social justice?

In this chapter, we explore the causes and consequences of climate change. We find out why climate change is both an environmental issue and a social problem due to the inequitable power dynamics that place some communities at greater risk than others. We examine how individuals and communities are responding to climate change. We are acting to adapt to the current effects of climate change and to prevent further social and ecological harm. We want to leave behind a cleaner and safer environment for future generations.

Let's learn more about this beautiful and troubled planet we call home!

Licenses and Attributions for Chapter Overview

Open Content, Original

"Chapter Overview" by Patricia Halleran, Kimberly Puttman, and Avery Temple, is licensed under CC BY 4.0.

Open Content, Shared Previously

Figure 8.2 Photo by Francis Eatherington. License: by CC BY-NC 2.0.

All Rights Reserved Content

Figure 8.1a "36 Inches | Understanding the Jordan Cove Energy Project" © Synchronous Pictures. License Terms: Standard YouTube License.

Figure 8.1b "Rogue Climate, Klamath Co. landowners 'excited' as Jordan Cove project halts after years-long fight" © KOBI-TV NBC5. License Terms: Standard YouTube License.

10.

CLIMATE CHANGE AS A SOCIAL PROBLEM

Scientists believe global climate change is the greatest challenge humanity has ever faced. But what exactly is climate change? What causes climate change? Why is it a social problem and not just an environmental problem?

Climate change refers to the long-term shift in global and regional temperatures, humidity and rainfall patterns, and other atmospheric characteristics. Unlike changes in weather that occur on a local level that can be measured in hourly, daily, or weekly fluctuations, climate change refers to longer-term fluctuations (both regionally or globally) that take place over a time scale of seasons, years, or even decades.

In the past two centuries, an exponential increase in carbon dioxide and other greenhouse gases have been released into the earth's atmosphere, as the chart in figure 8.3 shows. Although there are some natural processes that affect the earth's climate, such as volcanic eruptions, the vast majority of scientists worldwide attribute the speed at which global warming has recently occurred to human activity, most notably the burning of fossil fuels. Scientists examine ocean sediments, ice cores, tree rings, and changes in glaciers to understand variations in Earth's climate over time.

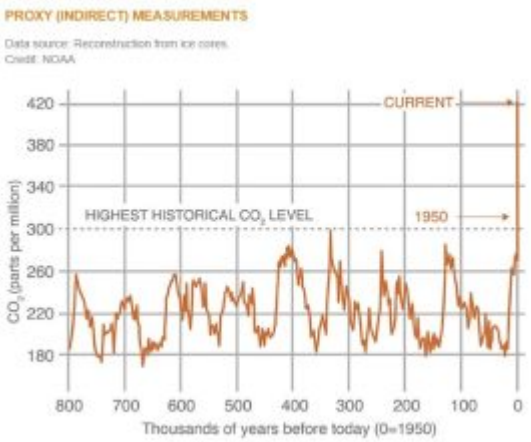


Figure 8.3. This graph shows the level of Carbon dioxide (CO2) over time. Although some fluctuation is normal, CO2 levels have never been as high as they are now. The change is predominantly caused by burning fossil fuels like coal, oil, and gas.

The Industrial Revolution is one reason for the increased carbon dioxide in the atmosphere. Since the Industrial Revolution, the concentration of greenhouse gasses is higher than at any other time in the past 800,000 years. This increase in greenhouse gasses is called the **greenhouse effect**––an imbalance between the energy entering and leaving the earth's atmosphere, resulting in a rise in global temperature. Because certain gasses absorb energy, such as carbon dioxide and methane, they trap heat and prevent it from being released

into space, causing a rise in global temperature. The burning of fossil fuels is not the only human activity contributing to the greenhouse effect. Other activities such as deforestation, urbanization, and unsustainable agricultural practices contribute to global climate change.

So, climate change is a social problem because humans are causing the problem and are differently impacted by the problem. A **social problem** is a social condition or pattern of behavior that has negative consequences for individuals, our social world, or our physical world. Early sociological definitions of social problems rarely included the phrase "our physical world." Today, climate change itself drives the importance of adding this phrase.**social problem**

Climate change is a critical issue, no matter how we approach it. Scientists are studying how to minimize its effects on people and the environment more broadly and, with any hope, successfully plan for the uncertain future. We must first examine the various ways climate change is already a threat to societies and communities worldwide.

Extreme Weather Events

As you watch the news, you may notice that extreme weather events occur regularly around the world. Many scientists argue that these events are caused or at least made worse by climate change. An **extreme weather event** is defined by the severity of its effects or any weather event uncommon for a particular location. Some examples of these types of severe and unusual events in the U.S. include Hurricane Katrina in 2005, which killed over 1800 people and caused $125 billion in damage; Hurricane Sandy in 2012, the third-most destructive hurricane ever to hit the nation; and the 2020 and 2021 wildfires that engulfed the West Coast states due to severe and prolonged drought and heat waves.

One of the most serious concerns Indigenous communities and other residents had about the Jordan Cove Energy Project discussed at the beginning of this chapter was the risk of a highly explosive gas pipeline being placed in a region increasingly inundated by annual wildfires. One of the large fires that swept through southern Oregon in September 2020 was located just a few miles from the planned route of the proposed pipelines, proving that the communities' fears were valid.

And, as mentioned by communities of both Indigenous and non-Indigenous peoples, climate change and mismanagement of forests will continue to create ripe conditions for unprecedented wildfires. In the Good Fire podcast, which you can listen to if you'd like, hosts Amy Cardinal Christianson and Matthew Kristoff, along with guest Frank Lake, discuss the landscape surrounding fire management:

Wildfire management has long been the domain of colonial governments. Despite a rich history of living with, managing, and using fire as a tool since time immemorial, Indigenous people were not permitted to practice cultural fire and their knowledge was largely ignored. As a result, total fire suppression became the prominent policy. With the most active force of natural succession abruptly halted, Indigenous communities suffered as the land changed. Today, western society has recognized the ecological problem a lack of fire has created, however, the cultural impact has been largely ignored. (Kristoff 2019)

The Indigenous knowledge that might have protected us against wildfires has been suppressed. It is another consequence of colonialism, an economic and political set of practices introduced in Chapter 5. Colonialism is not just a historical event. It is a structure of inequality that reproduces itself, even today (Wolfe 2006).

Cultural Loss

Figure 8.4. Salmon returning to their spawning grounds near Port Hope, Ontario, Canada. In the chapter's next section, we will discuss what makes up a culture. How might access to salmon shape a culture? How might a lack of access to salmon impact that same culture?

Many cultures around the world are intimately connected to their environment. Certain foods, medicine, dance, and art are unique to places with particular animals, plants, or climates. With drastic temperature changes, extreme disasters, and biodiversity loss among plants and animals, people cannot practice many customs. This contributes to significant cultural loss around the world.

For example, salmon are an important symbol and food source for the Indigenous people in the Pacific Northwest (figure 8.4). The imagery of salmon in Indigenous art demonstrates a deep connection to natural surroundings. However, one effect of climate change is the warming of bodies of water worldwide. Like many fish, salmon require a specific temperature to spawn. As water temperatures increase, salmon cannot spawn as effectively or at all. This severely impacts species who eat salmon as a staple in their diet and the indigenous peoples who practice traditional methods of harvesting, crafting with, and cooking salmon.

Climate change can create cultural change or inhibit cultural expression.

Climate Change and Poverty: "Those who contribute the least suffer the most"

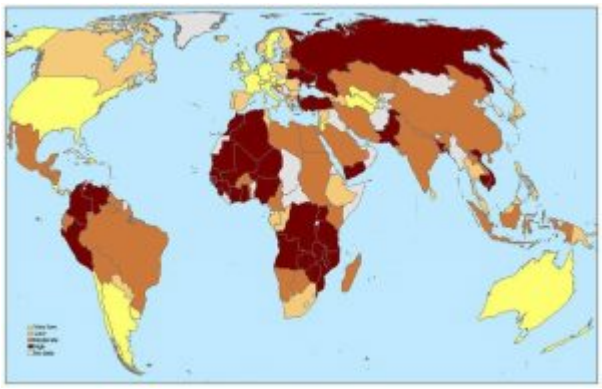


Figure 8.5. How vulnerable to climate change is your community? https://www.flickr.com/photos/theworldfishcenter/6143273940

This index combines a country's vulnerability to climate change, and its readiness to improve resilience. Much of Africa is both vulnerable and not ready. Most of North America is less vulnerable and more ready. However, looking at this data by country hides vulnerabilities that are unique to communities.

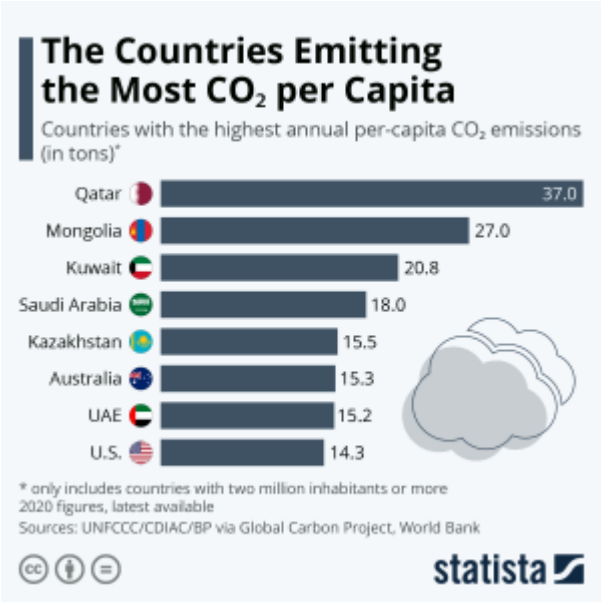


Figure 8.6. Countries with the highest annual per-capita CO2 emissions (in tons). https://www.statista.com/chart/20903/countries-emitting-most-co2-per-capita/

This image shows emissions of carbon dioxide, an emission that contributes to global warming. A common saying in the environmental movement is, "Those who contribute the least suffer the most." This means that the poorest people use the least planetary resources, so they contribute to climate change the least. However, they suffer the most from climate change. We can see this as we compare the maps in figures 8.5 and 8.6. We see, for example, that Africa contributes the least greenhouse gasses, but they are the most vulnerable to climate

change. The United States is a high contributor of emissions but the least vulnerable to climate change. While this model doesn't hold true for every country, the saying encapsulates a key issue with climate change.

For example, with Hurricane Katrina in New Orleans, people with cars could evacuate. People without cars often couldn't. People without cars contributed the least to CO2 emissions but experienced the most loss related to the extreme weather event (Bullard 2008).

You may have cheered with us as you learned that the Jordon Cove Energy Project pipeline project was shut down. However, the question remains: How else do we generate and transport our energy resources? Part of the answer is that the projects go where the resources exist, and the people are even more powerless to resist. Our unequal social locations contribute to inequality. To explore this further, we will look at the experience of people in Nigeria and oil production. We will build on the concept of socioeconomic class (SES) that we began in Chapter 4.

Figure 8.7. This map shows Nigeria, a country on the west coast of Africa. Nearly everyone there lives on less than $30.00 a day. Many people live on much less. How much do you think this country contributes to CO2 emissions?

Nigeria is a country on the western coast of Africa, as shown in figure 8.7. More than 40% of the people in Nigeria live in extreme poverty, defined as living on less than $1.40 per day (Cuaresma 2018). Less than 15% of the people have access to clean fuel for cooking (Ritchie 2021), and less than 60% of the people have access to sufficient electricity (Ritchie and Rosado 2021). At the same time, Nigeria is one of the world's top oil exporters. Oil companies use a practice called gas flaring, burning the waste gas from oil exploration rather than disposing of it in other ways.

Figure 8.8. Gas flaring causes poor health in Nigeria.

Poor Nigerians experience rashes and sores because of the toxic fumes. In a recent study, children exposed to flaring experience coughs, respiratory issues, fevers, and other poor health symptoms. The rate of child deaths

in children under five also slightly increases (Alimi and Gibson 2022: n.p.) The pollution contaminates the land, so women can't grow enough food. Pollution also contaminates the water, leaving less for drinking and crop irrigation. One article notes that the women in the Niger Delta are poor because the environmental toxins are poisoning their plants. Women plant cassava to make their flour. However, the cassava roots are dying, and the women can't replace them (Lawal 2021).

Many people are migrating to bigger cities, but it doesn't solve the local pollution and emissions problem. The article, "In Nigeria, Gas Giants Get Rich as Women Sink Into Poverty" documents the story with more details, including pictures of the impacts of the gas flares, if you would like to learn more. We also notice that those who use the least resources are impacted the most. In this case, the environmental impact occurs on a different continent than most of the people using the oil. If you'd like to look more deeply into this problem, watch Who Is Responsible For Climate Change? – Who Needs To Fix It?

Licenses and Attributions for Climate Change as a Social Problem

Open Content, Original

"Climate Change as a Social Problem" by Patricia Halleran, Kimberly Puttman, and Avery Temple, is licensed under CC BY 4.0.

All Rights Reserved Content

Figure 8.3: Carbon Dioxide Concentration from Nasa Global Climate Change, permission to use granted by NASA

Figure 8.8 The impact of gas flaring on child health in Nigeria by Alimi, Omoniyi, and John Gibson is used under Fair Use

Open Content, Shared Previously

Figure 8.4 Photo by Brandon . License: Unsplash License.

Figure 8.5 Unequal Vulnerability by WorldFish is licensed under CC BY-NC-ND 2.0

Figure 8.6 The Countries Emitting the Most CO_2 Per Capita by Katharina Buchholz is licensed under CC BY ND 2.0

Figure 8.7 File:West Africa map.gif by PirateShip6 is licensed under CC BY SA 4.0

11.

ENVIRONMENTAL INEQUALITY AND CULTURE

The environmental crisis is a social problem because people contribute to the problem and experience it differently based on their race, class, gender, and ability among other social locations. A portion of this inequality is historically rooted in the destruction of culture caused by colonialism. To understand this, we must define both culture and colonialism.

In every interaction, we all adhere to various rules, expectations, and standards that are created and maintained in our specific culture. These social norms have meanings and expectations. The meanings can be misinterpreted or misunderstood in many ways. When we do not meet those expectations, we may receive some form of disapproval. The disapproval could be as simple as a fierce look or a rude comment.

For example, someone trying to connect with you may ask: "What do you think of the weather we're having?" A common response in Oregon might be, "I'm so tired of the rain." If you ignored the question, you would be violating a norm. Alternatively, if you responded with your detailed analysis of climate change, you would also violate the norm of a "greeting." Instead of a short, calm statement, you respond in a detailed and emotional way, not meeting the other person's expectations. These norms and the norm violations are concrete examples of culture.

Culture is the shared beliefs, values, and practices that are transmitted within a social group. Culture includes:

- shared values,
- beliefs that strengthen the values,
- norms, and rules that maintain the values,
- language so that the values can be taught,
- symbols that form the language people must learn,
- arts and artifacts,
- and the people's collective identities and memories.

We examine social situations to discover the expectations for norms and behaviors. People who interact within a shared culture create and enforce these expectations. Sociologists examine these circumstances and search for patterns.

Enculturation and Cultural Universals

Anthropologist Edward Tyler (1871) was one of the earliest social scientists to define culture, stating that it was "that complex whole which includes knowledge, belief, art, morals, law, custom, and any other capabilities and habits" that people learn from other members of their group. In other words, culture is taught and learned. Anthropologists call the process of learning culture **enculturation.**

A Western example of enculturation is the belief that we must work to earn the right to live. Children are taught from a young age that we must work jobs until we become elderly to afford our basic necessities, such as food, shelter, water, and acceptance within our communities. This is steadily reinforced throughout adolescence and into adulthood through toys, media, job fairs, career days, and paychecks.

Culture also includes the institutions we create, the mental maps we perceive to be "reality," and the power structures that shape our understanding of the world. It is important to note that culture is not static. Rather, it is a constantly evolving dynamic process, being shaped, reinforced, and negotiated by members within the cultural group. We learn culture from our parents and other family members, our teachers and religious leaders, the media, and the larger communities and societies we are a part of. Fundamental to the definition of culture is that it is a shared experience that develops in response to being a group member.

All cultures have to solve similar problems: how to find enough to eat, how to raise children, how to care for the sick, and how to memorialize those who have died. Although cultures vary, they also share common elements. **Cultural universals** are patterns or traits that are globally common to all societies.

One example of a cultural universal is the family unit. Every human society recognizes a family structure that regulates sexual reproduction and the care of children. Even so, how that family unit is defined and how it functions vary. In many Asian cultures, for example, family members from all generations commonly live together in one household. In these cultures, young adults continue to live in the extended household family structure until they marry and join their spouse's household, or they may remain and raise their nuclear family within the extended family's homestead.

In the White dominant culture of the United States, by contrast, individuals are expected to leave home and live independently for a period before forming a family unit that consists of parents and their offspring. Other cultural universals include customs like funeral rites, weddings, and celebrations of births. However, each culture may view and conduct the ceremonies quite differently. Even humor may be a cultural universal—a way to release tension and create unity (Murdock 1949). You may not always get the joke of a person from another culture, but it seems that everyone laughs.

The Culture Wheel

As a sociologist exploring a social problem, you might look at how the cultures of the participants reflect

different values, norms, languages, or laws in order to better understand the conflict. To remind ourselves of what these cultural differences can be, we have the culture wheel to help (figure 8.9).

Figure 8.9. The culture wheel visually represents a specific culture's beliefs, actions, and backgrounds. The culture wheel helps us to understand what is common and different in many cultures. When you consider your own cultural background, how is it the same or different from the dominant culture? Figure 8.9 Image Description

How might you use this culture wheel to explain your own culture to someone else?

Part of why the conflict is so hard to resolve regarding the environment is that we see a deep conflict between culture and the related world views.

According to Alan Johnson, a sociologist you met in Chapter 1 , a **worldview** is:

The collection of interconnected beliefs, values, attitudes, images, stories, and memories out of which a sense of reality is constructed and maintained in a social system and in the minds of individuals who participate in it. (Johnson 2014:180)

Like culture, a worldview helps a person make sense of their world. A worldview is a perception of reality reinforced by people in a society. For example, in the dominant worldview in the United States, people think that the concept of race is based on biology. In this worldview, you can tell someone's race by looking at physical characteristics such as skin tone, eye shape, or hair texture.

In a worldview that incorporates social construction, we see race is a social construct, not a biological one. Even being White is a social construction resulting from a combination of capitalism and colonialism. Initially, the English used "race" to divide English people from Irish people, legitimizing taking Irish land. Once created, "race" as applied to Indigenous, African, and other "non-white" people became a justification for genocide, slavery, domination, and colonization (Johnson 2014).

Unpacking Oppression, Living Justice: Colonialism

Many schoolchildren in the United States can tell us that our country began as thirteen colonies. However, this basic understanding is a bit flawed.

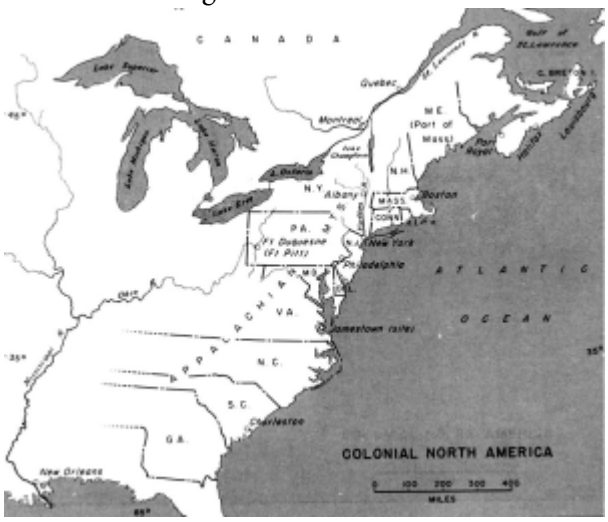


Figure 8.10. Colonial North America (1689-1783) How many colonies do you see?

This map of colonial North America (1689-1783) shows the 13 colonies school children learn about. It also shows the 4 colonies that became part of Canada. To the far north, Halifax is a major city in Nova Scotia, the city of Quebec is part of the colony of Quebec, Prince Edward Island is the tiny island just northwest of Halifax, and only a tiny corner of Newfoundland shows up on the far upper right corner. Even countries are socially constructed.

Immediately before the American Revolution, Great Britain actually had 17 colonies. Thirteen of these colonies eventually revolted. They became the new country, the United States of America. The other colonies, Newfoundland, Nova Scotia, Quebec and Prince Edward Island, remained colonies of Great Britain. These original colonies became part of the Confederation of Canada in 1867. Canada became fully independent of Great Britain in 1982.

The school child version of the thirteen colonies also simplifies a much more complicated reality. The more nuanced version of this history includes violence and genocide under the practice of colonialism.

Colonialism is the domination of a people or area by a foreign state or nation. When we say that Great Britain colonized North America, we mean that Great Britain made the laws, provided the leaders, bought animal furs, wood, and minerals, and imposed taxes. The colonizers who lived here were citizens of Great Britain, but had no rights to vote. Indigenous people and slaves had even less.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=38#oembed-1

Figure 8.11. The History of the World: Every Year [YouTube]. Please watch minutes 16 – 18:09, spanning from 1550 to 1970. In this period, we see political colonialism increase and decrease. Also, the video itself takes the perspective of colonizers. For example, Australia is empty, but we know that the Indigenous Aboriginal people have lived there since before time.

It can be challenging to imagine the sheer scope of colonial domination. Please watch the video in figure 8.11, particularly minutes 16 – 18:09. In this video, we see that Spain, Portugal, France, England, China, and Russia were major colonizing powers. Starting about video minute 16, in the 1550s, we can see the expansion of Spain and Portugal into Central and South America. By video minute 16:30, or the 1620s, France, England, and the Netherlands established colonies in North America. By about video minute 17:17, about the year 1800, we see Great Britain establishing colonies in Australia and Canada. Much of Africa was "owned" by Spain, Portugal, and Great Britain. It was only after World War II and the rise of nationalism in the 1950s and 1960s that the power of colonialism waned. The map at video minute 18:09 shows mostly independent states worldwide.

Today, some places in the world are still colonies or territories of other states. Puerto Rico is a U.S. territory. The people who live there are U.S. citizens, but they can't vote in many elections. Similarly, the Falkland Islands, small islands off the coast of Argentina, are legally recognized as territories of the United Kingdom and claimed as part of Argentina simultaneously. However, most of the world's countries govern themselves independently. Why, then, is colonialism still important?

Learning about colonialism is necessary because we still feel the effects of this historical legacy. European world powers established global slavery in this time period. Colonizers killed the people who already lived on the land through disease, war, and resettlement. Colonizers used education as a way of destroying family and community. Colonial practices fuel climate change. Part of the reason for that begins with differences in worldview.

It's your turn to unpack colonialism and live justice:

Compare the colonization video and the native lands map project.

Consider these questions:

- Who is creating the map? (You might want to look at the About section on the native lands page.)
- What is included and excluded?
- What worldview does each map support?
- How might this impact climate change?

Worldview Conflict – Indigenous and Western Perspectives

Although Indigenous peoples worldwide are significantly different from one another, Indigenous people, social scientists, and activists assert that there is an Indigenous worldview. From Chapter 1, we remember that

the social construction of language is important. Let's talk first about the terms that we use to describe the first people who live in any place: Indigenous, First Nation, and Indian.

The United Nations describes **Indigenous peoples** in this way:

Indigenous peoples have in common a historical continuity with a given region prior to colonization and a strong link to their lands. They maintain, at least in part, distinct social, economic, and political systems. They have distinct languages, cultures, beliefs, and knowledge systems. They are determined to maintain and develop their identity and distinct institutions, and they form a non-dominant sector of society. (United Nations n.d.)

The United Nations doesn't define who is indigenous on purpose, asserting that indigenous people have the right to identify themselves for themselves.

In an alternate definition, the Canadian organization Indigenous Foundations defines **First Nations** as:

a term used to describe Aboriginal peoples of Canada who are ethnically neither Métis nor Inuit. .... You may also hear some First Nations people refer to themselves as "Indians." While there are many reasons for an individual to self-identify this way, this may be a deliberate act on their part to position and present themselves as someone who is defined by federal legislation. (First Nations Studies Program n.d.)

Although Indigenous people throughout the world have very different cultures, their collective worldview is significantly different from the Western worldview. If you'd like, please read this story, "What I Learned from Coyote," and this explanation of worldview, "As I had shared with Coyote." In them, Jennifer Anaquod, indigenous educator, researcher, and member of the Muscowpetung Saulteaux First Nation in Saskatchewan, describes her worldview through story. Describing the world through story is part of Indigenous culture.

We've summarized some core differences between Indigenous and Western worldviews in the table in figure 8.12. Each worldview defines relationships to wealth and to land, among other components. In the Indigenous view, land is sacred. Generation after generation, people care for the land and are nourished in return. Wealth is shared. In the Western worldview, land is owned or controlled. The purpose of living is to accumulate individual wealth. This belief supports the economic practices of capitalism. And, as a reminder, it is important to understand that not all indigenous people have an indigenous worldview. Not all Western people have a Western worldview.

Indigenous Worldview	**Western Worldview**
Collectiveness	Individualism
Shared wealth	Accumulate wealth
Natural world more important	People's laws are more important
Land is sacred. We belong to the land,	Land is a resource, is dangerous, and must be controlled.
Silence is valued.	Silence needs to be filled.
Generosity	Scarcity
Binaries do not exist.	Binaries are crucial.

Figure 8.12. Differences between the Indigenous World View and the Western World View. Even creating a chart that divides things into two categories is an example of the Western Worldview.

We also see a difference in worldview when we examine how we understand what people need to thrive and grow. You may have seen the triangle on the left of figure 8.13 at some point in your education. In figure 8.13, the triangle (left) shows Maslow's hierarchy of needs.

Figure 8.13. C omparison between Maslow's Hierarchy and First Nations Perspective.

Maslow's Hierarchy focuses on the individual. The First Nations Perspective includes the health of the collective now and in the future. It includes the emotional need for affection and loving connections to others once basic physiological and biological needs are met. In contrast, the triangle on the right in figure 8.13 shows theories created by multiple indigenous groups, including the Blackfoot Nation in North America. This model emphasizes the self-actualization of not just the individual but of the community as the most primary of needs.

In 1938, American psychologist Abraham Maslow spent time with the people of the Blackfoot Nation in Canada prior to releasing his Hierarchy of Needs theory (figure 8.13). Historians think he based the teepee-like structure on the Blackfoot ideas but westernized the focus on the individual rather than the community (Bray 2019).

Let's look more closely at the representation of Blackfoot ideas. It can be seen that the well-being of the individual, the family, and the community are based on connectedness: the closeness that we experience with family and friends, and the prosocial extension that we provide to others in our communities and in the world. In addition, this model focuses on time; the top of the teepee is cultural perpetuity, and it symbolizes a community's culture lasting forever.

As powerful as cultures and worldviews are, they need action in the world to become real. One institution that encapsulates our values is the economy. Let's look next at how colonialism and capitalism work together to exacerbate the social problem of climate change.

Colonialism, Capitalism, and Climate Change

An example that illustrates the differences between the dominant Western perspective today versus the Indigenous or First Nations perspective is the economic system of capitalism. **Capitalism** is an economic

system based on private ownership and the production of profit. This economic system requires endless consumption and use of resources, which is not sustainable on a finite planet.

When the goal is profit, people must buy more and more things. Creating more and more things uses even more planetary resources. This drive for profit shapes our values and our behaviors. For example, capitalism often requires **conspicuous consumption**, the purchase of expensive luxury goods or services to display one's wealth and status. It is not enough to have a small house with running water, heat, and electricity.

Instead, capitalism requires that people always want more: a mansion, two cars, a swimming pool, and a fancy vacation. We can see conspicuous consumption at work when we examine what people eat around the world. If you want to learn more, The Great Global Food Gap [website] shows images of what families across the globe buy for food. (Please note: as of 2023, a British pound (£) is worth slightly less than a United States dollar ($)). How much must you spend on food to meet your basic needs? How does that amount change when considering a diet that will make you happy?

Figure 8.14. Carvers Owen James, Herb Sheakley, and tribal member George Dalton, Jr. hoist the Kaagwaantaan house post.

Traditional Ecological Knowledge (TEK) is a rich source of wisdom. Indigenous or First Nation's economic systems generally have not relied on exponential growth and consumption to live a healthy lifestyle. Many journals from early colonists describe the Americas as places with lush and ample resources. Indigenous peoples had consistently managed and stewarded the land using techniques perfected throughout generations. This knowledge today is called **Traditional Ecological Knowledge**, or TEK. To learn more about TEK, read Native Knowledge: What Ecologists Are Learning from Indigenous People [website].

In addition to the decimation of Indigenous populations and the land that they lived on, colonization supported a worldview that contributed to ecological devastation today. In this view, land should be owned and subjugated, rather than tended and cared for. In the words of authors Laura Dominguez and Colin Luoma (who write using UK English):

The widespread plunder of natural resources was a hallmark of colonisation. Nature was something that was to be commodified in order to enrich the colonial power. In turn, indigenous territories were treated as business enterprises, with seemingly unlimited resources to exploit. Undoubtedly, this had dire environmental consequences. Only upon the realisation that their activities were causing rapid environmental degradation did colonisers begin to concern themselves with nature conservation. This brought about early attempts by colonisers to preserve indigenous lands—notwithstanding the fact that indigenous peoples have been conserving their own traditional territories for centuries prior to European contact. Yet the ideology that emerged was that nature was something that should be first exploited, then preserved, but all without the input, involvement, or participation of indigenous populations. (Dominguez and Luoma 2020)

Further, colonization supports a worldview that leads its participants to value individual well-being above all else. This leads to a lack of action and concern regarding the well being of our neighbors, plants, and animals who surround us.

Examples from Australia, New Zealand, and Latin America show the link between colonization, capitalism, and climate change.

In many areas of the world, European colonizers needed wood. Wood was essential in building houses and ships. It was a major source of fuel for heating and cooking. In New Zealand, one of the main reasons that colonists took over Maori land was to extract timber. This resulted in 60% less forest and the extinction of many native animal species (Varanasi 2022). Similarly, in Australia, colonizers banned Indigenous wildfire management practices. They thought that banning fire would protect the forests. However, the Indigenous practices enhanced biodiversity and protected the forests.

We see the result of these colonial practices even today. In 2019 and 2020, Australia was devastated by catastrophic wildfires, and 34 people died in these wildfires. These fires destroyed 72,000 square miles of land and 3,500 homes. The fires also killed or displaced about 3 billion animals. In addition, they released significant carbon dioxide, which continuously fuels climate change (Center for Disaster Philanthropy 2020; Pratt 2021).

We also see links between colonization, capitalism, and climate change in South and Central America. Uruguayan journalist and poet Edwardo Galeano wrote *The Open Veins of Latin America* in 1971. In it, he argued that capitalism based on colonization created poverty in Latin America. He writes:

Latin America is the region of open veins. Everything from the discovery until our times, has always been transmuted into European–or later–United States– capital, and as such has accumulated on distant centers of power. Everything: the soil, its fruits and its mineral-rich depths, the people and their capacity to work and to consume, natural resources and human resources. (Galeano 1971:2)

He also wrote a poem "Las Nadies/The Nobodies," which describes the impact of colonial capitalism on the people who live in the colonized countries. In it, the people are nobodies. He wrote, "We don't have culture, but folklore," among other losses. In this poem, we see the importance of culture. We see another emphasis on "those who contribute the least suffer the most." Again, we notice the power of capitalist colonialism. If you'd like to listen to this poem, watch Los Nadies/The Nobodies Poem [Video].

The legacy of colonialism and capitalism on climate change continues in Latin America today. The world

markets for beef, soybeans, palm oil, wood products, sugar, and coffee support continued deforestation (Union of Concerned Scientists 2016). Deforestation itself is a cause of climate change.

Environmental inequality arises from cultural differences in worldviews and the economic systems that drive those worldviews. This conflict provides the context for making sense of the climate crisis today.

Licenses and Attributions for Environmental Inequality and Culture

Open Content, Original

"Environmental Inequality and Culture" by Kimberly Puttman and Avery Temple, is licensed under CC BY 4.0.

Unpacking Oppressing, Living Justice: Colonialism by Kimberly Puttman is licensed under CC BY 4.0.

5.3 Values and 5.3.1 Enculturation is adapted from "Chapter 3 Introduction" and "3.1 What is Culture" by Tonja R. Conerly, Kathleen Holmes, Asha Lal Tamang, Openstax Sociology 3e is licensed under CC BY 4.0. Modifications: Summarized some content and applied it specifically to the social problem of climate change. License Terms: Access for free at https://openstax.org/books/introduction-sociology-3e/pages/1-introduction

Open Content, Shared Previously

Figure 8.10 File:Colonial North America 1689 to 1783.jpg by United States Army Center of Military History is in the Public Domain

Figure 8.12 Differences between the Indigenous World View and the Western World View by Avery Temple. License: CC BY 4.0.

Figure 8.13 Maslow's Hierarchy and First Nations Hierarchy Contemporary Families: An Equity Lens by Elizabeth B. Pearce; Wesley Sharp; and Nyssa Cronin is licensed under a CC BY 4.0, except where otherwise noted.

Figure 8.14 Carvers Owen James and Herb Sheakley, and tribal member George Dalton, Jr. hoist the Kaagwaantaan house post from National Park Service is in the Public Domain.

All Rights Reserved Content

Figure 8.9 "The Culture Wheel" (c) AndreaGrace J. Fonte Weaver. All Rights Reserved. Used with permission

Figure 8.11 "The History of the World Every Year" © Ollie Bye. License Terms: Standard YouTube License.

12.

MAKING SENSE OF THE CLIMATE CRISIS

Activists and scientists use a variety of perspectives to understand climate change and climate activism. This section will look at environmental justice, environmental race theory, ecofeminism, youth climate change activism, and Critical Environmental Justice theories and actions.

Figure 8.15. Silent Spring Book Cover. Environmentalist Rachel Carson wrote the book *Silent Spring*. Published in 1962, it described how the pesticide DDT was killing birds. As a result, DDT was banned, and eagles, brown pelican, and osprey populations have rebounded. However, bird populations are generally still in decline, representing one component in biodiversity loss (Guynup 2022).

In addition to warming temperatures and loss of wildlife, we can look at climate change through the lens of the social problems process. As we examine how the environmental movement began in the United States, we begin with environmentalist and author Rachel Carson. In her book *Silent Spring* (1962), she described how toxic pesticides were killing populations of robins and causing deeper environmental damage, as seen in figure 8.15. This book highlights the work of activists of the time making claims about environmental problems, which is Step 1 of Claims-making in Best's model of the social problems process.

By raising these issues with books, articles, and debates, activists used the media in various ways to engage people. Public awareness steadily grew concerning the connection between human activity, ecological degradation, and the dramatic loss of biodiversity. This awareness is covered in Step 2: Media Coverage and Step 3: Public Reaction in the Best Claims Making Model. Out of this awareness, the environmental movement was formed to put pressure on political institutions to address the damage that had already occurred and prevent further harm from happening in the future.

As a result of an increase in public awareness and an admirable concerted effort by the environmental

movement, many governments banned or restricted the use of DDT and similar pesticides. The changes in policies show Step 4: Policymaking in the model. The changes in laws, regulations, and policies have saved many threatened species. They have also held polluting industries accountable for the damage that they caused. The implementation of government laws and policies is incorporated in Step 5: Social Problems Work, and Step 6: Policy Outcomes. Although the work of environmental change is ongoing, we find concrete examples of Best's model at work in society.

What is Environmental Racism?

Environmental racism is any environmental policy or practice which disadtoxic pesticides were based on race . The term was first coined in 1982 by Reverend Dr. Benjamin Chavis during what many consider one of the earliest environmental justice actions in the U.S. Warren County, North Carolina residents came together to protest the siting of a toxic landfill in a predominantly Black community (Bullard 2000). Chavis (1994) defined environmental racism as:

racial discrimination in environmental policymaking and enforcement of regulations and laws, the deliberate targeting of communities of color for toxic waste facilities, the official sanctioning of the presence of life-threatening poisons and pollutants for communities of color, and the history of excluding people of color from leadership of the environmental movement. (Chavis 1994)

Figure 8.16. Environmental sociologist Robert D. Bullard is often described as the "Father of Environmental Justice."

Environmental sociologist Robert D. Bullard is often described as the "Father of Environmental Justice." His book *Dumping on Dixie: Race, Class, and Environmental Quality* (1990) was the first book describing environmental racism. Bullard discussed a landmark study he conducted in 1979 concerning the locations of all the municipal solid-waste sites in Houston, Texas. This research was part of the first class-action lawsuit in the US to charge environmental discrimination under the Civil Rights Act. The lawsuit *Bean v. Southwestern Waste Management* was in response to the siting of a landfill in a suburban middle-class neighborhood in

which Bullard described as "an unlikely location for a garbage dump––except that over 82 percent of its residents were African American" (p. xiv) .

Results from Bullard's research inspired him to investigate four other Black communities in the South to see if there was indeed a correlation between race and increased exposure to toxic facilities and other locally unwanted land uses. His research findings revealed that "the siting of local waste facilities was not random" (p. xiv) but were in fact clear examples of institutional racism––laws and policies that have intentionally and systematically marginalized Black communities for generations.

Bullard's groundbreaking research provided convincing evidence of environmental discrimination. He defined environmental discrimination as the "disparate treatment of a group or community based on race, class, or some other distinguishing characteristic," an experience he saw as a "fact of life" for Black communities. At the center of this legacy of discrimination, he argued, was structural and individual racism, which led to the "impoverishment of Black communities . . . [making] it easier for Black residential areas to become the dumping grounds for all types of health-threatening toxins and industrial pollution" (p. 7) . Bullards work illustrated how and why past injustices continue to affect and harm historically oppressed communities today.

Environmental racism also includes the colonialist land theft from Indigenous people. Indigenous scholar Roxanne Dunbar-Ortiz argued in *An Indigenous Peoples' History of the United States*, that "everything in US history is about the land," at least in terms of increasing European and Euro-American wealth and power (Dunbar-Ortiz 2014).

Figure 8.17. David Pellow is a sociologist and activist who researches environmental justice.

Researcher and activist David Pellow wrote the 2017 book *What is Critical Environmental Justice*? agrees. He argues that environmental injustice was a major component of the European colonization agenda. From the theft of nearly all Indigenous historical lands; the extermination of entire cultural groups and millions of Indigenous peoples; the control, commodification, and over-exploitation of natural resources, and the

enslavement of millions of Indigenous and African peoples to "work the land," environmental racism has been a problem in the U.S. from the start.

Environmental injustice can be traced much further back in US history to the exploitation and extermination of millions of Indigenous peoples and the violent seizure of their ancestral lands as a result of European and Euro-American colonization and warfare (Jarratt-Snider and Nielson 2020). To learn more about David Pellow's work, watch his 6.42 minute video, Polluting the Voiceless [Video].

What is Environmental Justice?

Environmental racism and environmental injustice call for environmental justice. This call is both a social movement and an academic theory. **Environmental justice** (EJ) is an intersectional social movement pioneered by African Americans, Indigenous peoples, Latinx, lower-income, and other historically oppressed populations fighting against environmental discrimination within their communities and across the world.

Environmental justice is also an academic theory explaining the causes and consequences of environmental inequality and supporting action. As a social movement, EJ is rooted in the struggles of the Civil Rights Movement and its fight to end racial segregation and structural inequality in the 1950s and 1960s. It operates "under the assumption that all Americans have a basic right to live, work, play, go to school, and worship in a clean and healthy environment" (Bullard 2000).

The EJ movement began to receive widespread public attention in the early 1980s after a series of grassroots actions took place against the polluting practices of toxic industries. Federal and state governments failed to regulate these industries in historically marginalized communities. With a deep awareness of institutional racism and the socioeconomic inequalities in the U.S. and elsewhere, early EJ activists recognized that all forms of injustice were interconnected.

Therefore, the struggle for a healthy environment must also include access to quality schools and education, adequate and safe housing, green spaces, fresh food, clean water, and sustainable employment opportunities (Checker 2007). What makes this movement unique and strong is the intersectionality of the injustices it seeks to address and the diverse communities it brings together to address various types of social inequities (Schlosberg 2007).

In an alternate definition, The Environmental Protection Agency (2018) defines EJ as the "fair treatment and meaningful involvement of all people regardless of race, class, color, national origin or income with respect to the development, implementation, and enforcement of environmental law, regulations, and policies." To many activists and scholars, however, the EPA's definition holds little weight, considering that polluting industries are rarely, if ever, held accountable for the harm they cause (Pellow 2017).

Many EJ activists and scholars also recognize how social inequalities of all kinds are deeply embedded within the structure of the government. Therefore, they find it hard to rely on government oversight to protect their communities. Often, the government and the legal system allow these injustices to occur in the first place (Estes 2019). Many communities who strive for environmental justice create local solutions themselves. They

form alliances, conduct direct action campaigns, invest in mutual aid efforts, and practice direct democratic principles to achieve their goals (Pellow 2017). We'll look at some examples later.

What is Ecofeminism?

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=46#oembed-1

Figure 8.18. Gender inequality is showing up... in climate change [YouTube]. The first 12 minutes of this TED talk show Canadian researcher Amber Fletcher interviewing farm women to demonstrate how climate change impacts agriculture in Canada. How is this information new to you?

Women and children are disproportionately impacted by climate change. The video in figure 8.18 explores this topic in more detail. In response to this and other gendered inequalities, women and nonbinary people are thinking, researching, and taking action. This strand of feminist theory and action is called ecofeminism. Ecofeminism connects the domination of women to the domination of the environment. To learn more, read the article Ecofeminism: Encouraging Interconnectedness with Our Environment in Modern Society, where researchers Mondal and Majumder (2019) write, "bringing together feminism and environmentalism, **ecofeminism** argues that the domination of women and the degradation of the environment are consequences of patriarchy and capitalism" (n.p.).

In addition to being a theory that fundamentally names the intersectionality of the oppression of women and non-binary people with the destruction of the environment, ecofeminism champions taking action. Women themselves say that they must become climate change activists to create a world where their children can survive and thrive.

To witness one example, you may want to watch the TED talk EcoGrief and Ecofeminism, where Heide Hutner tells her own story of cancer. She also links her grief and her activism to the activism of women around the world. Similarly, you may want to listen to Terry Tempest Williams tell the story of The Clan of the One-Breasted Women. She can connect the event of nuclear testing with her family's health. She describes how this leads her to activism.

What is Youth Climate Activism?

Young people worldwide are taking action to end climate change, using social media to connect rich and poor countries. Their passion is creating action in new ways. Let's meet two activists and explore what youth climate action looks like.

Figure 8.19. Greta Thunberg, environmental activist, holds a sign reading "School Strike for Climate Change."

Greta Thunberg is a youth activist from Sweden. She began protesting in front of government offices in 2018 with other young people. This small action has grown into a worldwide movement, using youth energy and new forms of social media to mobilize and educate people.

In a speech in Berlin in March 2019, Thunberg said, "We live in a strange world where children must sacrifice their own education in order to protest against the destruction of their future. Where the people who have contributed the least to this crisis are the ones who are going to be affected the most."

Her movement, Fridays for Future, started when she and other activists protested in front of the Swedish parliament to draw attention to climate change. Their social media posts went viral and encouraged other youth to take action (Fridays for Future 2022).

#FridaysForFuture continues to mobilize youth around the world. 100,000 people marched in Glasgow in 2021 to protest during the Global Climate Conference . Some estimated that 7.6 million youth have participated in global climate action. Youth are taking action worldwide, in both rich and poor countries. (Hasegawa 2022). Another young activist making a difference is Autumn Peltier.

Figure 8.20. Autumn Peltier, youth water activist at the World Economic Forum 2021.

> In my culture, my people believe that water is one of the most sacred elements. It's something we honor. My people believe that when we're in the womb, we live in water for nine months and our mother carries us in the water. As a fetus, we learn our first two teachings: how to love the water and how to love our mother. As women, we're really connected to the water in a spiritual way. We believe that we're in ceremony for nine months when we carry a baby. Another way to look at it is that water is the lifeblood of Mother Earth, and Mother Earth is female. (Autumn Peltier 2021)

Autumn Peltier is a world-renowned water protector, activist, and citizen of the Wikwemikong First Nation on Manitoulin Island, Ontario, Canada. Since she was 8 years old, she has fought for clean water in Canada. In 2019, Peltier was appointed as the Anishinabek Nation Chief Water Commissioner following the death of her great-aunt, Josephine Mandamin, who had been the previous Chief Water Commissioner. She remains in that position today. She criticized the Canadian Prime Minister, spoke at the United Nations, and led youth and Indigenous advocacy efforts. If you would like to learn more about Autumn Peltier, she tells her story in The teen fighting to protect Canada's water – meet Autumn Peltier [YouTube].

In a recent article, Karen O'Brian, Elin Selboe, and Bronwyn Hayward propose that young people engage in three kinds of activism regarding climate change and environmental justice: dutiful dissent, disruptive dissent, and dangerous dissent.

The dutiful dissenters create change by working within the system. They may work with school organizations to create recycling programs or policies around investment. "Through dutiful dissent, youth activists work within existing systems to express their discontent with business as usual and to promote alternative responses to climate change" (O'Brian, Selboe, and Hayward 2018). In contrast, disruptive dissenters stage strikes and protests that highlight inequalities and injustices.

Disruptive actions explicitly challenge power relationships, as well as the actors and political authorities who maintain them, often through direct protests and collective organization. They may involve starting or joining petition campaigns or boycotts, disrupting international climate meetings to draw attention to hypocrisy and exclusion of important voices, or protesting key concerns through political marches or rallies. (O'Brian, Selboe, and Hayward 2018)

Finally, dangerous dissenters begin to create alternatives to existing structures and systems to create social change. "Dangerous dissent challenges existing paradigms or ways of understanding the relationship between climate change and social change." For example, the optional read The Next Generation Sonoran Desert Researchers tells the story of the Sonoran Desert on both sides of the U.S.-Mexico border. They provide alternative explanations of ecological issues and alternative methods of creating change.

The dangerous dissenters can "enable people to present organized challenges to mainstream power relationships and conventional environmental behavior." (O'Brian, Selboe, and Hayward 2018). In these three models, youth activists are leading actions and movements for social change and the environment.

What is Critical Environmental Justice?

Critical environmental justice (CEJ) is often referred to as the "second generation" of environmental justice activism and scholarship. In part, CEJ considers how all forms of structural inequality put targeted communities at risk of environmental harm and how all forms of inequality essentially violate the human right to live in a healthy, safe, and thriving environment.

By drawing on numerous fields of inquiry (i.e., critical race studies, Black feminist studies, Indigenousto createality studies, and more––CEJ strives to understand, document, and radically oppose intersectional forms of injustice that perpetuate oppression and exploitation on multiple levels.

Pellow (2018), a notable scholar in the field, argued that there are four main limitations to "first generation" EJ studies:

- EJ studies tend to focus on only one or two types of categories at a time, usually race and/or class, rather than looking at how multiple forms of discrimination can occur for some individuals and whole communities simultaneously.
- EJ studies tend to examine the causes, outcomes, and solutions to environmental injustice issues on a single level or at a specific location rather than considering the host of environmental problems people face today on a community as well as a global scale. For example, the deforestation of the Amazon Rainforest not only impacts local Indigenous communities in the region, it reduces carbon sinks for the whole planet, therefore contributing to the climate crisis.
- First-generation EJ studies tend to almost exclusively rely on legislative or institutional reform to address environmental injustice issues, ignoring the fact that it is these same power structures that permitted and even produced the environmental and social harm in the first place.
- Traditional EJ studies recognize that historically marginalized communities are more likely to live in highly contaminated locations. However, entire populations of people are treated as expendable by political power structures and industries, not just particular communities located in a particular place.

For example, a community might move because chemicals were spilled in their neighborhood. Even if they are temporarily safe, they are likely to experience environmental injustice again. The discrimination they face is structural and historical, not just located in their own neighborhood.

In short, critical environmental justice takes a holistic approach to understanding, exposing, and ultimately resisting the practices and policies of governments and industries that prioritize profit over the lives of people, all other life forms, and even the future of our planet.

Licenses and Attributions for Making Sense of the Climate Crisis

Open Content, Original

"Making Sense of the Climate Crisis" by Kimberly Puttman, Patricia Halleran and Avery Temple is licensed under CC BY 4.0.

Open Content, Shared Previously

Figure 8.15 Book Cover "Silent Spring" from The Sound Canadian Research Behind Rachel Carson's Silent Spring by Mark J. McLaughlin. License: CC-BY-ND 4.0.

Figure 8.16 Robert Bullard, Professor and Dean of the Barbara Jordan-Mickey Leland School of Public Affairs at Texas Southern University by University of Michigan School for Environment and Sustainability is licensed under CC BY 2.0

Figure 8.17 David Pellow https://en.wikipedia.org/wiki/David_Pellow

Figure 8.18 "Gender inequality is showing up... in climate change" by Amber Fletcher. TEDxRegina. License Terms: Standard YouTube license.

Figure 8.19 Thunberg in front of the Swedish parliament, holding a "Skolstrejk för klimatet" sign by Anders Hellberg is licensed CC BY-SA 4.0

Figure 8.20 Photo of Autumn Peltier by World Economic Forum. License: CC BY-NC-SA 2.0.

13.

ENVIRONMENTAL JUSTICE IS SOCIAL JUSTICE

When we look at the problems of climate and environment, the sheer size of the issues can be disheartening. These issues are difficult to resolve because their causes and solutions are interdependent. For example, people in the U.S. need oil to create gasoline for cars and fuel for industry. This voracious need encourages oil companies to produce oil efficiently. Industrial efficiency may incentivize some companies to use gas flaring in Nigeria. The causes of environmental degradation are linked in both obvious and subtle ways.

Solutions to environmental issues, particularly when they are effective, also reveal the power of our interdependence. Making a difference with this social problem requires both/and thinking, both individual agency and collective action. One optional video that explores how we can take action is We WILL Fix Climate Change [Video]. Let's explore additional examples that look at collective action taken on regional, national, and international scales.

Environmental Justice in Oregon, Then and Now

The Bottle Bill

Figure 8.21. The Oregon Bottle Bill was the first law that created deposits for bottles. Do you think it has made a difference?

When I (Kim Puttman) was in college in the 1990s, I belonged to an organization known as OSPIRG, the Oregon Student Public Interest Research Group. During the late 1960s and early 1970s, the group

was instrumental in environmental activism in the state. They advocated for laws and policies that would reduce consumer pollution. Their legacy includes the Oregon Bottle Bill. To learn more about it, watch the 1.41-minute video How Did We Get Here: Oregon's Bottle Bill.

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=48#oembed-1

This law, formally known as the Beverage Container Act of 1971, was signed into law by then Oregon governor Tom McCall. With the support of other environmental groups and the legislature, the law became the first one in the nation to provide deposits on bottles and cans, encouraging people to return them rather than throw them away. The concept was both revolutionary and effective. In this post from the Oregon Historical Society, we see the consequences of this law, both then and now:

The Bottle Bill instantly reduced litter in Oregon. The share of beverage containers in roadside litter in the state declined from 40 percent before the law was passed to 10.8 percent in 1973 and 6 percent in 1979. The Bottle Bill also reinforces the practice of recycling. In the 2000s, about 84 percent of beverage containers were recycled, helping to make Oregon fourth in the nation for its rate of recycling. (Henkles 2022)

In the case of action in one state, activists, beverage manufacturers and bottlers, grocery store owners and clerks, the legislature, and the governor all had to agree on what to do about the pollution problem. This new law had to be implemented and advertised through the media. For decades, grocery stores had to collect the initial refunds, process the bottles, and return the money to consumers. You may have even had a job that required you to handle these sometimes gross empty bottles.

From a relatively small beginning, the impact of this state law has grown. Multiple U.S. states have enacted similar laws. The bottle bill has even grown in Oregon. The most recent iterations established bottle drops, a more efficient and hygienic way to process bottles and cans. Solving this kind of problem requires using our interconnectedness effectively, and the consequences continue rippling into the world.

The Latina Fire Survivors in Southern Oregon

Figure 8.22. Coalición Fortaleza grew from the experience of the Alameda Fire in southern Oregon. They value Unidad/Unity, Amor/Love, Dignidad/Dignity, Esperanza/Hope, Fuerza/Strength, Familia/Family, Justicia/Justice and Salud y Vida/Health and Life. With these values they are creating alternatives that support environmental justice.

Most Hispanic and Latino people say that global climate change is an important issue to address. Over 80% of them say that addressing climate change is of personal interest to them, a much higher percentage than the 67% of non-Hispanic people (Mora and Hugo Lopez 2021). Some of this focus may be because immigrants from Central America are migrating because of extreme climate events. It may also be that states with large percentages of Hispanic people like Texas, California, and Florida are experiencing more extreme weather events like drought, flooding, and wildfires.

In Oregon, where we experienced drought and unexpected wildfires in 2020, we see Latinos organizing for change. Coalición Fortaleza is a fire survivor organization run by Latina and Indigenous women, creating options for survivors of the Alameda Fire in southern Oregon. The communities impacted by the fire were seasonal farm workers, mixed-status families, and low-income people. They are working to re-home everyone. In doing so, they are strengthening their community and finding solutions that sustain Mother Earth. They write:

> As experts of our own lived experiences, we have the imaginations, local knowledge and largest stake in ensuring that the rebuilding solutions don't recreate the systems and conditions that have kept us in poverty and without access to life-saving information and resources. We will focus on community-led solutions that will serve our most impacted members (Coalición Fortaleza 2023: np).

The group is committed to using the disruption of their community and its rebuilding to challenge the existing structures of power and create new, more equitable environmental justice.

Indigenous Resistance

Indigenous resistance to colonialism and climate destruction continues worldwide. Indigenous cultures are rooted in place, tradition, and land stewardship. Because there are Indigenous peoples on every acre of land that is habitable by humans, each act of destruction to the environment is also an act of destruction to the Indigenous peoples.

You may know that Indigenous people currently steward 80% of the world's biodiversity (Raygoredetsky 2018). This is true because Indigenous peoples both resisted exploitation and created new systems for protecting the land, its inhabitants, and their cultures. These acts of resistance continue today. To learn more, watch Indigenous World View Can Preserve Our Existence [YouTube].

Figure 8.23. Water Protectors protesting the Dakota Access Pipeline in Standing Rock, North Dakota.

A well-known example of Indigenous resistance in the United States is the land stewardships known as Standing Rock. The picture in figure 8.23 shows Indigenous Water Keepers protecting the water. The NoDAPL movement began when the Standing Rock Sioux people decided to fight the construction of a pipeline known as the Dakota Access Pipeline. This pipeline would be built on their ancestral land, destroying cultural resources and violating centuries-old treaties made between the tribe and the U.S. government.

This led to intense protests where Indigenous peoples, allies, and community members from all over the world came to occupy and resist the construction of the Dakota Access Pipeline. More than 300 people were injured, and hundreds were arrested during these protests by the U.S. government (Montare 2018). While the Dakota Access Pipeline is still in commission, the NoDAPL movement paved the way for many contemporary Indigenous resistance movements in North America, which you have the option to explore in #StopLine3 and Stop Enbridge: Protect the Gulf Coast!

Figure 8.24. Zapatista Movement. In 1998, Zapatista women in Amador Hernadez, Southern Mexico, demanded daily that the Mexican military leave the village's communal landholdings.

Another historical example of Indigenous resistance is the Zapatista movement (figure 8.24). In 1994, an Indigenous armed organization named the Zapatista Army of National Liberation (EZLN) declared war on the Mexican Government. They demanded, "work, land, housing, food, health, education, independence, liberty, democracy, justice and peace."

This uprising began in Chiapas, Mexico, as an occupation of land and continues to this day. The Indigenousandh some politically aligned non-Indigenous peoples still assert sovereignty over their economic, social, and cultural development. The Zapatista movement is a current example of how Indigenous communities can defend their lands, cultures, and each other. You can learn more about the Zapatista movement if you'd like.

Paris Climate Agreements

Our interdependence is also reflected at the other end of the scale of social change. In 2015, the United Nations brokered an international treaty known as the Paris Agreement. The goal of the agreement is to limit the emission of greenhouse gasses to prevent additional global warming. This worldwide agreement was signed by 196 parties when it initially became a treaty, with the United States later withdrawing from the agreement on July 1, 2017, due to a decision made by President Donald Trump.

The United Nations writes this about the Paris Agreement:

The Paris Agreement is a landmark in the multilateral climate change process because, for the first time, a binding agreement brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects. (United Nations 2022)

The core components of the agreement are:

- Countries will enact limits on greenhouse gas emissions for their countries by 2020.
- Countries will also develop energy alternatives that reduce emissions.
- Countries that need help will receive financial, technological, and infrastructure assistance.

As you might expect, the implementation of this agreement has proven, and continues to be, complicated. Some environmentalists argue that the agreement doesn't move fast enough to create the needed changes. When measuring progress in the five years since the agreement, the American Association for the Advancement of Science reports mixed results. On one hand, the implementation of some of the limits is starting to slow the emissions of greenhouse gasses. On the other hand, the United Nations has very little money to enforce the agreements, and countries, such as the United States, can leave the agreement anytime. To learn more about the Paris Agreement, watch the 1:40 minute video What is the Paris Agreement and How Does It Work?[Video]

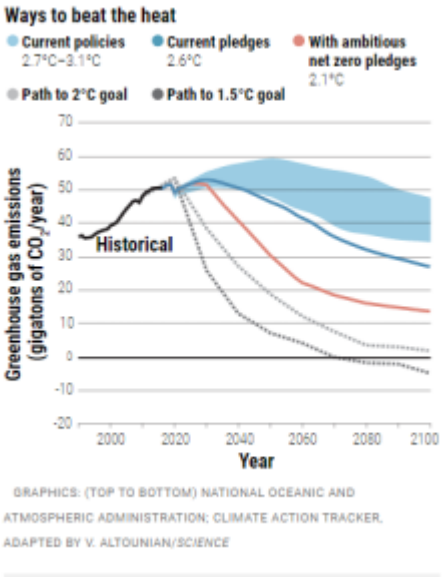


Figure 8.25. Greenhouse Gas emissions: goals, progress, and vision.

The chart in figure 8.25 shows both the goal for emissions and our progress. If we stay with current policies shown in the blue-shaded area, the greenhouse gas emissions would result in an approximately 3 percent increase in global temperature. If we actually do the work specified in the Paris Agreement, temperatures would only rise by 2.6 degrees Celsius. Most climate scientists believe we need to do more to sustain life.

Even though progress is uncertain, the act of global solidarity is unprecedented. Global leaders are recognizing our shared interdependence. They are acting on a global scale to make a difference.

All of us taking individual action using our own agency, communities creating social movements, fire survivors creating new ways of being in community and planetary agreements creating visions for a more sustainable world fight climate change. These interdependent solutions are required for us to survive. Environmental Justice is social justice.

Licenses and Attributions for Environmental Justice is Social Justice

Open Content, Original

"Environmental Justice is Social Justice" by Avery Temple and Kimberly Puttman is licensed under CC BY 4.0.

Open Content, Shared Previously

Figure 8.21 Photo by Aleksandr Kadykov on Unsplash
Figure 8.22 [Add Image Latino Fire Survivors in SO]
Figure 8.23 Standing Rock, North Dakota Water Protectors by NoDAPL Archive. License:CC BY-SA 4.0

All Rights Reserved Content

Figure 8.24 Photo of Zapatista Women (Photo by Tim Russo) in A Spark of Hope: The Ongoing Lessons of the Zapatista Revolution 25 Years On by Hilary Klein, North American Congress on Latin America is used under fair use.
Figure 8.25 "Greenhouse Gas emissions – goals, progress, and vision" in The Paris climate pact is 5 years old. Is it working?, by Warren Cornwall, Science is used under fair use.

14.

CHAPTER SUMMARY, KEY TERMS

Climate change is a social problem impacting both people and the planet. The people who use climate change as an issue deepen inequality in our society. The people who use the fewest resources suffer from climate change the most.

Like other social problems, climate change reveals a conflict in values. These conflicts of culture and worldview are deeply rooted in the practices of capitalism and colonialism perpetuated by Western worldviews and values that have been established through colonialism.

Sociologists and environmental activists use the theories and practices of environmental justice, critical environmental justice, environmental racism, and ecofeminism to make sense of why climate change is happening so rapidly. These theories also suggest effective opportunities for action. We also now know a few of the many rich examples of collective action and agency in response to climate change.

As we look back at the Jordan Cove Energy Project, where we began this chapter, we now see how unexpected this victory is. To stop the energy company, local residents, ranchers, fishermen and women, indigenous elders, youth, and everyday people like you and me had to come together. They had to promote a common vision of clean renewable energy and the projected costs and risks of a pipeline. They had to convince local and state government officials that the pipeline was not in the best interests of the people who lived in that area and the people who might benefit from cheap energy.

The stakes were high, and their victory was uncertain. Working together, they succeeded in protecting the piece of the planet they call home.

Essential Ideas

Learning Objective 1: Why is climate change a social problem as much as an environmental problem?

Climate change is a social problem first because the activities of humans are the major contributor to creating the climate crisis. Second, we see conflicts in values between colonialist capitalism and more sustainable ways of living. Third, we know that climate disasters and environmental challenges impact groups unequally based on their social location. Finally, solving the climate crisis requires changes in laws, policies, and practices throughout the world, interdependent solutions that create environmental justice.

Learning Objective 2: How do historical experiences of colonization contribute to the environmental crisis?

Colonization as a social and economic system extracts resources from the people and lands of colonized areas to contribute to the wealth and power of the colonizers. This extractive form of economics prioritizes making

profits over sustainable care for people and land. This economic system is still at play today, even though few colonies are left in the world.

Learning Objective 3: How do differences in Indigenous and Western worldviews contribute to the climate crisis and offer opportunities for innovative solutions?

Indigenous culture and worldview values communities and relationships. The land is sacred and must be cared for. Western culture values the individual and profit. The land is a resource that can be used to make profit. Because Indigenous cultures choose practices that nourish the land for generations, they offer solutions for healing our earth.

Learning Objective 4: How can an understanding of the intersections between race, class, gender, and other social locations help explain the causes and consequences of climate change?

As we consider the climate crisis, we see environmental racism and gendered impacts of environmental issues. For example, poor women in Nigeria can't farm like they used to, and their families are sick because of gas flaring. People who were poor and disproportionately Black couldn't evacuate New Orleans during Hurricane Katrina because they didn't have cars. Canadian farm families are already feeling the effects of climate change, and female farmers are picking up extra work. In all of these cases, social location matters to environmental justice.

Learning Objective 5: Are all human groups equally responsible for causing the climate crisis?

No, all human groups are not responsible equally for the climate crisis. One of the causes of the climate crisis is CO2 emissions from fossil fuels. In general, people from industrialized countries use more fossil fuels and produce more CO2. However, less industrialized countries have fewer resources to guard against the effects of climate change, so people in those countries are harmed more. That's partially why global climate agreements include provisions for transferring technology and money from more developed countries to less developed countries (although those promises aren't always honored).

Learning Objective 6: Are changes in individual behavior or collective action more important in applying solutions that support environmental and social justice?

This is actually a trick question. Both individual agency and collective action are critical to ending the climate crisis. We need worldwide agreements like the Paris Agreement to set standards and targets for changing our collective behavior. We need feminists, youth, and Indigenous people to remind us how important this is with their social movements. And we need individual actions of recycling bottles, using less plastic, and being satisfied with less to solve the climate crisis. Environmental Justice is social justice for all of us.

Key Terms

capitalism: an economic system based on private ownership and the production of profit.

climate change: the long-term shift in global and regional temperatures, humidity and rainfall patterns, and other atmospheric characteristics

colonialism: the domination of a people or area by a foreign state or nation

conspicuous consumption: the purchase of expensive luxury goods or services as a display of one's wealth and status.

critical environmental justice: a theory which considers how all forms of structural inequality put targeted communities at risk of environmental harm, and how all forms of inequality essentially violate the human right to live in a healthy, safe, and thriving environment.

cultural universals: patterns or traits that are globally common to all societies

culture: the shared beliefs, values, and practices which are socially transmitted within a social group

ecofeminism: a theory that argues that the domination of women and the degradation of the environment are consequences of patriarchy and capitalism.

enculturation: the process of learning culture

environmental justice: an intersectional social movement pioneered by African Americans, Indigenous peoples, Latinx, lower-income, and other historically oppressed populations fighting against environmental discrimination within their communities and across the world

environmental racism: any environmental policy or practice which disadvantages people or communities based on race.

extreme weather events: An extreme weather event is defined by the severity of its effects or any weather event uncommon for a particular location.

Indigenous peoples: Indigenous peoples have in common a historical continuity with a given region prior to colonization and a strong link to their lands

Traditional Ecological Knowledge (TEK): the on-going accumulation of knowledge, practice and belief about relationships between living beings in a specific ecosystem that is acquired by indigenous people over hundreds or thousands of years through direct contact with the environment, handed down through generations, and used for life-sustaining ways.

worldview: the collection of interconnected beliefs, values, attitude, images, stories, and memories out of which a sense of reality is constructed and maintained in a social system and in the minds of individuals who participate in it.

Discuss and Do

- Environmental Activism: What organizations are working for environmental justice in your community?
    - ○ What do they do?
    - ○ Why do you admire the actions they take?
    - ○ How could you get involved?
    - ○ Or: get involved and tell us what you learned.
- Introduce a climate justice activist: describe them, particularly their social location, and their work. You can choose a person introduced in the video: Indigenous Activists, or another activist. How does their

contribution reflect inequality or interdependence?

- Imagine a future in which your needs are met, you and your loved ones are safe, and you are able to spend your time how you wish. What would be different? What kind of world would we need in order to achieve this for everyone?
- Culture, Worldview and Climate Change: How do culture and worldview contribute to causing climate change and to ending it? This is a great opportunity to dive into these stories of worldview that may be new to you: "What I Learned from Coyote" "As I had shared with Coyote."
- Culture Worldview and Climate Maps are ways of seeing the world. Compare the same region in Google Earth, Native Land Digital or History of the World Every Year. Who is telling the story? Why are the borders and boundaries different? How might this impact worldview and climate change?
- EcoFeminism: Women and girls are disproportionately impacted by climate change. They may also have a unique response. The section on ecofeminism has several deeper sources: Gender inequality is showing up... in climate change [YouTube Video], Ecofeminism: Encouraging Interconnectedness with Our Environment in Modern Society[Article], Ted talk EcoGrief and Ecofeminism, and The Clan of the One-Breasted Women [Story]. How does gender impact the causes, consequences of climate change and the actions of climate justice?
- What does it mean to say "Those who contribute the least, suffer the most?" when we talk about environmental justice?
- Some people argue that climate change isn't real. Others argue that climate change is the most pressing issue for our time. What do you think?

Licenses and Attributions for Chapter Summary

Open Content, Original

"Chapter Summary" by Avery Temple and Kimberly Puttman is licensed under CC BY 4.0.

References

Alimi, Omoniyi, and John Gibson. 2022. "The Impact of Gas Flaring on Child Health in Nigeria." World Bank Blogs. September 14, 2022. https://blogs.worldbank.org/developmenttalk/impact-gas-flaring-child-health-nigeria.

Anaquod, Jennifer. 2021a. "As I Had Shared With Coyote." In *Political Ideologies and Worldviews: An Introduction*. Kwantlen Polytechnic University. https://kpu.pressbooks.pub/political-ideologies/chapter/displacement-and-indigenous-worldview-what-i-learned-from-coyote/.

———. 2021b. "What I Learned from Coyote." In *Political Ideologies and Worldviews: An Introduction*.

Kwantlen Polytechnic University. https://kpu.pressbooks.pub/political-ideologies/chapter/displacement-and-indigenous-worldview-what-i-learned-from-coyote/.

Australian Institute of International Affairs, and Iker /. Godelman. 2022. "The Zapatista Movement: The Fight for Indigenous Rights in Mexico." *Australian Institute of International Affairs* (blog). 2022. https://www.internationalaffairs.org.au/news-item/the-zapatista-movement-the-fight-for-indigenous-rights-in-mexico/.

Barber, Kendra H. 2015. "Whither Shall We Go? The Past and Present of Black Churches and the Public Sphere." *Religions* 6 (1): 245–65. https://doi.org/10.3390/rel6010245.

Blakemore, Erin. 2020. "Why Puerto Rico Has Debated U.S. Statehood since Its Colonization." National Geographic: History. July 24, 2020. https://www.nationalgeographic.com/history/article/puerto-rico-debated-statehood-since-colonization.

Bridges Together. 2018. "Celebrating Our Culture: A New How-To-Guide." *Bridges Together* (blog). December 21, 2018. https://www.bridgestogether.org/celebrating-our-culture-a-new-how-to-guide/.

Buchholz, Katharina. 2022. "The Countries Emitting the Most CO_2 Per Capita." https://www.statista.com/chart/20903/countries-emitting-most-co2-per-capita/.

Bullard, Robert D. 1990. *Dumping in Dixie: Race, Class, and Environmental Quality*. Boulder, CO: Westview Press. http://www.ciesin.org/docs/010-278/010-278chpt2.html.

———. 1995. "Unequal Protection: Environmental Justice and Communities of Colo." *Bulletin of Science, Technology & Society* 15 (4): 203–203. https://doi.org/10.1177/027046769501500454.

———. 2008. "Differential Vulnerabilities: Environmental and Economic Inequality and Government Response to Unnatural Disasters." *Social Research* 75 (3): 753–84. https://www.jstor.org/stable/40972088.

Bullard, Robert, and Glenn Johnson. 2000. "Environmental Justice: Grassroots Activism and Its Impact on Public Policy Decision Making." *Journal of Social Issues* 56 (January): 555–78. https://doi.org/10.1111/0022-4537.00184.

Calhoun-Brown, Allison. 2000. "Upon This Rock: The Black Church, Nonviolence, and the Civil Rights Movement." *PS; Political Science and Politics* 33 (2): 168–74. https://doi.org/10.2307/420886.

CBC News. 2020. "Teen Activist Autumn Peltier Appears at World Economic Forum with Criticism for Federal Politicians." CBC. January 20, 2020. https://www.cbc.ca/news/indigenous/autumn-peltier-thunberg-davos-1.5435091.

CBC News: The National, dir. 2018. *The Teen Fighting to Protect Canada's Water — Meet Autumn Peltier*. https://www.youtube.com/watch?v=xqdE_7OZaqE.

Center for Disaster Philanthropy. 2020. "2019-2020 Australian Bushfires." Center for Disaster Philanthropy. October 14, 2020. https://disasterphilanthropy.org/disasters/2019-australian-wildfires/.

Checker, Melissa. 2007. "'But I Know It's True': Environmental Risk Assessment, Justice, and Anthropology." *Human Organization* 66 (2): 112–24. https://doi.org/10.17730/humo.66.2.1582262175731728.

Coalicion Fortaleza. 2023. "Coalicion Fortaleza." Coalicion Fortaleza. 2023. https://www.coalicionfortaleza.org/.

Conerly, Tonja R., Kathleen Holmes, and Asha Lal Tamang. 2022. *Introduction to Sociology 3e*. Houston: OpenStax. https://assets.openstax.org/oscms-prodcms/media/documents/IntroductiontoSociology3e-WEB_9QTqRGQ.pdf.

Connor, Brendan. 2020. "Indigenous Water Activist Autumn Peltier Challenges Politicians during World Economic Forum." Northern Ontario. January 21, 2020. https://northernontario.ctvnews.ca/indigenous-water-activist-autumn-peltier-challenges-politicians-during-world-economic-forum-1.4777341.

Cornwall, Warren. 2020. "The Paris Climate Pact Is 5 Years Old. Is It Working?" *Science Insider*, December. https://www.science.org/content/article/paris-climate-pact-5-years-old-it-working.

Craig LLaw Center. 2021. "Victory! The End to Jordan Cove LNG." Crag Law Center. December 2, 2021. https://crag.org/victory-the-end-to-jordan-cove-lng/.

Crespo Cuaresma, Jesús, Wolfgang Fengler, Homi Kharas, Karim Bekhtiar, Michael Brottrager, and Martin Hofer. 2018. "Will the Sustainable Development Goals Be Fulfilled? Assessing Present and Future Global Poverty." *Palgrave Communications* 4 (1): 1–8. https://doi.org/10.1057/s41599-018-0083-y.

Daily Mail Reporter. 2013. "The Great Global Food Gap: Families around the World Photographed with Weekly Shopping as They Reveal Cost Ranges from £3.20 to £320." *DailyMail.Com*, May 5, 2013. https://www.dailymail.co.uk/news/article-2319825/The-great-global-food-gap-Families-world-photographed-weekly-shopping-reveal-cost-ranges-3-20-320.html.

Donna DiGiacinto, dir. 2020. *Earth Day 2020 NO Pipeline*. https://www.youtube.com/watch?v=23J4rnHaFs0.

Dunbar-Ortiz, Roxanne. 2015. *An Indigenous Peoples' History Of The United States*. Beacon Press.

Eatherington, Francis. 2015. *Route of Proposed Pipeline near Dora, MP 27*. Photo. https://www.flickr.com/photos/umpquawild/16927400553/.

Estes, Nick. 2019. *Our History Is the Future: Standing Rock Versus the Dakota Access Pipeline, and the Long Tradition of Indigenous Resistance*. Verso Books.

Eyers, Pegi. 2017. "What Is Cultural Appropriation?" *Unsettling America* (blog). April 26, 2017. https://unsettlingamerica.wordpress.com/2017/04/26/what-is-cultural-appropriation/.

Farley, Philena, and Maraam Dwidar. 2019. "Understanding the Future of Black Politics Means Understanding the Future of the Black Church | USAPP." April 5, 2019. https://blogs.lse.ac.uk/usappblog/2019/04/05/understanding-the-future-of-black-politics-means-understanding-the-future-of-the-black-church/.

First Nations and Indigenous Studies. 2009a. "Terminology." First Nations Studies Program, The University of British Columbia. 2009. https://indigenousfoundations.arts.ubc.ca/terminology/#firstnations.

———. 2009b. "Totem Poles." Indigenous Foundations University of British Columbia. 2009. https://indigenousfoundations.arts.ubc.ca/totem_poles/.

Fletcher, Amber, dir. 2015. *Gender Inequality Is Showing up... in Climate Change*. TEDxRegina: TED Talks. https://www.youtube.com/watch?v=iPigdDzBDOE.

Fonte Weaver, AndreaGrace J. 2022. "The Culture Wheel."

FridaysForFuture. 2023. "Fridays For Future." Fridays For Future. 2023. https://fridaysforfuture.org/.

Galeano, Eduardo. 1971. *Open Veins of Latin America*. New York: Monthly Review Press.

Greener, Brandon. 2021. *Photo of Spawning Salmon*. Photograph. https://unsplash.com/photos/enPHTN3OPRw.

Guynup, Sharon. 2022. "Rachel Carson's 'Silent Spring' 60 Years on: Birds Still Fading from the Skies." Mongabay Environmental News. May 23, 2022. https://news.mongabay.com/2022/05/rachel-carsons-silent-spring-60-years-on-birds-still-fading-from-the-skies/.

Hasegawa, Koichi. 2022. "Fridays for Future: A Social Movements Perspective." October 13, 2022. https://globaldialogue.isa-sociology.org//articles/fridays-for-future-a-social-movements-perspective.

Hayward, Abi. 2020. "Water Protection and Youth Activism with Autumn Peltier." Canadian Geographic. October 21, 2020. https://canadiangeographic.ca/articles/water-protection-and-youth-activism-with-autumn-peltier/.

Hellberg, Anders. 2018. *English: In August 2018, Outside the Swedish Parliament Building, Greta Thunberg Started a School Strike for the Climate. Her Sign Reads, "Skolstrejk För Klimatet," Meaning, "School Strike for Climate".* Own work. https://commons.wikimedia.org/wiki/File:Greta_Thunberg_4.jpg.

Hofstede, Geert. 1977. *Cultures and Organizations: Software of the Mind*. 3rd edition. New York: McGraw Hill USA.

Kadykov, Aleksandr. 2021. *Photo of Bottles and Recycling*. Photograph. https://unsplash.com/photos/h8aQ4PUViCA.

KGW News, dir. 2020. *How Did We Get Here: Oregon's Bottle Bill*. https://www.youtube.com/watch?v=6ljxm8kIPiQ.

Klein, Hilary. 2019. "A Spark of Hope: The Ongoing Lessons of the Zapatista Revolution 25 Years On." NACLA. January 18, 2019. https://nacla.org/news/2019/01/18/spark-hope-ongoing-lessons-zapatista-revolution-25-years.

Kluckholn, C, and F Strodtbeck. 1961. *Variations in Value Orientation*. Evanston, IL: Peterson.

KOBI-TV NBC5, dir. 2021. *Rogue Climate, Klamath Co. Landowners "excited" as Jordan Cove Project Halts after Years-Long Fight*. KOBI-TV NBC5. https://www.youtube.com/watch?v=eqPYvT-iM-U.

Kristoff, Matthew. n.d. "Fire Ecology and Indigenous Knowledge with Frank Lake." Good Fire Podcast. Accessed September 6, 2022. https://yourforestpodcast.com/good-fire-podcast/2019/10/16/fxk6gvcl10gjnex2zu8jtdo6gbhgbt.

Kurzgesagt – In a Nutshell, dir. 2020. *Who Is Responsible For Climate Change? – Who Needs To Fix It?* https://www.youtube.com/watch?v=ipVxxxqwBQw.

———, dir. 2022. *We WILL Fix Climate Change!* https://www.youtube.com/watch?v=LxgMdjyw8uw.

Lakota People's Law Project. 2022. "No DAPL." 2022. https://action.lakotalaw.org/nodapl.

Lawal, Shola. 2012. "In Nigeria, Gas Giants Get Rich As Women Sink into Poverty." September 27, 2012. https://www.vice.com/en/article/wx5xgx/in-nigeria-gas-giants-get-rich-as-women-sink-into-poverty.

Magazine, Smithsonian, and John Hanc. 2017. "When Nova Scotia Almost Joined the American Revolution." *Smithsonian Magazine*, June 5, 2017. https://www.smithsonianmag.com/history/when-nova-scotia-almost-joined-american-revolution-180963564/.

McLaughlin, Mark J. n.d. "The Sound Canadian Research Behind Rachel Carson's Silent Spring – Active History." Accessed April 25, 2022. http://activehistory.ca/2012/09/the-sound-canadian-research-behind-rachel-carsons-silent-spring/.

Milman, Oliver. 2019. "European Colonization of Americas Killed so Many It Cooled Earth's Climate." *The Guardian*, January 31, 2019, sec. Environment. https://www.theguardian.com/environment/2019/jan/31/european-colonization-of-americas-helped-cause-climate-change.

Mondal, Gourish Chandra, and Palash Majumder. 2019. "Ecofeminism: Encouraging Interconnectedness with Our Environment in Modern Society." *American Journal of Educational Research* 7 (7): 482–84. https://doi.org/10.12691/education-7-7-7.

Montare, Ariadne S. 2018. "Standing Rock: A Case Study in Civil Disobedience." *GPSolo Magazine*, June 2018. https://www.americanbar.org/groups/gpsolo/publications/gp_solo/2018/may-june/standing-rock-case-study-civil-disobedience/.

Mora, Lauren, and Mark Hugo Lopez. 2021. "Most U.S. Latinos Say Global Climate Change and Other Environmental Issues Impact Their Local Communities." *Pew Research Center* (blog). October 4, 2021. https://www.pewresearch.org/short-reads/2021/10/04/most-u-s-latinos-say-global-climate-change-and-other-environmental-issues-impact-their-local-communities/.

Morobe Development Foundation, dir. 2021. *Indigenous Worldview Can Preserve Our Existence*. https://www.youtube.com/watch?v=QkQTeVmHn7M.

Morris, Alden. 1984. *The Origins of the Civil Rights Movement: Black Communities Organizing for Change*. New York: Free Press.

Murdock, George Peter. 1949. *Social Structure*. New York: Macmillan and Company.

Nasa Global Climate Change. 2023. *Carbon Dioxide Concentration*. Graph. https://climate.nasa.gov/vital-signs/carbon-dioxide.

National Bureau of Statistics Nigeria. 2019. "2019 Poverty and Inequality in Nigeria: Executive Summary." National Bureau of Statistics Nigeria. https://nigerianstat.gov.ng/download/1092.

National Park Service. 2023. "Benefits." Indigenous Knowledge and Traditional Ecological Knowledge. June 29, 2023. https://www.nps.gov/subjects/tek/benefits.htm.

Native Land Digital. n.d. "Native Land Digital Map Application." Native-Land.Ca. Accessed May 16, 2023. https://native-land.ca/.

NewsWatch 12, dir. 2021. *Jordan Cove Pipeline Project Will Not Go Forward, Company Says*. https://www.youtube.com/watch?v=HyPOYuqIiiQ.

NOAA. 2020. "Atmospheric Carbon Dioxide and Earth's Surface Temperature (1880 – 2019)." February 12, 2020. https://www.climate.gov/media/11048.

Nodapl Archive. n.d. "Cities in Solidarity." #NoDAPL Archive – Standing Rock Water Protectors. Accessed September 5, 2022. https://www.nodaplarchive.com/cities-in-solidarity.html.

Notre Dame Global Adaptation Initiative. 2023. "Country Index // Notre Dame Global Adaptation Initiative // University of Notre Dame." Notre Dame Global Adaptation Initiative. 2023. https://gain.nd.edu/our-work/country-index/.

O'Brian, Karen, Elin Selbor, and Bronwyn M. Hayward. 2018. "Exploring Youth Activism on Climate Change: Dutiful, Disruptive, and Dangerous Dissent." *Ecology and Society* 23 (3): 42. https://doi.org/10.5751/ES-10287-230342.

Olajubu, Oyeronke. 2004. "Seeing Through a Women's Eye: Yoruba Religious Tradition and Gender Relations." *Journal of Feminist Studies in Religion* 20 (1): 41–60. https://web.p.ebscohost.com/ehost/detail/detail?vid=7&sid=5bd6847e-bbbc-4991-b38e-d64377567d72%40redis&bdata=JnNpdGU9ZWhvc3QtbGl2ZSZzY29wZT1zaXRl#AN=13197317&db=aph.

@OllieBye, dir. 2016. *The History of the World: Every Year*. https://youtu.be/-6Wu0Q7x5D0.

Parkinson, Sally Rey. 2017. "The Great Global Food Gap: Families around the World Photographed with Weekly Shopping as They Reveal Cost Ranges from £3.20 to £320." *World Hunger News* (blog). 2020 2017. https://www.worldhunger.org/great-global-food-gap-families-around-world-photographed-weekly-shopping-reveal-cost-ranges-3-20-320/.

Pearce, Elizabeth. n.d. *Contemporary Families: An Equity Lens*. Open Oregon Educational Resources. https://openoregon.pressbooks.pub/families/.

Pellow, David N. 2017. *What Is Critical Environmental Justice?* Wiley.

———. 2018. "Political Prisoners and Environmental Justice." *Capitalism Nature Socialism* 29 (4): 1–20. https://doi.org/10.1080/10455752.2018.1530835.

———, dir. 2020. *Sociological Insights – Polluting the Voiceless*. https://vimeopro.com/asasoc/insights/video/430092048.

Peña-Parr, Victoria. 2020. "The Complicated History of Environmental Racism." The University of New Mexico. August 4, 2020. http://news.unm.edu/news/the-complicated-history-of-environmental-racism.

PirateShip6. 2021. *File:West Africa Map.Gif*. https://commons.wikimedia.org/wiki/File:West_Africa_map.gif.

Pratt, Sara. 2021. "Australian Fires Fueled Unprecedented Blooms." NASA Earth Observatory. NASA Earth Observatory. November 4, 2021. https://earthobservatory.nasa.gov/images/149039/australian-fires-fueled-unprecedented-blooms.

Ragoredetsky, Gleb. 2018. "Indigenous Peoples Defend Earth's Biodiversity—but They're in Danger." *Environment*, November 16, 2018. https://www.nationalgeographic.com/environment/article/can-indigenous-land-stewardship-protect-biodiversity-.

Ritchie, Hannah. 2021. "How Many People Do Not Have Access to Clean Fuels for Cooking?" Our World in Data. November 30, 2021. https://ourworldindata.org/no-clean-cooking-fuels.

Ritchie, Hannah, and Pablo Rosado. 2021. "Energy: Key Charts." Our World in Data. December 17, 2021. https://ourworldindata.org/energy-key-charts.

Robbins, Jim. 2018. "Native Knowledge: What Ecologists Are Learning from Indigenous People." *Yale Environment 360*, April 26, 2018. https://e360.yale.edu/features/native-knowledge-what-ecologists-are-learning-from-indigenous-people.

Roser, Max. 2020. "The World's Energy Problem." Our World in Data. December 10, 2020. https://ourworldindata.org/worlds-energy-problem.

———. 2021. "Extreme Poverty: How Far Have We Come, How Far Do We Still Have to Go?" Our World in Data. November 22, 2021. https://ourworldindata.org/extreme-poverty-in-brief.

Salgado, Carlos, dir. 2011. *Africa Directo – Los Nadie*. user T38. https://vimeo.com/23725766.

Schlosberg, David. 2007. *Defining Environmental Justice: Theories, Movements, and Nature*. Oxford University Press UK.

Short, Damien, Jessica Elliot, Kadin Norder, Edward Lloyd-Davies, and Joanna Morley. 2015. "Extreme Energy, 'Fracking' and Human Rights: A New Field for Human Rights Impact Assessments?" *The International Journal of Human Rights* 19 (6): 697–736. https://doi.org/10.1080/13642987.2015.1019219.

Smith, Andy. 2022. "What Is Capitalism?" Investopedia. July 6, 2022. https://www.investopedia.com/terms/c/capitalism.asp.

Sonoran Desert Researchers. 2019. "Investigadores Del Desierto Sonorense (Sonoran Desert Researchers)." July 24, 2019. https://nextgensd.com/.

State of Oregon. 2021. "State of Oregon: Facilities – Jordan Cove Energy Project." 2021. https://www.oregon.gov/energy/facilities-safety/facilities/Pages/Jordan-Cove.aspx.

State of Oregon Legislature. 1971. "Beverage Container Act (Bottle Bill)." 1971. https://www.oregonencyclopedia.org/articles/beverage_container_act_bottle_bill/.

STOP ENBRIDGE. 2023. "STOP ENBRIDGE – Protect the Gulf Coast." 2023. https://stopenbridge.com/.

Stop Line 3. n.d. "Stop Line 3." Stop Line 3. Accessed September 5, 2022. https://www.stopline3.org.

Synchronous Pictures, dir. 2015. *36 Inches | Understanding the Jordan Cove Energy Project*. https://www.youtube.com/watch?v=5ZHlQmtV-2k.

The Klamath Tribes, dir. 2017. *NO LNG Pipeline*. https://www.youtube.com/watch?v=EeWRuwQBPRc.

Thunberg, Greta. 2019. "Acceptance Speech at the 2019 Goldene Kamera Awards." *Archives of Women's Political Communication* (blog). March 30, 2019. https://awpc.cattcenter.iastate.edu/2019/12/02/acceptance-speech-at-the-2019-goldene-kamera-awards-march-30-2019/.

Tremlett, Paul-François, Liam T. Sutherland, and Graham Harvey, eds. 2017. "Edward Burnett Tylor, Religion and Culture." Bloomsbury Academic Publishing Plc. http://ndl.ethernet.edu.et/bitstream/123456789/35258/1/26.pdf.

UN Development Program. n.d. "10 Things to Know about Indigenous Peoples – United Nations Development Programme." Exposure. Accessed May 2, 2022. https://stories.undp.org/10-things-we-all-should-know-about-indigenous-people?utm_source=EN&utm_medium=GSR&utm_content=US_UNDP_PaidSearch_Brand_English&utm_campaign=CENTRAL&c_src=CENTRAL&c_src2=GSR&gclid=Cj0KCQjwvLOTBhCJARIsACVldV1I8Xxg3VMpMXJcZToCddEoRWCrHHKNqPITT_wqWX5NGAAwJ7RdObEaAkiUEALw_wcB.

Unicef. n.d. "Young Climate Activists Demand Action and Inspire Hope." Accessed April 30, 2022. https://www.unicef.org/stories/young-climate-activists-demand-action-inspire-hope.

Union of Concerned Scientists. 2016. "What's Driving Deforestation?" February 8, 2016. https://www.ucsusa.org/resources/whats-driving-deforestation.

United Nations, dir. 2021. *What Is the "Paris Agreement", and How Does It Work?* https://www.youtube.com/watch?v=5THr3bFj8Z4.

———. n.d. "Indigenous Peoples." United Nations. United Nations. Accessed September 5, 2022. https://www.un.org/en/fight-racism/vulnerable-groups/indigenous-peoples.

University of Michigan School for Environment and Sustainability. 2012a. *David Pellow in 2012*. Photograph.

———. 2012b. *Robert Bullard, Professor and Dean of the Barbara Jordan-Mickey Leland School of Public Affairs at Texas Southern University*. Photograph. https://www.flickr.com/photos/26835854@N07/8057541429.

US EPA, OP. 2014. "Environmental Justice." Collections and Lists. November 3, 2014. https://www.epa.gov/environmentaljustice.

U.S. Federal Government. 1989. *File:Colonial North America 1689 to 1783.Jpg*. https://commons.wikimedia.org/wiki/File:Colonial_North_America_1689_to_1783.jpg.

USA, Fabrice Florin from Mill Valley. 2018. *A Quarter Million People Joined the Climate Action March around the World on Sep. 8, 2018, Asking for Immediate Action to Reduce Climate Change.* Art and Activism for Climate Action. https://commons.wikimedia.org/wiki/File:Art_and_Activism_for_Climate_Action_(44662843861).jpg.

Vanea Cyr [@ven2024]. 2021. "Day #1 For the next 30 Days I Plan to Suggest Ways to Incorporate and Embed Indigenous Education in to Daily Practice. Anyone Else Care to Play? Worldview Comparison. There Are so Many Examples of Differences in Worldview. #yourturn #embedintoeveryday Https://T.Co/WM0xDKvoRZ." Tweet. *Twitter*. https://mobile.twitter.com/ven2024/status/1450252684691390473.

Varanasi, Anuradha. 2022. "How Colonialism Spawned and Continues to Exacerbate the Climate Crisis." *State of the Planet* (blog). September 21, 2022. https://news.climate.columbia.edu/2022/09/21/how-colonialism-spawned-and-continues-to-exacerbate-the-climate-crisis/.

Victoria Public Sector Commission. 2022. "Aboriginal Cultural Capability Toolkit." *VPSC* (blog). June 28, 2022. https://vpsc.vic.gov.au/workforce-programs/aboriginal-cultural-capability-toolkit/.

Wolfe, Patrick. 2006. "Settler Colonialism and the Elimination of the Native." *Journal of Genocide Research* 8 (4): 387–409. https://doi.org/10.1080/14623520601056240.

Workman, Daniel. n.d. "Crude Oil Exports by Country 2020." Accessed April 30, 2022. https://www.worldstopexports.com/worlds-top-oil-exports-country/.

World Economic Forum. 2020. *Autumn Peltier, Chief Water Commissioner of the Anishinabek Nation, Canada, Speaking in the Forging a Sustainable Path towards a Common Future Session at the World Economic Forum Annual Meeting 2020 in Davos-Klosters, Switzerland, 21 January*. https://flic.kr/p/2ihWdLJ.

World Wildlife Fund. 2018. "What Are the Biggest Drivers of Tropical Deforestation?" World Wildlife Fund. Summer 2018. https://www.worldwildlife.org/magazine/issues/summer-2018/articles/what-are-the-biggest-drivers-of-tropical-deforestation.

WorldFish. 2011. *Unequal Vulnerability*. https://flic.kr/p/amRTjd.

PART III
STUDENT WORKS

Welcome to this ever-growing library of student portfolio works! These learners were enrolled in G209: Environmental Justice with Deron Carter or HDFS201: Contemporary Families in the U.S. with Elizabeth B. Pearce at Linn-Benton Community College in Albany, OR, USA. These are actual student artifacts from the final project described in chapter 1 of this book.

See the Introduction for more details.

The following student works are licensed CC BY 4.0, except where otherwise noted.

KLAMATH BASIN WATER CRISIS BY KRISARAH NYGREN

One or more interactive elements has been excluded from this version of the text. You can view them online here: https://openoregon.pressbooks.pub/environmentaljustice/?p=102#oembed-1

LEAD POISONING IN THE MODERN COMMUNITY BY MENA MORAN

Lead Poisoning Background

Throughout the centuries and recent decades, lead has been utilized for paint, gas, sheet lead, solder, pipes, and ammunition. While these materials have been used regularly, lead is exceedingly toxic, and symptoms to the body and the brain can be detrimental, leading to convulsions, comas, kidney failure, reproductive issues, nervous system disruptions, anemia, cancer, and death. Neurologically, lead is known to slow growth and development and contribute to neurological disorders in adulthood (i.e. depression, anxiety, schizophrenia, and the lowering of IQ). The measure of lead in the blood (blood lead levels or BLLs), have been high due to this overuse of lead—the average BLL decreasing from 15 micrograms of lead per deciliter of blood (μ/dL) in the 1970s to 5 μ/dL in the 1990s ("Lead Management", 2011). Because lead is harmful to development, the toxin especially impacts children.

In the city of Flint, Michigan, beginning in 2014, 100,000 people were affected by lead poisoning before officials took action. As a low-income city, the governor of Michigan, Rick Snyder, began to draw water from the Flint River to conserve money in 2013. For many years, the Flint River was known to be toxic and rich in pollutants, and when the river began to supply Flint's water, elected officials ruled that the water need not undergo treatment. As if this weren't contaminated enough, lead pipes were used to further distribute the water, and "[d]ue to the water's poor quality, lead began to seep from the pipes into the city's water supply" ("Flint Water Crisis", 2022). In the crisis, clean water was not available until 2019, and many citizens acquired Legionnaires Disease (a form of pneumonia developed by Legionella bacteria), among other mental and physical health tolls, such as rashes and hair loss—there were a total of twelve deaths accounted for. Around this time, the African American population of the city was 57% in 2015 (Sim, 2016). In 2021, a lawsuit was initiated against Michigan, Flint, and officials for duty negligence in the crisis. Similarly, in Wisconsin, in 2018, one quarter of children were tested for lead poisoning, all under the age of six, and accordingly had BLLs "over double the national average" (Shain, 2022). In Milwaukee, Wisconsin, over 40 percent of the water lines contain lead, and half of the city's households are rented, limiting residents' choices in the matter of replacement. Costs for replacing lead pipes in Milwaukee have ranged up to $5,000 for just one pipe to $27,000 for a minimal replacement. The CDC claims that no lead level is considered safe, and although this is the goal set by the EPA, the maximum amount of lead permitted in water is 15 parts per billion.

Lead and Schools

A Department of Housing and Urban Development (HUD) study in 2003 "found that 28 percent of licensed childcare centers in the U.S. contain lead-based paint" ("Lead Management", 2011). This number has declined due to the raised awareness of lead poisoning, but the problem continues to persist. 74 Federal GSA daycare centers that closed due to the COVID-19 Pandemic were examined after they had reopened—95 percent had not been tested for lead. When advised to test, 50 percent complied, and 7 percent of this half proved to have exceedingly high lead levels (Davidson, 2022). Public schools are increasingly providing lead health screenings for children, who should not have above 10 μ/dL in their blood. Unfortunately, only 43% of public schools in the US test for lead, and of those that test, 37% test positive for elevated lead levels in water ("K-12 Education: Lead Testing of School Drinking Water Would Benefit from Improved Federal Guidance", 2018) In one study by the National Library of Medicine, it was concluded "that 13% of reading failure and 14.8% of math failure can be attributed to exposure to blood lead concentrations" in Chicago public schools alone (Evens, Forst, Hryhorczuk, et al, 2015). Nationally, it was estimated in 2016-2017 that about three-quarters of school districts had not examined schools for lead-based paint" (Murray & Schatz, 2019). One theory that has continued to gain approval in the 21st century is the correspondence between lead exposure and crime rates. Author Kevin Drum looks at multiple studies showing levels of crime in correlation with lead. The crime rates in the U.S. appear to interact with blood lead levels significantly, peaking in the 1960s and 70s, and declining until the 1990s. You can view the figures in Drum's article here. (Drum, 2013) With generations of children inhabiting environments with high levels of lead, and with childrens' propensity to put objects in their mouths (such as lead paint chips and/or toys), neurological disorders are more likely to develop, which may have helped to increase crime during specific time periods.

Redlined and Leadlined

The disappointing truth about where lead poisoning is most distributed involves a long and grueling history of redlining and racism. The effects of redlining African Americans and minorities into segregated areas continues to play out today, as many minorities are low-income and inhabit houses built before 1978, which was the year lead paint was banned in the construction of homes and products. In 2021, in the U.S., it was counted that African Americans had a 21% poverty rate, non-hispanic white populations at 9.5%, and hispanic at 21%, according to the Kaiser Family Foundation ("Poverty by Race/Ethnicity", 2021). The BLL of non-hispanic Black children has been proven to be significantly higher than that of non-hispanic white kids, at a level of 4.0 μg/dL versus 3.0 μg/dL, and Black children are more likely to live in urban areas (Bravo, Zephyr, Kowal, et al, 2022). In correlation, it is estimated that detectable levels of lead in the blood have tested positive for 58 percent of Black children, 56 percent of Hispanic children, and 49 percent white children nationally (Hauptman, Niles, Gudin, et al, 2021). This also takes into account that Black children are six times more

likely to have elevated BLLs than white children in houses built before 1978 (Knight, 2020). Additionally, although lead poisoning is a larger social issue than one may think, it also remains an environmental one as well: lead continues to settle into soil and groundwater permanently. Lead does not decay or biodegrade, making the environment more toxic to inhabit.

Figure: "Redlined & Leadlined"

Despite these concerning events, there have been a number of acts throughout the decades that have attempted to combat lead poisoning, from the 1974 Safe Drinking Water Act, in which the EPA regulates the amount of lead in water for housing and facility development. The Lead Contamination Control Act of 1988 ensures education of lead, as well as health screenings in schools. The Residential Lead-based Paint Hazard Reduction Act (1992 – Title X) monitors the amount of lead paint in housing and construction. Consumer Product Safety Improvement Act (2009) regulates lead in products such as toys, and the Toxic Substances Control Act requires reports and records of lead contamination. You can view more acts to combat lead poisoning at the EPA webpage ("Lead Laws and Regulations", 2022).

Works Cited

Bravo, Mercedes A. et al. "Racial residential segregation shapes the relationship between early childhood lead exposure and fourth-grade standardized test scores." Proceedings of the National Academy of Sciences of the United States of America, 15 Aug. 2022, https://www.pnas.org/doi/10.1073/pnas.2117868119#supplementary-materials

Davidson, Joe. "Kids at risk of lead contamination in federal child care, watchdog says." Washington Post, 30 Sep. 2022, p. NA. Gale In Context: Opposing Viewpoints, link.gale.com/apps/doc/A720309859/OVIC?u=lbcc&sid=bookmark-OVIC&xid=23cca22d. Accessed 27 Nov. 2022.

Drum, Kevin. "America's Real Criminal Element: Lead." Mother Jones, 2013, https://d32ogoqmya1dw8.cloudfront.net/files/integrate/teaching_materials/lead/lead_crime_2013.pdf

Evens, Anne et al. "The impact of low-level lead toxicity on school performance among children in the Chicago Public Schools: a population-based retrospective cohort study", National Library of Medicine, 7 Apr. 2015, https://pubmed.ncbi.nlm.nih.gov/25889033/#:~:text=We%20estimated%20that%2013%25%20of,dL%20in%20Chicago%20school%20children.

"Flint Water Crisis." Gale Opposing Viewpoints Online Collection, Gale, 2022. Gale In Context: Opposing Viewpoints, link.gale.com/apps/doc/WAZOPU131154091/OVIC?u=lbcc&sid=bookmark-OVIC&xid=f1f43c9a. Accessed 25 Nov. 2022.

Hauptman, Marissa et al. "Individual- and Community-Level Factors Associated With Detectable and Elevated Blood Lead Levels in US Children: Results From a National Clinical Laboratory." JAMA Pediatr. 2021;175(12):1252–1260. doi:10.1001/jamapediatrics.2021.3518 https://jamanetwork.com/journals/jamapediatrics/article-abstract/2784260

"K-12 Education: Lead Testing of School Drinking Water Would Benefit from Improved Federal Guidance." U.S.Government Accountability Office, 5 Jul. 2018, https://www.gao.gov/products/gao-18-382

Knight, Ben. "Lead Poisoning Reveals Environmental Racism in the U.S." EcoWatch, 7 May 2020, https://www.ecowatch.com/lead-environmental-racism-2645941587.html

"Lead Laws and Regulations." United States Environmental Protection Agency, 18 Aug. 2022, https://www.epa.gov/lead/lead-laws-and-regulations#:~:text=Lead%20is%20a%20pollutant%20regulated,Recovery%20Act%20(RCRA)%2C%20and

"Lead management." Environmental Encyclopedia, edited by Deirdre S. Blanchfield, Gale, 2011. Gale In Context: Opposing Viewpoints, link.gale.com/apps/doc/CV2644150796/OVIC?u=lbcc&sid=bookmark-OVIC&xid=e43c9f75. Accessed 27 Nov. 2022.

Murray, Patty and Schatz, Brian. "GAO-19-461R, K-12 Education: School Districts' Efforts to Address Lead-Based Paint." U.S. Government Accountability Office, 9 Jul. 2019, https://www.gao.gov/assets/gao-19-461r.pdf

"Poverty Rate by Race/Ethnicity." Kaiser Family Foundation, 2021, https://www.kff.org/other/state-indicator/poverty-rate-by-raceethnicity/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

Shain, Susan. "A Lead Problem Worse than Flint's." Gale Opposing Viewpoints Online Collection, Gale, 2022. Gale In Context: Opposing Viewpoints, link.gale.com/apps/doc/FWTPHB028692899/

OVIC?u=lbcc&sid=bookmark-OVIC&xid=402034a9. Accessed 27 Nov. 2022. Originally published as "A Lead Problem Worse Than Flint's," In These Times, 16 Sep. 2021.

Sim, Bérengère. "Poor and African American in Flint: The water crisis and its trapped population." 2016, http://labos.ulg.ac.be/hugo/wp-content/uploads/sites/38/2017/11/The-State-of-Environmental-Migration-2016-76-102.pdf

Other viewed/recommended sources not referenced in text:

"African American Neighborhood Built On Toxic Lead Contamination." Youtube, uploaded by Rebel HQ, 2016, https://www.youtube.com/watch?v=KNMOitVOw9I

"Lead in Toys Brochure." Department of Health and Human Services, https://dhhs.ne.gov/Lead%20Documents/LeadInToys.pdf

"Scientists link childhood lead exposure to adult mental health problems." Living on Earth, 14 Jan. 2022, p. NA. Gale In Context: Opposing Viewpoints, link.gale.com/apps/doc/A691424430/OVIC?u=lbcc&sid=bookmark-OVIC&xid=74aeb0ef. Accessed 27 Nov. 2022.

THE IMPACT OF MIGRATION AND PESTICIDES ON MIGRANT WORKERS AND THEIR FAMILIES BY FIONA SPRAGUE AND AUSTYN MOON

https://docs.google.com/presentation/d/e/2PACX-1vQU3_cBhmKiepBejrVMjz7B-eMBqUe5XfmyX1b86jn7StJuP0LoBFmJf_Y2Itwj6WclFVuzBKMKHdaX/embed?start=true&loop=true&delayms=30000

LEAD IN MINORITY COMMUNITIES BY LUKE SCOVEL

Lead in Minority Communities

Introduction

Lead has been a problem in the U.S. for centuries. Lead was ubiquitous in paint and pipes until 1978, when it was banned for use in new housing (EPA, 2023). A large portion of low-income housing is old and deteriorating, which causes increased risk for anyone living in these areas (Chen et al., 2022). This is an example of an environmental injustice because it disproportionately affects low-income and minority communities. Children are especially affected due to higher absorption levels and possible developmental defects (Henderson & Wells, 2021). Small amounts of lead are not harmful for adults, but any amount of lead is harmful for children (Chen et al., 2022). People of color, and more specifically children of color, are much more likely to be exposed to high levels of lead from inadequate housing. This project will provide examples on how lead can affect minorities and children, and detail what the current regulations are and how they should be changed.

Results

From 1999 to 2019, the percentage of housing units with lead paint declined from 38 million to 35 million, but the number of housing units that contained deteriorating lead paint increased from 13.6 million to 18.2 million (Jacobs & Brown, 2023). Only 11.1% of households that received government housing assistance had higher levels of lead, while 19.9% of households that did not receive assistance had higher levels of lead (Cox et al., 2021).

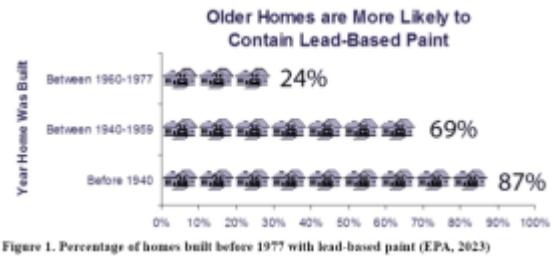


Figure 1. Percentage of homes built before 1977 with lead-based paint (EPA, 2023)

Figure 1. Percentage of homes built before 1977 with lead-based paint (EPA, 2023)

While the number of homes that were constructed containing lead declined leading up to the federal ban in 1978, millions of homes still contain lead that was never removed.

58% of children from majority black areas and 56% of children from majority hispanic areas had detectable blood lead levels compared to 49% from predominantly white neighborhoods (Chen, 2022). Childhood lead exposure has been linked to "cognitive impairments and behavioral disorders in childhood, as well as criminal arrests, psychopathology, and reduced earnings in adulthood" (Braun et al., 2021).

Example

The Freddie Gray case is one example of police brutality on a black person that has been linked to increased lead levels during childhood. Freddie Gray grew up in extreme poverty in Baltimore where he was exposed to significant amounts of lead due to contaminated housing. Tests taken between 1992 and 1996 showed that Gray had significant amounts of lead in his blood, which led to a lawsuit against their landlord. As children are known to have increased mental deficiencies when exposed to lead, it is thought that this may have contributed to Freddie's behavior issues and led to his death at the hands of police in Cleveland, Ohio (Henderson & Wells, 2021).

Current lead laws are insufficient

Lead regulations are weak at the federal level. The 1978 law banned any new usage of lead in houses, but millions of homes already contained lead that wasn't required to be removed. It wasn't until 1992 that actual regulations were put into place on how the government would go about removing lead from contaminated housing, but they still didn't require any kind of mass testing for housing built before 1978 (Chen, 2022).

As stated before, any amount of lead exposure can be harmful for children. In 2019, the EPA updated its lead level standards after removal to 10 micrograms (μg) of lead in dust per square foot (ft2) for floor dust and 100 μg/ft2 for window sill dust from 40 and 250 μg/ft2 respectively (EPA, 2023). According to a study done on the EPA's updated lead regulations,

"The 2019 EPA dust lead hazard standard does not adequately protect children from residential dust lead hazards... there was a 45% and 33% higher risk of having blood lead concentrations ≥5 μg/dL at the newly revised floor and windowsill dust lead hazards of 10 and 100 μg/ft2 compared to the HOME Study standards of 5 and 50 μg/ft2" (Braun et al., 2021).

These updated regulations were a step in the right direction, however lead still poses a large risk to children.

What should be changed

The main problems that need to be addressed to resolve the larger issue are government provided low-income housing and lead regulations. As shown by the statistics I have provided in this report, government housing assistance resulted in lower lead exposure risk. Increased funding for government housing programs should

be considered. The other large problem within this issue is inadequate regulations for when lead should be removed from contaminated housing. Currently there is no large-scale program to investigate old housing for lead contamination. More stringent regulations on the levels of lead within housing should be implemented (Braun et al., 2021).

Conclusion

In this project, I examined scientific data from multiple sources to better understand and analyze the problem of lead contamination in minority communities. Lead contamination in housing has led to disproportionate, life-long harms on minority and low-income communities all over the U.S, perpetuating the cycle of poverty for as long as these people are unable to afford better housing and regulations are insufficient to protect them from hazards. This ends up resulting in a generational issue for minorities as they are unable to escape from the cycle of poverty due to increased financial and social burdens. The U.S. needs better environmental justice regulations for these communities. From my research I have determined that a nationwide survey of housing built before 1978 should be undertaken to identify housing that contains possible hazards, and when contamination is found it should be completely removed. Improved housing assistance programs would also be beneficial to these communities by providing safer housing with less of a financial burden.

References

Chen, K. (2022). A Community Voice on Lead Paint: Examining the Role of Cost-Benefit Analysis in Environmental Regulation. Ecology Law Quarterly, 49(2), 437–470. https://www.ecologylawquarterly.org/wp-content/uploads/2023/03/49.2_Chen_Internet.pdf

EPA. (2023). Lead. Environmental Protection Agency. https://www.epa.gov/lead

Jacobs, D. E., & Brown, M. J. (2023). Childhood Lead Poisoning 1970-2022: Charting Progress and Needed Reforms. Journal of Public Health Management & Practice, 29(2), 230–240. https://doi-org.ezproxy.libweb.linnbenton.edu/10.1097/PHH.0000000000001664

Braun, J.M., Yolton, K., Newman, N. et al. Residential dust lead levels and the risk of childhood lead poisoning in United States children. Pediatr Res 90, 896–902 (2021). https://doi.org/10.1038/s41390-020-1091-3

Henderson, S., & Wells, R. (2021). Environmental Racism and the Contamination of Black Lives: A Literature Review. Journal of African American Studies, 25(1), 134–151. https://doi-org.ezproxy.libweb.linnbenton.edu/10.1007/s12111-020-09511-5

Cox, D., Dewalt, G., O'Haver, R., Biell, J. et al. (2021). American Healthy Homes Survey II Lead Findings. Department of Housing and Urban Development. https://www.hud.gov/sites/dfiles/HH/documents/AHHS%20II_Lead_Findings_Report_Final_29oct21.pdf?ref=tome-control-de-su-salud

MODERN DAY EUGENICS BY ANNABELLE BURIGHT

Eugenics (2)

RUSSIAN-UKRAINIAN WAR BY JESSE MARTIN

Final G209 r

SUPER FUNDS BY MAYA ROWLEY

Environmental Justice Open Pedogody Project