

## RESEARCH ARTICLE

# Applying a leverage points framework to the United Nations climate negotiations: The (dis)empowerment of youth participants

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Young people are both among the generations to be most affected by climate change and critical advocates for climate action. In the face of growing urgency surrounding the climate crisis, the United Nations Framework Convention on Climate Change (UNFCCC) has become an important institutional framework for political progress. We developed a community-based participatory action research project centered on youth involved in the COP climate negotiations. A “leverage points” approach guided our research; this paper is the first time the framework has been applied in an international negotiations context. Our findings point to the structural power, networks, and paradigms that youth might engage with for international climate justice work. We identify actionable leverage points through which youth organizers might increase their social power in the COP process to bring about climate action. Many of these leverage points are rooted in dynamics of power, which we expand upon and connect to broader literature. Moving forward, these findings can benefit and inform the strategies of youth as they participate in the COP process.

**Keywords:** climate change; climate justice; social movements; United Nations Framework Convention on Climate Change; Participatory Action Research; youth organizing

## 1. Introduction

Climate change is perhaps the most significant threat facing the global community, affecting human rights, national security, and global economies (Climate change impacts and adaptation strategies for coastal communities, 2017; Intergovernmental Panel on Climate Change, 2018; Jacquet and Jamieson, 2016; Mach et al., 2019; Momtaz and Asaduzzaman, 2018). It is an urgent social and political problem that requires large-scale action. Increasing research demonstrates the need for immediate action on mitigation as well as adaptation (Barros et al., 2014; Rogelj et al., 2016; Savaresi, 2016a, p. 201; Stocker, 2014).

In response to both these findings and uncertain international leadership on climate change, there has been a groundswell of activism and community organizing for policies to reduce greenhouse gas emissions, from the local to the international, with much of it inspired and led by youth (Black et al., 2014; Foran and Widick, 2013; Klein, 2014; Regan, 2015; Stephens et al., 2018; Yona and Lenferna, 2016). Youth in particular have been active here, from leading campus fossil fuel divestment campaigns to international movements such as Fridays for the Future. While more recent attention has been paid to youth activists such as Greta Thunberg, young people have in fact been engaging with international environmental issues for decades, in policy, grassroots organizing, academia, and beyond (Belliveau, 2018; Fisher, 2019, 2016; Grady-Benson and Sarathy, 2016; Yona, 2019).

The United Nations Framework Convention on Climate Change Conference of the Parties (UNFCCC COP) is an annual gathering of countries that have ratified this treaty, often cautiously lauded as a solution to climate change (Savaresi, 2016a, 2016b; Seres, 2013), though not without criticism about its effectiveness (Kemp, 2018). The UNFCCC is an institutional framework of significance to national and international climate change policies, in particular through global accords such as the Kyoto Protocol

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and the Paris Agreement (“Timeline – UNFCCC – 20 Years of Effort and Achievement,” n.d.).

These negotiating spaces bring together numerous different actors, such as party delegates representing nation states, news media, Secretariat officials, and various observer delegates, such as large Non-Governmental Organizations (NGOs). Notable observers include researchers and young community organizers who are active within the UNFCCC space. By youth we broadly refer to activists who are under 35, which is typically the upper age limit for membership within youth climate organizations; 30 is the upper limit defined by the Major Group for Children and Youth of the United Nations, whereas the Africa Group within the United Nations uses 35 as the age limit (“Children and Youth ∴ Sustainable Development Knowledge Platform,” n.d.; “Youth Empowerment | Office of the Special Adviser on Africa, OSAA,” n.d.). Our interests are in the roles these young participants play within UNFCCC gathering spaces and negotiations. Here youth face a seemingly insurmountable hurdle, a double challenge of being the living generation to be most affected by climate change, while also possessing little political capital to bring about the changes needed to mitigate and adapt to it. Youth are at the forefront of climate activism today, from climate strikes to the development of bold new policy agendas such as the Green New Deal, Fridays for the Future, and the Sunrise Movement (Bandura and Cherry, 2019; Fisher, 2019; Grosse, 2019; Hathaway, 2019), but their perspectives have been overlooked in prior analyses of climate negotiations (Böhmelt, 2013; Cabré, 2011; Dombrowski, 2010; Hjerpe and Buhr, 2014; Uhre, 2014).

In this paper, we utilize a leverage points framework articulated by Meadows (1997) to examine points of opportunity and engagement for youth within the UNFCCC. Leverage points (see **Table 1**) are twelve opportunities to shift a system. Our approach is a novel contribution to environmental scholarship, as this research project is the first time that this analysis has been applied to international agreements or multilateralism broadly.

This paper examines climate change activism within the United Nations climate negotiations with a specific focus on youth involvement leading up to the historic Paris Agreement in 2015. First, we introduce Meadows’ leverage points framework and introduce key findings and themes emerging from research interviews and observation. We subsequently apply the framework to these themes, and further expand on how they relate to power dynamics, placing our findings in context with broader social movement literature. The primary aim of the project was to provide recommendations to youth climate justice organizers on how to improve their efforts and be more effective in their campaigns, a common thread throughout the paper.

We interviewed 21 youth stakeholders – both researchers and community organizers – who engage with the UNFCCC space, in order to better understand power dynamics at play, in addition to 16 additional non-youth stakeholders in these disciplines. These actors were all engaging with the landmark COP21 Paris climate negotiations in 2015. Our results reveal the substantial limits to youth influence within the UNFCCC system, with many respondents expressing a sense of powerlessness. However, we uncover key leverage points, namely paradigm thinking and structural power, that youth organizers could potentially avail themselves to influence the UNFCCC process. Ultimately, this research aims to shed light on the UNFCCC space as a dynamic rather than static process; understanding how different actors interact with each other may help inform better practices to utilize or reform the COP space. Given the pervasive sense of powerlessness among young climate stakeholders, this framework could provide this group with new ways of thinking and strategizing to make their climate change work more effective.

## 2. Background

This research has been informed by both a knowledge of the UNFCCC process and a systems thinking approach.

**Table 1:** Places to intervene in a system, in increasing order of effectiveness (Meadows, 2010, 1997). DOI: <https://doi.org/10.1525/elementa.433.t1>

12	Constants, parameters, numbers (such as subsidies, taxes, standards)
11	The size of buffers and other stabilizing stocks, relative to their flows
10	The structure of material stocks and flows (such as transport network, population age structures)
9	The lengths of delays, relative to the rate of system change
8	The strength of negative feedback loops, relative to the impacts they are trying to correct against
7	The gain around driving positive feedback loops
6	The structure of information flow (who does and does not have access to what kinds of information)
5	The rules of the system (such as incentives, punishment, constraints)
4	The power to add, change, evolve, or self-organize system structure
3	The goals of the system
2	The mindset or paradigm out of which the system – its goals, structure, rules, delays, parameters – arises
1	The power to transcend paradigms

### **2.1. United Nations Framework Convention on Climate Change (UNFCCC)**

The impetus for the United Nations Framework Convention on Climate Change (UNFCCC) is to facilitate dialogue and encourage political ambition for climate action (Giddens, 2011). The UNFCCC provides a political process, several Technical Bodies, and a Secretariat. The Secretariat helps facilitate and organize yearly COPs and Intersessional meetings, whereas the Technical Bodies play a role to clearly define and support climate change mitigation and adaptation measures. Due to its nature as a Framework Convention, the UNFCCC does not normally produce legally binding agreements itself (Jacquet and Jamieson, 2016); however, it can and has created legally binding policy instruments such as the Kyoto Protocol among member countries (LRI, n.d.).

The UNFCCC meets yearly in various locations for its Conference of the Parties, known as COP (Rietig, 2016), in addition to intersessional Subsidiary Body meetings throughout the year at the UNFCCC Secretariat's Bonn, Germany headquarters. COPs are meant to facilitate international climate change negotiations, with a focus on government delegations that make decisions. Other groups attend as observers, such as U.N. bodies or NGOs. These conferences are led by the host country and as such, the COP Presidency role shifts to a new country every year. A wide variety of constituents are represented at a COP, including business, the fossil fuel industry, agricultural groups, universities, activist organizations, climate change denier groups, multi-national corporations, and other United Nations bodies and programmes, all with varying degrees of access. COPs are highly monitored and secured, and access is often restricted: the UNFCCC Secretariat (the governing UNFCCC body) awards what many NGOs consider an arbitrary number of "badges" to accredited organizations that varies every year. Different types of accreditation granted allow different levels of access within the UNFCCC space. For example, NGOs and other observers may have access to certain parts of the convention centre, but are not granted entry to many small-room negotiations among some countries (Nasiritousi and Linnér, 2016). Therefore, many NGOs spend their time on various activities during a COP, which may include lobbying government representatives, soliciting media coverage, and staging protests within the meeting space (Rietig, 2016). Since COPs are typically held in countries that may be expensive to travel to – such as South Africa, Qatar, and Peru in recent years – financial costs as well as visa approval barriers may hinder access to participants, in particular NGO representatives from the Global South and Small Island and Developing States (Betzold et al., 2012; Chasek, 2005).

The relative importance and profile of COPs vary by year. Some years – such as during the COP18 conference in 2012 in Doha, Qatar – the COP itself was small and did not produce many significant policy outcomes. In other years, the gatherings are amplified, both in the negotiations and media coverage. The COP15 conference, held in Copenhagen, Denmark, in 2009 was considered the largest such conference when it took place (Cabré, 2011). The

conference was mired in a stalemate, culminating with a two-page non-binding document, which NGOs widely criticized as insufficient (Rietig, 2016), while other participants supported it as a symbolic step (Renné, 2010).

### **2.2. COP21 conference and Paris Agreement**

In December 2015, another important UNFCCC conference, COP21, was held in Paris, France. The goal of the COP21 talks had been planned for years: to bring all countries together to reach a universal climate agreement (Savaresi, 2016b). The COP21 conference was the single largest gathering of heads of state in history (UNFCCC, 2015), despite terrorist attacks that had taken place two weeks before the conference began. The attacks resulted in heightened security, forcing many NGOs to cancel their planned marches and demonstrations (Quinn, 2015).

As a result of the negotiations, countries signed (and later ratified) the Paris Agreement, a universal, non-binding agreement to limit average global temperature increase to well below two degrees Celsius (Vandeyck et al., 2016). This agreement was the first global agreement to set a target/limit of temperature change. While hailed by many as an achievement, the Paris Agreement was also heavily criticized by some climate justice organizations as being insufficient to limit global average warming to 1.5 degrees Celsius, a benchmark for small island and low-lying coastal nations. It has also been critiqued academically, where scholars have highlighted it may be insufficient to adequately mitigate emissions (Allan, 2019; Kemp, 2018). Youth, in particular, were among the most critical of the agreement, arguing that it did not contain stringent enough measures to reduce greenhouse gas emissions to protect young and future generations.

### **2.3. Climate justice movement**

From fossil fuel divestment campaigns to Arctic drilling protests, the climate justice movement embodies a multitude of established NGOs and newly formed grassroots organizations working on climate change activism with the goal of mitigation as well as adaptation (Black et al., 2014; Bond et al., 2014; Foran, 2014; Foran and Widick, 2013; Parks and Roberts, 2010; Scandrett, 2016; Shepard and Corbin-Mark, 2009; Yona and Lenferna, 2016). Foran et al. (2015) have examined the international climate justice movement at the United Nations Framework Convention on Climate Change, illustrating the different rhetoric, strategies, and alliances created by activist groups in those spaces, and reflecting upon means of empowerment and disempowerment, resistance to corporate influence, and peaceful protest.

Within the UNFCCC COP meetings, there is a significant climate justice contingent among NGOs and observers (Bond et al., 2014; Foran and Widick, 2013). Organization coalitions, such as the Climate Action Network and Climate Justice Now!, list thousands of member groups and regularly organize press conferences, news events, and demonstrations within the UNFCCC space. The UNFCCC Secretariat officially recognizes the role of organizations through the ENGO constituency at COP and has appointed Focal Points to liaise between NGOs and the Secretariat.

While youth have their own constituency, YOUNGO, within the COP, this constituency is not awarded as much influence as the overall ENGO constituency; as a matter of fact, youth tend to express that they are tokenized more than they are treated as stakeholders in this process.

#### **2.4. International youth climate justice movement**

The international youth climate justice movement is embedded within larger environmental social movements, yet is also distinct from larger NGO campaigns. The movement ranges from young scientists and students to full-time campaigners. Many of these youth activists began as community organizers on campuses, particularly around fossil fuel divestment, the Sunrise Movement, and the Green New Deal in recent years. Oftentimes, they use the international platform afforded by the UNFCCC to promote their localized campaigns, as was done by a coalition of youth around fossil fuel divestment at the COP19 talks in Warsaw, Poland in 2013.

YOUNGO, the UNFCCC youth constituency, is recently created and highly active, with youth NGOs (many calling themselves domestic “Youth Climate Coalitions”) organizing daily protests and leading media campaigns to pressure their government negotiators. Although youth had been attending United Nations environmental conferences since their inception, the youth constituency was only recognized by the UNFCCC in 2009. While globally dispersed, the constituency counts thousands of members, many of whom are from the Global North. YOUNGO organizes a COY, or Conference of Youth, that takes place every year immediately before the COP negotiations, beginning in 2005. COYs are independently organized by the Youth Climate Coalition in the COP host country (Kwon, 2019). The impetus for COYs and the creation of YOUNGO came from national-level youth delegations who attended these conferences; at the 2005 COP conference which took place in Montreal, Canadian youth played an important role.

Youth are often seen as the moral voice within the UNFCCC space. They will often express frustration with the negotiation process, feeling that their generation is the living generation with the most at stake in the climate crisis. Many come from historically oppressed and marginalized communities, identities which are further compounded by a sense of powerlessness within the COP space. These complexities will oftentimes play out in group dynamics: youth are treated as a homogenous entity, when in reality there are many diverse identities represented, across geographical region, socioeconomic class, race, gender, sexual identity, and more.

#### **2.5. Leverage Points: Places to Intervene in a System**

Our research is grounded in a leverage points approach framework first developed by Meadows (1997), which we suggest can provide insight on the roles and effectiveness of youth in the UNFCCC process. This approach presents a relatively under-utilized analytical framework for institutions and environmental problems; in fact, our research is the first instance of the framework applied to international agreements, and multilateralism broadly. Furthermore, many proposed environmental solutions tend to ignore

certain aspects of social and political systems that in turn create more problems; a systemic approach aims to illustrate different exogenous components of a problem in an effort to develop innovative solutions (Yona et al., 2019). While we adopt a systems approach, we are not applying a systems dynamic framework; in other words, our focus is not one of environmental modeling, but rather an epistemological framework.

Leverage points, the conceptual framework behind this approach, are a set of twelve mechanisms or “points of power” (Meadows, 2008) – in order of increasing impact and difficulty to accomplish – that may help youth participants intervene in a complex system (**Table 1**). Meadows proposed these leverage points based on their ability to have the most impact on society with the least effort. This framework has been used a handful of times to examine environmental and social problems in the past (Abson et al., 2016; Nguyen and Bosch, 2013; Proust et al., 2012; West et al., 2014), but to date has not been applied to the United Nations Framework Convention on Climate Change. Based on our data gathering, we have identified a few leverage points that might allow youth to exert particular power within UNFCCC spaces. The leverage points were identified inductively based on the themes emerging from interview data as well as participant observation. This provides a new perspective to climate negotiations from a systems approach and draws from the experiences of young organizers and researchers who are working to bring about change within the COP process.

We used leverage points for a multitude of reasons: as a qualitative systems approach that integrates many scholarly disciplines, it is well-suited to provide actionable research findings that can be used by youth climate organizers. Indeed, transboundary work across academia, policy, and advocacy is foundational to social change, and we wanted this community-based participatory action research project to have applications outside of academia. Finally, we sought to identify key barriers and opportunities for youth activists, while also highlighting some at a range of scales and levels of difficulty to implement; leverage points are an ideal approach for these research goals.

As such, leverage points are valuable analytical tools in presenting potentially overlooked strategies for youth organizing and advocacy within the UNFCCC.

### **3. Methods**

This research project was designed as Participatory Action Research (PAR), utilizing qualitative research and semi-structured interview methods from Creswell (1998) and the Sage Handbook for Action Research (Bradbury, 2015). Community-Based Participatory Action Research (CBPAR) methods make it possible to study complex issues such as climate change.

The lead author was, in fact, embedded within some of the communities being interviewed. This approach is called “insider action research”, which occurs “when complete members of an organization seek to inquire into the working of their own organizational system in order to change something in it” (Bradbury, 2015). Moreover, as a result of this action research, the lead author wrote



two non-academic books for young organizers working on climate change (Yona, 2016a, 2016b).

“[Researchers engaged in PAR] draw on and contribute to an ever-increasing repertoire of experiential practices at personal, interpersonal, and/or collective levels, allowing us to address complex problems while also giving attention to coordinating action [...] Action research is a democratic and participative orientation to knowledge creation. It brings together action and reflection, theory and practice, in the pursuit of practical solutions to issues of pressing concern. Action research is a pragmatic co-creation of knowing *with*, not on *about*, people” (Bradbury, 2015).

Semi-structured interviews were used to gauge participants’ experience working on climate change, and their opinions of climate campaigns, policies, and the COP process. Semi-structured interview questions were developed using standard approaches in sociology (Rubin and Rubin, 2005) and can be found in Appendix I of our Supplemental Materials. Interviewees were selected using a snowball sampling method (Creswell, 1998; Rubin and Rubin, 2005) and through emails to the YOUNGO youth constituency emailing list. Interviews were conducted during the COP21 conference in Paris, France; in London, England; in Ottawa, Canada; in Washington, D.C.; and virtually over Skype. Interviews were then coded using QSR International Nvivo11 software, with a deliberate approach toward identifying key themes that may further shed light on insights regarding youth involvement in the UNFCCC from a systems thinking approach.

In total, 37 interviews were conducted among community organizers, academics, and policymakers involved with multilateral climate policy (Table 2). We tried to limit selection bias by emailing mass lists that ostensibly reached most of the youth at the COP, though we acknowledge there may be some bias in the overrepresentation of NGO actors in our results. We also made use of best practices for qualitative interviewing in this field (Rubin and Rubin, 2005). Of these interviews, 21 participants were youth researchers and/or organizers (“youth” defined as being below the age of 35 – the upper limit that is usually

defined for youth in the UNFCCC space – and associated with a youth organization); the remaining 16 participants’ interviews were used for exploratory and informational purposes, using the same set of interview questions. These exploratory interviews were used to provide background information on the UNFCCC process and its history. We sought to interview youth organizers and researchers in recognition of the multiple roles played by many young stakeholders who work on climate change.

We selected key leverage points based on semi-structured interviews and observations, using methods that have been employed in environmental literature to better understand hidden processes and to develop inductively generated hypotheses that might explain observed patterns (Bernstein and Cashore, 2012; Cashore and Howlett, 2007; Levin et al., 2012; O’Neill et al., 2013; Vanhala, 2017). Describing frames, perceptions of power, and networks within the UNFCCC COP meetings was at the core of this research.

## 4. Results

### 4.1. Heterogeneity of youth organizers

A crucial, yet often overlooked in the literature, aspect of youth within the UNFCCC is their heterogeneity as a group. While there is a tendency to generalize youth as a group, they are not homogenous. There are tensions within the YOUNGO constituency, as well as a wide range of access and resource availability. For example, youth groups from the Global North seemed to have greater access to resources. These varying levels of privilege and access were also observed across identities such as indigenous identity, race, gender, home country, mother tongue, socioeconomic class, sexual identity, and others. Our research aims to highlight common threads among these different groups, though we recognize that there is tension and disagreement across these groups. A more extensive development of the results can be accessed through the two books written by the lead author on this research project, and additional relevant interview quotes can be found in Appendix II.

### 4.2. Key themes emerging from data

Based on our leverage points approach (Table 1), our data suggest pressure points most salient for young climate action organizers: the perceptions that youth hold, the structure and rules of the UNFCCC, paradigm thinking, and coalitions and organizational networks. These results serve to illustrate the findings that may be uncovered utilizing such an approach, though a more exhaustive list of findings can be found in the two books published by the first author (Yona, 2016b, 2016a). The broad themes emerged through interviews as well as through participant observation; in the Discussion, we build on these themes and apply a leverage points framework to them (Table 3). We elaborate on these findings below.

#### 4.2.1. Youth perceptions of the UNFCCC process

Every youth participant interviewed spoke to the lack of power awarded to COP observers. (It should be noted that none of our interviewees possessed a ‘pink badge’, which would have indicated they were sponsored by their

**Table 2:** Stakeholders interviewed by group. DOI: <https://doi.org/10.1525/elementa.433.t2>

Group	Number of Stakeholders
Academic	5
Academic-NGO	7
NGO	18
NGO-Policymaker	2
Policymaker	3
Policymaker-Academic	2
Total	37

**Table 3:** Places to intervene in a system, in increasing order of effectiveness (Meadows, 2010, 1997). Leverage points highlighted in bold were evaluated in this research project and are further elaborated upon in the Discussion. DOI: <https://doi.org/10.1525/elementa.433.t3>

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12	Constants, parameters, numbers (such as subsidies, taxes, standards)
11	The size of buffers and other stabilizing stocks, relative to their flows
10	The structure of material stocks and flows (such as transport network, population age structures)
9	The lengths of delays, relative to the rate of system change
<b>8</b>	<b>The strength of negative feedback loops, relative to the impacts they are trying to correct against</b>
7	The gain around driving positive feedback loops
<b>6</b>	<b>The structure of information flow (who does and does not have access to what kinds of information)</b>
<b>5</b>	<b>The rules of the system (such as incentives, punishment, constraints)</b>
<b>4</b>	<b>The power to add, change, evolve, or self-organize system structure</b>
<b>3</b>	<b>The goals of the system</b>
<b>2</b>	<b>The mindset or paradigm out of which the system – its goals, structure, rules, delays, parameters – arises</b>
<b>1</b>	<b>The power to transcend paradigms</b>

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national government). Organizers also expressed feeling decreasing engagement and transparency within the UNFCCC process. Many mentioned that they could not provide examples of a time when they felt there was not a power imbalance within the COP space. In particular, youth organizers seemed delegated to tokenizing roles within the COP space, both from governments and the UNFCCC Secretariat, as well as from other environmental NGOs. While many of these themes are not necessarily unique to youth, they affect youth, particularly as youth participants are a group that generally prioritizes having an impact on climate justice within the negotiations. They are also issues that youth face, as a constituency that advocates for institutional accountability within the UNFCCC space (Kuyper et al., 2017).

#### 4.2.1.1. Corruption and corporate influence

Multiple interview participants mentioned corruption – referring both to certain countries and governments as well as corporate entities engaging with COP – as having disproportionate influence on the UNFCCC process. When asked about their plans for COP21, one interviewee said, “I want to be involved in equally, just exposing that sort of special interest corruption that has a role in the talks from fossil fuel industry lobbyists working for nations like Australia, and still for Canada, the United States, whatnot, exposing some of the dirty tricks that the rich companies use and just going up against fossil producers playing along.” Many of the youth participating in the negotiations were also fossil fuel divestment campaigners, which contributed to their points of view on corporate influence in the negotiations (al-Mealla et al., 2014; “Fossil fuel companies grow nervous as divestment movement grows stronger,” 2014).

These sentiments were also reflected in participant observations. Many of the theatrical demonstrations taking place within the COP21 venue highlighted the role of the fossil fuel industry. For example, during the first week of the COP21 conference, the Canadian Youth Delegation

organized a “retirement party” for fossil fuels, in an attempt to pressure the Canadian government to make more ambitious statements and commitments regarding fossil fuel subsidies and the federal government’s close relationships with oil and gas companies. Furthermore, the “corporate capture” of COP was also a frequently used rhetoric by climate justice groups, in an effort to highlight the corporate sponsorship of COP21.

#### 4.2.1.2. Inequitable distribution of resources

Interview participants frequently mentioned the inequitable distribution of resources – mainly economic – within the UNFCCC venue. Youth groups aim to have an impact at the negotiations, but do so with very little funding, often relying entirely on volunteers and students for unpaid organizing. The cost of attendance at COPs – hostels, likely expensive travel – are prohibitive for many youth. As such, young participants are acutely aware of the inequitable distribution of resources at COP. Many noted the disparities between governments, where some countries could not afford to send more than a handful of delegates, while other countries were well staffed. One interviewee emphasized, “It’s inequitable. Smaller countries are not fairly represented. So there are countries who bring hundreds of staff, and then there’s some countries that can barely bring two. So that process is clearly unfair when there’s like 12 sessions. In the last one there were 12 sessions arranged to happen at the exact same time. How is Tuvalu, for example – I don’t know if they did have this many people, but imagine if they had five delegates. How are they meant to cover 12 important sessions when they’ve only got 5 people there?” As a disempowered group, youth in general expressed frustration at and related to the inequitable distribution of resources.

An interviewee, who also founded a U.S.-based youth NGO, reflected on funding access: “We do work with environmental justice groups, and there’s been a longstanding difficult dynamic between Big Green organizations, like the Sierra Club, and grassroots environmental justice groups,

particularly environmental justice groups that are led by communities of color, and low-income communities, but communities of color especially. And there's very obviously a huge misbalance of people who are being affected most by environmental degradation, and the groups who are working on the frontlines, and organizations that are very well-funded to deal with these issues, and get the most name recognition. [...] Another place where this plays out, is from the funding community to all groups at large, where the funding community is not really doing the work at all, but they control so much of what makes the work possible that they're either subtly or directly pulling the reins in a lot of ways, and creating strategies for funding that are completely divorced from the reality of how advocacy can or needs to be done, and that is a huge problem that I'm privy to." Of course, funding is also a challenge for youth organizations, as mentioned above.

#### 4.2.3. Mindsets within the UNFCCC

Paradigms are ways of thinking, mindsets, norms, and cultures that we take for granted in a community. They are a way of seeing the world, encompassing shared understood knowledge and values within a particular group of people (Meadows, 1997). There were common paradigms across interviews. In many cases, there was an inherent sense of powerlessness within the UNFCCC process for academics, policymakers, and organizers alike. Indeed, a paradigm is the perception of one's power. People need to perceive themselves as powerful actors who can exert agency if they are to feel effective in bringing about social change.

One participant said: "Individually our voices, I wish they were powerful, I wish our democracy worked in such a way that each person felt empowered to make the changes that they wanted to. But sometimes we need to pull it together and have a collective voice to get some of these things done." Such statements were common throughout the interviews conducted.

Many interview subjects also indicated individual actions as framing their sense of power within COP. Some indicated that they personally felt powerless in the context of the negotiations. Others recalled moments when they felt very powerful. For example, one activist from the United Kingdom recalled being able to pressure her government negotiator as a youth delegate during a previous COP, which gave her a sense of agency. As a young person, she felt that she could represent a moral voice, a sense of urgency, and a focus on injustice when engaging with her government.

These paradigms extend to academia as well. One participant – who works both within academia and policy – noted: "Either you say that scientists should just not be involved with politics anymore, or you say that scientists have to present solutions. But if you want to present solution[s], you can't have one single type of speech. Because when you were saying that climate change was dangerous, everybody was kind of saying the same thing. But for solutions everybody has different solutions. And you can't just say, we have thousands of solutions. You have to say, I have the specific solution. And so every

scientist is going to have a different thing to say, and sometimes they do not agree."

Whether accurate or not, even the perception of power or success had an impact for many interview participants in academia, advocacy, and policy. One participant, an organizer, said: "I think there's a big mental barrier where we perceive that the biggest barriers to climate change actually being like David Cameron or politicians who are in power and review them as the power but the reality is that they're only powerful because we give them that power. There's a big shift that we have to do in our minds for that."

Another interviewee not considered among youth, a policymaker, echoed these sentiments and validated these youth concerns, saying: "I think it's a generalized failing of grassroots movements to miss, or to underestimate our own power. So, if you underestimate your own power, you're constantly hedging your bets against your own success, and downgrading what your goals are, because you don't think the real goal is possible."

#### 4.2.4. Organizational networks, coalitions, and collaboration

Through participant observation, the role of climate NGOs within the UNFCCC did not appear clearly defined. Climate justice organizations led a multitude of events within and outside of the official COP space, from ceremonial "side events", to press conferences, to informal lobbying to demonstrations. Youth, in particular, struggle to find their space and be taken seriously within the negotiations; for them, networks and collaborations are impactful.

One interview participant explained: "A sense of hope is certainly working with others. It's quite clear that [...] being an activist, you can really insulate oneself by trying to stick to pure political principles and make oneself quite irrelevant. There's really this interesting balance to strike a [sic] coalition building and working with people in ways that you have a broader reach, that you can ideally build kind of a sequencing in of reaching people who are ready to hear particular messages and move them along a continuum to where meaningful change could take place."

Others said that they were frustrated by the motivations that organizers brought to the table, in particular the influence of individual and organizational egos in hindering successful campaigns. One interviewee, who is a community organizer, recalled a successful campaign to keep climate change education from being cut from nationwide curricula in the United Kingdom. She said, "I think the reason it succeeded is because everyone left their egos at the door. If I could pick out one reason this won, that was it. And it was [a] very non-zero [sum game]: people did stuff, and no one felt like because one person was doing something that it was gonna affect their ability to do something."

Even more so, some indicated frustration when collaborating with other organizations at the UNFCCC. In particular, young organizers also expressed frustration in dealing with well-established NGOs. One interview subject, who works for a large U.S.-based environmental organization, noted: "In the advocacy around the Clean Power Plan,

which is a historic plan to limit carbon emissions from power plants, everyone's talking about intergenerational equity and the fact that they need to protect future generations, but no one has really taken the time in the Clean Power Plan's specific advocacy to consult young people on how we should be messaging all of this." However, the majority of interviewees recognized the importance of networks within the UNFCCC space. One interview subject explained: "I think because you're looking for a paradigm shift you essentially have to engage in that. You have to engage in nudging people towards other things."

Lastly, there was an emphasis on community in both interviews and participant observation. One notable participant, who works for a large NGO based in the United States, said: "I fundamentally believe that we are not going to win until we figure out how to – and we're not winning right now. We're not gonna win until we figure out how to take care of each other and take care of ourselves. How do we show up to work every single day and be able to take on our work with grace and clarity? I see across the movement, a lot of, I don't know, there's a lot of command and control and there's a lot of just general frustration. People aren't showing up with compassion and empathy that's required to solve really, really insane issues. [...] This is an issue that's going to affect our generation and those after

it more than any generation that's already existed. I think that's a lot to hold, so we have to be good to each other and take care of each other, even when we're in moments of crisis, whether real or perceived." One participant also called for community, saying it was a necessary "humanization" of climate change work.

## 5. Discussion

### 5.1. Applying a Leverage Points framework

These results may have implications for climate change organizing and advocacy within international spaces. Many of these results can be adopted into a leverage points framework. As mentioned previously, this approach is powerful because it may assist young climate justice organizers in their social movement efforts. Moreover, the leverage points framework also provides a scholarly lens, a systems-based approach through which we might understand youth involvement within COP negotiations. Here, we highlight some of these leverage points that youth can use to influence the UNFCCC process. We recognize that some of these leverage points may be more accessible than others (see **Table 4**, "Difficulty to Implement"); we highlight them here to help recognize both barriers as well as opportunities for change.

**Table 4:** Applying a Leverage Points framework to youth organizing within the UNFCCC, in order of potential impact.  
DOI: <https://doi.org/10.1525/elementa.433.t4>

Leverage Point	Specific Leverage Point for Youth	Difficulty to Implement	Description
<i>The power to transcend paradigms</i>	Transcending mindsets of martyrdom and glorification of burnout	High	Perceptions of martyrdom serve to accelerate burnout among youth at COP conferences; increasing emphasis on self-sustenance and celebration may help increase effectiveness in the UNFCCC process; shifting perceptions of the UNFCCC process and its purpose
<i>Paradigm thinking</i>	Systemic, radical change	Moderate (currently in place, to an extent)	Emphasis on social justice and intersectionality; paradigms mentioned by some participants echo concepts of cognitive liberation, wherein social movements need to firmly believe in the ability of their cause to succeed if they are indeed to do so (McAdam, 1999; McAdam and Snow, 2009); fostering a greater sense of community, and a deeper sense of impending success
<i>The rules of the system</i>	UNFCCC rules	High	Identifying and targeting sources of disempowerment; efforts to increase physical access to negotiating spaces and ability to organize peaceful demonstrations
<i>The goals of the system</i>	Goals of youth participation in UNFCCC	Low	Youth participants may strategize on their participation goals within the UNFCCC: is the goal to affect the final outcome document? In that case, targeting lobbying and organizing would need to take place well in advance of the COPs themselves. Other goals of UNFCCC participation can include coalition-building with like-minded NGOs and global networking or media leveraging for local and domestic campaigns
<i>The power to add, change, evolve, or self-organize system structure</i>	Political windows of opportunity for youth organizing goals	Low	Utilizing the COP space as an opportunity for a policy goal that can advance climate goals outside the scope of the UNFCCC process
<i>The structure of information flow and the power to self-organize system structure</i>	Youth networks and coalition-building	Moderate	Building strategic alliances among different NGOs at COP – particularly within youth organizations



## 5.2. Power and powerlessness within the youth climate justice movement at the UNFCCC

*"In your work on climate can you give me an example of a time where you felt either exerted on you or just something you noticed, but an imbalance of power?" – Leehi Yona, interviewing*

*[Long Pause]*

*"Most fresh in my mind is the UNFCCC and the idea of being an observer there or a youth observer particularly. Yeah, I think there's nothing more disempowering than feeling like there's a train creeping in one direction, and that maybe you're holding a piece of ribbon trying to stop it." – Youth climate activist*

Power and powerlessness are key components of social movement theory; we argue they play an important role within the climate movement broadly, and particularly within UNFCCC conferences. We apply a power analysis to frame our findings within existing social movement literature. Indeed, power is a rich sociological concept, and books can be written about the power dynamics within the UNFCCC space. Here, we aim to highlight just some of the manifestations of power and disempowerment for youth participants, in the hopes that doing so will serve as a springboard for further community-based action research. We briefly introduce some of these concepts and invite the reader to dive more deeply into the concept of power by reading the work we have cited here more extensively.

From a sociological perspective, power refers to the ability for an individual or group of people to coerce or influence the actions of another individual or group of people (Gaventa, 1980). Bertrand Russell referred to power as "the production of intended effects" (Lukes, 1986), while another sociologist, Charles Tilly, referred to social movements as a "counterweight to oppressive power" (Tilly et al., 2009). Concepts of power and powerlessness help explain certain structures of inequality and climate injustice, and the magnitude of the challenge in resolving these inequalities.

One approach to study power, in the context of Appalachian mining communities, examines the grievances at the root of a person's decision to engage in a social issue as reflections of power (Gaventa, 1980). In many cases, power is directly linked to social class: those with the most social capital have the most power to make their desired

goals a reality, using their networks of influence (Domhoff, 2010). While the most common perception of power is direct power – where it is clear who is exerting power and who is made powerless, and where the mechanism of disempowerment is "straightforward" (Gaventa, 1980) – more indirect forms of power exist. **Table 5** elaborates on these indirect forms, known as dimensions of power. This indirect power concept highlights the "behaviour-doing, participating" of certain disempowered groups, and can take on the form of rules, agenda-setting, and world views (Gaventa, 1980).

Power within the UNFCCC can therefore take on many forms. Manifestations of power within the COP space include participation and non-participation or exclusion; beliefs and assumptions about what successes may be realistic; rules and sanctions; and paradigm thinking. They represent "the means through which power influences, shapes, or determines conceptions of the necessities, possibilities, or strategies or challenge in situations of latent conflict" (Gaventa, 1980).

This understanding of power is relevant to UNFCCC negotiations, in particular for our understanding of youth participants in the COP process. As far as youth are concerned, if they can find ways to push into UNFCCC spaces, they might be able to push for more political change. Youth are often a disempowered constituency within negotiations, struggling to influence the process with limited means (Kuyper et al., 2017). This concept of 'borrowing' power has been applied in the context of the Alliance of Small Island States, where disempowered groups attempt to draw from "external power sources" to achieve their goals, despite having limited means (Betzold, 2010). Recognizing power dynamics within the UNFCCC space may help re-orient youth organizers and researchers in their engagement strategy.

Within the U.N. space, it can be argued that young people are near the very bottom in terms of power held, in contrast to the high power wielded by heads of state, political leaders, and other constituents such as corporate representatives. Moreover, young people are typically dismissed or ignored as lacking the credibility and authority that is perceived to come with age. It is therefore unsurprising that a sense of powerlessness is pervasive among youth, an observation both evidenced in literature and throughout the interviews conducted for this research project (Bond et al., 2014). Gaventa calls this "extensive fatalism", wherein a sense of despair can become significant to the extent of influencing behavior,

**Table 5:** Further explanations on dimensions of power. DOI: <https://doi.org/10.1525/elementa.433.t5>

Dimension of Power	Definition
First	Power that is exerted directly upon a person or group of people. In this first dimension of power, there is an awareness that power is being exerted, and both the individuals and groups who are powerful or powerless are aware of their status.
Second	Those who are powerful have agenda-setting power. They can control society in a broader way.
Third	Powerful elites influence the mindsets and thoughts of the disempowered; the third dimension of power is significant because it addresses ways in which power is exerted on a person or group of people that they may not be aware of.

“or, the powerless may act, but owing to the sense of their powerlessness, they may alter the level of their demands” (Gaventa, 1980).

### 5.2.1. Rules and structural power

Rules and structures have long been established as indirect forms of power (Gaventa, 1980). Participants mentioned a sense of despair; in such a way, “power may affect conceptions of the grievances themselves” (Gaventa, 1980). The designation of specific “demonstration areas” and the requirement of permits to protest within the yearly U.N. negotiations is a perfect example of such disempowerment. As youth rely on these demonstrations as a way of leveraging influence, they are particularly affected by these rules.

The rules that govern the negotiations also exert power over UNFCCC observers. These rules are most evident during sanctioned demonstrations. For example, as opposed to civil society gathering areas elsewhere, any group willing to organize an “action” or demonstration within the COP venue may only do so in specified places, and only after submitting a detailed action plan (with its own guidelines) to United Nations security with at least 24 hours’ notice. More often than not, these spaces are also located as far as possible from the physical negotiation plenaries, which reduces their ability to reach government officials.

Many interview subjects noted the structural challenges to the UNFCCC space. Spaces within COP are often bounded with specific access requirements, and badges for access are increasingly limited for youth organizations, shutting them out of key spaces. Moreover, COP21 in particular had significant spatial separation. Within the Le Bourget conference venue, there was a zone where all negotiations took place that was only open to those with U.N. accreditation, and a secured but more accessible space where those without accreditation could also participate. The two zones were separated by a long exterior distance traversed by walking. Evidently, due to restrictions on accreditation to civil society at COP21, much of civil society was gathered in the latter, whereas few policymakers ventured outside the former. Some interviewees pointed out the difficulty in physically navigating a space as large as the COP venue, where it may take as long as an hour to move from one zone to another. Some interview participants reflected that these structural barriers separated the COP process into two simultaneous gatherings that became distinct from each other. One participant mentioned, “I think that there are two COPs. I think there’s the negotiators’ COP, and then I think there’s the civil society space where you were allowed the freedom to imagine alternative realities and solutions.”

At the same time, the UNFCCC structure could be a space for empowerment. The international negotiations make it feasible to access local and regional government officials in ways that would otherwise be difficult domestically. Many elected officials are brought to COP for media purposes, but they do not play an active role with the negotiations. As such, they may be more accessible than they

otherwise would be. One youth activist we spoke with ran into her state Governor at the COP21 food court, where they proceeded to have a spontaneous lunch. This same activist was lobbying her state government (Vermont) to reject a fracked gas pipeline that was going through the state. She took advantage of her governor’s relative accessibility during COP, and staged a disruptive action during a presentation he gave the day after they had met. The action gathered much news in her home state, putting newfound media pressure on the Governor to reject the pipeline (Banner Baird and Stigliani, 2015; Craven, 2015; Dobbs, 2015; Johnson-Kurts, 2015).

Furthermore, mapping out structural power can serve as an effective strategy for future COPs. The current UNFCCC structure encourages silos and increases the likelihood that actors will remain within echo chambers, which may inhibit political progress on climate change. Mapping structural power would entail listing the different networks and actors within the UNFCCC space, and determining who can be targeted, and how, as well as why. The above instance of the young activist in Vermont is such an example. These power imbalances also relate to agenda-setting and narratives of thinking as forms of power (Lukes, 1986). Being aware of these forms of power is important, because they are frequently overlooked or taken for granted by NGOs and community organizers. The implications of structural disempowerment of youth within the UNFCCC space may merit more attention going forward.

## 6. Conclusion

Young people have long been on the front lines of climate change activism. We interviewed young researchers and community organizers who work on international climate policy about their views of the UNFCCC, a governance framework often lauded as a source of progress for international climate policies. We applied a leverage points approach to illustrate systems that influence climate negotiations. Ultimately, we found that power, paradigms, structures, and coalitions all influence stakeholders in how they interact with each other and at COP conferences. These are all leverage points through which youth might increase their power within a system that inherently disempowers them. Rarely have youth climate organizers, particularly in the UN space, been studied, let alone the ways in which they interact with each other. In this paper, we also applied for the first time a systems-thinking leverage points framework to the United Nations climate change negotiations. Understanding these relationships and systems can influence how actors choose to engage with or reform the COP process. Finally, further research and exploration of the climate justice movement from a leverage points perspective could reveal potentially interesting solutions to climate change challenges. Leverage point strategies may be especially effective for youth organizations that lack the resources of other groups seeking influence in the climate negotiation process. This paper is a contribution both to those youth efforts, as well as academic literature on systems change and the youth climate justice movement.

## Data Accessibility Statement

Our research received Exemption Status from Dartmouth College's Institutional Review Board (STUDY00029088). As part of our protocol, and in recognition of the potentially sensitive nature of our interviewees' responses, we are not publishing our raw interview data. More extensive data from this project can be found at: <https://sites.dartmouth.edu/climateaction/the-books/>.

## Supplemental files

The supplemental files for this article can be found as follows:

- **Appendix I.** Semi-Structured Interview Questions. DOI: <https://doi.org/10.1525/elementa.433.s1>
- **Appendix II.** Selected Key Quotes. DOI: <https://doi.org/10.1525/elementa.433.s2>

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The authors have no competing interests to declare. Anne R. Kapuscinski is one of the *Elementa's* Editors-in-Chief. She was not involved in the review process of this manuscript.

## Author contributions

LY conducted the research and wrote the manuscript, with intellectual collaboration with, manuscript feedback, and guidance from MDD, RBH, ARK, and RAV.

## References

- Abson, DJ, Fischer, J, Leventon, J, Newig, J, Schomerus, T, Vilsmaier, U, von Wehrden, H, Abernethy, P, Ives, CD, Jäger, NW and Lang, DJ.** 2016. Leverage points for sustainability transformation. *Ambio*. DOI: <https://doi.org/10.1007/s13280-016-0800-y>
- Allan, JI.** 2019. Dangerous Incrementalism of the Paris Agreement. *Glob. Environ. Polit.* **19**: 4–11. DOI: [https://doi.org/10.1162/glep\\_a\\_00488](https://doi.org/10.1162/glep_a_00488)
- Al-Mealla, R, Appadurai, A, Casson, L, Cofrin-Shaw, B, Ebel, A, Gawith, D, Ibrahim, F, Liddie, B, Lundberg, S, Peters, J, Rosenberg, R, Thanki, N, Weidner, N, Williams, E and Yona, L.** 2014. At the COP.
- Bandura, A and Cherry, L.** 2019. Enlisting the power of youth for climate change. *Am. Psychol.* DOI: <https://doi.org/10.1037/amp0000512>
- Banner Baird, J and Stigliani, ET.** 2015. Vt. protesters interrupt Paris climate talks [WWW Document]. *Burlingt. Free Press*. URL <http://www.burlingtonfreepress.com/story/life/green-mountain/2015/12/09/vt-protesters-interrupt-paris-climate-talks/77029512/> (accessed 7.30.17).
- Barros, VR, Field, CB and Change, IP on C.** 2014. Climate change 2014: impacts, adaptation, and vulnerability: Working Group II contribution to the fifth assessment report of the Intergovernmental Panel on Climate Change. New York: Cambridge University Press; **4**.
- Belliveau, E.** 2018. Climate justice in the fossil fuel divestment movement: critical reflections on youth environmental organizing in Canada (Thesis).
- Bernstein, S and Cashore, B.** 2012. Complex global governance and domestic policies: four pathways of influence. *Int. Aff.* **88**: 585–604. DOI: <https://doi.org/10.1111/j.1468-2346.2012.01090.x>
- Betzold, C.** 2010. 'Borrowing' Power to Influence International Negotiations: AOSIS in the Climate Change Regime, 1990–1997. *Politics* **30**: 131–148. DOI: <https://doi.org/10.1111/j.1467-9256.2010.01377.x>
- Betzold, C, Castro, P and Weiler, F.** 2012. AOSIS in the UNFCCC negotiations: from unity to fragmentation? *Clim. Policy Lond.* **12**: 591–613. DOI: <https://doi.org/10.1080/14693062.2012.692205>
- Black, T, Klein, N, McKibben, B, Russell, JK, D'Arcy, S and Weis, AJ.** 2014. A line in the tar sands: struggles for environmental justice. In: Black, T, Weis, T, D'Arcy, S, Russell, JK (eds.). Oakland, CA; Toronto, Ontario, Canada: PM Press.
- Böhmelt, T.** 2013. A closer look at the information provision rationale: Civil society participation in states' delegations at the UNFCCC. *Rev. Int. Organ.* **8**: 55–80. DOI: <https://doi.org/10.1007/s11558-012-9149-6>
- Bond, P, Dorsey, MK, Foran, J, Sabido, P, Shultz, J, Thanki, N, Tokar, B, Widick, R, Williams, E and Yona, L.** 2014. What now for climate justice? Social movement strategies for the final year of struggle over the next universal climate treaty. *International Institute for Climate Action Theory*.
- Bradbury, H.** (ed.) 2015. The SAGE handbook of action research. In: Bradbury, H (ed.), Third edition. Los Angeles: SAGE Publications. DOI: <https://doi.org/10.4135/9781473921290>
- Cabré, MM.** 2011. Issue-linkages to Climate Change Measured through NGO Participation in the UNFCCC. *Glob. Environ. Polit.* **11**: 10–22. DOI: [https://doi.org/10.1162/glep\\_a\\_00066](https://doi.org/10.1162/glep_a_00066)
- Cashore, B and Howlett, M.** 2007. Punctuating Which Equilibrium? Understanding Thermostatic Policy Dynamics in Pacific Northwest Forestry. *Am. J. Polit. Sci.* **51**: 532–551. DOI: <https://doi.org/10.1111/j.1540-5907.2007.00266.x>



- Chasek, PS.** 2005. Margins of Power: Coalition Building and Coalition Maintenance of the South Pacific Island States and the Alliance of Small Island States. *Rev. Eur. Community Int. Environ. Law* **14**: 125–137. DOI: <https://doi.org/10.1111/j.1467-9388.2005.00433.x>
- Children and Youth ∴ Sustainable Development Knowledge Platform [WWW Document].** n.d. URL <https://sustainabledevelopment.un.org/major-groups/childrenandyouth> (accessed 5.22.20).
- Climate change impacts and adaptation strategies for coastal communities.** 2017. New York, NY: Springer Berlin Heidelberg.
- Craven, J.** 2015. Fracked Gas protest follows Shumlin to Paris [WWW Document]. *VT Digger*. URL <https://vtdigger.org/2015/12/09/172593/> (accessed 7.30.17).
- Creswell, JW.** 1998. Qualitative inquiry and research design: choosing among five traditions. Thousand Oaks, Calif.: Sage Publications.
- Dobbs, T.** 2015. Shumlin Gets Personal In Response To Protestors In Paris [WWW Document]. URL <http://digital.vpr.net/post/shumlin-gets-personal-response-protestors-paris> (accessed 7.30.17).
- Dombrowski, K.** 2010. Filling the gap? An analysis of non-governmental organizations responses to participation and representation deficits in global climate governance. *Int. Environ. Agreem. Polit. Law Econ.* **10**: 397–416. DOI: <https://doi.org/10.1007/s10784-010-9140-8>
- Domhoff, GW.** 2010. Who rules America?: challenges to corporate and class dominance, 6th ed. Boston: McGraw Hill Higher Education.
- Fisher, DR.** 2019. The broader importance of #Fridays-ForFuture. *Nat. Clim. Change* **9**: 430–431. DOI: <https://doi.org/10.1038/s41558-019-0484-y>
- Fisher, SR.** 2016. Life trajectories of youth committing to climate activism. *Environ. Educ. Res.* **22**: 229–247. DOI: <https://doi.org/10.1080/13504622.2015.1007337>
- Foran, J.** 2014. “iVolveremos!/we will return”: The state of play for the global climate justice movement. *Interface* **6**: 454–477.
- Foran, J and Widick, R.** 2013. Breaking Barriers to Climate Justice. *Contexts* **12**: 34–39. DOI: <https://doi.org/10.1177/1536504213487696>
- Fossil fuel companies grow nervous as divestment movement grows stronger.** 2014. Grist. URL <https://grist.org/climate-energy/fossil-fuel-companies-grow-nervous-as-divestment-movement-grows-stronger/> (accessed 5.24.20).
- Gaventa, J.** 1980. Power and powerlessness: quiescence and rebellion in an Appalachian valley. Urbana: University of Illinois Press.
- Giddens, A.** 2011. The Politics of Climate Change, 2 edition. Cambridge, UK; Malden, MA: Polity.
- Grady-Benson, J and Sarathy, B.** 2016. Fossil fuel divestment in US higher education: student-led organising for climate justice. *Local Environ.* **21**: 661–681. DOI: <https://doi.org/10.1080/13549839.2015.1009825>
- Grosse, C.** 2019. Climate Justice Movement Building: Values and Cultures of Creation in Santa Barbara, California. *Soc. Sci.* **8**: 79. DOI: <https://doi.org/10.3390/socsci8030079>
- Hathaway, JR.** 2019. Climate Change, the Intersectional Imperative, and the Opportunity of the Green New Deal. *Environ. Commun.* 1–10. DOI: <https://doi.org/10.1080/17524032.2019.1629977>
- Hjerpe, M and Buhr, K.** 2014. Frames of Climate Change in Side Events from Kyoto to Durban. *Glob. Environ. Polit.* **14**: 102–121. DOI: [https://doi.org/10.1162/GLEP\\_a\\_00231](https://doi.org/10.1162/GLEP_a_00231)
- Intergovernmental Panel on Climate Change.** 2018. Global warming of 1.5°C.
- Jacquet, J and Jamieson, D.** 2016. Soft but significant power in the Paris Agreement. *Nat. Clim. Change* **6**: 643–646. DOI: <https://doi.org/10.1038/nclimate3006>
- Johnson-Kurts, A.** 2015. The Biggest Moments in Youth Activism at the UN Climate Negotiations. *Huffington Post*. URL [http://www.huffingtonpost.com/aly-johnsonkurts/the-biggest-moments-in-yo\\_b\\_8865262.html](http://www.huffingtonpost.com/aly-johnsonkurts/the-biggest-moments-in-yo_b_8865262.html)
- Kemp, L.** 2018. A Systems Critique of the 2015 Paris Agreement on Climate. In: Hossain, M, Hales, R and Sarker, T (eds.), *Pathways to a Sustainable Economy: Bridging the Gap between Paris Climate Change Commitments and Net Zero Emissions*, 25–41. Cham: Springer International Publishing. DOI: [https://doi.org/10.1007/978-3-319-67702-6\\_3](https://doi.org/10.1007/978-3-319-67702-6_3)
- Klein, N.** 2014. This changes everything: capitalism vs. the climate. New York: Simon & Schuster.
- Kuyper, J, Bäckstrand, K and Schroeder, H.** 2017. Institutional Accountability of Nonstate Actors in the UNFCCC: Exit, Voice, and Loyalty. *Rev. Policy Res.* **34**: 88–109. DOI: <https://doi.org/10.1111/ropr.12213>
- Kwon, SA.** 2019. The politics of global youth participation. *J. Youth Stud.* **22**: 926–940. DOI: <https://doi.org/10.1080/13676261.2018.1559282>
- Levin, K, Cashore, B, Bernstein, S and Auld, G.** 2012. Overcoming the tragedy of super wicked problems: constraining our future selves to ameliorate global climate change. *Policy Sci.* **45**: 123–152. DOI: <https://doi.org/10.1007/s11077-012-9151-0>
- LRI.** n.d. Binding nature of COP decisions. URL <https://legalresponse.org/legaladvice/binding-nature-of-cop-decisions/> (accessed 5.22.20).
- Lukes, S.** 1986. Power. New York: NYU Press.
- Mach, KJ, Kraan, CM, Adger, WN, Buhaug, H, Burke, M, Fearon, JD, Field, CB, Hendrix, CS, Maystadt, J-F, O’Loughlin, J, Roessler, P, Scheffran, J, Schultz, KA and von Uexkull, N.** 2019. Climate as a risk factor for armed conflict. *Nature* **571**: 193–197. DOI: <https://doi.org/10.1038/s41586-019-1300-6>
- Meadows, DH.** 1997. Places to intervene in a system (in increasing order of effectiveness). *Whole Earth*, 78–84.



- Meadows, DH.** 2008. *Thinking in Systems: A Primer*. Chelsea Green Publishing.
- Meadows, DH.** 2010. Leverage Points: Places to Intervene in a System. *Solut. J.* **1**: 41–49.
- Montaz, S** and **Asaduzzaman, M.** 2018. Climate change impacts and women's livelihood: vulnerability in developing countries, First edition. *Hazards disaster risk and climate change series*. New York: Routledge. DOI: <https://doi.org/10.4324/9780429462474>
- Nasiritousi, N** and **Linnér, B.** 2016. Open or closed meetings? Explaining nonstate actor involvement in the international climate change negotiations. *Int. Environ. Agreem. Polit. Law Econ. Dordr.* **16**, 127–144. DOI: <https://doi.org/10.1007/s10784-014-9237-6>
- Nguyen, NC** and **Bosch, OJH.** 2013. A Systems Thinking Approach to identify Leverage Points for Sustainability: A Case Study in the Cat Ba Biosphere Reserve, Vietnam. *Syst. Res. Behav. Sci.* **30**: 104–115. DOI: <https://doi.org/10.1002/sres.2145>
- O'Neill, K, Weinthal, E, Marion Suiseeya, KR, Bernstein, S, Cohn, A, Stone, MW and Cashore, B.** 2013. Methods and Global Environmental Governance. *Annu. Rev. Environ. Resour.* **38**: 441–471. DOI: <https://doi.org/10.1146/annurev-environ-072811-114530>
- Parks, BC** and **Roberts, JT.** 2010. Climate Change, Social Theory and Justice. *Theory Cult. Soc.* **27**: 134–166. DOI: <https://doi.org/10.1177/0263276409359018>
- Proust, K, Newell, B, Brown, H, Capon, A, Browne, C, Burton, A, Dixon, J, Mu, L and Zarafu, M.** 2012. Human Health and Climate Change: Leverage Points for Adaptation in Urban Environments. *Int. J. Environ. Res. Public Health* **9**: 2134–2158. DOI: <https://doi.org/10.3390/ijerph9062134>
- Quinn, B.** 2015. COP21 climate marches in Paris not authorised following attacks. *The Guardian*.
- Regan, PM.** 2015. *The politics of global climate change*, 1st ed. Boulder, CO: Paradigm Publishers. DOI: <https://doi.org/10.4324/9781315632728>
- Renné, D.** 2010. COP15 – what next? *Renew. Energy Focus* **11**: 16. DOI: [https://doi.org/10.1016/S1755-0084\(10\)70024-7](https://doi.org/10.1016/S1755-0084(10)70024-7)
- Rietig, K.** 2016. The Power of Strategy: Environmental NGO Influence in International Climate Negotiations. *Glob. Gov.* **22**: 269–288. Boulder. DOI: <https://doi.org/10.1163/19426720-02202006>
- Rogelj, J, den Elzen, M, Höhne, N, Fransen, T, Fekete, H, Winkler, H, Schaeffer, R, Sha, F, Riahi, K and Meinshausen, M.** 2016. Paris Agreement climate proposals need a boost to keep warming well below 2°C. *Nature* **534**: 631–639. DOI: <https://doi.org/10.1038/nature18307>
- Rubin, HJ** and **Rubin, I.** 2005. *Qualitative interviewing: the art of hearing data*, 2nd ed. Thousand Oaks, Calif.: Sage Publications. DOI: <https://doi.org/10.4135/9781452226651>
- Savaresi, A.** 2016a. The Paris Agreement: An Early Assessment. *Environ. Policy Law* **46**: 14–18.
- Savaresi, A.** 2016b. The Paris Agreement: a new beginning? *J. Energy Nat. Resour. Law* **34**: 16–26. DOI: <https://doi.org/10.1080/02646811.2016.1133983>
- Scandrett, E.** 2016. Climate justice: contested discourse and social transformation. *Int. J. Clim. Change Strateg. Manag.* **8**: 477–487. DOI: <https://doi.org/10.1108/IJCCSM-05-2015-0060>
- Seres, S.** 2013. Hats off to the Kyoto Protocol and the CDM: a giant success story. *Carbon Manag.* **4**: 23–25. DOI: <https://doi.org/10.4155/cmt.12.74>
- Shepard, PM** and **Corbin-Mark, C.** 2009. Climate Justice. *Environ. Justice* **2**: 163–166. DOI: <https://doi.org/10.1089/env.2009.2402>
- Stephens, JC, Frumhoff, PC** and **Yona, L.** 2018. The role of college and university faculty in the fossil fuel divestment movement. *Elem Sci Anth* **6**: 41. DOI: <https://doi.org/10.1525/elementa.297>
- Stocker, T.** 2014. *Climate change 2013: the physical science basis: Working Group I contribution to the Fifth assessment report of the Intergovernmental Panel on Climate Change*. New York: Cambridge University Press.
- Tilly, C** and **Wood, LJ.** 2009. *Social movements, 1768–2008*, 2nd ed. Boulder: Paradigm Publishers.
- Timeline – UNFCCC – 20 Years of Effort and Achievement [WWW Document].** n.d. URL <http://unfccc.int/timeline/> (accessed 4.14.16).
- Uhre, AN.** 2014. Exploring the diversity of transnational actors in global environmental governance. *Interest Groups Advocacy* **3**: 59–78. DOI: <https://doi.org/10.1057/iga.2013.13>
- UNFCCC.** 2015. Leaders Event and High Level Segment [WWW Document]. UNFCCC. URL <http://newsroom.unfccc.int/cop21parisinformationhub/cop-21cmp-11-information-hub-leaders-and-high-level-segment/> (accessed 7.31.17).
- Vandyck, T, Keramidas, K, Saveyn, B, Kitous, A and Vrontisi, Z.** 2016. A global stocktake of the Paris pledges: Implications for energy systems and economy. *Glob. Environ. Change* **41**: 46–63. DOI: <https://doi.org/10.1016/j.gloenvcha.2016.08.006>
- Vanhala, L.** 2017. Process Tracing in the Study of Environmental Politics. *Glob. Environ. Polit.* **17**: 88–105. DOI: [https://doi.org/10.1162/GLEP\\_a\\_00434](https://doi.org/10.1162/GLEP_a_00434)
- West, PC, Gerber, JS, Engstrom, PM, Mueller, ND, Brauman, KA, Carlson, KM, Cassidy, ES, Johnston, M, MacDonald, GK, Ray, DK and Siebert, S.** 2014. Leverage points for improving global food security and the environment. *Science* **345**: 325–328. DOI: <https://doi.org/10.1126/science.1246067>
- Yona, L.** 2016a. *Young Hope in a Dark World II: Anchoring Voices in Climate Science, Policy, and Advocacy*. Blurb Books.
- Yona, L.** 2016b. *Young Hope in a Dark World I: Leverage Points for Climate Action*. Blurb Books.

- Yona, L.** 2019. Raising my voice as a scientist and an advocate. *Science*. DOI: <https://doi.org/10.1126/science.caredit.aax4896>
- Yona, L, Cashore, B and Schmitz, OJ.** 2019. Integrating policy and ecology systems to achieve path dependent climate solutions. *Environ. Sci. Policy* **98**: 54–60. DOI: <https://doi.org/10.1016/j.envsci.2019.03.013>
- Yona, L and Lenferna, A.** 2016. The Fossil Fuel Divestment Movement within Universities. *Environ. Clim. Change Int. Relat.* **190**.
- Youth Empowerment|Office of the Special Adviser on Africa, OSAA [WWW Document].** n.d. URL <https://www.un.org/en/africa/osaa/peace/youth.shtml> (accessed 5.22.20).

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