Introduction: Seeing the (in)justice of sustainability: Visualizing inequality at the center of climate change communication

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Abstract
This special issue focuses on issues of sustainability and its (potential) effect(s) on widening inequalities and does so through discussions on visual and digital communication, including documentary filmmaking, photojournalism, cartography and citizen multimedia journalism, with a broad geographic span. The issue is comprised of two sets of scholarly approaches. The first set includes perhaps more conventionally arranged articles that align with the special issue theme, while the second set is steeped in intersections of theory and practice as short essays, revolving around visualizations that articulate veiled senses of inequalities in sustainability discourses.

Keywords
climate change, environmental media, inequality, sustainability, visual media

We know that environmental change due to massive global warming negatively influences the world's poorest and most-marginalized the most, as do the corporate and collective actions themselves that drive greenhouse gas emissions (Butler, 2008). With greater urgency, media scholarship -- and practice -- must now turn to the wicked problems associated with forms of human inequality that are increasingly linked to efforts to develop local and global sustainability. Marginalized groups, such as indigenous people, are often the last to account for and even considered as antagonists in environmental politics (Pinto et al., 2017; Spiegel, 2021; Takahashi et al., 2018). Classist, racist, gendered, and geographic divides propagate approaches to what people – and how – sustainability is applied in ways that are, on the surface, bettering the environment as these divides are deepend. Consider these aspects: Racialized gentrification of urban areas to form wetlands creates a forced migration of residents (Shumow & Gutsche, 2016), while such development of environmentally sound (and expensive) housing pushes out the poor. Scientists – and science communicators – advocate for further environmental literacy,

often ignoring social conditions, classification, and fallout of garnering support to fight climate change (Beasy, 2020; Meisner & Takahashi, 2013; Pinto et al., 2020).

And while mainstreamed media narratives of climate change activists elevate particular people and parts of the world over others – such as in the case of tree-planting (O'Sullivan & Poon, 2021) and architecture (Buttler, 2021) – on-the-ground effects of "sustainability" are often invisible or missing from discursive arenas. To be sure, and as this special issue notes, as notions of sustainability become more normalized as key to our shared social futures, long-standing issues of racialized, sexist, and geographically centered environmentalism continue to shape government and corporate decisions, as well as individual and collective interpretations of curbing climate change. As environmental activist Elizabeth Yeampierre said in 2020, "Climate change is the result of a legacy of extraction, of colonialism, of slavery" (Gardiner, 2020). Elsewhere, Yeampierre expanded on that idea when she said, "The truth is that the climate justice movement, people of color, indigenous people, have always worked multi-dimensionally because we have to be able to fight on so many different planes." We share in this concern as it represents a basis for concerns related to inequality, diversity, and inclusivity in collective – including global – efforts that should be about both the hardships to Earth and its peoples.

Visual – especially digital – media remain spaces for communicating dominant culture and ideologies, for seeing and expressing contestation, and for resistance. Mainstream avenues for media messaging tend to promote interpretations of our changing landscapes through a myriad of narratives that often pit humans against interests of the intangible and constructed – the economic, political, biological – rather than cultural (e.g. Jacobson, Pinto, Gutsche, & Wilson, 2019). Within these realms, media institutions can perpetuate inequalities that are bound up within power dynamics of collectives and societies– including within communication infrastructures and industries, themselves (Gutsche & Pinto, 2022) that have long contributed to environmental decline; or they can speculate as to the future of solutions-based approaches, such as "sustainability." Yet, visualizations science organizations and diverse, global citizen collectives complicate these narratives, such as in terms of data visualizations (MacKenzie & Stenport, 2020), cartographies of socioecological disaster (Lowan-Trudeau, 2021), the "effectiveness" of visuals in terms of interactions between individuals' and communities' ideologies and action (Duan, Takahashi, & Zwickle, 2021), and the role of visuals in environmental advocacy (Fernández, 2019).

Role(s) of the "visual" become clear in previous articulations of the field of "environmental media studies," (Shriver-Rice & Vaughan, 2020), in which the approach to conflicts related to global warming and climate change often can focus on a crisis that is not up for debate in terms of the causes and general catastrophe. Instead, such an approach of responsibility and notions of respect and perhaps reciprocity and reflexivity should be considered key in approaching today's "period of accelerated climate change, mass extinction and human- induced ecological instability whose causes and consequences are unevenly distributed both within and between nations" (p. 4). By taking a broad view of "visual media" and implications for how notions of sustainability are being reframed and understood, we ask how the role(s) of visual media within

this category of media studies involve the digital and interdisciplinary and the critical/cultural to interpret layers of the historical and futuristic in media and environments (and media environments). Through this vein, we view today's general and popular notions of "sustainability" to be wrapped-up in discourses framed by Westernized, neoliberal, and capitalistic means by which to address global warming (Gottschlich & Bellina, 2017). Moreover, we further adopt the idea that inequalities are inherent in large and recognized social movements, including those around climate change and global warming, that have influenced by and for the benefit of the powerful (for more, see Gutsche & Rafikova, 2016; Herdin, Faust, & Chen, 2020).

This special issue, therefore, surrounds issues of sustainability and its (potential) effect(s) on widening inequalities and does so through discussions on visual and digital communication, including documentary, photojournalism, and citizen multimedia journalism, with a broad geographic span. The issue is comprised of two sets of scholarly approaches. The first set includes perhaps more conventionally arranged articles that align with the special issue theme, while the second set is steeped in intersections of theory and practice as short essays, revolving around visualizations that articulate veiled senses of inequalities in sustainability discourses.

From Central Africa where political, economical and societal factors hinder efforts to combat climate change, the work by Denis J. Sonwa, Emmanuel Mbede, Youssoufa Bele, Edith Abilogo, and Precilia Ngaunkam, "Mainstreaming communication of adaptation to climate change: Some initiatives from Central Africa," chronicles how interventions on local news media and NGO communications can work as part of forest adaptation efforts in the Congo Basin region. This pilot project identifies deficiencies caused by underdevelopment in these countries and ways of generalizing knowledge and priming the issues related to climate change, specifically forestation and climate adaptation. The paper presents the efforts of journalistic capacity building projects for communicators and communication curriculum in higher education, and provides a start to what the authors hope will be a significant conversation of inter- and transdisciplinary approaches, including through media, to promote climate adaptation.

The next article is a collective effort in India to document and influence the country's "media-dark" portions where marginalized communities suffer severe impact from both climate change and negligence. Pooja Ichplani's work, "Agroenvironmental narratives of transformative resistance: How participatory videos frame climate change in India," examines how "Video Volunteers," a participatory video collective project aiming to promote indigenous voices and to challenge macro-level narratives in sustainable development. This article highlights how such climate discourses are embedded in and intertwined with justice concerns such as severe underdevelopment and gender inequality. The authors also discuss how visualizing rural and indigenous communities can work to highlight community and regional voices and perspectives, by decentralizing social movements.

The following piece turns to Almería, Spain, a prominent vegetable production site known as the "greenhouse" of Europe. To contrast the region's dominating industrialized agricultural practices, Paloma Yáñez Serrano conducted documentary work and ethnographic observation

in her work, "It is what it is: Visualizing sustainability collaboratively in Western Almería." She records local people's efforts in environmental justice through alternative sustainable agricultural production, as well as their commitment to political justice by promoting rights of seasonal migrant workers. By visualizing the nexus of sustainable agriculture production with environmental justice, the documentarians explore how communities engage with the process of reworking toward new modes of production such as agroecology, and how local knowledge and practices are key to attaining "meaningful sustainability."

Through a lens examining the temporalities involved in mainstream media's climate reporting, Hanna E.Morris examines the journalistic imperatives in U.S. media to witness and depict "slow" and "fast" violence related to . In this article, "Purgatory islands and climate death-worlds: Interrogating the journalistic imperative to witness the climate crisis through the lens of war," she analyzes how prominent news magazines featured Puerto Rico in the aftermath of Hurricane María as a "death-world," a pattern of depicting decay and death in "other" worlds while alluding to U.S. elitism in both textual and visual stories. The commodification of suffering brought on and exacerbated by climate change within media industries can occlude grassroots resistance and efforts to build community resilience.

How and why visual reproductions of geographic regions are communicated from the mapmaker to the mapreader presents opportunities to better understand these enhanced visual experiences brought by multimodal media and digitized content. In "Climate change communication beyond the digital divide: Exploring cartography's role and privilege in climate action," David Retchless, Carolyn Fish, and Jim Thatcher highlight the issues in accessibility and equity of technologies associated with the visual reproduction of land. Through reviewing two case studies where tools like narrative storytelling in maps and augmented reality were utilized to engage audience in perceiving impacts of climate change with a critical engagement, the authors suggest climate change communication cartography not only prioritize technology but also approach it as "relational" to improve engagement based on audience's daily life experiences.

The second set of articles highlights visually engaging essays from global scholars that address issues of inequality often overlooked by the aims and rhetorics of sustainability. Catalina de Onís and Hilda Llorens open this set of essays with their piece, "Visualizing green capitalist renewable energy: Development and grassroots solar community alternatives in Puerto Rico." Together, they interrogate industrial-scale solar energy development in Puerto Rico and visually juxtapose dangers of industrial-scale solar "farms" with grassroot rooftop solar projects in the territory's Jobos Bay region. At the core of their discussion are issues of race, class, and development of what developers and others refer to as "blank slates," rife for capitalistic subjugation in the name of sustainability.

In her piece, "The future in our hands: A sustainable stock photo reading," Anne Hege Simonsen, in Norway, examines similar aspects of race and class in today's digital visual media related to environment. Specifically, she conducts a reading of stock images related to "the environment" to underpin the complexities of media messages and ideologies that emerge and

are reproduced by ever-popular, spreadable images captured by search to supplement online discourse. Next, moving from the globe's Nordic region to the Global South, Boaz Dvir takes the reader/viewer through images produced by nonfiction storytellers surrounding human-made natural disaster in his essay, "Seeking the raw truth at Guatemala's largest landfill." Here, Dvir, a filmmaker, reflects upon the documenting of children gathering goods from a landfill surrounded by the Sierra de las Minas mountains to argue that the documentary genre may be able to capture some aspects of "reality" and "truth" in discussions of global warming but struggles to reveal its full impacts without reference of the "olfactory and tactile aspects."

Sarah E. Walker, Karen Bailey, and Elizabeth C. Smith write about – and visually express – how policy makers and professional communicators, along with community members, can express aspects of adaptation that take into account inequalities that are caused by current forms of sustainability. In "Seeing climate adaptation through an equity lens: Lessons learned from community adaptation to flood risk," the trio articulate problematic policies in the U.S. to counter massive flooding. Ryan Wallace and León Staines-Díaz use photographs to express complications in sustainable discourse via a juxtaposition of informal settlements in Monterrey, Mexico, and sprawling urban environments. They write in their essay, "Sustaining practices and 'progress' over people: Identifying the potential consequences of communicating sustainability to the Global South," that "[p]rogressionist narratives often obscure the human element because issues of forced displacement, inequity, violence, or starvation do not align with their framing."

From Miami, in the U.S., Xavier Cortada, Adam Roberti, and Ryan Deering showcase multiple images from Cortada's socially engaged art project designed to generate social action and awareness related to sea level rise – and its effects on home values. More than that, however, their piece, "Underwater Homeowners Association: Using socially engaged art to problem-solve in an imperiled, polarized and imperfect world," articulates a rationale for highlighting housing values among the privileged to further express the role of tax dollars and sustainable development that has widespread effects throughout communities and geographies.

Another documentary filmmaker, Lisa Lin, highlights her work on "transitional injustice during China's phase out coal strategy in the case study of Liupanshui, the largest coal mine in southern China since the 1950s." Through her piece, "Transitional (in)justice in phasing out coal in China: Documentary as visual evidence to unveil the local experiences of coal transitions," Lin also articulates the depth of multidisciplinary and participatory approaches to creating visual media on "sustainable" practices.

Dani Ploeger and Greenman Muleh next provide a sense of returning to self and place during discourse on our changing environments in their piece, "Ûiiti: A treatment for ecological experience in mobile network culture," explores their own high-tech iteration of the *nzevu*, a ritual instrument of the Kenyan Akamba tribe that has been reproduced into a digital application. The app transforms a smartphone into a "technology of transcendence" in ways that "evoke a heightened experience of the user's immediate lifeworld." Such a cross- cultural and -technological innovation returns the user – us, or you – to a sense of place within the

digital and physical that is monetized, objectified, and obfuscated to the degree we are separated from ourselves and our surroundings.

Rounding-out this issue and set of essays, Toby Miller critiques visual campaigns in the U.S. run by People for the Ethical Treatment of Animals in his piece, "PETA-porn: Do controversy and consumerism aid animal rights?" Here, Miller analyzes specific images that showcase sexist representations of women's bodies in the name of protecting animals, questioning the benefits to living environments through what he suggests are "reformist, consumerist politics" embedded in "plutocratic activism." He further asks, whether "a love of troping centerfolds and violence, and frottage with dubious corporate social responsibility, a good look for a social movement?"

Interrogation highlighted throughout this issue's intersections of inequalities complicate efforts and the very definitions of sustainability, while building theory that problematizes roles of visual narratives -- and narrating -- in the digital age. This effort is particularly important as mainstream media focus on only specific aspects of sustainable future(s). Indeed, we argue from our readings of these combined works, the term "sustainability" itself suggests a maintaining of modern-day living conforms, consumption, and lived experiences and breeds, therefore, questions about the peculiarities of sustainability and how we "see" them.

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