# Making A New Reality

## A toolkit for inclusive media futures

By Kamal Sinclair
and Jessica Clark
**Editor:** Carrie McLaren

August 2020

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# About

This publication is based on the *Making a New Reality* research project authored by Kamal Sinclair with support from Ford Foundation JustFilms and supplemental support from Sundance Institute. The original research was published in 2017–2018 at **makinganewreality.org.**

This project would not have been possible without the foundational work of Shari Frilot, the visionary behind the New Frontier Program at Sundance Institute. Since 2007, she curated thousands of innovative artists and storytellers and provided transformational support as they foraged new pathways to making meaning through the arts.

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# Making A New Reality

## A toolkit for inclusive media futures

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## Now is the time for social justice philanthropy to engage with emerging media

From late 2017 through mid–2018, Kamal Sinclair mapped the landscape for emerging media with her research on *Making A New Reality* (makinganewreality.org). In this foreword, Cara Mertes of the Ford Foundation, which funded this project, points out that advances in immersive narrative are reshaping the landscape of storytelling. Immersive media can bring people closer together across faith, race, class, gender, ability, and caste — or it can divide us. Mertes urges other funders to join Ford in supporting social justice initiatives for emerging media.


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# Foreword

**By Cara Mertes, Project Director, Moving Image Strategies, International Programs, Ford Foundation**

"Story and narrative are the code for humanity's operating system. Emerging media cannot risk limited inclusion and suffer the same pitfalls of traditional media. The stakes are too high..." This is just one of the compelling insights noted by Kamal Sinclair, a leading emerging media expert. When I first commissioned her research for the influential *Making a New Reality* study, she was directing Sundance Institute's New Frontier Lab Programs. Now, she's the executive director of the Guild of Future Architects, an ambitious community of people incubating collaborations that prototype bold ideas about the future from an intersectional and interdisciplinary lens.

Published from late 2017 through mid-2018, *Making A New Reality* (makinganewreality.org) mapped the landscape for emerging media, including immersive media such as virtual reality, augmented reality, 360 degree storytelling, hyper-reality, and more. With lead pieces on *Immerse* and supporting articles at makinganewreality.org, it also looked at the impact of artificial intelligence, ambient data, wired environments, and biomedia in the storytelling landscape. It is an unparalleled resource, culled from more than 100 interviews and research across the field.

Sinclair addressed current debates in emerging media against a backdrop of changing business models, creative experimentation and millions of dollars of investment in both content creators and tech platforms such as Oculus and Magic Leap. She then offered recommendations for the interventions social justice philanthropy and other donors/investors can consider as tech-enabled creative and immersive storytelling catapults toward becoming the dominant story experience for Generation Z and beyond.

> **Story and narrative are the code for humanity's operating system. Emerging media cannot risk limited inclusion and suffer the same pitfalls of traditional media. The stakes are too high.**

*Making A New Reality* is one of several exploratory initiatives I funded while directing Ford Foundation's JustFilms, in order to build a foundation for emerging media practices. While JustFilms primarily supports creative nonfiction storytellers and the organizations and networks that enable their work, I thought it valuable as part of the portfolio to put a limited portion of the available funding towards incubating related work that could potentially strengthen the overall impact of Ford Foundation's moving image strategies. Mapping the emerging media landscape through a justice lens was one such effort.

From 2017–2019, funding focused on three integrated components:

- Research into and analysis of new forms in emerging media, their economies, structures and blindspots, and recommendations for interventions by social justice philanthropy;
- Access to experimentation for artists of color and socially engaged artists to develop new frameworks, languages, and agendas for the present and future of digital storytelling, and
- Content funding for immersive story experiments rooted in and/or co-created by community members adversely impacted by inequality.

Why is now the right moment for social justice philanthropy to engage with emerging media? The field is young, access for creators is extremely limited, and adoption rates for audiences are projected to soar, making immersive media highly influential in reinforcing narratives that undergird political and social realities. Emerging media is a site of convergence for all expressive forms, including film, journalism, and the broader arts, as well as being a potentially useful approach for Ford's full suite of social justice strategies.

## Immersive media in its infancy

The advances in designing immersive narrative experiences are swiftly reshaping the landscape of storytelling at a level and pace unseen since the invention of the moving image. More than 120 years ago, cinematic technology emerged and developed into a remarkably intimate yet crowd-based narrative experience through the projection of images and sound on a large screen. This appealed to the imagination and emotions of viewers in ways that had not been achieved before.

Cinema did not replace the previously dominant story technology, the book, but moving-image storytelling became ascendent in the 20th century. The screens have changed over time, as has the preeminence of the theatrical experience in favor of individual viewing on smaller screens. But the grammar of moving image storytelling has largely been codified.

With the evolution of the digital age comes a new frontier of immersive expression, already proving potent in ways that humans haven't experienced before, according to research at Stanford University Virtual Human Interaction Lab. And the development of its language, aesthetics and politics is still forming.

It is early days now for immersive media. Though it is a moving image storytelling approach, emerging media can be seen as a related but distinct field of practice where cinema, journalism, sculpture, performance, visual arts, radio, music, and theater all can provide inspiration, and coding is the new architecture. The experience of VR or AR is still clunky, inelegant and messy — all hallmarks of its emergent status — but the field is evolving quickly, and the short-form experiences being created today are experiments searching for the theory and practice that will inform future generations of experience.

One of the differences between film and immersive media is that film is external to the body, and the other seeks to trick the mind into thinking it is an internalized experience, more like a memory than a stimulus. Immersive media aims to transport your mind and body into another world that feels real, engaging all human senses, essentially comprising an alternative experience of reality in a digitally coded environment. The effect of these new approaches on humans is not well-understood yet, though research points to its powerful stimulation effects in the brains of people experiencing immersive media, particularly in VR. This has been convincing enough that NGOs, and most famously, the United Nations, began using VR in 2015 with *Clouds Over Sidra*. More experiments have followed, and VR has attracted those trying to relay the importance of pressing contemporary issues, such as forced immigration and other humanitarian crises.

The attraction of social justice-oriented organizations to the technology lies in its novelty, efficiency, and potential impact. In a short amount of time, VR seemed capable of introducing viewers more actively into new environments where they could better simulate the experience of "being there." A more authentic immersive narrative experience seemed to help users identify better with the realities of other people. It promised to create a feeling of connectedness and

thereby elicit sympathy, empathy, and even compassion. For organizations such as the International Rescue Committee and the UN, this promised to unlock a greater willingness to engage in problem solving, and helped increase donation levels at events featuring VR. It was initially understood as a new, more powerful "empathy machine," adapted from critic Roger Ebert, who once described cinema in these terms.

With such a potentially transformative set of story technologies under development taking this turn toward social justice causes, it was time to learn and experiment. Drawing from analyses across documentary, the arts and journalism, it was immediately clear that the lack of any kind of diversity across the supply chain of immersive media was a red flag. The continuing consolidation of a lucrative field by men was in danger of being repeated, and needed recognition and recommendations for transformation moving forward.

Querying the relations of power and privilege in the process of immersive storymaking and distribution was another area of focus, as was a better understanding of the narrative frameworks and strategies that are becoming accepted. The impact of these experiences on individual and societal values, beliefs, and actions over time is key. Finally, importing the attention-based commercial business models of the first generation of moving-image story approaches — film, TV, and video journalism — a path followed by social media giants, could guarantee that a crisis in diversity in immersive media would be dwarfed by the larger challenge to democracy itself, a global crisis which continues to unfold.

## The human paradox and storytelling

Immersive media is in its "shiny new toy" phase, and there are those who believe it will change the world for the better by bringing people closer together across faith, race, class, gender, ability, and caste. Some hope it will potentially dissolve "othering" by tapping into the human ability to create common cause across divides. And there is evidence to support immersive media's capacity to stimulate powerful reactions and emotions.

But as with everything human, what is life-enhancing can also be life threatening. Homo sapiens have developed a remarkable capacity for holding contradictory impulses. Capacities for violence and sustenance exist side by side in every person.

People's ability to rationalize such divergent behavior is supported by the worldview and value systems we architect through our cultural practices; our traditions, customs, rules, and norms. In his Nobel Peace Prize acceptance speech, Aleksandr Solzhenitsyn remarked on this: "If only there were evil people out there, insidiously committing evil deeds, and it were just simple — we could separate them from the rest of us and destroy them. But the line dividing good and evil cuts through the heart of every human being. And who among us is willing to destroy a piece of their own heart."

The stories we tell ourselves in part work to relieve the sometimes unbearable contradiction of the human condition, which is defined by capacities for compassion and cruelty in equal measure. With human nature so contradictory, it follows that human inventions, which are intended for good outcomes, also yield the opposite. Note virtual reality philosopher Jaron Lanier's insight in a *New York Times* interview: "The whole internet thing was supposed to create the world's best information resource in all of history. Everything would be made visible. And instead we are living in a time of total opacity where you don't know why you see the news that you see...You don't know who has paid to change what you see."

The world is only beginning to see how dangerous this inversion from transparency to opacity will be as inequality grows exponentially. This same question is paramount as immersive story technologies become more sophisticated. *Making A New Reality* asks: How can society be mindful in the design phase to create the most inclusive, thoughtful and community-centered approaches, rather than relying solely on traditional for-profit and scaling models of tech development?

## This is the moment for greater foundation investment

The speed and scale of the transformation in the story landscape is breathtaking. *Making A New Reality* detailed how we are at a prime moment of intervention with the next wave of new story technologies: "It is imperative that we engineer robust participation of people from a broad set of communities, identity groups, value systems, and fields of knowledge in this emerging media landscape, in all roles and levels of power," Sinclair writes. "This will help to mitigate the pitfalls of disruption and potentially usher in a change that has justice and equity as core values."

How can structural inequities be addressed earlier in the immersive story industry and its spaces of experimentation? What are the changes we must strive for in the business model itself in order to attain greater equity and inclusion in decision-making? If our efforts are toward greater justice, what are the most fruitful story-centered strategies for transforming unjust conditions?

Ford Foundation is just one funder exploring this arena from a social justice perspective. Peer funders, including the Knight Foundation and MacArthur Foundation, are also actively supporting research and initiatives in emerging media fields such as journalism, as they develop and adopt immersive media approaches. For this field of emerging media to grow with equity and inclusion as a central commitment, support can be scaled or more limited and targeted. It

**How can structural inequities be addressed earlier in the immersive story industry?**

can range from funding content production to platform innovation, to education, mentorship and visibility opportunities, to developing relevant critical analysis and curatorial expertise, or a mix of these, as Ford has done.

Community-based foundations and local funders could also have a chance to bring these groundbreaking experiences to their own backyards. It bears remembering that foundations and other patrons have supported artists, journalists and documentarians in creating many of the forms that now feed into immersive storytelling, as well as socially relevant digital productions and "tech for good" initiatives. Supporting scholars, publications, and others who are tracking emerging media can also make clear not just the potential of these technologies, but the dangers: how they are used for repression, surveillance, or propaganda, and how we risk losing privacy and control over our own data and networks.

So, this is only the next phase of existing philanthropic practices. Traditional narrative practice such as documentary has long been aligned with grassroots advocacy and direct action. While emerging media may seem elite and abstract right now, these new forms are becoming mainstream and have the potential to catalyze change on the ground and influence thought and policy leaders in ways that bring more resources to bear on urgent social issues.

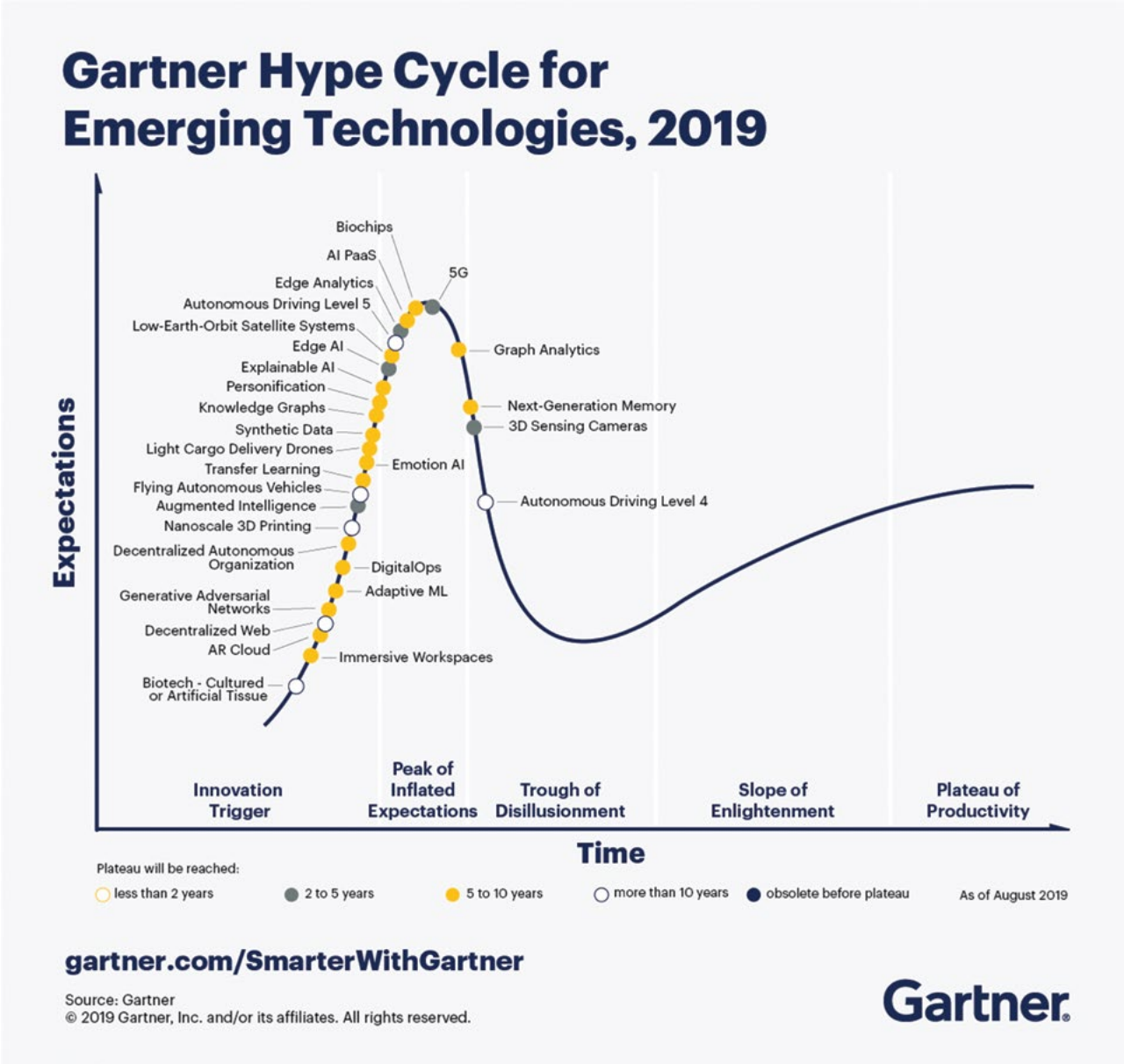
Creating access for content makers before mass audiences adopt these new storytelling technologies is crucial to the development of the aesthetic language itself, as well as fueling a subsequent critical discourse that is centered squarely in building a more inclusive and equitable body of commentary that adds to the larger discussions.


↳ *Awavena* is a VR collaboration between the Amazonian Yawanawá and artist Lynette Wallworth. Above, Joel Yawanawa looks at dailies in the cardboard VR viewer. Photo by Greg Downing.

The *Making a New Reality* initiative joined a number of other projects supported during my time at JustFilms which were designed to do just that. These included two labs that provide opportunities for artists of color., Open Immersion Lab (a partnership between the National Film Board of Canada and the Canadian Film Center) and Electric South | New Dimensions, based in Capetown, South Africa. In content funding, award-winning VR projects by Lynette Wallworth (*Collisions*, *Awavena*) and Jennifer Brea (*Unrest*) use VR less to disseminate information than as a site where mythology, the imaginary, and the psychological meet the real world in journeys across time and space.

Continuing to combine research with practice, the results of MIT's Open Documentary Lab's deep foray into co-creation and its implications for community-based storytelling in both traditional and immersive practices has been the subject of a convening and research report published in 2019, titled *Collective Wisdom*, led by co-authors Katerina Cizek, William Uricchio, and Sarah Wolozin. Like *Making a New Reality*, this report has been serialized and expanded at *Immerse.news*, and is designed to open up dialogue about new nonfiction forms and provide a critical take on the often hype-filled discussions about the promise of technology.

Now, we hope that this toolkit will travel even further out, beyond the often-cloistered environments of film festivals and universities, and into the field where new media forms are being forged.




↳ The difficulty with researching emerging media is, well, it's always emerging! Each year, the Gartner Hype Cycle for Emerging Technologies tracks which new trends are on the upslope and which have hit the "Trough of Disillusionment." When this research project began, VR was climbing the "Slope of Enlightenment," and now it's not even on the chart for 2019. Media makers today should keep an eye on the hype around new tech such as 5G, and be careful not to get swept up.

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# Making a New Reality:

## How we got here, and what comes next

Commissioned by the Ford Foundation's JustFilms program, Kamal Sinclair conducted more than 100 interviews for *Making a New Reality* in 2017–2018. Through the process, she discovered a passionate community of documentarians, journalists, artists, and technologists — who not only want to design for justice and well-being but beauty. Her original research was published at makinganewreality.org and syndicated at Immerse.news. With this toolkit, Jessica Clark and Carrie McLaren have updated and supplemented Sinclair's original work with recommendations and resources to help develop initiatives that further equity in emerging media.


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In 2008 my life took a turn from the world of performing and visual arts to an increasingly more virtual engagement.

I went from a primarily analog world to a primarily digital one in a period of rapid innovation and fundamental changes to human communication architecture. This personal journey has informed the long-form research project on the *Making a New Reality* website, and my recent journey from Sundance to the Guild of Future Architects.

↳ Kamal Sinclair

Commissioned by the Ford Foundation's JustFilms program with supplemental support from Sundance Institute, researching *Making a New Reality* allowed me to intensively listen to a host of voices. What is emerging media? What are the concerns related to equality and equity in emerging media? What interventions can mitigate inequity in emerging media?

Answers to these questions built up over the seven chapters, each of which consists of a lead article, as well as supplementary related articles. All of these were published between November 2017 and May 2018 at makinganewreality.org. Each of these lead articles was also published on Immerse.news — a publication designed to foster creative dialogue about emerging nonfiction storytelling.

Now that the series is complete, with support from the Ford Foundation, I've worked with *Immerse* editor Jessica Clark and associate editor Carrie McLaren to develop this related toolkit, to help storytellers, technologists, funders, policymakers, and others understand how and why emerging media forms can be a powerful force for social equity. The toolkit uses the original series as a launchpad for finding concrete ideas and resources to help the field evolve.

Over the 80-plus years of its history, the Ford Foundation has made catalyzing interventions in media, including establishing the framework and seed resources for public television in the United States and supporting the rise of the independent documentary field. Seeing new narrative technologies emerging, Cara Mertes, then the Director of JustFilms, commissioned this global field scan and analysis to identify the kinds of interventions that might tip the scales of emerging media toward justice and equality. As she notes in her forward, what this research makes clear is that the scale of disruption in creative media-making, distribution, and moving-image storytelling will touch every aspect of society. The stakes are too high for limited inclusion.

Says who? Over the course of *Making a New Reality*, I conducted more than 100 interviews with selected Ford Foundation grantees and media stakeholders, who offered insights on emerging media, as well as the challenges to and possible interventions for increasing equity and inclusion. Interviewees and peers also reviewed the draft analysis for comments. The research was supplemented by a review of secondary sources, including industry reports, news articles, blogs, and academic publications, as well as my own participation in the emerging media field since 2007. Associates Lisa Osborne and Paisley Smith, and editors Jessica Clark and Carrie McLaren, have also shaped the report and this subsequent toolkit. Finally, I've gathered responses to the research from many different events and collaborative processes.

Through this multilayered process, since 2016, I've had the pleasure and honor of being in a rigorous discourse with artists, thought leaders, media-makers, community organizers, business leaders, technologists, policymakers, researchers, philanthropists, activists, academics, philosophers, engineers, cultural leaders, students, family members, friends, children, and spiritual practitioners about how to further equality and equity in (and through) emerging media. I believe Yelena Rachitsky said it best when she said the conversation about how we are *Making a New Reality* is "soul-filling."

The conversations were dizzying and often felt beyond the reach of possibility, so there were moments I almost lost faith in the work. You can imagine my joy when the affirmations began to flow, first in a trickle and now in powerful waves, making it clear that this work is urgent, meaningful, and achievable.

At the Ford Foundation JustFilms Emerging Media Summit, I spent time with the deviant artists in the tech space. They are already on the frontlines of future civil rights movements and are challenging us to ask why we've been frantically innovating into what looks to be an unjust future? Who do we really want to be in that future, and how we will establish better value systems and ethics?

These artists are from a broad range of identity backgrounds, working at the intersection of art and bioengineering, artificial intelligence, public media, immersive media, brain hacking, data storytelling, social art practices, speculative objects, and futurist narratives. Seeing them gathered in one space, laughing, questioning, sharing, educating us and each other, developing community, and unapologetically putting stakes in the ground for justice, well-being, and prosperity was a deep and powerful affirmation. Of course, these artists represent a small fraction of artists starting to awaken, assemble, and collaborate on the future of culture. In the last year, I've had the incredible opportunity to work with an expanded community of people that include artists and technologist, but also people on the bleeding edge of reimagining healthcare, wellness, food systems, our justice system and more through the Guild of Future Architects.

Around the same time, I made a trip to Silicon Valley to meet up with the deviant geeks. The first day I had a series of meetings at Stanford University that went from disheartening to transcendent. My early meetings exposed the thickness of the famed "Silicon Valley bubble" when I realized that powerful and influential people on the campus had little reference for some of the most landmark works in emerging media storytelling and that their industry analysis is faulty and skewed. I left the meeting feeling like there was no hope for working within Silicon Valley to make change and that maybe our only hope was to "Buckminster Fuller" emerging media and build new systems from the ground up.

Since then, I have been heartened to discover a passionate community of technologists and engineers who not only want to design for justice and well-being but beauty. I have discovered allies, eager to have this frank conversation, to take ownership, and to work towards mitigating future harms. These "geeks" represented a small fraction of people beginning to awaken, assemble, and collaborate on the future of culture. The momentum building in the #TechWontBuildIt, #MoreThanCode, #PublicInterestTech, and #HumaneTech movements are a testament to that fact.

When I presented *Making a New Reality* research at industry events, employees from power centers like Amazon, Netflix, film studios, and financiers came up to me wanting to galvanize their resources to heed the call to action, and to make up for assertions that narratives with diverse characters "just don't sell."

At one of the events where I presented the research, a white woman said, "I'm so excited for this initiative and 100% committed to diversity and inclusion, but how are we going to get white people to give up what they have, so others can have a seat at the table?"

I was genuinely taken aback by her question because I really never thought of it as a zero-sum proposition, where someone has to lose for others to gain. In fact, I never thought of white people having to give up anything because I've always seen them as already operating in a deep deficit. The circumstances of history have caused massive numbers of people of color to live under restrictive systems that hindered the development of their potential.

Study after study shows the negative impact on all of humanity when groups of people are not able to fulfill their potential. We lose human brilliance in every field. We lose important contributions to science, medicine, technology, philosophy, art, culture, and commerce. And we gain the burden of human potential suppressed (i.e., expensive prison systems, abusive immigration systems, the impacts of poverty in our cities, climate change, war, and mental health epidemics).

The fears embedded in the "zero-sum" framing is probably a key factor in our failure to achieve equity goals in media and in society — especially when notions of scarcity helped fuel systems of oppression historically. The fears embedded in notions of scarcity also fuel our frenzied appetite for exponential growth, expansion, and productivity, which can hinder the adoption of the values of reflection, collaboration, and consultation.

Scarcity is an antiquated concept, but our economic systems perpetuate a constant and exponential hunger for growth, especially for those that have already accumulated more than they could ever use. We are in an age of abundance, but we are still operating on the subconscious survival mechanisms of scarcity.

If we care for more than just people's bodies and elevate their intellectual and creative potential, we will attain a level of civilization that we've never seen. We can enact enlightenment and become a more true civilization, not one that claims allegiance to civility but fails in practice. We have the opportunity to become a better version of ourselves.

There has been a wonderful response to the digital version of the project from philanthropists, academic institutions, industry-related companies, and community organizations. We've been exploring strategies with institutions such as Johns Hopkins University, MIT, and Stanford University to apply the recommendations from the research in intersectional programs and pedagogy. We are also developing initiatives to share the research in communities that are ripe for taking leadership positions in furthering equity in emerging media.

Now, this toolkit is designed to help all of us convene as a field — to outline, debate and implement strategies for structural change that enable artists, technologists, policymakers, community leaders, and scientists to make a new — and more just — reality.

**We have the opportunity to become a better version of ourselves.**

When Kamal and I first started working together in 2016, we knew a few things for sure: That emerging media forms such as VR, AR, and AI were poised to remake storytelling and the ways that we comprehend, experience, and shape reality itself.

That too many of these new forms were being pioneered by the same old, same old — and that this would stifle innovation and fail to reflect the full range of human experience.

↳ Jessica Clark (Photo by Albert Yee)

What we couldn't know is that in 2020, we'd find ourselves together in the jaws of a global pandemic, which is simultaneously deepening already abysmal chasms between haves and have-nots, and forcing many of us to newly mediate our work, play, and grieving through digital platforms.

This jarring break from what we considered "normal" — already a fraught concept — has underscored the urgency of giving many more people across the world the tools to dream up not just new, but improved realities.

To make this possible, I worked with longtime collaborator Carrie McLaren. Carrie is the associate editor of *Immerse* — a publication on emerging forms of nonfiction media that I edit — and art director for my media strategy and production firm, Dot Connector Studio. Together, we reorganized and updated Kamal's research, which we'd edited and published from 2017–2018 at makinganewreality.org. We've also been thrilled to collaborate on design with Lope Gutierrez-Ruiz and his team at In-House International. They created the eye-popping graphics for the digital version of the project and have done a beautiful job of translating them into this new version.

We took the insights Kamal gleaned from her interviewees and research, and reorganized them around three key targets for action: things that each of us can do to increase equity in emerging media, ways that institutions can pitch in, and systemic interventions — which require collaboration across institutions, sectors, and governments. For each of these sections, we did original research to add resources designed to help readers get a better grasp on each recommendation, and find ways to move forward.

We also stepped back and took a deeper look at what we meant by "equity" — not just in terms of race, but gender, class, religion, ability, and ideology. Debates on these topics have heated up to searing over the past few years, with movements such as #MeToo and #BlackLivesMatter and high-profile productions such as *Black Panther* and *The 1619 Project* bringing issues of injustice and representation to the fore.

Protests against police violence in 2020 catapulted these concerns to the forefront of public debate. Digital media and devices — most notably a mobile phone video of George Floyd's killing, but also body cameras — have been central to this moment.

To give us more clarity, Carrie drafted a section called “The urgency of defining our terms” on page 34 and worked to refine the language we were using throughout the toolkit to reflect current discourse.

We know that the language used to describe identities and secure justice will continue to change, but we wanted to challenge ourselves at least not to reflect old baggage or assumptions, and to honor conventions being advanced by those communities most affected by bias and oppression. We know too that not everyone will agree with our editorial choices — and that’s how it should be. As we edit this, journalists and advocates are debating new terms that better represent the nuances and concerns of the moment. Responses to the pandemic have also made it clear how valuable a diversity of perspectives on technology can be. As many people around the world strained to adapt to working from home, people with disabilities shared what they'd learned from long experience with forced isolation and lobbying for accommodations. Social change and progress are living processes fed by constant dialogue and struggles to make all perspectives visible.

Finally, we made updates throughout to reflect both changes in emerging media since 2018, and in the global arguments around the role of social platforms and of multinational technology companies in our public sphere. You’ll find many of these revisions reflected in section 2, and in the recommendations in section 3. We wrote the bulk of these in late 2019, before the ravages of the Coronavirus pandemic became clear. But we’ve worked to include key mentions of the ways we see our online lives shifting in response to this global crisis, and the disturbing incursions on privacy and civil liberties that governments around the world are already making because of it.

That’s why, in this moment, we hope this toolkit will make it into many more hands, and inspire makers, artists, and advocates. We need to not only hold the line on human rights and civil liberties, but to take this moment of rupture as a chance to use media in fresh ways — to reimagine our relationships to one another, to power, and to the natural world.

**Join us.**

**Social change and progress are living processes fed by constant dialogue and struggles to make all perspectives visible.**

# This is our chance to reimagine reality

Why is it important to make sure that emerging media and communications technologies are created by people from a wide variety of backgrounds and identities? The media we consume has an enormous impact on our perception of reality. With this toolkit, we are trying to achieve something that humans have not yet achieved in the history of mass media — fair and equitable representation of the world's stories and images.


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# Introduction

Why is it important to make sure that emerging media and communications technologies are both built and populated by people from a wide variety of backgrounds and identities?

Social and political science research, as well as psychology, genetics, and neurology, shows that the media we consume has an enormous impact on our perception of reality. What we see, hear, touch, taste, and smell communicates to our brains about who we are in relation to everything and everyone in the world.

Our perceptions thus directly influence behavior towards each other in numerous daily interactions and decisions. For many complex and varied reasons, the history of mass media has overwhelmingly failed to fairly represent the majority of identity groups and cultures on the planet. This is a key part of the formation and perpetuation of bias and inequity.


This and the following sections are condensed and updated versions of the articles posted at **makinganewreality.org** from 2017–2018 and syndicated at **Immerse.news.**

Story and narrative are the code for humanity's operating system. We have used stories to communicate knowledge, prescribe behavior, and imagine our futures since our earliest days. What do emerging media promise? With this toolkit and the many allied projects, we are trying to achieve something that we have not yet achieved in 500 years of mass media — fair and equitable representation of the world's stories and images.

Story and narrative inform how we design everything from technology to social systems. They shape the norms in which we perform our identities, even perhaps the mutations of our DNA and perceptions of reality. Stories are the first step in the process of how we imagine our reality, and help us understand how it is shaped — and whether we can help shape it.

If we can create an inclusive way of sharing stories, we can find the best ideas for transforming our social systems for the good of all. Intervening in emerging media provides an opportunity to change the status quo. It is also part of a larger technological paradigm shift disrupting every industry and social structure on Earth.

Stories live in our communication architecture. An experience, emotion, thought, or idea that exists in one person's mind is not a story until it has been transferred to another person. Whether in the form of oral storytelling, images on a cave wall, radio waves, computer games, or augmented reality experiences, story comes into being through the media we use to communicate with each other.

Every time there is widespread adoption of a new communications format or channel, the nature of public conversation changes. In the U.S., this was true for newspapers, which helped to shape the early republic. Photography, films, radio, television — these all provided new ways for people to see themselves and relate to one another, for good or ill: as citizens, as savages, as fellow community members, as "the other." All of these — along with the now-ubiquitous internet and mobile devices — were at one time "emerging media." Now, we are facing yet another sea change.

The creation of new media forms involves an interplay between creatives (i.e., artists and scientists), investors/funders, technologists, marketers, audiences, and other stakeholders. One individual can play any or all of these roles and the process can be re-ordered in many ways. Additionally, it can take decades before this process results in an established medium and, even then, the new medium is often in a constant state of refinement and innovation. For example, virtual reality has been emerging for 40-plus years.

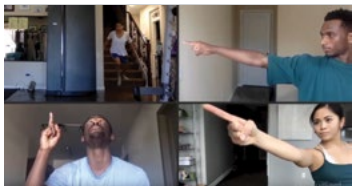
A new medium doesn't exist in isolation — it requires networks to circulate, evolve, and gain audiences. Also, a new medium does not necessarily replace older parts of the communication architecture as much as expands the infrastructure. Existing formats for recorded sound, moving image, live performance, and literature continue to be in use, even when specific technologies become antiquated (i.e., printed books, phonographs, celluloid film) and others come into use (i.e., eBooks, streaming music, VR).

This dynamic process means that new forms are always arising, being tested, catching hold — or failing to. At the time that the *Making a New Reality* research was conducted in late 2017, it was clear that immersive media, social media, location-based immersive experiences, and Artificial Intelligence (AI) were at the top of the list of media defined as emerging.

> **If a homogenous group of people are controlling the medium or using it to make stories, those stories will fail to capture the full human experience.**

However, the scope and scale of the ways in which media makers are hacking into the evolving communication architecture to make meaning through story is much broader and more elusive. See the "Categories of Emerging Media" (page 156) for examples of many different sorts of emerging media.

As Gartner's Hype Cycle suggests (see page 17), these forms of media and technology might be adopted or transformed, and new ones will be invented. But whatever the technology, the principle remains the same: If a homogenous group of people are controlling the medium or using it to make stories, those stories will fail to capture the full human experience and provide robust insights.



Moments of crisis can drive media innovations. During the pandemic and 2020 protests, we've been struck by the creativity of media makers and others in using digital media to work, connect with family, report on current events, and entertain themselves and one another — Zoom dance parties, participatory VR theater, art exhibits in "Animal Crossing," Twitch coverage of demonstrations, and more. Above, a still from "Bolero Julliard," a social media video featuring Juillard students and alumni.

# The Zeitgeist of Emerging Media

Check out our descriptions of emerging media types — from alternate reality gaming to VR — in the appendix on page 156.

The rapid and fundamental shifts in our communications architecture are giving new life to philosophical and religious debates about the nature of reality. The tools of immersive media are becoming more refined and capable of delivering compelling virtual, augmented, and mixed reality experiences. Social media culture increasingly allows people to socialize through digital representations of themselves. Machine learning is achieving new levels of "cognition." This zeitgeist might be summed up by the vision statement for *Immerse*, which asks: "Where does 'media' end and 'reality' begin?"

Emerging media has the potential to:

* Traverse space and "be" in another part of the world instantly, using VR to attend a live event thousands of miles away. Such technology may allow us to break out of a pedestrian reality and have a very non-human-scale experience of existing realities, such as seeing the forest from the perspective of a mosquito or traversing the length of the galaxy.

* Embody another person's perspective, such as seeing both the victim and perpetrator's perspective of a campus assault.

* Provide a "smart" interactive representation of our persona for future generations, such as conversing with a hologram of a Holocaust survivor via a natural-language AI that pulls appropriate answers from a database of responses.

* Imagine fictional worlds, bodies, and objects made into avatars — and more.

So: If a human's individual consciousness is the boundary of his, her, or their individual reality, and if the five senses are the primary means of gathering data that informs that consciousness, and if these new media innovations provide augmentations that enable those senses to gather and input data at a level that far exceeds typical human capabilities — then are our experiences with new devices and technologies real?

In other words: Does the meaning of the word "real" need to change, as our sensory and data processing abilities evolve? And if it does, who will create and control new realities?

These questions about the nature of reality become urgent when considering the proliferation of artificial intelligence systems, robotics, nanotech, and synthetic or hackable biology. The culture has imagined utopian and dystopian versions of these technologies for decades, but never have stories such as those in *Westworld* and *Black Mirror* been so resonant.

# Breaking Boundaries, Making Connections


Find a full list of interviewees on page 162. Throughout the toolkit we have included interviewees' names and current affiliations, but the appendix also shows where they were when the interviews took place.

A major subtheme in this zeitgeist of shifting realities is the newly apparent connectivity of people within and through emerging media. Social media, data analytics, and mobile technologies are making visible all the parts and particles of humanity's body. We are better able to see our interdependence.

In her interview, Sarah Wolozin of MIT's OpenDoc Lab emphasized that the major difference between traditional broadcast media and emerging media is that the latter is designed within the most intricate and complex network in the history of manmade things. Not only does the internet allow for dynamic, multimodal communication, but it takes aspects of traditional media and completely breaks traditional scope and scale. Improvisational storytelling is not new — but designing a transmedia campaign such as the "Why So Serious?" experience that preceded the release of *The Dark Knight*, with 10 million people improvising inside (and co-creating) a storyworld brings an unprecedented scale to these art practices.

Further, this enhanced vision is exposing our common points of unity (i.e., data visualization projects such as *We Feel Fine* or *I Want You to Want Me*, making our universal emotions, wants, and needs visible), as well as our social ailments (i.e., the easy publication of witness-captured media, exposing everything from police brutality, to the violent exile of LGBTQ youth from their homes, to totalitarian attacks on citizens). Suddenly we have access to rich pools of experiences that can be shared on a large scale.

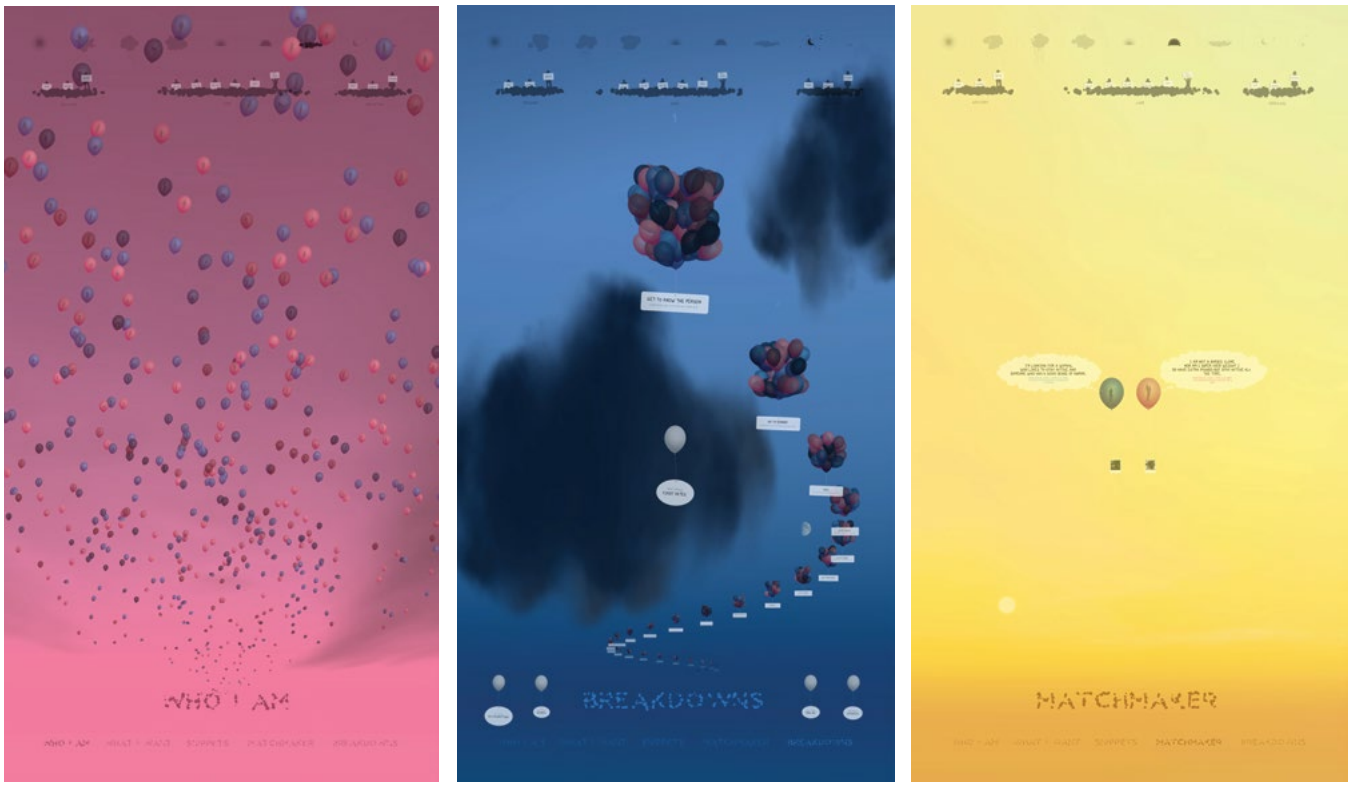
An overall observation on media innovation from the past few decades that arose from interviewees is arguably a trend that has been in process since the very beginnings of story and the human experience: *convergence*. Boundaries between genres and platforms are breaking down, interviewees observe — along with those between the real and the simulated, the human and the machine, the audience and the maker.

> **Boundaries between genres and platforms are breaking down — along with those between the real and the simulated, the human and the machine, the audience and the maker.**

"We've shifted our speech from talking about games or film as specific mediums and just started referring to media production. Everything has converged and story worlds exist across all mediums. This is precisely why we have embraced world building as a solution," said Joseph Unger, the founder of Pigeon Hole Productions.

The main difference between the past and the present is the rate and complexity of convergence. The human communication architecture tends to evolve through the convergence of technologies, cultures, knowledge silos, and forms. The current convergence is blurring the lines between tech, gaming, film, spoken word, dance, literature, music and sound design, theater, visual art, perception science, architecture, physics, psychology, sociology, biology, religion, and medicine. Practically every field of knowledge is contributing to this convergence.

With wired cities and homes, ambient data, immersive media, screenless computing, holograms, and environment-aware devices, it is difficult to answer the question, "Where does 'media' end and 'reality' begin?" However, a new class of storytellers, technologists, and artists are making work that tests the boundaries.




↳ Jonathan Harris and Sep Kamvar created "I Want You to Want Me" as an interactive installation for the Museum of Modern Art's "Design and the Elastic Mind" exhibition. More info is available at iwantyoutowantme.org.

# Defining Our Terms

## The urgency of defining our terms

In researching *Diversity Inc.*, Pamela Newkirk found that creative fields with more liberal and progressive types — arts, journalism, Hollywood, and tech — had notably worse track records in racial diversity than conservative-leaning, corporate sectors. Many readers may find this ironic but it speaks to a core truth: talking about social justice and expressing good intentions does not translate into meaningful action or change. Such lip service can itself pose a barrier. Using terms such as "social justice" or "racism" in an ambiguous or incorrect way can exacerbate the underlying problems.

This toolkit is focused on Diversity, Equity, and Inclusion (DEI) efforts in emerging media. Each of these terms has a specific meaning. And each factor is necessary — in conjunction — for real change to happen. In other words, we need D, E, *and* I for interventions to be successful, though initiatives may individually stress one factor over the others.

## What do we mean by “diversity”?

“Diversity” is the presence of difference within a given setting. This means different things to different people in different settings. Some may consider a firm with 10 white men and 2 women of color “diverse” while others expect a roughly even gender split, less white people, LGBTQ+ folks, and persons with disabilities. Age, geographic region, socioeconomic status, religion, ability, country of origin, and many other factors can contribute to diversity.

In this toolkit, with our focus on various forms of oppression, we by necessity use *diversity* broadly, but always with the urging that individuals and institutions precisely define the term for specific initiatives and interventions. We don’t refer to individuals as “diverse” — only groups of people can be described this way.

## What do we mean by “inclusion”?

So you’ve added several women (including Black, Latinx, and transgender) to your coding project. That will help diversify your (mostly white cis male) team. But *inclusion* is what you need if you want the new hires to thrive and to stay — for them to feel welcome, valued, and respected in day-to-day processes and decision-making. Many companies will hire women or people of color without truly moving the needle, because those new hires may not have the leverage to do their best work and may opt to leave. Companies that fail to actively build inclusive cultures have high turnover rates when those who don’t “fit” the company culture seek out better opportunities.

The use of "inclusion" alludes to the underlying fact that there is an existing group with existing norms and power expected to include an outside person or group of people into "their" environment. This retains a power and norm dynamic that can be problematic. Many diversity and inclusion experts are calling for more than inclusion, preferring "belonging." See "Center different cultural norms" (page 106) about how shifting group norms can support a sense of belonging, while asking existing insiders to also stretch their comfort zones and adopt new practices (i.e., using They/Them pronouns, having non-gendered bathrooms, realizing that "going out for drinks" with potential clients may not work for Muslim or sober members of your team, etc.)

## What do we mean by "equity" as opposed to "equality"?

At the core, *inequality* refers to imbalanced conditions. If a boss earns a higher salary than a subordinate, they are unequal but the situation is not necessarily unfair.

*Inequity* refers to an inequality that is socially unjust; it's when two or more groups are not operating on a level playing field. white men are more often chosen to head U.S. corporations than are women and people of color: that's inequity. To see them as merely an inequality (fair despite the imbalance) would be to assume that white men are inherently more capable, a belief that reflects racial and gender bias — and a lack of understanding regarding institutional barriers that different groups face. Inequity can take many forms: disadvantaging people based on ability, religion, sexual identity, or socioeconomic status.

Many of the examples and perspectives in this toolkit are based in the U.S. context, and so reflect the U.S. definitions and assumptions about race and gender politics. However, emerging media is a global concern, and so this toolkit strives to provide solutions that can apply more generally to an array of biases.

Typically, people assume bias to be conscious and intentional. But, as Jennifer Eberhardt documents in *Biased: Uncovering the Hidden Prejudice That Shapes What We See, Think, and Do*, it's very rare for any professional — and particularly those in the arts, journalism, and Hollywood — to voice such beliefs or acknowledge personal prejudice. Biased decision-making is usually unintentional and unconscious, as in: "I chose this story for the web series because the characters reminded me of some college peers of mine, so it feels true." Preference for the familiar and similar is a common form of bias.

Acting in a way that reflects one's bias does not make one a "bad" person. Biases are an inevitable result of living within a particular culture and environment. All humans, lacking god-like omniscience, are subject to biased decision-making. Recognizing that fact with humility and committing to practices to constantly keep one's biases in check is a crucial step forward in making a new reality. See "Cultivate awareness of implicit bias" on page 88.

The other key part is recognizing that personal bias and individual actions are only part of the problem. Our personal ideas and actions are reinforced — and greatly amplified by — systems and organizational structures. Here, again, we see why definitions are important.

*Sexism* and *racism* are often assumed to refer to deliberate, personal prejudice, or discrimination: *I'm so tired of his racism; he never promotes Black writers*. Or, *His sexism is out of control; he thinks women cannot cut it in tech*.

But the words *racism* and *sexism* do NOT mean simply bias or discrimination; biased and discriminatory acts constitutue a piece of racist and sexist systems but must not be mistaken for the whole. Racism and sexism are institutional, structural, and systemic. To paraphrase historian Ibram X. Kendi, racism is a marriage of racist ideas (biases) and racist policies that produces and normalizes racial inequities.

Understanding the important role that organizational structures play in perpetuating inequity — and actively developing new systems to counter those inequities — is another integral key to reforming media and society. So in Section 3, our toolkit for change (page 84), we share ideas from interviewees and other research on the big picture, structural interventions needed to forge a new path.

**Many of the perspectives in this toolkit are based in the U.S. context. However, emerging media is a global concern, and so this toolkit strives to provide solutions that can apply more generally to an array of biases.**

# Critical Issues to Address

In this section, we cite the key problems in emerging media in regard to Diversity, Equity, and Inclusion (DEI). Almost every *Making A New Reality* interviewee raised concerns that the current emerging media industries are already falling into the pitfalls that traditional media suffer in terms of creating and perpetuating biased narratives and representing the perspectives of a narrow slice of humanity.

### The High Stakes of Limited Inclusion

As a society, we can't risk allowing emerging media to reflect the same biases and misrepresentations as traditional media. The consequences are too dire.

### Challenging Bias

We are programmed to see the world through biased narratives and simple archetypes. How can we reframe who gets to invent new media forms?

### Rethinking Institutions

Homogenous and top-down management structures in media, arts, and technology can lead to disastrous results for business and society. How can we challenge groupthink and break out of silos?

### Larger Structural and Political Issues

Concerns about our communications environment are rampant: a consolidated digital media landscape; threats to privacy and security, polarization, misinformation; and new high-tech forms of oppression.

# The High Stakes of Limited Inclusion

As a society, we can't risk having emerging media reflect the same biases and lack of representation as traditional media. The stakes are too high. Together — as makers and artists, media production companies, tech corporations, policy-makers, and other stakeholders — we must build inclusive and equitable practices into the processes that help us imagine our future.

Given the paradigm shift taking place across our communications architecture, the *Making a New Reality* research points to the urgent need to establish greater equality in emerging media before a new power balance is cemented.

The World Economic Forum has been framing its agenda around the idea that we are in the dawn of the Fourth Industrial Revolution. This means that emerging media are part of a suite of new technologies ushering in sweeping changes that have enormous promise for advancing civilization. If misused, these emerging technologies pose powerful threats to the goal of creating a more equitable world.


Learn more about how Wallworth's work has informed global debates about climate change in "High Stakes of Limited Inclusion" at **makinganewreality.org.**

Emerging media pioneer Lynette Wallworth urges us to assess these changing times through more than just an economic or technological lens and consider how technological advancements instigated in silos and devoid of connection to community have brought about a new epoch in Earth's history: the Anthropocene — a period that started with a war-time drive to split the atom. Theorists suggest that in this epoch humans are responsible for changing the natural world in ways that are irreversible.

We've learned from history that the stories and visual images we create have a direct impact on how we construct our future, access opportunity, and perform our identities within future environments. We've also learned that it is impossible to foresee all of the consequences of massive change, especially when those leading the change have a limited perspective caused by a lack of diversity both in their real-world creative, business, and tech teams, and in their imagined visions of the future. Finally, we know from history that industrial revolutions or other paradigm-shifting moments in the functional design of civilization can bring great value to the world but at great cost to the most vulnerable. It is imperative that we engineer robust participation of people from a broad set of communities, identity groups, value systems, and fields of knowledge in this emerging media landscape, in all roles and levels of power. This will help to mitigate the pitfalls of disruption and potentially usher in a change that has justice and equity as core values.

## Why are storytellers critical to this process?

We use story and narrative to design everything from the technology we invent, to the social systems we implement, to the norms in which we perform our identities. We are writing the next operating system for humanity with the stories we tell about our future. And those stories are now intertwined with computer code, which increasingly shapes what we perceive, know, and feel.

"Code is the new superpower," said Sep Kamvar of MIT Media Lab's Social Computing Group. "Code designs a social process, that social process designs our world."

Since the dawn of mass media, the stories that frame our identities and systems have largely been told or controlled by a narrow few members of humanity. Now, the large majority of our global media is generated by or distributed on platforms that continue to be controlled by a small group of people who do not represent our diverse global population.

The start of the mass media era is often marked by the invention of the Gutenberg printing press in 1440, which made it possible to communicate messages to thousands — even millions — of readers.

This history of mass media closely matches the history of political and economic imperialism. Historians have often attributed the success of European colonialism to military technologies. Stories have been effective in priming participants with the rationale and ideology to implement these strategies.

Most people don't know how code works beyond the end-user interface. This harkens back to the centuries-old power structures that allowed the literate to rule the illiterate. Those who could read had power and, now, those who can code have power.

We already operate within systems and environments structured and driven by code — both at work and at home. The environments in which we work, live, and travel are increasingly controlled by automated networks and devices. Now, as experiential media and spatial computing become more commonplace, people's daily experiences are suffused with assumptions, interfaces, and routines created by a small caste of experts. We must act now to intervene.

"We run the risk of having about 15% of the world's population designing the world, through media consumption and media creation, for the other 85% of the population," warned Julie Ann Crommett of Walt Disney Studios. "I don't think that's good business, first of all, but I also think that's troubling from a societal perspective." This concern was echoed by Brickson Diamond of the Blackhouse Foundation: "The risk becomes that we continue to have this really isolated group of people who decide what's valuable."

Now is the moment to break this pattern and create an inclusive process for designing our future. Many of those interviewed in this research expressed an urgency to seize this window of opportunity.

# Challenging Bias

Many interviewees echoed the notion that we are trying to awaken from over a century of biased narratives in mass media. None of us can claim to be free of unconscious biases that history and culture have primed in our minds and hearts. We are programmed to accept a very limited set of types in any one identity group, and our brains quickly conflate very complex and dynamic people into pre-programmed and overly simple archetypes.

Whether biases originate from some fundamental human instinct to create in-groups and out-groups, or the legacy of discriminatory structures created by brutally Darwinian motives, the reality is the same. People continue to perceive other human beings through the faulty lens of bias. In an interdependent global society with the superhuman capabilities of emerging media and technology, this is dangerous.

## Who gets to innovate?

Many observers have noted that women are playing a key role in innovating VR storytelling and documentary. Above, Shari Frilot, Chief Curator, New Frontier at Sundance Institute.

When asked to describe the first image that comes to mind when thinking of a film, technology, social media, science, or virtual reality innovator, most Americans, and perhaps most people, will describe a young, cisgendered, straight, white, able-bodied man.

Even some of the most progressive or liberal people will rationalize this stereotype as having truth to it, not because they think white men have superior intellect, but because they recognize the impact of legacy privilege and resources.

However, digging into the true origins of innovation greatly challenges these assumptions. A few examples of people that bust the innovator stereotype include:

- Oscar Devereaux Micheaux, a Black man, who significantly defined the medium of the film by making 40-plus independent films in the first half of the 20th century;
- Joan Clarke and Grace Hopper, two standouts among the legions of women who helped define computer science;
- Katherine Johnson, Dorothy Vaughan, and Mary Jackson, three Black female mathematicians who helped America send men into space during the Space Race;

- Edie Windsor, a heroic gay rights activist whose case overturned the Defense of Marriage Act, who learned computer programming on the UNIVAC computer for the Atomic Energy Commission at N.Y.U. and was later hired by I.B.M. as a computer programmer in 1958;
- Evelyn Mirallas, the head of NASA's 30-year-old virtual reality program;
- Martine Rothblatt, a transgender woman, who founded Sirus XM, United Therapeutics, and the Terasem Foundation;
- Char Davies, Nonny de la Peña, Shari Frilot, and Diana Williams, four women (three of whom are people of color) who have helped catalyze today's virtual reality innovation cycle and industry.

Nonetheless, the story of innovation is told through the lens of those in power, who consciously or unconsciously tend to put themselves, or those with whom they identify, at the center of the stories. In the process, they often marginalize the stories of key figures involved in writing or coding the innovations that form humanity's operating system.

In the worst circumstances, there has been outright theft of ideas or property. Even Alan Turing, who is at the center of our public consciousness as an innovator, had to suppress and hide his identity as a gay man to remain a central, celebrated figure in the larger innovation narratives around the invention of computers and artificial intelligence that center straight, white, cisgendered, able-bodied males.

## Why this matters

In the middle of the 20th century, the number of women entering the legal, medical, and computer fields was approximately the same across all three areas. In fact, in early computer science, women were entering the field at a faster rate than men. However, the film, advertising, and popular media of the 1980s represented emerging computer technology as an almost exclusively male domain.


Tech companies consistently fail on the hiring front. Diversity reports from Apple, Facebook, Google, and Microsoft over the last five years showed few gains for Black and Latinx tech workers, with female workers still hovering below 25%.

Films such as *War Games* and *Weird Science*, and marketing campaigns of big tech brands such as Microsoft and Apple, positioned men and boys as the leads and heroes of the story. These stories cumulatively coded our collective consciousness to support one gender over another in that field. We primed men to adopt and perform this new "tech geek" identity, while women were pushed to the margins of these nascent, computer-centric stories.

What is even more concerning is that the repetition and wide distribution of these narratives created the development of superiority and inferiority complexes among men and women when it came to computer technology. *Planet Money's* "When Women Stopped Coding" episode described the computer science environment changing: Men started to haze women for not belonging, and women (even those with some of the highest grades in their class) started to buy into the notion that they didn't belong and that maybe they weren't smart enough to participate in the field.

This hurts all of us. Often the spark of invention and innovation comes from the cross-pollination of ideas. Diversity is an essential component of innovation. "Research shows, pretty compellingly, that diverse teams outperform homogeneous teams...because the value of diversity is so significant," said Adam Huttler of Monkeypod. "We know from data that groups with a higher percentage of women function at a higher level of collective intelligence. Unless you're only going to have one employee, you'd better think about how you're going to hire the best collection of individuals."

## Appropriation in innovation

There is a related concern about how the history of appropriation impacts patterns of open creativity and creative commons culture in the future. One affecting example of how diverse perspectives inform innovation can be found in Omar Wasow's contribution to social media. Wasow is a Black man who created the pre-web community New York Online from his living room in 1993. This was the prototype for his 1999 social media defining network BlackPlanet.com. Before BlackPlanet, there were "web contact model" social media sites, such as the 1997 SixDegrees.com, but this was the first "social-circles model" site that was followed by Friendster in 2002, MySpace in 2003, and Facebook in 2004.

Wasow emerged during an internet culture of open creativity and innovation, where communities of diverse people co-created art, technology, and envisioned the future together. This open-source mentality matured into formal social contracts such as Creative Commons licenses that allow participants to give back altruistically to the community.

How do we maintain the open and generous environment that has allowed these communities to thrive while mitigating the long-suffered pattern of unfair appropriation and misattribution that centers the dominant identity group and minimizes (if not eliminates) the contribution of the traditionally underrepresented groups?

Eliminating groups from the innovation story deprives them of the wealth they are due. If a corporate interest — associated with the community or not — leverages an individual's or a community's ideas for economic gain, how does the person or the group benefit?

Creative Commons

Creative Commons provides free licenses and public domain tools to grant copyright permissions and allow others to copy, distribute, and make use of those works, hassle-free.

> **Eliminating groups from the innovation story deprives them of the wealth they are due.**

↳ Mainstream media has too often failed to acknowledge the key roles women have played in tech, contributing to inequities in the field.

## Repeating the patterns of the past?

Almost every *Making A New Reality* interviewee raised concerns that the current emerging media industries are already falling into the pitfalls that traditional media suffer in terms of creating and perpetuating biased narratives and behaviors. Media content continues to represent diverse peoples through deficit-based identities (as criminals, violent, primitive, traumatized, impoverished, victims), rather than asset-based (as innovators, educators, business owners, problem-solvers, family members, heroes).

Failing to properly attribute positive aspects of diverse identities often leads to the suppression and exclusion of people that embody those positive identities. This is problematic in many ways, but in the innovation space, this bias has a direct impact on the ability of traditionally marginalized people to benefit from the industries they helped to create. How do we deal with affronts that are both ubiquitous and in many ways invisible to those perpetuating the biases? Can we do better in this new and evolving media space?

Yes. "Amplification," "lean in," "unconscious bias education," "safe spaces," "shine theory," and "inclusion" strategies have been changing the virtual reality community's gender makeup since 2015. But we still have a long way to go to achieve anything close to equity or equality, especially among other marginalized groups. Remember the "post-racial" proclamations during Obama's administration? We need to be careful about prematurely claiming success.

**Media content continues to represent diverse peoples through deficit-based identities (as criminals, violent, primitive, traumatized, impoverished, victims), rather than asset-based (as innovators, educators, business owners, problem-solvers, family members, heroes).**

## The thin line between empathy and patronizing attitudes

Whenever society breaks new ground, we have the burden of having to grapple with the disruption to our status quo. We all have gaps in our perspectives that are bound to cause missteps, especially when trying to chart new paths. That is why innovation takes courage and tenacity. But we can mitigate some of those blind spots through more courageous conversations. If we still have missteps, we can acknowledge mistakes, learn from them, and work to avoid them in the future.

For example, the debate about whether VR can spark "empathy" reveals the various ways in which the personal perspectives of makers and viewers can affect their opinions on a topic. One of the dominant claims about virtual reality's power is that it compels audiences to empathize with the protagonist's experience. The ability of VR to conjure a profound sense of empathy has been studied by the Stanford Virtual Human Interaction Lab since 2001. However, that rationale has come under heavy critique, especially the term "empathy machine" popularized by VR maker Chris Milk. Media makers from marginalized groups and social justice advocates expressed concern that many VR films aiming to transport people into the perspective of those in trauma or poverty devolve into "disaster porn" or a perverted dynamic of highly privileged people getting a "safari" into the pain of those who are often oppressed by those same communities.

Some propose that compassion, not empathy, is a better way to help audiences escape their self-interest and care about the experiences of others in a manner that might improve relationships across social and economic boundaries. According to Sonya Childress, now at Perspective Fund, the problem is a lack of solidarity. In a much-circulated posting, she wrote, "Cultivating empathy for those with less power or resources avoids challenging whiteness and the structural privilege that comes with it."


The debate over whether VR elicits empathy has been raging for several years. See related articles in Immerse.news by Janet H. Murray (October 2016), Dan Archer (May 2018), and Dr. Harry Farmer (September 2019).

## Why is the ratio so off?

This example from VR raises a larger question: Why are patronizing representations all too common in emerging media?

Jennifer MacArthur of Borderline Media pointed to a severe lack of support for diverse media makers as the reason: "If it were people of color and women instead of white dudes [driving the content], we would have a different conversation about the potential of VR. It wouldn't be obsessed with empathy, because we're not obsessed with trying to humanize ourselves for white people. We're human. We're past that."

Black Public Media's Leslie Fields-Cruz added that this predominantly white and male representation of Black and Brown trauma is actually re-traumatizing people of color. "The red flags I see in VR are around the kinds of stories being told about communities of color by well-meaning storytellers. They'll create these stories so white viewers can see it and say, 'Wow, I didn't know that was happening to people of color.' Whereas Black viewers might say, 'I don't need to relive this, I can experience this every single day.'"

> **If it were people of color and women instead of white dudes [driving the content], we would have a different conversation about the potential of VR. It wouldn't be obsessed with empathy, because we're not obsessed with trying to humanize ourselves for white people. We're human. We're past that.**

Solutions pp.86

See the"Personal Change" subsection in Section 3, our toolkit for change.

Moira Griffin of New Bumper & Paint Productions said, "If we don't address issues of access at the outset, VR will go the way of the independent and Hollywood entertainment industries who are grappling with diversity more than 100 years later. My challenge to VCs, VR makers, and founders is to create executive boards and management that reflect the health and viability of the industry — diversity isn't charity. Investors also need to champion and put real money behind emerging companies and creators who reflect the society that we live in."

If we benefit from the randomness of being born white, male, able-bodied, or straight, how do we pursue our personal potentials and realize our dreams without displacing or affecting those born into less privileged identity groups?

## Pitfalls of the meritocracy and pipeline arguments

Two oft-repeated reasons why tech and media industries have such egregious gaps in diversity and gender representation are the meritocracy argument and the pipeline issue.

People in the tech industry often describe it as a meritocracy that rewards those who are simply "the best" contributors, innovators, and entrepreneurs — the majority of whom happen to be white or Asian, and male. Note that Asian American men are often grouped together with white men in discussions of representation. Asian Americans in general are not underrepresented in tech or in the American workforce more generally. However, despite some high-profile Asian American male CEOs in the tech industry, Asian Americans on the whole remain underrepresented at the highest levels of industry; one study by a Pan-Asian professional organization, Ascend, found that "despite being outnumbered by Asian men and women in the entry-level professional workforce, white men and women were twice as likely as Asians to become executives and held almost 3x the number of executive jobs."

Similarly, in the media industry, there was a longstanding Hollywood assertion that diversity in casting just does not generate the same economic returns as content reflecting the white mainstream that is less diverse — an argument that aligns with the meritocracy assumptions in tech.

However, reporters and social science researchers have found that diverse companies and diverse media representations actually perform better according to pure economic criteria. Why? In part, because demographics in America are changing. By 2044, the nation's white population is projected to no longer constitute the majority.

The bottom line is that both Hollywood and Silicon Valley would strengthen their positions by rethinking staffing practices and developing more forward-thinking projects in sync with these changes. The same goes for the new breed of digital and immersive media production companies sprouting up across the country.

Both tech and media industry insiders attribute the problem to a lack of diverse candidates in the talent pipelines. But that argument does not always hold up. First, tech and media companies are not leveraging the talent that does exist, especially when looking at hiring practices for roles that are not specific to tech and media specializations. Second, they are not investing in developing those pipelines in the same ways they invest in members of the dominant groups.

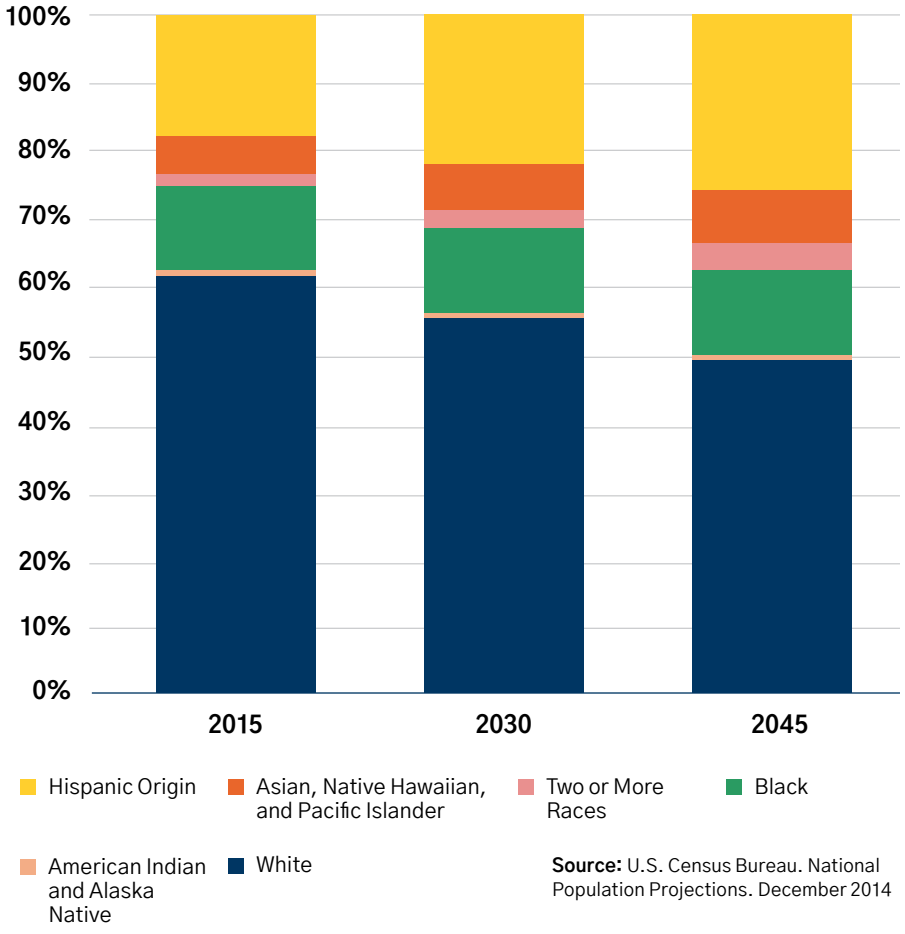

See "Expand pipelines to address disproportionalities" in Section 3, our toolkit for change.

Interviewees strongly expressed their aggravation with the fact that these excuses and issues persist. “We have this hope that when you create parity in school it will translate into parity in the industry,” said Tracy Fullerton of USC Games. “But, what happens then? There is a sense that you can start your own company, and I’ve been very heartened to see women start their own companies. And they have gotten investment, but they haven’t received as much investment.”

“I look around my office and only see one other Black person. Do I think there is something in this industry that makes it so there aren’t qualified African-American candidates? No, I think there are qualified people of all backgrounds. I just don’t think there is a strong enough desire to build a diversified community. But, from a business perspective, if you look at the numbers, you’ll see that people of color significantly over-index when it comes to mobile media consumption. The business argument should be made that these are the folks that need to be in the industry,” said Miles Perkins of Epic Games.

“People need to aggressively escape this idea that tech or media are meritocracies,” said interviewee Franklin Leonard, the founder of The Black List. “They’re meritocracies for cis, straight, white men. Period.”

**The U.S. Population Will Become Increasingly Diverse**




**Source:** U.S. Census Bureau. National Population Projections. December 2014

## Participation and representation gaps

It is not news that the tech, gaming, and film industries have significant diversity and gender gaps, and that LGBTQ workers are paid less than straight workers.

Although there have been some successful emerging media interventions and initiatives to mitigate the replication of the race, gender, and sexual-orientation gaps found in the film, gaming, and technology sectors, all the areas of emerging media described in *Making A New Reality* are currently dominated by people who present as straight, white, and cisgender male. Women who manage to breach the executive ranks earn significantly less than their male counterpoints, and sexual harassment and other forms of sexism make the environment hostile. From 2012 to 2014, the DIY virtual reality storytelling community was fairly diverse and egalitarian for convergence of three, traditionally non-diverse sectors: tech, gaming, and film. But the dynamics changed as the industry caught on. "We are past the DIY stage when people were experimenting in VR and the barrier to entry was low. All that was happening before the headsets came in, before the $8.6 billion dollars came in," observed Diana Williams of Lucasfilm.

"The red flag for me in emerging media is the dissemination of resources," said Morgan Willis, formerly of Allied Media. "That is one of the ways that we adapt or recreate systems of structural oppression, right? The people who can most easily access either artistic or professional support have built-in platforms to position what they're producing as having more social weight or more relevance. It has the potential to be a thing that stratifies voices." As Joshua Breitbart at the office of the Mayor of New York City put it, "Economic inequality underpins and even precedes the technology... and then it recreates those inequities in that technological space."

"As Heather Dewey-Hagborg has pointed out, new media art is a community that combines the world of computer science and the art world, and unfortunately, it can, especially in its demographics, inherit the worst aspects of both. So you've got a history of white, nerd dudes playing with gizmos, coming from computer science. Then you've got a patriarchy of male artists, male gallerists, male curators, male critics from the art world. Put that together, and you start to see some of the pathologies that we are definitely feeling right now in media arts and emerging media," observed Golan Levin of Carnegie Mellon University School of Art.

One of the major fears expressed by many interviewees is that we will continue the dangerous pattern of limited, stereotypical, and prejudiced media representation on these new media platforms, which will compound the effects of implicit bias in ways we may not fully understand, due to the power of immersive media to "hack" the brain. Continuing these patterns might make the implicit bias effect of media become exponentially more dangerous. Even well-meaning people and institutions — seeking to further social justice and advocate for underrepresented communities by presenting images of them in crisis — inadvertently contribute to the pervasive and narrow set of deficit-based identity images.

## Beyond race, sexuality, and gender biases

Interviewees also raised concerns around patterns of regional exclusion. Of course, there is a longtime pattern of developing regional markets and industry hubs. But regional diversity is valuable. Emerging media industries seem to be following the established patterns of traditional tech and media, which tend to ignore important regions such as the Global South.


See “Adopt universal design practices” in Section 3, our toolkit for change.

There have also been calls for re-assessing how we include people with atypical human limitations, such as physical and intellectual disabilities. This is especially unfair when the technology itself can be a mechanism for further inclusion that was not possible even a generation ago.

To combat this, the makers of an art project from Canada called for creative technologists to help create cyborg-like ways of overcoming disabilities by creating superhuman capabilities. For example, the subject of the project *Upgrade Required* — who only has the use of his eyes — imagined brainwave technology that would allow him to pilot nano-spacecraft. His collaborator argued that people who have limited physical movement are spending much of their time in deep thought, and considering things that could help us advance society. Therefore, it is imperative that we involve people with disabilities in imagining our future.

Age discrimination is another issue to address in media and tech. The younger generation has a relationship to technology, identity, and the global community that is qualitatively different from older generations. Similarly, humans are living longer but are feeling shut out by the stereotype that people are over the hill at 30 in the tech sector. Could more inclusive value systems not only help to bridge such age gaps but also allow us all to benefit from the different generational perspectives and experiences?

## Diversity stigma

Many interviewees expressed concern that we are stuck on 20th-century models of diversity that do not account for more contemporary notions of identity as a fluid construct — spectrums of intersecting identity groups rather than the traditionally used monolithic or binary groups (Black/white, gay/straight, man/woman). Even our technology industry now has the ability to better understand our identities as dynamic and fluid. In fact, technology already achieves this when seeking niche advertising opportunities. However, many of us still operate in simplistic stereotypes and narrow identity frameworks.

Interviewee Moira Griffin cited the dilution of focus and resources when diversity programs try to serve multiple underrepresented groups or classes with limited resources. Needs and obstacles can vary widely between groups, and specialization is necessary.

The modern mode of diversity, equity, and inclusion (DEI) initiatives has been present in education, human resources, and public service since the Civil Rights movement but became more widely adopted in the 1990s and 2000s. But as Pamela Newkirk documents in *Diversity Inc.* (2019) the multi-billions of dollars spent on "the diversity industry" have largely been wasted on one-off trainings and empty posturing. Participants dismiss diversity initiatives as ineffectual. Half-baked efforts have led a backlash against affirmative action, mandated trainings, and have failed to move the needle on either parity or implicit bias.


See "Cultivate awareness of implicit bias" in Section 3, our toolkit for change.

According to Frank Dobbin, a Harvard University sociology professor who has studied diversity programs, "All lab studies show that you can change people's attitudes for about 30 minutes after training . . . But three to six months later, there's either no change or a negative reaction because you've actually activated their bias." Dobbin suggests company diversity efforts that prove most effective include minority recruiting programs and staff-wide mentoring programs.

Janice Gassam, Diversity & Inclusion consultant, wrote in *Forbes* in December 2019 that DEI workshops need to be woven into the fabric of the institution. Otherwise, they'll "seem like cosmetic diversity efforts."

The other issue is the negative feeling of being a token, a presumed beneficiary of "affirmative action." Interviewees felt frustrated that white colleagues did not understand that they needed to go above and beyond to earn their position.

Morgan Willis of Allied Media Projects urged us to consider that part of the stagnation and stigmatization of diversity initiatives is that people are comfortable with the status quo.

"I think there's an assumption that if we make the effort to diversify, people will realize that it is a really good thing and then everybody's work gets better and everybody's perspectives will be filled with different framework and ideas," said Willis. "But the truth is that, very often, people don't want that. That is something we're not naming out loud when we talk about diversity, and it is one of the central challenges."

Willis essentially asks us to deeply reflect on the root of the issue of inequality. Much of it is a legacy infrastructure from systemic racism, sexism, colonialism, and nationalism. Whether consciously or unconsciously, there is strong resistance to real change, which has triggered huge backlash in the last decade by those wanting to keep the status quo.

**Half-baked efforts have led a backlash against affirmative action, mandated trainings, and have failed to move the needle on either parity or implicit bias.**

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See “Advocate for the under-represented” in Section 3, our toolkit for change.

No matter how earnest the efforts of those members of underrepresented groups working to “lean in,” their efforts will be for naught if existing structural systems of exclusion and oppression are not dismantled. At the moment, we are seeing a global epidemic of exclusionary and oppressive policies being enacted that are not dismantling but actually shoring up unjust systems.

## Navigating privileged settings

Becoming a more equitable and inclusive society requires that those who have been underrepresented be more visible, active, and empowered in spaces dominated by others — which threatens the status quo.

Entering into a predominantly privileged and white space can be traumatizing due to factors such as:

- Being the only person of one’s identity group,
- Interacting with people who do not understand one’s cultural norms and values and are therefore vulnerable to insensitive acts, and
- Navigating implicit bias and patronizing attitudes that manifest from power differentials.

Another way these spaces can feel unsafe is when vulnerable aspects of one’s identity group are on display. This was a comment by many Black attendees of the Broadway show *Passing Strange*, which told a very nuanced and complex story of a Black man’s life and community. Some members of the Black community felt it was unsafe to “air our dirty laundry” in the context of the predominantly white, wealthy, elite audience of Broadway.

*Double Consciousness*, a video exhibition by artist Kahlil Joseph and organized by The Museum of Contemporary Art in Los Angeles, mesmerizes with images of contemporary LA.

Similar critiques were made about the large-scale, two-channel video installation of Kahlil Joseph's *Double Consciousness* at the 2016 New Frontier exhibit during the Sundance Film Festival. The piece is a poetic and lyrical collage of complex, nuanced, beautiful, and authentic images of the director's neighborhood in South Los Angeles, but it inadvertently made some of the people of color in attendance feel unsafe.

Limbal explained: "Kahlil Joseph's piece was really uncomfortable for me to watch at Sundance. I wanted to see that piece in the Bronx. To be clear, I loved the piece. It captured the beauty, horror, joy, trauma, and triumph that exists side-by-side in our communities. Unfortunately, Sundance did not feel like a safe space to grapple with those complexities, which raises the question of who do we design and curate for. I've had many conversations with friends about representations of violence against the Black body and who is edified versus re-traumatized by seeing it. For folks of color, the 'where' is sometimes as important as 'what' we see."

Although other Black and Latinx interviewees had different reactions to those pieces and to similar Black projects exhibited in white spaces, they understood and identified with the critique. They felt that telling these more complex, nuanced, and authentic stories helps break down stereotypical and dehumanizing narratives that dominate in mass media. However, admittedly, there is a real danger of people unfamiliar with Black or Latinx culture in America misunderstanding the imagery, or even using it to support biases (implicit or explicit).

Marie Nelson, now at ABC News, said, "I think context is hugely important. And I think that you have to be aware that media is going to be consumed quite differently depending on where people sit. But I think that our job is less about


See “Center different cultural norms” in Section 3, our toolkit for change.

preventing that sense of discomfort and more about creating an opportunity for honest storytelling that provokes dialogue and conversation. I don’t think that you can do that if you don’t allow yourself to take those risks.”

There is a notable concern in the storytelling field about people who come from outside a specific community telling the story of that community. It has its roots in the ethnographic practice of going into the environment of an “out-group” and bringing back the learning to an “in-group.” This follows an anthropological history fraught with patronizing attitudes, superiority complexes, and misunderstanding of the actual internal dynamics of the cultures being observed or recorded. Therefore, the practice has been greatly critiqued over the decades.

However, some interviewees and thought leaders in the field say we should not censor anyone from sharing their perspective about a very complicated and intersectional world. We just need to ensure there are a diversity of perspectives being shared over time, with an important focus on increasing the ratio of those telling their own stories versus those telling other people’s stories. This is the only way, some argue, to get a broader sense of the complex, dynamic, and subjective reality of any group, including inside and outside reflections.

## Internalized oppression and imposter syndrome


See “Craft narratives that disrupt biases” in Section 3, our toolkit for change.

Much of interviewees’ criticism was about those on the dominant side of these equity and equality issues. But it is important to also understand the way in which traditionally marginalized communities also participate in the perpetuation of stereotypes and patronizing attitudes.

The assumption that Black people do not see themselves in certain asset-based identities, therefore leading to decisions not to represent them in those identities, perpetuates the “stereotype threat.” This may be endemic to the hyper-customization of media, which feeds audiences what they already consume and fails to broaden the scope of representation, creating echo chambers, regurgitated stereotypes, and filter bubbles. Or it may be a symptom of the much more concerning issue of internalized oppression.

Providing traditionally marginalized people with the psychological tools to battle feelings of inferiority is critical. Part of this process is making it transparent to members of marginalized groups that everyone feels the pangs of imposter syndrome when they move up the ladder. Systemic oppression has prohibited many types and groups of people from engaging in healthy patterns of success > failure > success. Therefore, their faith in the pattern is damaged.

“[My Black, female colleagues] recently attended a writing training. They came back and shared one of the exercises, which asked them to identify their areas of expertise. The room was filled with very accomplished women in science, the arts, and everything that you could think of, and some of these people couldn’t come up with anything [about which] they could position themselves as an expert. I think

we need a better term for it than 'internalized oppression.' Nobody wants to go there if we call it that," observed Loira Limbal of Firelight Media.

Nonny de la Peña shared her personal battles with imposter syndrome. "I was invited to an incredible lunch, with Prince William; Eric Schmidt from Alphabet, Google; Jimmy Wales, founder of Wikipedia; Nicolas Zennstroem, who started Skype; and others. I walk into this 14-person lunch with Prince William right in the heart of London, and 'holy sh**!,' I was frozen. I didn't know where to sit. We all had to wait for the prince to sit down. The prince sat down, Eric Schmidt sat right next to him, and I turned to the prince's handler, and asked, 'Well, where should I sit?' She suggested, 'Well, why don't you sit with Jimmy Wales?' That would have put me right across from the prince, so I panicked and ran to the end of the table. There, I wasn't even facing anybody. I was at the very end." She explained, "Next time, I'm going to make myself sit in that really uncomfortable seat and be okay that nobody else in this room still has student loans."

Ann Greenberg, Founder of Entertainment AI, agreed. "I bristle every time someone states that 'women are more nurturing,' or 'women are' this or that. There's no way I'm comfortable with those generalizations. Women are as varied as men are. In fact, if we keep sending the message that all women are more collaborative or supportive, then the women who do not embody those characteristics are going to feel like there's something wrong with them. And we need them to be themselves really badly right now. We need that leadership. I think about it more like power structures. It helps me not second guess everything I do too much."


↳ Media featuring diverse characters can be highly profitable. Blockbuster films *Black Panther, Coco, Moana*, and *Wonder Woman,* feature Black, Latinx, Indigenous, and female leads.

## A ray of hope: streaming media

Despite all of these concerns, we can see that change is possible. The proliferation of options for consuming streaming content has simultaneously created new marketplaces for makers and allowed for new forms of mass digital distribution combined with older methods such as theatrical release. Ideally, the success of blockbuster films such as *Black Panther* ($235 million opening weekend), *Coco* ($71.2 million opening weekend), *Moana* ($81.1 million opening weekend) and *Wonder Woman* ($103.1 million opening weekend), which feature strong Black, Latinx, and female characters, will spark fundamental shifts.

Similarly on streaming services and premium cable: *Jessica Jones, Luke Cage, The Watchman, Orange is the New Black, Atypical,* and many other shows have elevated women, people of color, immigrants, and other previously underrepresented groups to the roles of hero and protagonist. Perhaps we are seeing a tipping point where diverse content becomes the rule, not the exception, and these same principles can be applied as new media forms bubble up.

However, such market shifts will require media consumers to adapt to a new normal and understand that the status quo was skewed. For example, one interviewee said, "When *Luke Cage* came out, a lot of people were like, 'I don't feel comfortable with this show.' 'It's racist.' 'There's only Black people.' They had a complete lack of awareness that only seeing white people in most films or TV shows is our everyday experience, since the beginning.

> **Despite all of these concerns, we can see that change is possible.**

# Notes

# Rethinking Institutions

## Trust issues

Trust is one of the major factors in the work of institutions trying to create safe and inclusive space. The question of "Can we trust this institution?" is often on the mind of people from traditionally oppressed groups. There have been too many breaches of trust in history to make this an easy suspicion to overcome.

Even putting people from marginalized groups in positions of power within an institution is not enough to bridge the gaps in trust between institutions of power and identity groups that have been disenfranchised. It is hard to be assessed for trustworthiness by your own people, but these suspicions are completely logical for a number of reasons. For example, privilege is seductive, especially for a person typically excluded from privileged spaces. No one is immune to the illusions of their ego and it takes daily practice to stop it from impeding the work. Also, if you look at the long history of oppression, complicity by "tokens" or "Uncle Toms" have always been part of the formula. This makes being a person from a minority group, working inside a traditionally majority-led institution, extremely sensitive.


See "Conduct an equity audit and develop tailored interventions" in Section 3, our toolkit for change.

That said, should historically white institutions lead the work of equity and inclusion? How do you determine the responsibilities of the institution and those from disenfranchised groups within the institution? Having someone from one of these groups lead a powerful institution suggests progress but raises questions: Is this step forward permanent or temporary? Is it indicative of a real and enduring change or merely the appearance of one? How do we measure progress?

Furthering equity is a continuum of attempts to make progress that sometimes sways back after moving significantly forward. Even when there seems to be a moment of arrival (the Emancipation Proclamation, the Civil Rights Act of 1964, Obama's election in 2008) it is fragile and vulnerable to reversal without constant vigilance. Backlash is always a danger — for example, the rise of the KKK during Reconstruction, the New Jim Crow replacing the old Jim Crow after the Civil Rights Movement, and the selection of white supremacists to serve in the administration that followed the first Black presidency in the U.S.

This complicated history has led to an abundance of approaches by underrepresented groups to further equality and equity. Some believe that the current systems and infrastructures are so problematic that to work within them is not conducive to real change; others feel it is critical to work inside places of power to enact real change. Some focus on hearts and minds change, while others are focused on systems change; others are trying to do it all.

In truth, everyone seeking to establish equality is attempting to achieve something that has never fully been realized in human history, so it will take cycles of risks, successes, and failures before we find the working models and mature as a global community. For those of us working to create safe spaces in emerging media — as in the real world — this process will take patience, hope, and, perhaps, faith, to stay motivated.

## Biased and segregated education systems

The failure of the government and domestic businesses to train Americans for the future has an impact on social stability along race and class lines that ripples through the media industries.


See "Foster digital and cultural literacy" in Section 3, our toolkit for change.

The failure to properly prepare Black and Latinx youth for gainful employment has been well-documented in opportunity- and discipline-gap research. Biases in our education system limit talent pipelines for the tech, gaming, and film industries, but this is not an excuse for a lack of diversity and inclusion in those fields. One, because tech and media companies are not leveraging the talent that does exist; two, because they are not investing in developing those pipelines and continue to center resources and programming around white students.

"[The biased education system] bums me the f*ck out!" said Luke DuBois of NYU's Brooklyn Experimental Media Center. "We actually think about it in my school a lot, because 60 percent of my students are from the five boroughs, and we have a center of excellence and diversity model. So I've got 100 students from the full spectrum of NYC and they're paying half the NYU rate. The graduate students are subsidized and funded. So, we've got a very diverse crew, but my colleagues at USC Film School can't play that same game. Not every school can pull that off. And it's not the professor's fault, right? It's the structure of the institution. Higher education is a business, and it works that way."

Problems with educational systems were one of the most consistently cited sources of the inequities in emerging media by *Making A New Reality* interviewees. Although there are growing efforts such as Black Girls Code and the Ghetto Film School aimed at bridging these gaps, the disparities can still feel overwhelming.

Schools are are only one of several institutions that need to be rethought if we are going to address the issue of inclusion in emerging media. And it's not just individual institutions that need revamping, but the disciplinary lines that separate them.

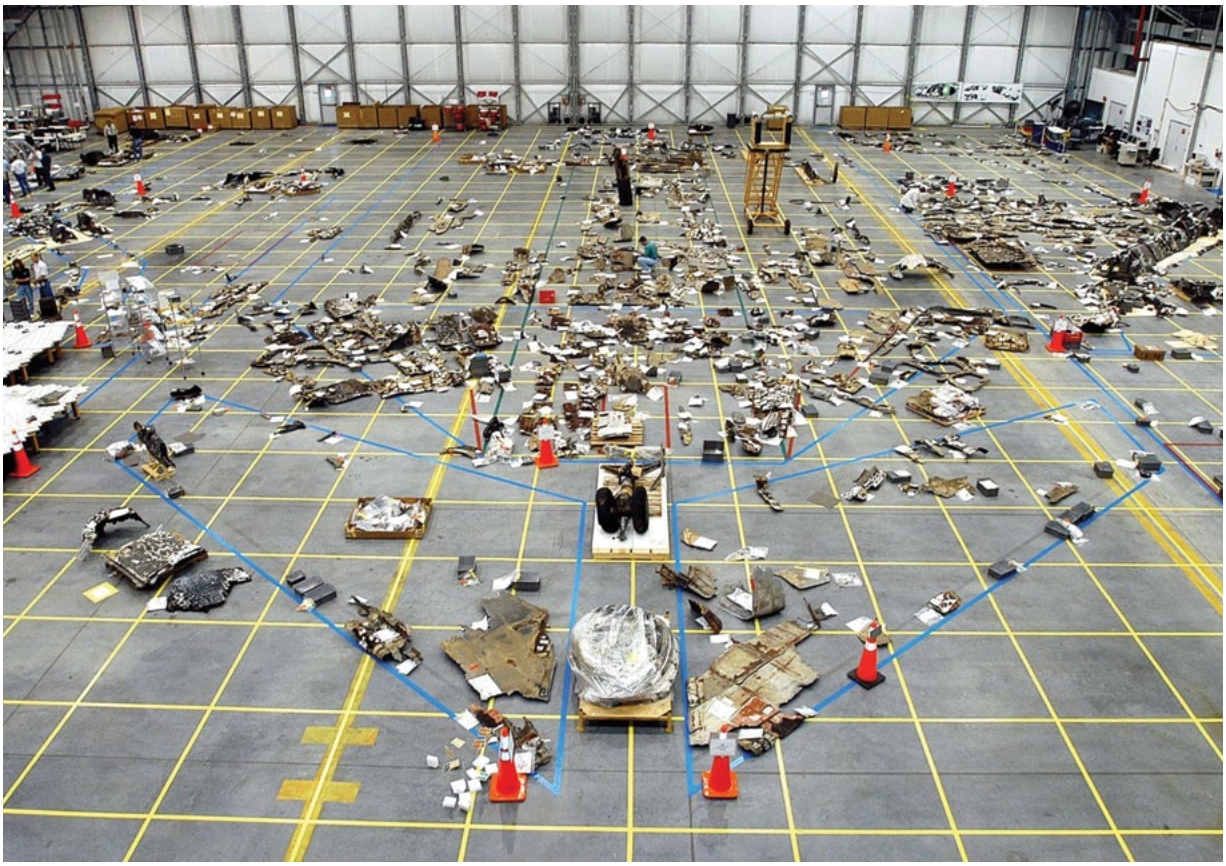
**Biases in our education system limit talent pipelines for the tech, gaming, and film industries, but this is not an excuse for a lack of diversity and inclusion in those fields.**

## Silos and groupthink

Cornell University opened a new Mui Ho Fine Arts Library in August 2019, only to find that it had plowed $22.6 million into a project that people in dresses, skirts, or high heels could not safely use. The architect, Wolfgang Tschapeller, designed the space with see-through, steel-grated floors. Anyone wearing dresses or skirts would be exposing themselves to those on the floors below. The floors damaged high heels, causing them to get stuck and possibly creating a trip hazard. Who was on the team that designed, tested, and approved this project and how did something this large fail so miserably?

Such mistakes can be not just dangerous but deadly. The primary reason for the 2003 Columbia Space Shuttle tragedy: groupthink. NASA's homogenous and top-down management structure shut out key inputs that ultimately led to the explosion.

How do you counter groupthink? Of course, team members need skills in group decision-making; successful teams share ideas freely and collaboratively. Teams also need a diverse group of participants, and they need to include members outside of the group in decision-making. Throughout the *Making a New Reality* interviews, artists, scientists, policy experts, entrepreneurs, and technologists lamented the silos that isolate their respective fields of knowledge in the design and imagination of our future.



↳ Researchers found that groupthink, fueled by top–down management, contributed to the 2003 Space Shuttle Columbia disaster.

## The need to cross disciplines

These gaps between scientists, technologists, engineers, artists and humanities experts are similar to identity divisions among people in emerging media in that once you get past the friction you realize the people on either side are more alike than not. Missing perspectives mean that mistakes will be made.

"I think tech firms need more artists and more critical engineering, meaning engineers with history degrees, which has basically vanished," said DuBois. "It's not even art that's missing, it's the broad stroke of liberal arts."

Miles Perkins of Epic Games identified our education system as a major source for these silos of the arts and humanities, engineering, and business in the tech and media fields, saying, "We have taught a generation of students to value STEM over STEAM [which adds "Arts" to Science, Technology, Engineering, and Math] in the last 25 years." Artist Britt Wray similarly described this gap between the arts and sciences, adding that it is not only a lack of shared language that becomes a stumbling block but a lack of respect for each others' fields of expertise.

DuBois agreed, "Part of it is the universities' fault. For the last 15 years, we've been STEMifying everything we do, so if you do computer science at Stanford, you get pipelined straight into Facebook or Google and don't really have to take any humanities classes in depth." Fortunately, DuBois saw some attempts to change course: "We're trying to fix this over at NYU now. We're developing a core curriculum for engineering students to counteract that, so they all have to take an ethics class, and they all have to take a history and philosophy of science and technology class so that they understand that this stuff doesn't happen in a vacuum."

Levin explained, "Our computer science departments teach programming with certain kinds of assumptions — that you are probably going to go to work in a cubicle at a big company like Microsoft. Therefore, they don't teach you to work in ways that are improvisational. But artists like to work improvisationally. In computer science, it's more about computing a plan or satisfying an assigned task."

"Second, computer science education traditionally assumes that you learn from abstract principles: 'Here's the equation. Here's an abstract description of how it works. Now you know the material. Now you take the test.' Artists don't learn that way. They learn from making concrete examples, not from abstract principles. So, for artists, learning is often much more tinkering-driven, curiosity-driven, creativity-driven, and hands-on with code — where you make stuff to figure out what's makeable."

To tackle this issue, all students studying game design at Carnegie Mellon are required to study improv. According to Drew Davidson, professor at Carnegie Mellon, improv teaches students to get over ego and focus on the scene and story, as well as how to work on a team that prioritizes the improv principle of "Yes, and..." rather than starting from "no." This simple change in attitude, key to improvisational theater, could drastically impact the tech field.

Levin identified another problem in computer science departments: "a strong bias towards making things which are utilitarian rather than expressive." He explained: "Your job is to make this vending machine or this banking software, but an artist says, 'Well, this doesn't really speak to me.' An artist like Lauren McCarthy sees code as a 21st-century artistic medium. There's a really important opportunity to support open-source arts engineering toolkits. Foundations could be doing that, but it's a challenging thing to explain, I think."

Marisa Jahn and other interviewees described a time in the last century where STEAM was held in high value at places such as MIT and Bell Labs, which were creating linkage between these fields. Though there are programs for artists in tech companies, many of them are "tinsel" and not rigorous. Interviewees lamented the value systems of exponential economic growth and hyper-capitalism, as described by Douglas Rushkoff in his book *Throwing Rocks at the Google Bus*, have encroached on the time, space, and resources for this kind of cross-pollination of ideas.

"The technology is there to service the art, not the other way around," said Maureen Fan of Baobab Studios. She explained that the myth still persists that investing in higher artistic values and more rigorous stories for mass media products (for example, casual games) will limit, if not dissolve, profit margins. *The Harvard Business Review* published a case study on the development and success factors of Pixar and found that making the story the primary brand value and technological excellence a secondary value was the key to the studio's exponential economic success. Some argue the VR industry has suffered from a tech-first mentality when the industry pushed hardware to launch ahead of an abundance of meaningful or cohesive content.

Eugene Chung, former head of Oculus film department and current CEO of Penrose Studios, shared that it was very difficult to get the company to invest in storytelling experiences in the beginning. Of course, there are valid arguments that sometimes artists are too attached to their creations and fail to make the difficult decisions to reach beyond the niche, indie audiences. In recent years, Oculus has invested more in non-gaming and non-sports experiences, stories, and communication functions. The industry has invested more heavily in content recently, and now high-quality content is being acquired out of festivals like Sundance Institute's New Frontier at seven figures. Could this have been different if artists had a greater locus of power in the beginning?

## But it's hard to break silos

Some interviewees talked about the challenges of having coders and engineers in conversation with designers of the end-user experience. This can be difficult for both sides of the dialogue.

Tracy Fullerton of USC Games explained that much of the siloed culture comes from day-to-day interactions: "There's this kind of nerd macho, coding really long hours. It is not friendly. It's not inclusive. It tends to not invite others into its sphere. So, even if you go in as a freshman to study computer science, you are on a daily basis going to be faced with this sense that you're not invited."

Yelena Rachitsky of Oculus discussed her experience at the crossroads of storytelling and technology: "I think part of the gap between the arts and tech is just that people come in from what they know and they tend to stay in that community. It's how you learn to think. It's how you learn to value things, and so now that there's this convergence, we're having to re-open our minds to realize, 'Oh, maybe this works better a different way.' And that is not an easy thing to do. I find myself having a hard time getting into the gaming mindset or the engineering mindset, coming from the film world. I'm used to it being very hierarchical, with the director first. In the tech world, it's hierarchical, with engineering first. Previously, I was in a world where the tech people did what the creative people asked them to do. And now I'm having to realize that's also a biased way to think because the tech is just as important as the creative."

Wray, journalist and former scientist, saw a similar dynamic in hard sciences: "It feels like artist/scientist collaborations are still a marginal practice. Artists get invited into scientific spaces rarely compared to those with the hard tech and hard engineering skills because they're perceived as less valuable. The artist or storyteller comes in and gets to benefit by learning about the atmosphere, the environment, the materials, and tools that all these scientists are using. They get to make captivating content that attaches their imagination to what the scientists are doing, but generally, the scientists are sitting there thinking, 'What do I get from this? I'm sharing my lab bench with you, but how do I necessarily incorporate what you have to show me into my work?' This is an ongoing question in synthetic biology. We need to get clearer about what the benefits are to scientists and how it could be more collaborative, rather than like a one-way partnership."

Wray explained that one of her biggest concerns is that small scientific communities such as synthetic biologists are making huge decisions that could affect the fundamental design of human bodies in the next twenty years without being in discourse with other fields of knowledge, such as the arts and humanities. "It's too much responsibility."


See "Promote interdisciplinary collaboration and strategically embed artists in spaces of power" in Section 3, our toolkit for change.

## Lost value

Dan Novy, MIT Media Lab engineer, is a strong advocate of bridging this gap, especially in media innovation. Not only should artists and technologists collaborate to optimize the technology, he thinks they should do so earlier in the process. He noted that the current process typically does not involve media makers until the product comes to market, then the artist is creatively constrained by the limitations of the technology. They either play inside the lines of the tech or hack the tech to get new results (e.g., James George & Jonathan Minard's hack of Kinect technology to create computer vision cameras in *CLOUDS*). The engineers see the hack and iterate the product to better match the artist's needs. Novy said this cycle would be more efficient if the artists collaborated with the engineers from the beginning of the concept.

McCarthy explained, "It's really hard to get any support for building tools because it is not the central thing. It's an alternative model, or it's just not as flashy to be building the tools that are underlying the final installation. But, I think that's where you need the most diversity because a tool is not neutral. It reflects the ideas of its creators. If we have one homogenous group making all the tools, our stories will all be shaped by what's possible in the tool. So, that's why I focus my attention there." McCarthy is an artist and programmer, and the creator of the tool p5.js, a javascript library that makes coding accessible to creators.

Scott Snibbe, an interactive artist and creative technologist, describes the first time he used the Apple II computer, back in the beginning of personal computing. As an artist, he saw the blinking green cursor on the jet-black screen as pure possibility, a multi-dimensional creative canvas. So, when Microsoft issued its operating system and put the entire universe of possibilities into a desktop framework, he was devastated. The immense creativity of this medium was now under the mental constraints of work/office productivity. He had to circumvent this framework in his practice for decades before Apple gave him a new infinite and multi-dimensional canvas in the iPad tablet. With that new tool, he has created some of the most astounding UX/UI designed works in the field, such as Bjork's Biophilia concept album.

In this instance, both the arts and sciences are charged with investigating what it means to be human and how we might improve our state of being. They both explore truth and require imagination. They help us understand our minds and bodies. They hold up a mirror to humanity. They open our imaginations to what could be.

> **Not only should artists and technologists collaborate to optimize technology, they should do so earlier in the process.**

# Notes

# Larger Structural and Political Issues

Since the original research for the *Making a New Reality* was conducted, several problematic dynamics in the environment for creating, sharing, distributing, and critiquing emerging media have come into sharper relief — often hinged to media about elections in democracies around the world.

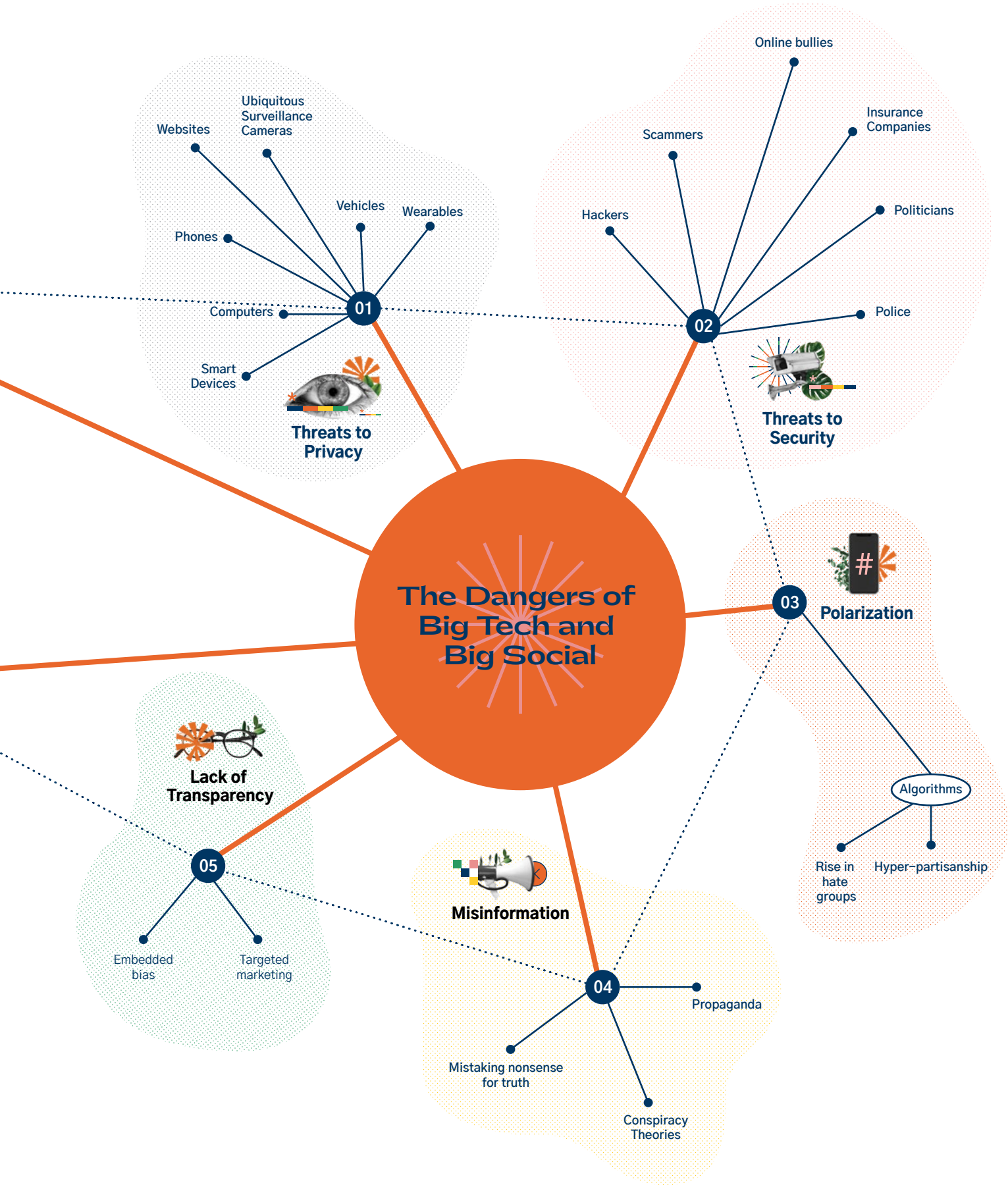
## A consolidated digital media landscape

At the dawn of the internet, many of us were full of optimism for its power to democratize information, connect humanity, and break down barriers to equality and justice. It's been painful to see that vision usurped by hyper-customization, echo chambers, filter bubbles, trolls, malicious social cyber warfare, and the loss of net neutrality.

Many interviewees for *Making a New Reality* raised concerns about falling into these pitfalls again with emerging forms such as immersive media and networked environments, especially since they are arriving in an aggressively consolidating media landscape. Many feel that this will compound the concerns over the dangers of silos between fields of knowledge and discipline.

Key concerns currently related to the rise and merging of powerful technology and social media companies include:

- **Threats to privacy**, as web sites, apps, computers, smart devices, wearables, vehicles, ubiquitous surveillance cameras, etc. gather personal data that is then parsed, repackaged, sold to the highest bidder, and used to manipulate consumers and voters.
- **Threats to security**, as this data and users' social accounts become vulnerable to not just marketers, but hackers, scammers, online bullies, insurance companies, politicians, police departments, and others seeking to manipulate people's behavior and opinions and make judgments about them that could affect their health and safety.
- **Polarization**, as the algorithms that engage and reward participation in social media and streaming sites reward ever-more extreme behavior and siloed media consumption/production.


The Dangers of Big Tech and Big Social
01
Threats to Privacy
Websites
Ubiquitous Surveillance Cameras
Vehicles
Wearables
Phones
Computers
Smart Devices
02
Threats to Security
Online bullies
Insurance Companies
Scammers
Politicians
Hackers
Police
03
Polarization
Algorithms
Rise in hate groups
Hyper-partisanship
04
Misinformation
Propaganda
Mistaking nonsense for truth
Conspiracy Theories
05
Lack of Transparency
Embedded bias
Targeted marketing

- **Misinformation**, as those creating propaganda, spreading conspiracy theories, or simply mistaking nonsense for truth use open distribution systems to disseminate falsehoods.
- **Lack of transparency**, as more and more of the information we see or can access and the software and hardware we use to do so, are shaped by complex algorithms and licensing agreements designed to benefit corporations and marketers.
- **Addictive behaviors**, as the designers of these systems attempt to keep users, gamers, consumers, partisans, athletes, trolls — really, everybody — hooked into spending more and more time with digital and mobile devices and using them to track ever-more intimate details.
- **Physical and emotional harm** caused by constant interaction with screens, devices, and digital objects, which keep users locked into unnatural physical positions, expose them to light and stimulation that interrupt circadian rhythms, and keep people from engaging in face-to-face social interactions or unstructured daydreaming.

2019 and early 2020 have seen a wave of articles, films, and books on how earlier hopes for the web's democratizing potential have been dashed, replaced by fears of an internet controlled by corporate greed, politicians' power grabs, or the murky motives of troll armies and other bad actors. For example, *The Great Hack* documented the discovery and consequences of the Facebook/Cambridge Analytica scandal, in which a research firm used the social media platform to collect personal data on users without their permission, and leveraged it to create targeted campaigns designed to affect elections.

Shoshana Zuboff's 2019 *The Age of Surveillance Capitalism: The Fight for a Human Future at the New Frontier of Power* provided a sweeping analysis of how such manipulations became possible and are poised to profoundly influence how people and societies spend their time, resources, energy and political capital, undermining democracy in the process. "This antidemocratic and anti-egalitarian juggernaut is best described as a market-driven coup from above: an overthrow of the people concealed as the technological Trojan horse of digital technology. On the strength of its annexation of human experience, this coup achieves exclusive concentrations of knowledge and power that sustain privileged influence over the division of learning in society. It is a form of tyranny that feeds on people but is not of the people," Zuboff told *The Guardian* in a January 2019 interview.

Her points about the unchecked power of corporate surveillance were vividly illustrated in a December 2019 interactive investigation by the *New York Times* titled "One Nation, Tracked," which showed how Americans' movements can be tracked via location pings from their cell phones. "It doesn't take much imagination to conjure the powers such always-on surveillance can provide an authoritarian regime like China's. Within America's own representative democracy, citizens would surely rise up in outrage if the government attempted to mandate that every person above the age of 12 carry a tracking device that revealed their

location 24 hours a day," wrote investigators Stuart Thompson and Charlie Warzel. "Yet, in the decade since Apple's App Store was created, Americans have, app by app, consented to just such a system run by private companies."

These same tools of surveillance and market segmentation have allowed advertisers to discriminate against users based on their demographics. In 2018, the U.S. Department of Housing and Urban Development filed a complaint against Facebook because its " ad targeting tools...invite advertisers to express unlawful preferences by suggesting discriminatory options, and Facebook effectuates the delivery of housing-related ads to certain users and not others based on those users' actual or imputed protected traits." Another lawsuit filed by the ACLU claimed that women were being blocked from seeing job ads posted by companies only seeking male applicants.

The ways in which these and other unexpected dynamics have played out in online and social media are a harbinger of unintended consequences that are sure to attend widespread adoption of newer emerging media forms. Producers, funders, and policymakers all need to be more attuned to possible negative outcomes of their work — even those striving to create more equitable conditions.

## Lack of ethical design practices

Emerging media can be exciting, but makers and inventors need ethical standards to help society optimize benefits and mitigate negative consequences.

There are a number of conversations in process about ethical design in emerging media. Journalistic standards top the list of concerns. We've been wrestling with reconciling the dynamics of citizen journalism and the decoupling of content from trusted outlets with traditional standards of accountability since the beginning of social media. The manipulation of facts has become an intensely scrutinized issue with the proliferation of so-called "fake news," or "alternate facts," as well as echo chambers and ideological cyber-warfare in social media.

However, this is only one area of concern. There are ethical design questions about every aspect of new media — which mirror similar early questions around film, photography, and other media.

Virtual reality has added a new layer of ethical concerns to this emerging media conversation because experiencing newsworthy events in VR can go beyond informing the public to traumatizing them. There are palpable fears among underrepresented groups that behaviors that create unsafe spaces will be exponentially worse in emerging media, especially with the potential for real-life PTSD from virtual harassment and violence. However, there is a spectrum of responses to this critique, and public discourse is to find consensus on ethical standards.

Ethical questions extend beyond journalism, documentary, or art into the behavior of the general public in virtual worlds. Gaming has long been critiqued for providing players with the ability to be explicitly violent and amoral (e.g., rape


See "Prepare for unintended consequences" in section 3, our toolkit for change.

Note that we are editing this toolkit in the first half of 2020 — in the middle of the coronavirus pandemic, worldwide protests and a controversial presidential election in the United States. Associated debates about the role of government, large technology companies, various bad actors (both independent and state-sponsored), and bias are being waged on a daily basis. In this section, we highlight key pre-pandemic concerns, with the caveat that issues related to specific companies, policies, and political figures are evolving rapidly. For example, contract tracing has become a huge concern for privacy advocates, as has the use of facial recognition for tracking down participants in protests.

in the Grand Theft Auto franchise). However, virtual reality pieces that hack the user's brain into feeling present in a virtual space and embodied in a virtual body require a higher level of ethical interrogation.


See "Design for justice, well–being, and prosperity" in Section 3, our toolkit for change.

For example, early psychological research is finding that when someone is abused or sexually harassed in virtual reality, they show the same signs of Post Traumatic Stress Disorder (PTSD) as someone who experienced it in real life. This can be especially damaging to children; research has shown they are more vulnerable to trauma than we may have previously understood. Therefore, we may need to enact laws to protect users and govern the kinds of experiences possible in virtual reality pieces — or, at the very least, implement a rating system that properly warns users about the possibility of trauma.

Although early research indicates a strong need to further ethical design practices in emerging media, this is even more important in terms of AI, where machine learning is evolving much faster than predicted.

## Lack of safe spaces

*Making a New Reality* interviewees raised a number of critical concerns about a lack of safe spaces in the emerging media environment — across production, exhibition, consumption, and institutional spaces.

"Twitter is not doing a very good job of keeping their users protected without censorship," said artist Nancy Schwartzman. "And don't get me started about Facebook."

For a lot of media reporters, the 2016 Gamergate incident, marked a change in the way people fight online, creating a prototype that extremists have championed and now widely used to recruit others. As Charlie Warzel wrote in a 2019 *New York Times* article:

*Today, five years later, the elements of Gamergate are frighteningly familiar: hundreds of thousands of hashtag-swarming tweets; armies of fake Twitter accounts; hoaxes and disinformation percolating in murky chat rooms and message boards before spreading to a confused mainstream media; advertiser boycotts; crowdfunding campaigns; racist, sexist and misogynist memes; YouTube shock jocks… The comparisons are nearly endless. Recent right-wing furies over female Marvel characters and Black Star Wars leads echo Gamergate's breathless Reddit threads defending sexist tropes in video games as essential cultural pillars.*

The U.S. Presidential election of Donald Trump in 2016 added fuel to the fire, with the President himself frequently attacking women and critics on Twitter. Mainstream news organizations reported that Russia had funded a number of fake Facebook and social media accounts similar to — if in some cases more subtle — than those above. Fake news and social media are now commonly state- and corporate-sponsored. Facebook, Twitter, and other social media platforms have implemented superficial changes to address the fakes and to combat cyberbullying, but the sheer volume of content and creators has to date made containing trolls and cyber-harassment all but impossible on a mainstream platform.

Gamergate served as an early warning signal for the tsunami of women's rage about working conditions in entertainment, news, and tech that crested with the #MeToo movement. While some high-profile perpetrators of sexual harassment have been fired, these industries have yet to implement meaningful structural change. Brianna Wu, one of the gaming journalists targeted by trolls during Gamergate, wrote an opinion piece for the *New York Times* (August 15, 2019), titled "I Wish I Could Tell You It's Gotten Better. It Hasn't."


See "Use collaborative design and co-create media" in Section 3, our toolkit for change.

She explained:

*We needed the men who sexually harassed us at work to be fired. What we got instead were catered luncheons for women in tech. Even today, game studios rarely stand by their employees who are targeted by online mobs who use exactly the same tactics they used during Gamergate. Everyone agrees sexism is a problem, yet no one admits to sexism.*

The dynamics we see at work in Gamergate have extended to journalism and online commentary more generally. Research from Pew reveals that two thirds of Americans have witnessed harassment online, that online harassment disproportionately affects women, and that young women are especially likely to experience sexualized abuse online. Women are also more likely to find these abuses upsetting than men do, which in turn influences how seriously the problem is taken in public discourse. In the *New York Times*, Bloomberg TV anchor and Brotopia author Emily Chang explained: "It isn't just that real-life harassment also shows up online, it's that the internet isn't designed for women, even when the majority of users of some popular applications and platforms are women. In fact, some features of digital life have been constructed, intentionally or not, in ways that make women feel less safe."

The problem is serious for women, and for women of color in particular. Amnesty International found that women of color were 34 percent more likely to be mentioned in abusive tweets than white women; and Black women specifically 84 percent more likely than white women to be mentioned in abusive tweets. These dynamics are also affecting the profession of journalism. Who gets to tell stories and have a public presence online, when a public presence likely entails gendered threats and attacks? Research from the International Women's Media Foundation found that 70 percent of women journalists had experienced harassment, threats, or attacks, and that one-third of respondents considered leaving the profession because of it.

## Zooming in on the issue of AI

AI is central to reinforcing many pernicious online dynamics. Futurist Amy Webb summed up a number of related concerns in her 2019 book, *The Big Nine: How the Tech Titans and Their Thinking Machines Could Warp Humanity*. "AI isn't a tech trend, a buzzword, or a temporary distraction — it is the third era of computing. We are in the midst of significant transformation, not unlike the generation who lived through the Industrial Revolution," she wrote.

She noted that those building the future of AI are centered at "nine tech giants — Google, Amazon, Apple, IBM, Microsoft, and Facebook in the United States and Baidu, Alibaba, and Tencent in China," and belong to insular "tribes," writing "The future of AI is being built by a relatively few like-minded people within small, insulated groups. ...[As] with all insulated groups that work closely together, their unconscious biases and myopia tend to become new systems of belief and accepted behaviors over time. What might have in the past felt unusual — wrong, even — becomes normalized as everyday thinking. And that thinking is what's being programmed into our machines."

In a December 2019 *New York Times* op-ed, tech reporter Kara Swisher laid out the problem in a different way, writing: "Simply put, far too many of the people who have designed the wondrous parts of the internet — thinking up cool new products to make our lives easier, distributing them across the

↳ Multimedia artist Joy Buolamwini has called attention to algorithmic bias with her project The Coded Gaze. See poetofcode.com.

globe and making fortunes doing so — have never felt unsafe a day in their lives. They've never felt a twinge of fear getting into a stranger's car. They've never imagined the pain of privacy violations because rarely have they been hacked or swatted or doxed. They've not been stalked or attacked or zeroed out because of their gender, race or sexual orientation. They've never had to think about the consequences of bad choices because there have been almost no consequences of failure."

Media, tech, and gaming companies protest that regulation will kill innovation. But many observers are terrified that this push for limiting regulation is going too far. And to effectively create a new reality that includes all of us, regulation can't just be aimed at breaking up monopolies in one country. It needs to address issues of equity and diversity within the global corporations shaping our digital experiences.

Beyond government regulation, we need a new social compact — to require corporations to address ethical issues as a matter of internal policy rather than simply maximizing profit. "If technological, economic, and social values aren't part of a company's statement of values, it is unlikely that the best interests of all of humanity will be prioritized during the research, design, and deployment process," wrote Webb.

## Biased algorithms and the false sense of democratization

Makers of emerging media, and those funding them and distributing their work, need a better working understanding of the ways in which algorithms affect audiences.

An algorithm is a finite sequence of defined instructions, typically to solve a class of problems or to perform a computation. Algorithms play a fundamental role in many forms of emerging media, from Twitter and Facebook feeds to smartphone apps, to web search, streaming media, smart devices, and beyond. They not only directly control what we interact with on screens but what goes on behind those screens, influencing hiring decisions, funding, educational services, and larger political, cultural, and social structures. It would be practically impossible to underestimate their influence and potential.

Algorithms are often hailed as a way to promote objectivity and to eliminate subjectivity and individual human bias. Ironically, this is where the trouble starts. Where a society is laden with sexism, racism, homophobia, transphobia, ableism, and myriad unnamed bigotries, algorithms by default reflect those biases — quickly and with an expansive reach, amplifying and exacerbating them.


See "Combat algorithmic bias — preemptively" in Section 3, our toolkit for change.

This arena is complicated and fast-moving. Here are just a few examples of how algorithms can both reflect and reinforce bias, in the process, distorting reality:

- Many smartphone apps use facial recognition for fun and games — but some facial recognition algorithms only recognize light-skinned faces. Faces of dark-skinned humans do not register as faces at all. Artist Joy Buolamwini, founder of the Algorithmic Justice League, refers to "the coded gaze," in which people with her complexion are effectively coded out of existence.
- In 2015, after Jacky Alcine (@jackyalcine) tweeted about how Google Photos had categorized a friend of his as a gorilla, the viral episode prompted Google to try and fix its code. But by 2018, the company still had not solved the underlying problem. It stopped labeling humans as gorillas by ceasing to label gorillas at all; in other words, it eliminated gorillas and many other non-human primates from its categorization scheme — coded *them* out of existence.
- Australian- and Hong Kong-based organization Youth Laboratories held a beauty contest that drew more than 6,000 submissions from around the world. The first round of the contest was determined by robots and, apparently, "robots did not like people with dark skin." As Ruha Benjamin reports in *Race After Technology: Abolitionist Tools for the New Jim Code*, all 44 finalists but six were white, and only one had dark skin. (Contrast this to the 2019 sweep of the world's major beauty pageants — Miss Universe, Miss World, Miss America, Miss USA, and Miss Teen USA all chose women of color as top winners.)
- A study by Carnegie Mellon University researchers, ("Automated Experiments on Ad Privacy Settings," 2015), found that Google showed an ad for high-income jobs to men much more often than it showed the ad to women.
- A study by Harvard's Latanya Sweeney found that searching Google for a name typically given to Black babies — Trevon, DeShawn, Darnell, or Jermaine, for example — was more likely to serve up advertisements hawking arrest records than for names commonly linked to white people.

Some commentators see these examples read as fixable, minor bugs; bugs that simply reflect society's pre-existing inequities. But there is nothing simple about the spread of algorithmic-fueled bias. Take dating apps as an example. Apps that allow users to self-identify by race invariably reflect the biases of the larger society. As *The Guardian* reported in 2018, "Tinder's algorithm ranks attractiveness based on previous swipes; therefore, it promotes what is considered 'traditionally' beautiful (read: white) people."

As Google's corrections suggest, algorithmic damage can be minimized after the fact — but the problem runs far too deep to be easily solved. Racism infuses nearly every dimension of American society and culture: from education to healthcare to medical and housing and hiring decisions and banking. As Ibram X. Kendi argues in *How to Be Anti-Racist*, there is no neutral ground in this case: A process is either racist or anti-racist because the status quo — what might be considered the neutral spot — is itself racist. In other words, even when we humans don't personally intend to support racism, when we work within systems that don't actively and intentionally counter racism, we do.

All of which suggests that solving problematic power dynamics that arise with algorithms is an enormous lift. Unless Google and Facebook and governments fully commit to countering racism, sexism, and other "isms," they are merely playing a game of whack-a-mole around the surfaces.


Since 2018, researchers have published numerous books, studies, and articles about the dangers of algorithms. Women and scholars of color have fueled most of this work, including: Ruha Benjamin (*Race After Technology: Abolitionist Tools for the New Jim Code*), Safiya Noble (*Algorithms of Oppression: How Search Engines Reinforce Racism*), Cathy O'Neil (*Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy*), Virginia Eubanks (*Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor*), Sarah Wachter-Boettcher (*Technically Wrong: Sexist Apps, Biased Algorithms, and Other Threats of Toxic Tech*).

## The need for new media policies

Interviewees raised concerns about the vulnerability of public and non-commercial media in this rapidly evolving landscape. The ongoing fight for net neutrality has become one vanguard of social justice work, as powerful corporate entities are raising the barriers to expression for those without power and money, in order to consolidate control over our communication architecture and economically or ideologically benefit from that control.

"I think what is actually crucial is the policy around the open web. This can feel very unsexy and very wonky, and especially not very relevant to artists, but it's actually much more crucial. Just trying to hold onto that free and open web, the way it was initially conceived, and making sure that value is represented, in mobile and whatever comes next, is crucial," said Ingrid Kopp of Electric South. "We're losing that battle. That is absolutely critical, because otherwise everything becomes walled and owned, and then those algorithms really do become inescapable."

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See "Create new forms of public media" in Section 3, our toolkit for change.

Joshua Breitbart at New York City's Office of the Mayor juxtaposed the standards of decency and safety in social media with those in broadcast television. The former has little obligation to protect users, even vulnerable populations such as children. The latter provides ratings on content that allow viewers the chance to make decisions about what they consume.

Our policies do not hold social media sites to the same standard that they hold TV, and there is no national subsidy for digital public media. Therefore the representation of "decent" or higher-grade educational content produced for emerging media platforms is hit-or-miss. With social media sites, anyone can have a channel, including mainstream TV broadcasters, with content such as *Sesame Street*. However, these platforms do not protect children from also seeing and consuming negative content that might be algorithmically curated for their feeds. These interactive platforms create an additional issue of being multipath communication tools, which makes users vulnerable to bullying and predators.

Unfortunately, large social media, technology, and streaming companies now also maintain important histories of personal and customized content that users do not want to lose. These sites are so integrated into other sites that they have become the unlocking mechanisms for everything from banking sites to kids' soccer team information. One's logins for a handful of social networks, essentially, have replaced passwords. In addition, users' social sites can be critical to finding employment in some sectors of the job market.

Many interviewees lamented that their active participation over a long period of time on sites such as Facebook have made them dependent on the company in ways they had not anticipated; they want to disengage but, for practical and professional reasons, cannot.

Many ask: Where are the public equivalents of Facebook or Google?
Can they even exist?

## Threats to existing public and independent media

While media corporations continue to consolidate, traditional public media organizations, such as NPR and PBS, have simultaneously lost funding in the U.S. and elsewhere. This not only threatens valuable legacy broadcast services but thwarts efforts by these entities to adapt to and produce emerging media.

Can't the philanthropic community sustain public media? Ford Foundation and its peer organizations have been part of an uphill battle to create and sustain independent and public media alternatives for decades. However, policies and laws that protect and fund public and independent media — including emerging media — are critical for making this a reality.

Even as major ideological divides threaten hard-won policies and infrastructure for social good, media makers are seeing the support of independent and diverse media production going to what philanthropists see as more pressing issues, which could ultimately exacerbate the ideological divide. Philanthropy is not stable or well-capitalized enough to achieve the unconsolidated — and therefore more diverse — media landscape needed to counter the groupthink in imagining our future, educating the citizenry, and countering filter bubbles and echo chambers.

Wendy Levy of The Alliance also talked about a lack of funding for public and independent media. "As we start to build new, inclusive opportunities for artists everywhere to be able to participate in new technologies, we need to make sure that practice is attached to movement-building. We need to know, going in, that the system is broken. How we support nonprofit organizations in this country is broken. So much of the brain trusts, which hold the space for these programs, are taken up with a constant and unsustainable quest for funding that it feels like a mouse on the wheel, impossible to get off."

Of course, PBS and NPR also have their problems — even public media can fail to deliver on the hopes for a democratized media. Vassiliki Khonsari of Ink Stories shared her concern that without an open internet, we will have limited access to content, therefore limiting access to diverse perspectives and experiences.

Resources commonly coalesce around a hub. However, when consolidation takes hold, we miss out on the ideas latent in regions outside tech and media hubs. This idea has been a central one in policymaking around public broadcasting stations and public access television and needs to be carried over into emerging platforms.

The systems for producing and distributing independent media are also not truly open when one considers the barriers to entry. Moira Griffin of New Bumper & Paint Productions said, "Independent space isn't democratized at all. It's really about who has access to finance. *Those* people are allowed to be independent. Independent filmmaking is whiter than Hollywood."

Existing gatekeepers and curators for independent and public media are not always successful at weeding out poor quality. Sometimes they leave out important conversations or underrepresented voices, both in the public and private spheres, as well as on commercial and non-commercial platforms.

"I go to many mainstream platforms and I don't even know if they see our people as their consumers," said Brickson Diamond of The Blackhouse Foundation, an organization that works to expand opportunities for Black content creators. These same dynamics are repeated in the curatorial spaces for emerging media projects.

## Building out a public media infrastructure beyond broadcast?

So, what would it take to build a public interest web, which would combine the subsidies for content and infrastructure that public stations currently enjoy with new capacities for imposing standards on content, emphasizing civic and educational functions, and creating sandboxes for citizens and makers to engage with new media forms?

The role of digital public media has taken on new relevance during the pandemic, as parents struggle to educate their kids from home, and the need for reliable public health facts has intensified amidst a groundswell of online misinformation.

These questions have been debated before, in the '90s with the advent of the web, and in the '00s as social media arose. Now, in 2020, the rollout of 5G networks across the country provides an opportunity to consider these questions anew, since faster speeds will allow for new types of services and capabilities, including the widespread adoption of VR and AR. Similarly the conversion of the digital television standard from ATSC 1.0 to ATSC 3.0 — which has been dubbed "next generation television" — will allow stations to offer new interactive, streaming, and multimedia options to audiences. The Public Media Venture Group has been convening stations to explore these possibilities.

Despite many calls to action, traditional public media networks in the US, such as NPR and PBS, have not yet built coordinated digital public interest platforms. No clear policies or income streams have been established to support an online equivalent for these national networks, although key players such

as PRX, KQED, ITVS, POV, AIR, WNYC, and others have stepped up as digital innovators, finding ways to leverage social and mobile platforms for distribution and audience engagement. Similarly, public access television stations — which managed to get money from the cable companies to support a previous wave of people-powered production — have not managed to band together to build a participatory digital platform.

Loc Dao, Chief Digital Officer at National Film Board of Canada, said that even countries with great public traditional media infrastructure are struggling with the reality that public content on the internet is not as visible as traditional radio and TV were pre-internet. To get publicly created content seen on digital or emerging media platforms, they have to place it on commercial sites such as Amazon and Facebook.

Often, they do this in ways that are tone-deaf to how younger people are actually using these platforms. A 2020 article in *The Guardian* explored this dynamic, noting, "What social media the BBC uses is far from millennial-friendly — a tepid array of memes on Instagram, mostly news-y Twitter accounts, and Facebook pages that share BuzzFeed-style videos of the kind that were already tired cliches in 2015. There has been no real effort to develop an original presence, either, on YouTube — a digital space that has been a social media staple for a decade."

Some interviewees feel that creating a competing platform to Facebook or Amazon is a fool's errand. Kopp said, "I feel like you could really easily waste a lot of money doing something like that. I'd be really nervous about trying to create a platform, because that's not what we're good at, and we need to do the stuff that we're good at but be better at it."

Nelson, who formerly worked at PBS, echoed Kopp's sentiment: "Is there a need for public space in emerging media platforms? I would say unequivocally yes. Is the right thing for us to build that space separate from commercial entities? Yes, but I recognize that there are so many constraints to creating something that can compete because at the end of the day public media makers want their content to reach as much of the public as possible."

Denise Mann of the UCLA School of Theater, Film and Television Producers Program put this in context of the "power grab to control media and entertainment in the tech space." She said, "It is massively scaled around the 'big four' tech platforms (Amazon, Google, Facebook, Apple) that control consumer data analytics. Their ability to control all this consumer data puts to shame Hollywood's own efforts to engage in consumer research over the past 50 to 60 years."

Even countries that invest in public media, value a diversity of perspectives, and work to constrain a purely commercial media landscape, struggle. Mann explained that she is "eager to learn more about the steps Europe is taking; for instance, they have greater restrictions on media companies that produce content that doubles as advertising (i.e., branded entertainment), which is one of the mainstays of YouTube and other platforms offering 'snackable' content. France and Germany, for instance, have robust and long-standing legal systems

in place to protect their own national culture. They've adopted various policies over the decades to beat back the encroachment of Hollywood's commercial franchises. However, it is difficult to develop competing streaming web TV strategies today given Netflix's almost two-decade head start. It's a massive issue for much of Europe."

In the context of these comments, perhaps trying to create public space on the internet or on social platforms is futile. We may be 10 to 15 years too late. Perhaps we should just focus on:

- Achieving net neutrality so that corporations can't prioritize their own content or degrade access to the open web;
- Establishing laws, policies, indicators, and regulations to stop the egregious ways these platforms impede on individual rights and freedoms and increase transparency;
- Negotiating deals with existing corporate platforms for channels dedicated to non-commercial use;
- Limiting commercial intrusion, and rewarding companies that do hold themselves accountable to create safe and inclusive spaces; and
- Investing in infrastructure that helps underprivileged communities participate in emerging platforms.


See "Build better worlds together" in Section 3, our toolkit for change

## Rejecting both corporate and government solutions

Some interviewees argued that fighting consolidation of our communications architecture by large corporations shouldn't necessarily be left in the hands of governments. They called for bottom-up strategies, local control, and volunteer labor to provide alternative structures.

Levin observed, "There's been a revolution when it comes to open-source arts engineering tool kits, which are programming environments made for artists by artists that are free. They're often cross-platform tools, not commercial products. They do not require artists to spend hundreds of dollars to line the pockets of Adobe, or Microsoft, or anyone else. "

Interviewee Lance Weiler advocated for strategies affectionately referred to as the "Buckminster Fuller Approach" because they circumvent tech and business centers by investing in regionally diverse, community-based programs to catalyze innovation by providing space, tools, and learning.

> **There's been a revolution when it comes to open-source arts engineering tool kits, which are programming environments made for artists by artists that are free.**

Kopp reflected, “I agree with those kinds of decentralizing ideas. It doesn’t all have to be all about the Microsoft and Facebooks. We probably need to be in community spaces, too, because, otherwise, we can never go into making an impact in those scaled up-spaces. I think we need to be in both. You need a bottom-up approach and a top-down approach. One of them is more about small interventions and seeding, and the other is about policy, think tanks, and public algorithms.”

## How can makers intercede?

What role can those crafting emerging media play in all of these debates about the perils of consolidated technology and the promise of new public interest platforms? Lauren McCarthy, Salome Asege, Rachel Ginsberg, Lance Weiler, Nick Fortugno, Grace Lee, Tony Patrick, Hyphen-Labs, Michael Almereyda, Alex McDowell, Detroit Narrative Agency, Pigeon Hole Productions, Sam Ford, Alexander Reben, Nnedi Okorafor, and Heather Dewey-Hagborg are just a few of the artists and technologists mentioned by interviewees for their practices of collaborating with diverse fields of knowledge to constructively interrogate and imagine our future. They were referenced by interviewees as examples of how silo-breaking efforts could help us navigate these disruptions.

# Notes

# A toolkit for change

In this section, we discuss solutions and share resources from experts and interviewees. There are many paths forward to addressing inequity in emerging media. We have grouped them into changes that can be made at the individual or personal level; changes to be implemented in media organizations and other institutions; and systemic changes needed across a variety of fields.

### Personal Solutions

Media makers with privilege — whether by race, class, gender, sexual orientation, or physical health — can start by recognizing their biases, and then commit to listening and learning.

### Institutional Change

Here we focus on changes that can be made at individual companies, outlets, or media networks. Equity audits, data collection, hiring reform, safe spaces, and community-centered media are among the recommended interventions.

### Systemic Change

This section covers cross-institutional solutions and initiatives that are interdisciplinary or based in different movements, trades, or government policies.


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# Personal Solutions

There is no single solution when it comes to creating more equitable and inclusive media — no single ideal starting place. The personal and political are interdependent, as are the many associated disciplines and fields and hierarchical layers. Interviewees identified areas in need of change at the personal level; at the organizational level; and at the larger, systemic level. Nothing substantial can happen in one area without key changes in the others.

This presents a challenge and a major opportunity: There are many paths forward to new realities, many ways to get involved and promote positive change at every level.

To break the varied possible solutions down, we have divided them into three core sections: personal, institutional, and systemic. Of course, personal changes can have an impact on institutional and, ultimately, systemic changes — and vice versa. But breaking things down in this way helps us — and you — to identify the sources where key decisions are made — and how to hold decision-makers accountable at each level.

This section focuses on personal beliefs and actions. Though there is no single path toward change, this section comes first for a reason: Change typically starts from within. Persons with privilege — whether by race, class, gender, sexual orientation, or physical health — need to recognize their biases, realize how much they don't in fact know, and commit to listening and learning.

***The radical opportunity: Strategies to mitigate bias in emerging media***

Morgan Willis of the Allied Media Conference shared an observation of this unconscious bias: "When listening to the [2017] Golden Globes, I was struck by the number of people who referred to the nonexistent movie *Hidden Fences* [a conflation of two Black films that were nominated, *Hidden Figures* and *Fences*]. To Hollywood, these films were one movie. It really illuminated how far we still need to go in making marginalized groups fully visible."

Practitioners such as Jenn Duong, who co-founded the virtual reality company SH//FT, see an opportunity to achieve fair representation in emerging media.

"What's so powerful about stories is they shape our worldview," said Duong. "If we can get diverse voices into VR now and create more diverse content, that's going to be really powerful."

Below are ideas, strategies, existing models, and resources for mitigating bias that we discussed with interviewees.

# Cultivate awareness of implicit bias

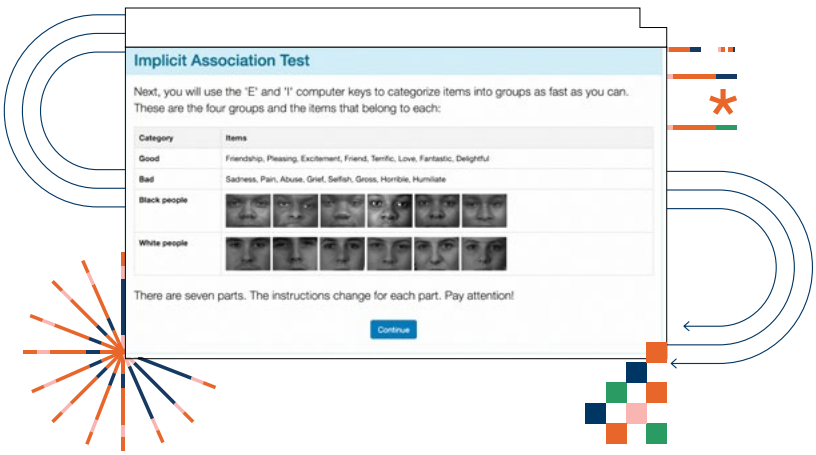
No matter how much we wish it were not true, centuries of institutionalized inequities and the related media representations and divisive historical narratives have primed us to be biased. If we are all biased, then how do we mitigate that bias and promote equity in the media landscape?

One approach is making people within the media field aware of their own unconscious biases. Even with strong feminist and inclusive ideologies, Duong described having to manage her own tendency to select a man over a woman when building teams for productions.

Julie Ann Crommett of Walt Disney Studios has been staging workshops on unconscious bias for the tech and media sectors for a number of years. Her goal was simply to raise awareness about implicit bias, so participants can self-assess their assumptions or become more conscious about how their programming impacts their decisions. She talked about one example from her previous stint at Google — they found that about 10% of users were loading videos to their YouTube iOS uploader upside-down. It turns out the users were left-handed, and they had no left-handed engineers on the team.

Crommett helps workshop attendees see that bias is rarely intentional; it is by-and-large unconscious. She outlined the benefits of overcoming these biases from a business perspective, from a design and innovation perspective, from an efficiency perspective, and from a social justice perspective.

Jennifer Eberhardt, a professor at Stanford University and an expert in the psychology of racial bias, has found that implicit bias workshops are not in themselves a solution. Eberhardt's research shows that, while it's possible to shift *the content of* stereotypes, it's not possible to change the human habit of classifying and categorizing. In other words, we are cognitively wired for bias. Still, diversity and equity trainers generally agree that learning to recognize one's biases — and seeing the role bias unwittingly plays in our day-to-day assumptions — is an important first step.



# Resources

*Links for all resources at makinganewreality.org/resources*

01

**Project Implicit**

Implicit association tests can help you recognize the unconscious feelings and beliefs that shape your thoughts. First, users select a test — Race, Disability, Sexuality, etc. — to assess a form of bias. Next, they answer a few questions to gauge their conscious views on the issue — in other words, how they *say* they feel. Finally, they "play" a video game-like test, responding as quickly as possible to prompts. Without time to think and reflect, a person's automatic responses tend to reflect the ideas and beliefs — sexism, racism, ableism — of the surrounding culture and environment.

02

***Biased: Uncovering the Hidden Prejudice That Shapes What We See, Think, and Do***

MacArthur "Genius" Jennifer Eberhardt, a professor in the Department of Psychology at Stanford University, wrote this highly accessible book (Viking, 2019) outlining the brain science behind racial bias, its nearly ubiquitous presence, and why persons are not to be "blamed" for it. Eberhardt provides context for individuals seeking to understand more about bias.

***Blindspot: Hidden Biases of Good People***

Mahzarin R. Banaji and Anthony G. Greenwald wrote this popular guide (Bantam, 2016) to help readers and educators identity and resist our personal prejudices.

03

# Practice and encourage allyship

The award-winning documentary cinematographer Kirsten Johnson has spent a quarter of a century filming all over the globe. When the accumulation of such experiences compelled her to revisit the material she'd filmed over the years, a process that ultimately led to the film *CAMERAPERSON*, she was struck by how often she'd made faulty assumptions or misinterpreted what was happening.

When filming in a maternity ward in Nigeria, only after the fact did she learn that doctors and resources had been detoured to accommodate her filming at a disservice to other patients. Unbeknownst to Johnson, in one terrible moment, a grandmother rushing her sick grandchild into the hospital mistakenly believed that she must let herself be filmed in order to get treatment for the child. What Johnson had interpreted as friendliness had been desperation.

Now, Johnson actively challenges the documentary community to question itself and work as an ally of marginalized groups and individuals seeking to gain access to resources so that they can make and distribute their own stories.

We need to change the ratio of who is doing the majority of the telling and observing. At the same time, some members of traditionally marginalized groups warned against the "kid-glove" dynamic, in which they are treated with low expectations and patronizing attitudes. For members of groups with more privilege, it's important to understand that there are constructive ways to advocate for more balance.

Valerie Aurora is a feminist activist and founder of Frame Shift Consulting, a tech diversity and inclusion firm. She promotes an "ally" strategy that places the responsibility for creating inclusion on the privileged group. This is the thinking behind a number of recommendations that push media and tech firms to take greater responsibility for creating inclusive environments (such as calls for tech companies to implement paid family leave).

In her online guide to allyship, Amélie Lamont writes, "Being an ally is hard work. Many of those who want to be allies are scared of making missteps that get them labeled as '-ist' or '-ic' (racist, sexist, transphobic, or homophobic). As an ally, you too are affected by a system of oppression. This means that, as an ally, there is much to unlearn and learn — mistakes are expected." Lamont notes that "If you decide to become an ally but refuse to acknowledge that your words and actions are laced with oppression, you're setting yourself up to fail. You will be complicit in the oppression of those you purport to help. Know that if you choose not to heed this, you wield far more power than someone who is outwardly '-ist' or '-ic' because you are, essentially, a wolf in sheep's clothing."

The *Guide to Allyship,* includes a great analogy called "Boots and Sandals" by Kayla Reed:

Imagine your privilege is a heavy boot that keeps you from feeling when you're stepping on someone's feet. 'Ouch! You're stepping on my toes!' How do you react?

- Centering yourself: "I can't believe you think I'm a toe-stepper! I'm a good person!"
- Denial that others' experiences are different from your own: "I don't mind when people step on my toes."
- Derailing: "Some people don't even have toes."
- Tone policing: "I'd move my foot if you'd ask me more nicely."
- Denial that the problem is fixable: "Toes getting stepped on is a fact of life."
- Victim blaming: "You shouldn't have been walking around people with boots!"
- Withdrawing: "I thought you wanted my help, but I guess not."

In reality, Most of us naturally know the right way to react when we step on someone's toes.

- Center the impacted: "Are you okay?"
- Listen to their response and learn.
- Apologize for the impact, even though you didn't intend it: "I'm sorry!"
- Stop the instance: Move your foot.
- Stop the pattern: Be careful where you step in the future.

# Resources

*Links for all resources at makinganewreality.org/resources*

04

***Guide to Allyship* by Amélie Lamont**
(@amelielamont) www.guidetoallyship.com.
An open-source guide targeted to white readers. Inspired in part by the work of Kayla Reed, who has defined allyship as: **A-** always center the impacted **L-** listen and learn from those who live in the oppression **L-** leverage your privilege **Y-** yield the floor. For white people seeking to ally with people of color, diversity trainers recommend first cultivating racial literacy and self-awareness — in other words, studying how whiteness frames personal preferences, experiences, and views.

05

***White Fragility: Why It's So Hard for White People to Talk about Racism***
Author and speaker Robin DiAngelo pulls no punches and gets the white liberals who don't storm out of the room to better understand (and even laugh at) themselves in this best-seller (Beacon Press, 2018). See also Robin DiAngelo's website for a curated selection of anti-racism handouts, checklists, and workshop exercises.

06

**"White Privilege: Unpacking the Invisible Knapsack"**
Peggy McIntosh, 1988.

07

**"How Men Can Become Better Allies to Women"**
W. Brad Johnson and David G. Smith, *Harvard Business Review*, October 12, 2018.

08

**"How to be an Ally in the Newsroom"**
Emma Carew Grovum, *Source*, April 24, 2019.

## Use the amplification strategy

It is important to create strategies to amplify the innovations and valuable voices of traditionally marginalized people in emerging media. Women, people of color, LGBTQ+, and persons with disabilities need the tools to promote themselves in the face of pushback; and their contributions must be fairly recognized.

Franklin Leonard, founder of the Black List, suggested that we are just starting to reconcile our history via films, such as *Hidden Figures* and *The Imitation Game*, that focus on innovators who are women, LGBTQ+, or ethnically diverse. In order to counter the well-documented "stereotype threat," we need to tell and promote these stories. "I think there's been a movement to address the so-called 'great men' theory of history," he said. "I think it's critically important that we do a good job of amplifying both the historical and present-day contributions of people who do not meet that description."

Ziad Touma, a multimedia producer, asked, "Why do we go and interview the white male technologist when right next to him is a woman of color working with him?"

In 2014, the team at Sundance Institute noticed that the women in VR were not getting the same attention or support as their male counterparts, so they decided to make a strategic effort to amplify the work of Nonny de la Peña. Just months later, de la Peña was dubbed the "Godmother of VR" by *Engadget*. This amplification strategy cemented her role in the history of virtual reality, opened doors, and enhanced her trajectory as an influencer and pioneer of immersive journalism.

Why have so many women flocked to VR? Perhaps because the amplification strategy worked, disrupting the male "tech geek" narrative and challenging the innovator stereotype. Notable early women innovators in the space include Shari Frilot, Megan Ellis, Lynette Wallworth, Diana Williams, Milica Zec, Janizca Bravo, Wesley Allsbrook, Sam Storr, Rose Troche, Yelena Rachitsky, Lucy Walker, Nicole Newnham, Ryan Pullium, and the eleVR team.

The ownership by women in VR goes all the way up the power chain. Both Megan Ellison, founder of Annapurna Pictures, and Gigi Pritzker, founder of MWM, took major leadership positions in the VR industry at an early stage.

Lyndon Barrios, co-founder of Blackthorne Media, said that his own visibility in the VR industry has been important: "Seeing only white men in these positions in the media really limits the imagination of the kids in Compton thinking of themselves in that role."

Engineer Carmen Aguilar y Wedge and her colleagues at Hyphen-Labs are busting the innovator stereotype wide open. They received a lot of visibility in 2016 with their project. Aguilar y Wedge said, "These changes are not going to happen overnight. It's going to be 20 years to see changes, but we're starting to put the words 'Neurospeculative Afrofeminism' into the mouths of 6-year-old boys, and that will become part of their vernacular."

# Resources

*Links for all resources at makinganewreality.org/resources*

Projects to promote more diverse media: Familiarizing yourself with the following resources, sharing them, and supporting them financially can help build audiences for more varied stories.

09

**Shine theory**

Is the idea that empowering friends also empowers oneself: "I don't shine if you don't shine." Promoted by podcasting duo Aminatou Sow and Ann Friedman, shine theory emphasizes collaboration and mutual investment over competition. The website contains examples of shine theory in practice, as well as links to the podcast, *Call Your Girlfriend*.

10

**The Representation Project**

Uses social media, film, and educational activism to promote media projects that challenge gender and racial stereotypes.

11

**Mediaversity Reviews**

Movie and TV reviews viewed through the lens of inclusivity, recognizing race, gender, LGBTQ+, and disability. Each production is critically examined on a variety of factors — including representation both onscreen and behind it — and ultimately graded from A+ (*Parasite, Luce*) to F (*Joker, The Hitman's Bodyguard*). The website encourages readers to submit their own reviews.

12

**The Reframe Project**

Offers a Stamp of Approval highlighting film and TV projects with a healthy gender balance.

13

**Bechdel Test**

This crowdsourced list ranks movies based on 3 criteria: "(1) it has to have at least two women in it, who (2) who talk to each other, about (3) something besides a man." This crowdsourced site indicates whether movies pass or fail this simple test.

# Advocate for the under-represented

"Everybody's got to lean in on it," said Lyndon Barrios, co-founder of Blackthorne Media.

Although it feels uncomfortable and threatening to be the only person or one of very few members of an identity group in the room, pushing past the discomfort, fear, marginalization, patronizing attitudes, or microaggressions has been a key strategy for those looking to pierce the homogeneity of powerful spaces.

The lean-in strategy was popularized by Sheryl Sandberg. Many argue that this strategy is not ideal, because it puts the onus on the oppressed or subordinate group to push into a system that is not designed for them. They also explain this strategy may work for a percentage of people, but without systems change those gains will not expand to the wider communities of marginalized groups or establish sustainable justice.

However, even these critics acknowledge that practicing assertiveness may be a necessary interim step towards systems change. As DeejayKnight, a popular gamer on Twitch stated, "If I don't talk about this, I'm contributing to letting [racism] be cool."

How are people stepping up to the challenge? Nonny de la Peña shared an example: "My friend was going to [Silicon Valley VR] and I noticed that, out of two days of speakers, there were no women. I did something I had never done in my life. I called the organizer and said, 'I need to go. You need to have a woman speaking.' At first, he said no and so I reached out to some of my [male] friends to pressure them. He then relented and let me be the moderator of the five guys. So I went, and, out of 300 people, there were, like, five women."

The story that de la Peña shared sparked two kinds of responses from other interviewees. One focused on possible inferiority complexes that may prevent women from demanding a place at the table. The other saw de la Peña's account as confirmation that the tech sector operates from a masculine ethos, making it hard for people who operate from a more feminine dynamic.

Yelena Rachitsky of Oculus explains: "I don't always think of male, female. I think of feminine and masculine. I do think a masculine approach is synonymous with slightly more aggressive approaches to going out and getting things, especially in VR. It is such an entrepreneurial space right now that it needs that aggression. No one is asking anyone to do this. Everyone who is doing it is deciding to do this and doing whatever it takes."

Maureen Fan, CEO of Baobab Studios, shared her frustration that "a lot of the literature for women in leadership is about teaching us how to be more like men and I just felt that was unfair. Why do we have to change?"

# Resources

*Links for all resources at makinganewreality.org/resources*

14

A number of organizations provide workshops to women and people of color. **Take the Lead**, for example, is a leadership program that provides professional women with "breakthrough training, mentoring, coaching and the immediately actionable 9 Leadership Power Tools." Depending on where you live, you may be able to find a range of local examples.

15

**The Memo**

"The Memo is a career development company providing tools, access, and a robust community for women of color and for the companies where they work." Founder Minda Harts has also written *What Women of Color Need to Know to Secure a Seat at the Table* (Seal Press, 2019), which provides "actionable advice on challenges, from microaggressions to the wage gap-and offers a clear path to success."

16

**Gender Avenger (GA) Toolkit**

The Gender Avenger Tally app makes it easy to report gender imbalances at conferences and panels on social media. The full toolkit also includes the GA Pledge ("I will not serve as a panelist at a public conference when there are no women on the panel.") and a GA Stamp of Approval for public conferences with 40% of women represented on stage, of which at least 30% are women of color.

17

**POCIT (People of Color in Tech)**

Website and podcast (Techish) with a focus on networking strategies, job tips, and sharing stories for people who work in all aspects of tech, from creatives to engineers.

18

**Diversifi**

A new web portal designed to help professionals of color to compare corporate workplaces and "find careers and companies that value them."

## Craft narratives that disrupt biases

The more we learn about the nature of the brain, perception, and implicit bias, the more we understand the dangers of dependency narratives, deficit-based identity frameworks, and the stereotypes that threaten the mission of equality.

Disrupting these narratives is particularly challenging because they are deeply entrenched in old value systems that interpret the nature of human reality as dichotomous. Everything from Social Darwinism to the prosperity gospel relies on binaries, such as good and bad, winners and losers, superior and inferior, saviors and the saved. These concepts assume there has to be a group in a subordinate position in order for another group to inhabit the dominant position and prosper economically or spiritually, "get rich," or "get into heaven." The problem with these worldviews is that they create an intrinsic imperative for those in power to maintain this either/or caste system. This incentivizes dependency and disincentivizes independence or equality. Believing in the concept of equality actually breaks that worldview.

Some interviewees posit that making and proliferating empowered, asset-based identities, and stereotype-breaking narratives are a powerful way of furthering equality. Not just the disenfranchised but also the enfranchised groups suffer under these constraints.

> **These concepts assume there has to be a group in a subordinate position in order for another group to prosper economically or spiritually.**

↳ Los Angeles–based artist Miwa Matreyek created *This World Made Itself,* a multimedia live performance work combining projected animation and the artist's shadow silhouette.

# Resources

*Links for all resources at makinganewreality.org/resources*

19

**The Pop Culture Collaborative**
A philanthropic resource and funder learning community that uses grantmaking, convening, narrative strategy, and research to transform the narrative landscape around people of color, immigrants, refugees, Muslims, and Native people — especially those who are women, queer, transgender, and/or disabled.

20

**Narrative Initiative**
A nonprofit organization that "catalyzes durable narrative change in order to make equity and social justice common sense." Its resource library includes a "curated collection of guides, worksheets, webinars and trainings offered as a resource for the field of narrative change practitioners."

21

**"Equity Screen for Content Creators"**
This post from the blog *Nonprofit AF* provides helpful questions to guide creators of podcasts, videos, books, and blogs on making content inclusive of all. For example: How does the issue you're exploring affect (the following) people of diverse identities? Are you the appropriate person/organization to be talking about this issue? Can everyone access your content? Who is getting paid, is it equitable?

22

**Understanding the Dunning-Kruger Effect**
Typically, "imposter effect" refers to the impact of sexism and racism on women and people of color, making them feel as if they aren't good enough to meet cultural (white, male) norms. But research has uncovered the other side of the imposter effect, where privileged people believe themselves to be better, smarter, and harder-working than they in fact are. Perhaps understanding what's known as the Dunning-Kruger Effect can help all parties identify how cultural norms warp individuals' perspectives.

# Institutional Change

This section focuses on changes that can be made at individual companies, organizations, or media networks. Most of the solutions raised here need to work in concert with changes at both the personal and systemic levels. But change can start anywhere.

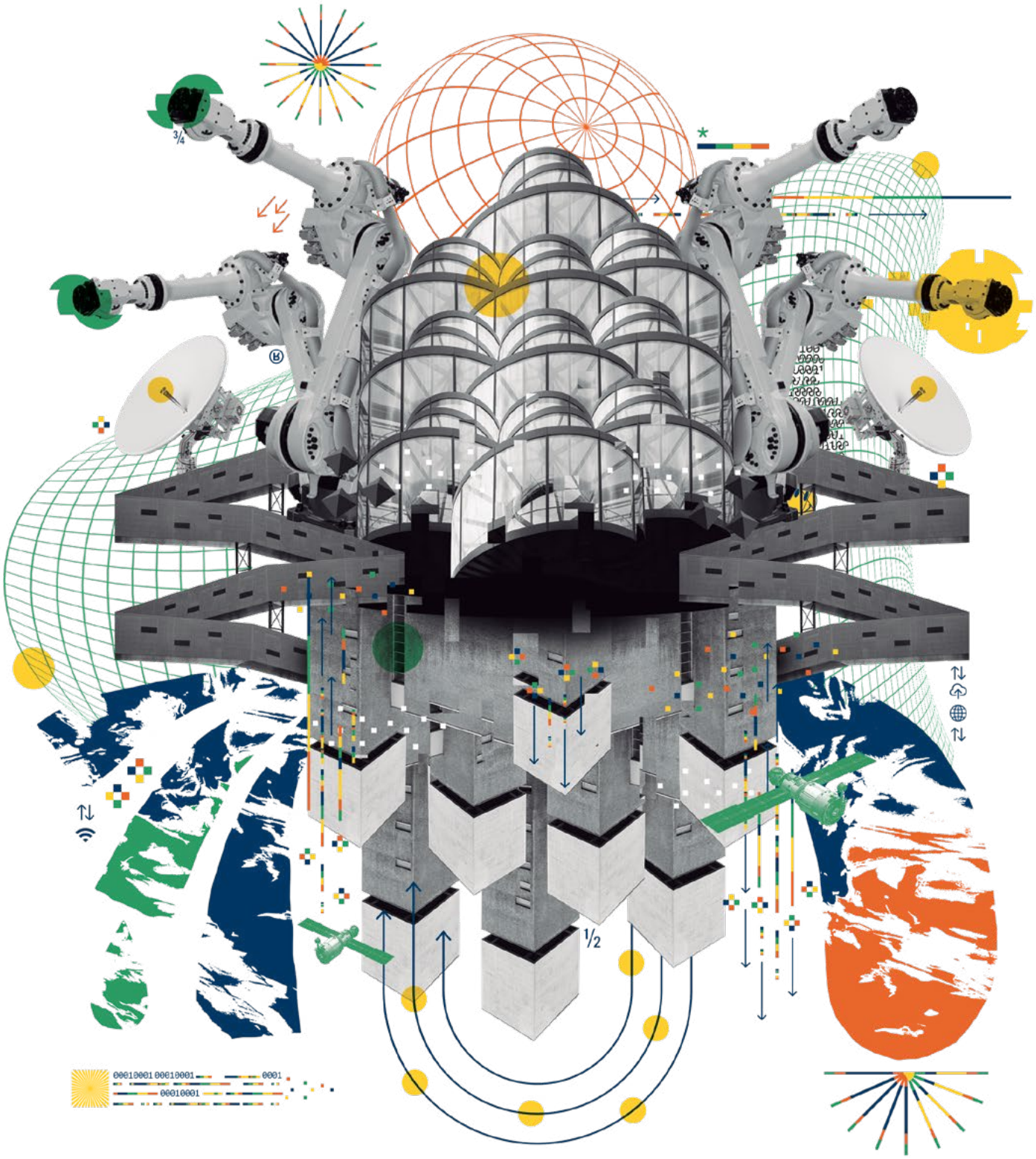
## Conduct an equity audit and develop tailored interventions

In the previous section, we suggested resources for identifying implicit bias. But making people aware of their bias does not always help mitigate that bias. In fact, sometimes it can have the opposite effect — generating backlash.

How can media institutions guard against bias in hiring, promotion, and content production? Some interviewees suggested putting on blinders could be one part of the solution, referring to the diversification efforts at American symphonies in the 1990s. These symphonies instituted a curtained and carpeted audition environment that shielded auditioning performers from judges and focused judges' attention on the performances alone. Research by the Clayman Institute for Gender Research at Stanford revealed that orchestras increased their number of women musicians from 5% to 25% since the 1970s, because of this one, simple change.

But when it comes to race, "colorblindness" is all too often part of the problem. When one can't see race, one can't see racial discrimination or racial inequity. Switching to "blind" hiring practices does not ensure either diversity or inclusion, so equity advocates tend to call for moving from a colorblind approach to a color-*conscious* one. Hiring processes that rely on algorithms to reach and filter out candidates may end up increasing discrimination against candidates of color and female candidates at multiple stages throughout the hiring process.

Equity audits — ideally, conducted by a third-party — can help organizations assess whether or not they are structurally set up for all employees. This requires collecting and monitoring data about an organization's existing diversity among staff and hiring practices. Auditors collect demographic information through qualitative and quantitative methods, and ensure that the data for different demographic groups is disaggregated data (i.e., not lumping all women together).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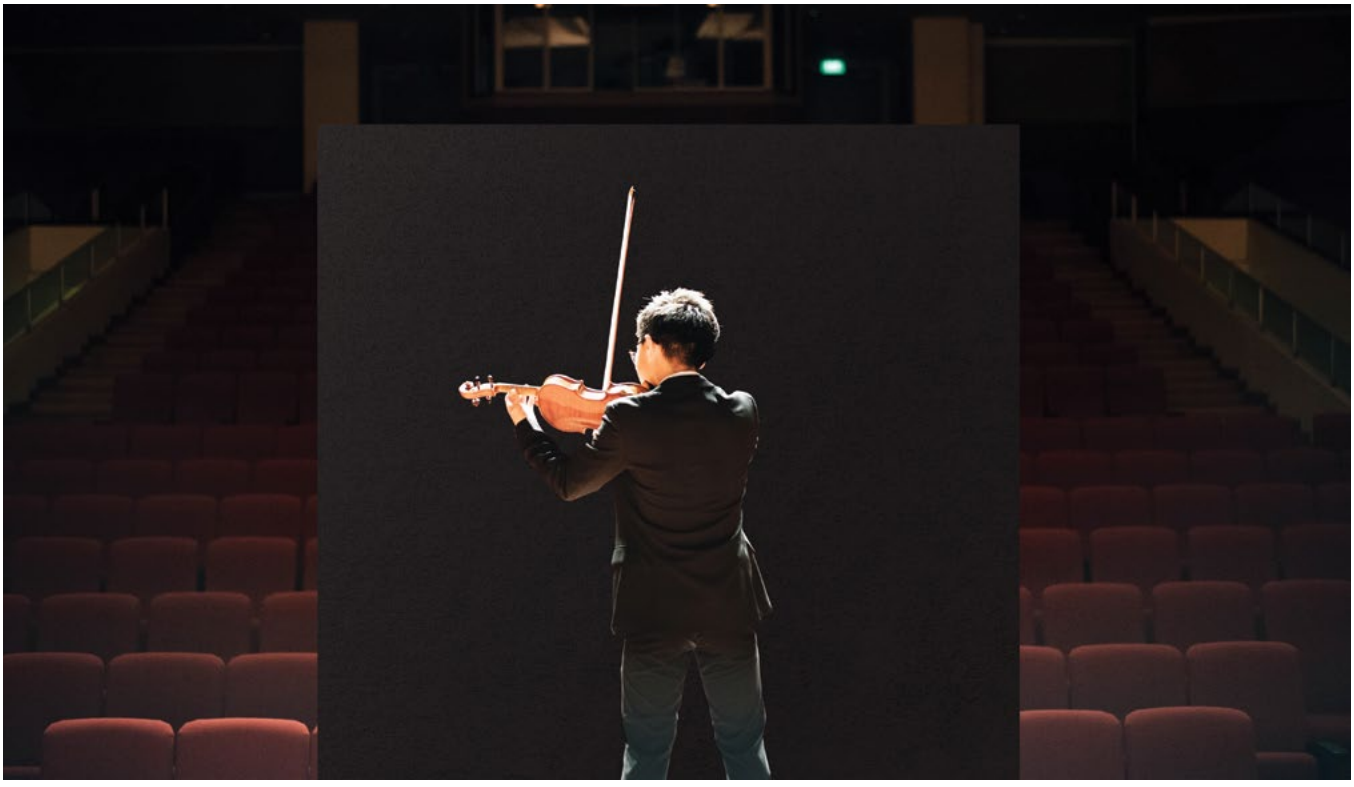
The idea of collecting data about identities can be uncomfortable. But D5, a five-year coalition dedicated to growing diversity, equity, and inclusion within philanthropy noted that:

*[E]ngaging people about their identities and sense of who they are can also be empowering and enrolling. Otherwise, we make assumptions that can hide or exclude important aspects of who people are that can inform our cultures, processes, and understanding. In fact, not engaging people around these issues can make them feel invisible and undervalued.*

Collecting information about people's identities should be conducted in a way that protects individuals' rights, privacy, and dignity. Most importantly, any data collection effort as part of a larger equity audit should clearly inform participants about the reasons for collecting this information and exactly how it will be used.

Once organizations have data about their specific challenges, they can tailor programs to their specific needs. As mentioned in the previous section, implicit-bias trainings do not work in isolation and can sometimes lead to a backlash. The types of workshops that have proven to be useful are part of long-term efforts focused on behavior change and accountability, rather than on changing minds. Other interventions that have proven track records include active recruitment programs specifically targeting women and people of color, formal mentoring systems, and diversity task forces.



↳ Research by the Clayman Institute for Gender Research at Stanford revealed that orchestras increased their proportion of women musicians from 5% to 25% after they started blocking the judges' view of performers during auditions.

# Resources

*Links for all resources at makinganewreality.org/resources*

23

**"What's the difference between diversity, inclusion, and equity?"**
Meg Bolger, *General Assembly Blog*, October 24, 2017. An important first step in analyzing institutional inequity is to unite around a common language for identifying challenges. In this piece, Bolger helpfully delineates diversity, inclusion, and equity — and what they mean in practice. All three pieces of the DEI puzzle must be in place in order to be successful.

24

***Diversity Inc.: The Failed Promise of a Billion-Dollar Business***
Pamela Newkirk's must-read book (Hachette, 2019) points out how billions of dollars have been spent on racial diversity initiatives over the past two decades with little-to-no results. Ironically, the fields generally considered more creative and progressive (museums, arts, journalism, Hollywood) have the worst records. Newkirk makes a strong case that many efforts are not successful because they weren't designed to be. But all is not lost. Newkirk points to ways in which some companies have managed to directly — and successfully — counteract racial inequities through strategic, comprehensive interventions and planning.

25

**"What Gets Measured, Gets Done: Achieving Results Through Diversity and Inclusion"**
Maureen Giovannini published this piece in *The Journal for Quality & Participation*, Winter 2004.

26

**"The Mistake Companies Make When They Use Data to Plan Diversity Efforts"**
Katie Wullert, Shannon Gilmartin, and Caroline Simard wrote this piece in *Harvard Business Review*, April 16, 2019.

27

***What Works: Gender Equality by Design***
This book by Iris Bohnet (Harvard University Press, 2016) focuses on de-biasing organizations rather than individuals, an approach likely to have a much greater impact.

28

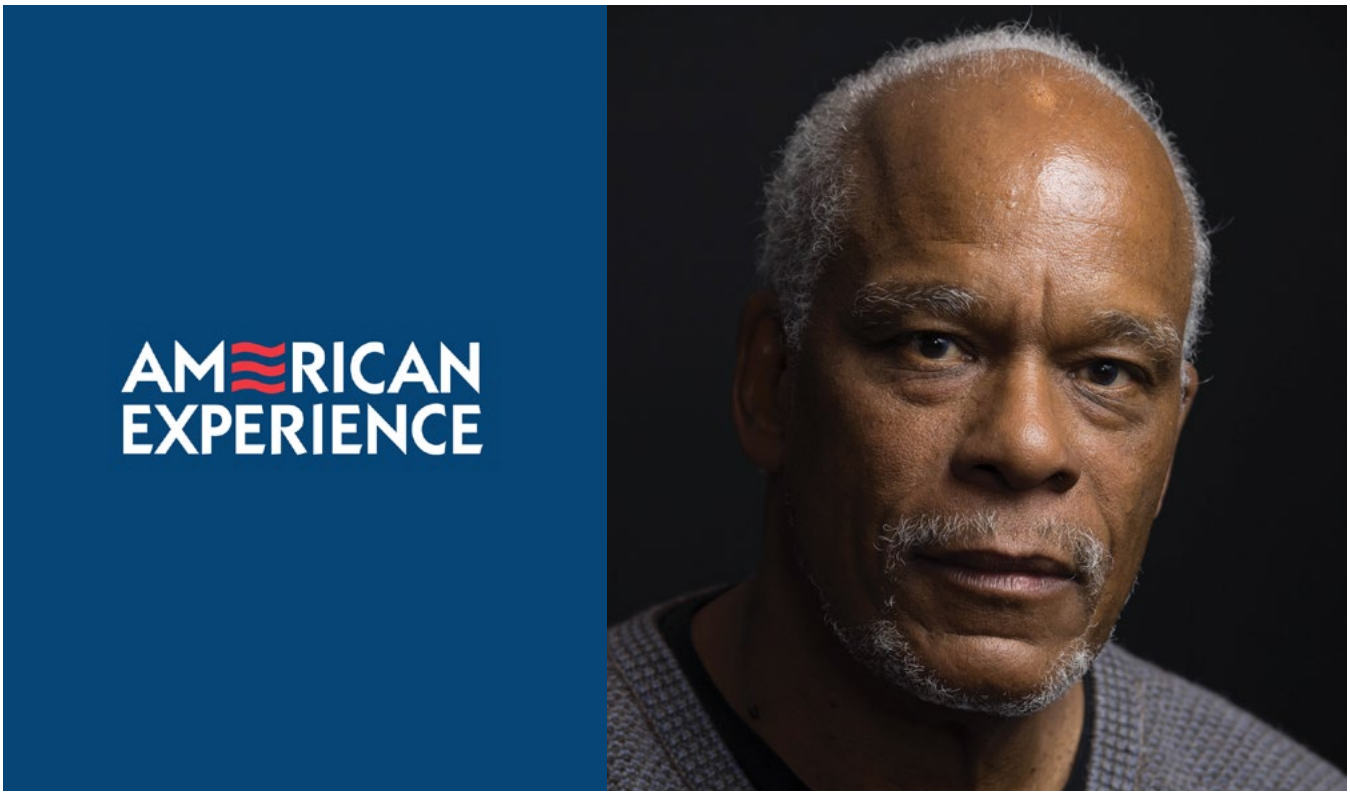
**RacialEquityTools.org**
There are lots of helpful resources here but, in particular, we'd recommend the "Plan" section, which contains toolkits, examples, and assessments for organizations seeking to better understand and to address racial inequity.

## Search beyond current milieu for talent

Interviewees suggested that diversifying staff was critical when it comes to ensuring that media projects represent the full spectrum of society.

Award-winning documentary filmmaker Stanley Nelson was quoted in a September 2016 article in *Current* about his personal experience in TV. "Bill [Moyers] looked away from his known circles, stepped out of his comfort zone and took a risk on a filmmaker whose work he thought had promise. *American Experience*, PBS's award-winning history series, did the same thing — they sought me out, and they took a chance. Taking a chance on me benefited not only me but, I believe, Bill Moyers and *American Experience* as well. What they got was a point of view that may not have existed on their programs before: a look at history or contemporary society that many of their viewers had not seen on television before. I believe one of the biggest reasons we've gotten to this point is our failure to tell the full American story. [This] leads to wanting to build walls instead of embracing the wonderful, unstoppable future that lies ahead."

Some interviewees recommended changing the models we use to discover and cultivate talent. This might mean providing shadowing opportunities or just going slower when making a film or tech project because training is going on simultaneously.




↳ American documentary filmmaker and MacArthur "genius" Stanley Earl Nelson Jr. earned an Emmy, the Sundance Film Festival Special Jury Prize, and the George Foster Peabody Award for his American Experience episode "The Murder of Emmett Till."

Brad Lichtenstein, a VR maker in Milwaukee, advocated for building a talent pipeline that does not just funnel talent to the coasts or global hubs but encourages developing regional projects and businesses. “I love this idea of getting people away from the coasts or the hubs and having them try out a different place and test the possibilities. Maybe it could be more of a residency or capacity-building thing.”

Artist Eline Jongsma shared a bold strategy used by her university. “You have to recruit people from unexpected places. At my university in Amsterdam, we had one student from Morocco. The director assigned the student to go back to Morocco and recruit other students. It cost a little bit of money and time, and there was a risk involved. But it was an example.”

Some interviewees suggested that regulation can play a role in diversifying staff. For example, in Canada, parity laws such as the 50/50 rule promote gender balance in public media, and California recently became the first state to require women on corporate boards. However, across most of the U.S., it is up to organizations to voluntarily pursue parity in hiring and promotion.

Claudia Peña suggested that organizations add “People of color, women, LGBTQ+, and people with disabilities are encouraged to apply” to job announcements, as it has helped diversify staff in the nonprofit sector. Postings can also include “salary negotiable” in a job description, which the National Bureau of Economic Research says significantly closes the negotiation gap between men and women.

Don Young, the Director of Programs at the Center for Asian American Media (CAAM), described a whole pool of talent and audience that mainstream media is not aware of, or tapping into, in the Asian American community. How does Hollywood continually miss this robust pipeline of talent? “They [Asian American media makers] have their networks. They have their Facebook groups. They have their mobile groups. There are films that are completely finding a life through those networks. A lot of Asian-American film festivals are taking them in, but a lot of traditional festivals have not been.”

Young went on to describe a common generational challenge in the storytelling craft that is particularly prominent in the Asian American community, who, according to research, use new platforms at a greater rate than the general population. The younger generation focuses on short-form content, which is easier to make and distribute, and has a harder time making long-form stories. How do you support their voices?

Elevating diverse media producers can lead to more diversity down the chain. When asked how being Asian American affected her as a director, Cathy Yan — the first Asian American to direct a superhero movie (*Birds of Prey*) — told an NPR reporter in February 2020 that she happened to have a lot of Asians in the crew. It wasn't a "complete coincidence" but it wasn't a "deliberate quota" either.

More diverse film/TV/art critics — and curators — would also grow the audience for diverse content. A 2018 study of film reviews by USC, "Critic's Choice: Gender and Race/Ethnicity of Film Reviewers," found that 82% of reviews were by white people and 64%, by white men.

> **I love this idea of getting people away from the coasts or the hubs and having them try out a different place and test the possibilities.**

# Resources

*Links for all resources at makinganewreality.org/resources*

29

**"The Bias of 'Professionalism' Standards"**

This brief by Aysa Gray in the *Stanford Social Innovation Review* (June 4, 2019) provides a number of helpful prompts to critically examine one's institutional culture. Gray writes, "Professionalism has become coded language for white favoritism in workplace practices that more often than not privilege the values of white and Western employees and leave behind people of color."

30

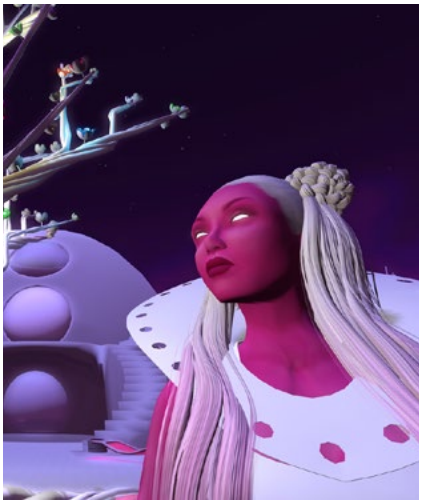
**Project Include: Hiring**

Project Include is a nonprofit that uses data and advocacy to accelerate diversity and inclusion solutions in the tech industry. Its page on hiring recommendations describes a number of best practices, from "Use a broad range of recruiting sources" to "Rethink traditional interview practices."

31

**Textio**

This AI-based software helps employees write inclusive job descriptions and other printed materials.



↳ Aboriginal Territories in Cyberspace (AbTeC) by Skawennati.

## Center different cultural norms

Supporting new leaders and voices in emerging media may require gatekeepers to stop trying to make projects fit an established mold.

Film producer Ziad Touma shared, "I was just having a conversation about a script on Friday, a conference call with two white, male commissioning editors who were judging a female writer's script. I said, 'The points you're asking us to change, to make the film more active, to have more drama, are male-driven. And if we are going to judge female films, you have to change your criteria."

She went on to say, "Maybe the way some communities tell their stories is inherently different. Africans have an oral tradition. They don't write their stories. They tell them from generation to generation, through oral tradition.

There is a wonderful freedom in imagining a reality where different peoples are not beholden to the pressures of assimilation and able to bring the full scope of their cultures and experiences to the collective table.

Leslie Fields-Cruz of Black Public Media made a compelling case for carving out protected space for specific identity groups. Organizations such as Black Public Media and the Center for Asian American Media are critical for cultivating talent, she suggested, by providing those groups with training, access to tools, and professional networking that more privileged groups already receive. "Our focus is Black storytellers and Black content — that's it."

Similarly, in 2016, Jenn Duong and Julie Young established the VR studio, SH// FT, that is specifically charged with supporting content by women. In 2017, the women expanded their mission to include people of color as well.

Allied Media Projects was cited by multiple interviewees as another organization that has been able to create organizational structures and dynamics that reflect and respect a wide variety of cultures and identities.

For more than a decade, multimedia artist Skawennati has been at the forefront of adjusting the center of design for gaming, interactive media, and technology, in relation to Indigenous cultures. "I think that one of the big problems is time because I think the way that you work with Indigenous communities is very slow, you know?" she said. "Gaming and tech are industries where things go out of date so quickly. It's so tiring and so demoralizing."

"We started the Skins Workshop series to bring Aboriginal storytelling to (experimental) digital media... We also have been really thinking about the future (science fiction territory!) and having our participants visualize themselves in the future. This is something that Native people haven't been asked to do very much. Like never. If we ask these kids to tell their own stories, they will start to realize that their experiences are no less Native than the legends or the histories that are being told to them by their elders."

# Resources

*Links for all resources at makinganewreality.org/resources*

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**"Paying Attention to White Culture and Privilege: A Missing Link to Advancing Racial Equity"**

A challenge to DEI work is the inability to recognize white institutional culture and the way it defines behaviors, communication styles, and end-goals. This paper by Gita Gulati-Partee and Maggie Potapchuk in *The Foundation Review* (2014) provides tips to recognize and counter white norms that drive insularity, homogeneity, and unwelcoming climates within organizations.

33

**"'Checkbox Diversity' Must Be Left Behind for DEI Efforts to Succeed"**

Nicole Anand writes in *Stanford Social Innovation Review* (May 21, 2019): "Good intentions to increase the diversity of organizations have led to 'checkbox' approaches that don't account for hegemony, marginalization, and the creation of sustainable shifts in power. Without a closer examination of these practices, we may wake up in a few years wondering what went wrong."

34

**"Cast a Broader Net: Innovation is Relative"**

Dr. Nettrice Gaskin created the concept of Techno-Vernacular Creativity (TVC) to illuminate the inventive processes that are often overlooked because they do not look like the dominant group's innovation. She notes that TVC differs from traditional R&D by employing reappropriation, improvisation, and conceptual remixing, aka "tinkering."

# Use collaborative design and co-create media

A number of *Making a New Reality* contributors and interviewees helped to research a report titled *Collective Wisdom: Co-Creating Media Within Communities, Across Disciplines and with Algorithms*.

Co-creation offers alternatives to a single-author vision, and involves a constellation of production methods, frameworks, and feedback systems. In co-creation, projects emerge from a process and evolve from *within* communities and *with* people, rather than *for* or *about* them. Co-creation also spans across and beyond disciplines and organizations. The concept of co-creation reframes the ethics of who creates, how, and why.

In its field study, *Collective Wisdom*, the Co-Creation Studio at MIT Open Documentary Lab identified several key lessons from practitioners and scholars. Co-creation:

- Begins with deep listening, fostering dialogue and learning rather than coming in with preset agendas.
- Involves identifying common principles and negotiating terms and benefit agreements on individual, organizational, and community levels. These terms are determined beforehand to ensure equity and inclusion.
- Involves balancing the project's process with the outcomes, rather than predefining relationships and processes solely by the deliverables.
- Centers healing, safety, and sustainability by employing trauma-informed practices. Co-created media projects are deeply connected to the well-being (and transformation) of the participants and community rather than repeating and reproducing trauma for the benefit of audiences or end-users.
- Both allows for, and demands, appropriate forms of leadership, language, and technology.
- Provides community access to technological and media digital literacy as core to many co-creative projects.
- Demands alternative models of funding, evaluation, and impact.
- Involves always being iterative, circling back (rather than ploughing ahead).

Co-creation can be particularly impactful in community-based media. For example, historically, the stories that circulate about Detroit have defined it as broken, violent, and in need of saving from itself. Since Detroit's emergence from bankruptcy in 2014, stories about Detroit portray its resurgence as one led by white billionaires, scrappy entrepreneurs, and pioneering artists. Invisible from that narrative is the Detroit that was saving itself all along. Communities of color in Detroit pushed back against marginalization and erasure, and created a vision for Detroit based in liberation and justice. Black and Brown Detroiters have not been at the table when it comes to narratives around the city's so-called rebirth.

↳ Members of the Detroit Narrative Agency gather for a workshop at the Boggs Center. Top row: Natasha Tamate Weiss and Atieno Nyar Kasagam, Orlando Ford, Alicia Diaz. Bottom row: Bree Gant, Cierra Burks and Ahya Simone. Photo © Kashira Dowridge.

Detroit Narrative Agency (DNA) is amplifying that Detroit, incubating quality and compelling films that shift the dominant narratives towards liberation and justice. DNA co-creates media from within communities, and the co-creation happens in multiple layers, in concentric circles. The process starts with deep listening rather than pre-set agendas.

DNA's current fellowship program is supporting a cohort of filmmakers of color in Detroit to develop short films and accompanying community impact strategies. Such agreements are useful to spell out the terms of engagement, especially for outside organizations coming in to work with local groups. Cultural organizations more broadly are beginning to pick up on the model of community benefit agreements that have become common in urban contexts to negotiate terms for local communities when developers arrive to transform neighborhoods. These are legally binding instruments signed by developers, municipal governments, and community groups. The benefits at issue might include local jobs, living-wage requirements, affordable housing, and neighborhood improvements.

Community benefit agreements, however, are not panaceas. Veterans of co-creation are acutely aware of their pitfalls and problems but do use them to guarantee certain basic rights, alongside bigger policy and legislative concerns affecting the role of government; this includes how we define and use public space, the commons, and how we will govern ourselves and shared resources into the future.

(Thanks to the Co-Creation Studio's Sam Mendez for contributing to this section.)

# Resources

*Links for all resources at makinganewreality.org/resources*

35

**Collective Wisdom:**
**List of relevant readings and projects**

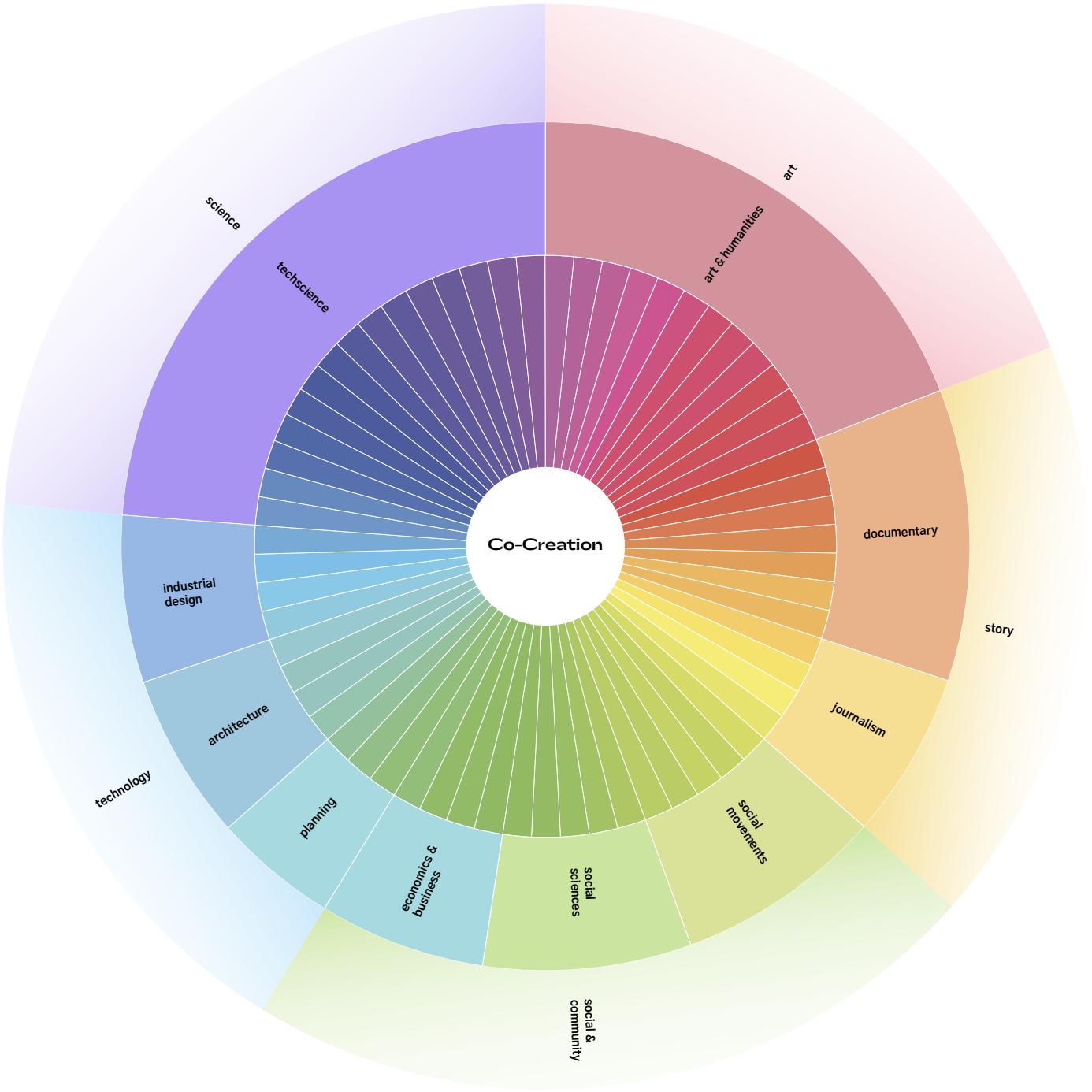
The Co-Creation Studio at MIT Open Documentary Lab has assembled a list of relevant readings, projects, and programs that can serve as useful reference points for co-created projects.

36

**Rising Voices**

Rising Voices, the outreach initiative of Global Voices, brings local communities speaking endangered or Indigenous languages into the global conversation. The initiative offers training, resources, microgrant funding, and mentoring so that underrepresented communities can tell their own digital stories using participatory media tools.

## Interactive Wheel of Collective Wisdom




↳ This interactive tool developed at MIT's Co-Creation Studio illustrates the varied elements involved in a co-creative approach, which replaces the traditional "single-author" vision with "a constellation of media production methods, frameworks, and feedback systems."

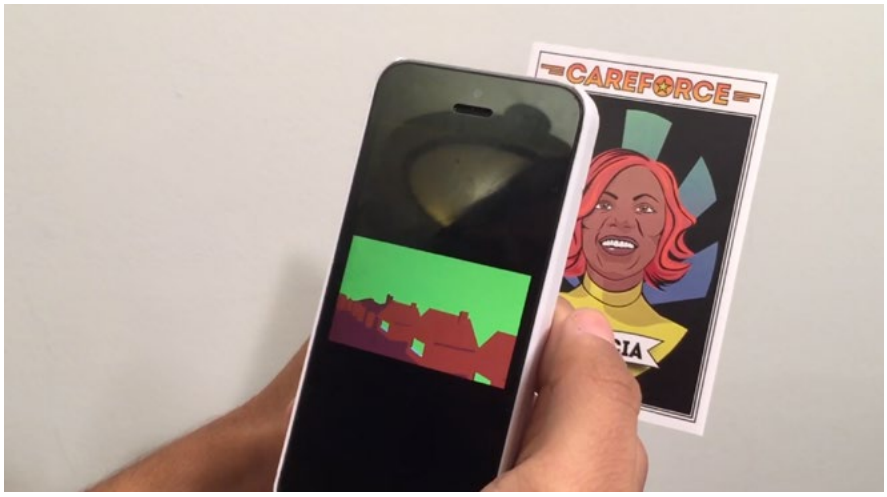
## Adopt universal design practices

Claudia Peña of the UCLA School of Law made an important point: There has been an ongoing movement towards Universal Design practices to ensure that design centers people with disabilities. The adoption of these practices has not only improved the lives of people with disabilities but the lives of everyone involved.

The Centre for Excellence in Universal Design (CEUD) states that "Universal Design is the design and composition of an environment so that it can be accessed, understood and used to the greatest extent possible by all people regardless of their age, size, ability, or disability. An environment (or any building, product, or service in that environment) should be designed to meet the needs of all people who wish to use it. This is not a special requirement, for the benefit of only a minority of the population. It is a fundamental condition of good design. If an environment is accessible, usable, convenient and a pleasure to use everyone benefits. By considering the diverse needs and abilities of all throughout the design process, universal design creates products, services, and environments that meet peoples' needs. Simply put, universal design is good design."

Shifting norms in emerging media to accommodate a wide variety of individuals will help develop a more robust and interdependent ecosystem. There is evidence that allowing alternative modes of working can add great value to the innovation of products, content, services, and industry optimization.

As artist Marisa Jahn has learned over many years of doing collaborative community and public art, the process of working in communities that are not part of elite art, media, and tech spaces requires a more customized and thoughtful design for making and sharing work (such as her Careforce transmedia art project that engages with the domestic-worker community). In part, this involves educating stakeholders (audience-participants, users, funders, critics, and curators) about their own assumptions.




↳ Artist Marisa Morán Jahn spearheaded CareForce (careforce.co), a set of whimsical and empowering public art projects amplifying the voices of America's caregivers. The group's AR app links up with custom trading cards.

# Resources

*Links for all resources at makinganewreality.org/resources*

37

**Center for Humane Technology Design Guide**
The Center is developing a design guide (currently in Alpha) for tech teams to use as a starting point for creating new apps, websites, and other tech. The simple two-page form asks developers to consider the impact their project will have on human sensitivities such as emotions, attention, social reasoning, and decision-making.

38

**Getting Started with Accessibility**
The University of Washington has some good starter guides for making accessible web content.

39

**Chicago Cultural Accessibility Consortium**
This organization is geared toward making Chicago's cultural spaces more accessible to visitors with disabilities, but many of its resources and guides could serve cultural spaces in other places just as well.

40

**MIT Open Courseware**
Principles and Practice of Assistive Technology. Course materials, including videos, lecture notes, and syllabus for this free and shareable MIT class are available online.

## Make a business case

Many interviewees suggested that making the business case for diversity in media and tech is an important strategy. There are a growing number of business analysts identifying diversity as an essential part of companies' future competitiveness as new global audiences are emerging. Given that corporations have a fiduciary duty to their investors to maximize returns, this can even be a legal requirement.

Julie Ann Crommett of Walt Disney Studios described the benefits of inclusion in corporate environments: "The greatest red flag in emerging media and tech is that a lack of inclusion is hindering our own innovation, because how the heck can you solve for all the opportunities and all the issues that anybody may face if you don't have a representation of people at the table to consider all sides?"

One of the clearest commercial rationales for diversity is avoiding the financial and PR disasters that result from groupthink. For Black History Month 2020, Penguin Books and Barnes & Noble teamed up on series they named "Diverse Editions." The companies took literary classics such as *Frankenstein, Peter Pan*, and *Alice in Wonderland* and re-printed them with covers portraying the characters as people of color — as if simply repackaging stories written from a white perspective would make them more appealing. The response from social media was fast and furious, with several critics referring to the series as "tone-deaf" and "literary blackface." Almost as soon as the books hit the shelves, Barnes & Noble and Penguin canceled the series and announced that they would be removing all of the titles from stores.

Some interviewees expressed dismay that it usually takes the promise of economic success — instead of moral or ethical imperatives — to drive organizations to become more inclusive. Crommett echoed this sentiment when she said a lack of diversity is more than just bad business but "fundamentally troubling in terms of access and expression" and that solving this problem is "doing something greater [than creating economic returns], it is providing access to each other in completely different ways."

**There are a growing number of business analysts identifying diversity as an essential part of companies' future competitiveness as new global audiences are emerging.**

# Resources

*Links for all resources at makinganewreality.org/resources*

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**Ms. Factor Toolkit**

The Producers Guide of America collaborated with Women in Hollywood to create this handy website to help media makers pitch projects with female-driven content. "Ms. Factor Toolkit aims to raise awareness among decision-makers and to educate industry members by debunking the myths that perpetuate gender bias. This toolkit shows that by not supporting and valuing female-driven content in the entertainment business there is a significant underserved female audience, and consequently a lot of money being left at the door."

42

**"10 Stats That Build The Case For Investing In Women-Led Startups"**

Allyson Kapin, Forbes.com, Jan 28, 2019.

43

**"The Business Case for Racial Equity: A Strategy for Growth"**

According to this report by Ani Turner (April 24, 2018), "The U.S. stands to gain $8 trillion in GDP by eliminating racial inequities."

## Set editorial standards for new media forms

Establishing trust and clear boundaries in emerging media production will involve setting new standards for transparency, fact-checking, sourcing, and trigger warnings that reflect the affordances of the medium. Pioneers such as *Frontline*, Francesca Panetta (*The Guardian*), and Gabo Arora (formerly of UNVR) are establishing practices aligned to previously established journalistic and documentary values with new media forms.

The *New York Times* made a bold precedent in this area by launching *Notes on Blindness* on its Op-Docs channel and releasing a VR companion experience in 2014 on the NYT VR app. Kathleen Lingo of the *New York Times* said, "Op-Docs was a great experience for testing the boundaries of documentary in a journalism organization… Our big lesson was that we could push creative boundaries as long as we were transparent. We made sure the audience was 100% clear that the piece did not use real footage, that there were actors performing to documentary audio."

The *New York Times* also distributed Nonny de la Peña's *Kiya* VR experience, which re-enacted a fatal domestic violence case using a room-scale, game engine-rendered environment based on actual 911 audio. Lindsay Crouse of the *New York Times* described the process of ensuring the work met journalistic standards: "She had audio transcripts of a woman making a 911 call, so we had to make sure the context of how the piece represented the event was accurate. Then I listened to the broader 911 recordings [of the incident], making sure the excerpts represented what happened accurately. We needed to make sure that the way she's making that argument was using fair evidence. I also spoke with the sister, who has become a gun activist, and talked her through the situation, making sure she felt everything was accurately represented as well."


↳ *6x9* by Francesca Panetta.

When asked about the ethical concerns raised about VR pieces triggering traumatic responses, Panetta shared the thought process at *The Guardian:* "We had a lot of conversations before 6x9 launched about, particularly, PTSD and the age that we would recommend for viewing. I ended up taking it to a psychologist who does consultancy for film and TV programs. She was very helpful. When I showed 6x9 to the people I interviewed who had been in solitary confinement for a long amount of time, I explained the project carefully and suggested to them they not watch it if they were uncertain, or [take] the headset off if they [became] uncomfortable. But they all very much did want to see it and told me it was really useful for them to be able to demonstrate what they went through to other people. [It's] not different to normal documentary making or journalism in that you need to be sensitive to each piece and ask who the audience is and what the implications are."

As the field matures, and more examples of nonfiction VR and AR accumulate, creating more standardized guidelines will become easier. Meanwhile, many people in journalism and documentary are currently working on guides design to help media makers identify and avoid misinformation, and make their own work more trustworthy, which will be useful resources for those creating parallel projects on emerging platforms.

# Resources

*Links for all resources at makinganewreality.org/resources*

44

**"A Field Guide to 'Fake News' and Other Information Disorders"**
This 2017 report from Public Data Lab "explores the use of digital methods to study false viral news, political memes, trolling practices, and their social life online."

45

**"Prepare, Don't Panic: Synthetic Media and Deepfakes"**
The WITNESS Media Lab has been a real leader in thinking through legal, ethical, and infrastructural changes needed to advance nonfiction storytelling through video. The title above is from one of several sections on the group's website, which has many practical resources and tools, from a quick "Twelve things we can do now to prepare for deepfakes" to in-depth reports that outline pragmatic solutions.

46

**"Creating Virtual Reality Journalism: A Guide For Best Practices"**
*Frontline*, September 2018.

# Systemic Change

Individuals and organizations cannot make emerging media inclusive on their own. Many of the solutions will involve collaboration across institutions, sectors, and governments. Others will involve organizing and public action campaigns, often across the very platforms that need reinventing. Changing practices takes time, money, and energy, and requires intermediary organizations to help define and build fields — a complicated proposition given how rapidly society is transforming. Perhaps most difficult of all, changing minds and culture involves education, imagination, and storytelling that reframes deeply held assumptions.

For one model of how this all works, see the 2018 report *The Water of Systems Change*, published by consulting firm FSG.

"The first step in seeing the water is to illuminate the systemic forces at play," write the report's authors John Kania, Mark Kramer, and Peter Senge. "Grappling with this messy kaleidoscope of factors is a much different process than funding or managing a typical nonprofit program. It requires that change-makers look beyond any single organization to understand the system by identifying all of the actors that touch the issue they seek to address. One must then go further to explore the relationships among these actors, the distribution of power, the institutional norms and constraints within which they operate, and the attitudes and assumptions that influence decisions. These are the conditions that significantly impede or enable social change."

They offer an analysis of the "six conditions of system change" — policies, practices, resource flows, relationships and connections, power dynamics, and mental models.


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The solutions below are roughly organized into five areas:

**1) Get more money into the sector to support DEI in emerging media:**



**2) Educate the people — and ourselves:**



**3) Cross boundaries and silos:**



**4) Commit to creating more humane media:**



**5) Collaborate to think bigger:**



Of course, some systemic issues fall outside of the scope of this toolkit. The pandemic rapidly shifted many work and leisure activities online, while shutting down promising sectors of emerging media. The results of this are unpredictable and will be felt for years. Structural racism and sexism, the legacy of colonialism, global efforts to dismantle democratic institutions, and the dynamics of capitalism all play into the issues we are discussing. There's a worldwide debate too about how best to regulate software and social media corporations that are reshaping our daily habits and the public sphere, exacerbated by new civil liberties concerns in the wake of the Coronavirus pandemic. Media makers and artists — and the funders, policymakers, and advocates that work in this sector — can play an important role in these debates but can't single-handedly solve these issues.

Below we sketch out ways in which people and entities across the sector *can* work together to help make emerging media and technology more inclusive. Who knows, the pandemic might even accelerate such work, as *New York Times Magazine* writer Jenna Wortham observed in an April 2020 piece titled "Has Coronavirus Made the Internet Better?" — "Historically speaking, new infrastructures tend to emerge as a response to disasters and the negligence of governments in their wake." These are complex issues, so the resources in this section tend to be less nuts-and-bolts, more designed for readers to dive deeper.

## Fund people and projects outside of existing networks

Right now, there is an important window of opportunity in emerging media to diversify the players. White males continue to receive the seed and angel investments necessary to move beyond the DIY phase of development. Out of necessity, people across the economic spectrum are creating new ways to communicate, work, and play. There needs to be a conscious effort by multiple funders and investors to support innovators from diverse backgrounds and to seek them out to share new creative and technical practices.

Documentary filmmaker Dawn Porter said, "I think there is a real opportunity for foundations to give unrestricted funding to folks to learn, understanding that in the initial phases they can't compare it to what success looks like in other funding programs. They may have to broaden their idea of funding and allow people the time and inclination to literally just figure it out."

Jenni Wolfson of Chicken & Egg Pictures talked about why her company is committed to lowering the barriers to entry with grants to women storytellers. She mentioned stories that men don't seem to be telling, such as those about reproductive justice. "If we want to see the full range of stories out there, we really have to make more of an effort to find filmmakers from all backgrounds and empower them," she said. "For example, for those artists who didn't go to certain schools or costly film programs or who live far from the networking opportunities that lead to funding, we need to continuously think about what measures we put in place to address obstacles like that."

Marie Nelson, who was at PBS at the time of our interview, believes that the support should be longitudinal, "looking at capable people in the industry who may have made a successful film and never get to make their next film. Often, either people don't get the chance at all or, if they do get a chance, they get only one chance. Then there is no path from that point on... Implicit bias assumes that some people have the ability to transition and develop skills and learn on the fly and others don't, so they are not even given an opportunity."

Establishing greater parity in investment and funding of creative sector professionals, companies, and organizations would also help break the silos and reduce groupthink.

Loira Limbal of Firelight Media asserted, "We [people of color] have to be central at every stage, in every phase, in every facet. That's the only way that there could be any hope of emerging media being inclusive. It just cannot be well-meaning white folks in the majority of everything. What if we started investing in diverse storytellers at the same rate that Silicon Valley invests in white storytellers and male storytellers?"

Fan calls for better representation at the VC level. There are many studies to support claims that real change will not happen without diversity at the top. "The top of the food chain is very much venture capitalist, so can we get more women VCs or women angel investors?" she asks. "Because money seems to make the

world go round. It's funny how many of these VC meetings I go into, and I'm like, 'Let me guess: there's going to be one Black person and one woman,' and it ends up being one or the other, not both."

Can philanthropic institutions and nonprofits play a role in the for-profit arena of tech and media? According to a rep from media company Scatter, "Sundance Institute's New Frontier program and Fractured Atlas play a critical role" within creative communities traditionally ignored by Silicon Valley. In 2017, Fractured Atlas spun off Exponential Creativity Ventures, a fund that makes early-stage investments in entrepreneurs using technology to "empower or enhance human creativity." According to the website, the group's Creativity Fund identifies "supporting underrepresented founders" as central to its investment model.

Brad Lichtenstein imagines a cooperative corporate model guided by multiple bottom-lines (creativity, profit, and social good) and supports people from the creative innovation space who have an entrepreneurial focus. "Everybody is sharing their code. Everybody is talking about problems on Facebook groups. It seems like a huge opportunity. Creating regional, triple-bottom-line businesses that are not in Silicon Valley could be an advantage. There is an echo chamber that develops at a company as large as Facebook or in an area, like Silicon Valley, and it's really, really hard to find deviation."

Other interviewees discussed business models that avoid the traditional investment community altogether in order to avoid the strings that come with angel or VC financing. Some said they also wanted to avoid a heavy reliance on philanthropic support. Such funders have been supplementing social justice media work for decades but have not extended their full support to emerging media platforms yet.

Even when we do allocate public funding for the arts, it often excludes artists working in this tech and art convergence space. Golan Levin of Carnegie Mellon said there are huge gaps between public or philanthropic funding and emerging media. Although he's seen some positive signs of change, Levin laments that funders still suffer from inertia around digital art.

He explained that "there are a half dozen places in the United States, like my lab, that fund weird, new work, regardless of whether it's a commercial product. Eyebeam, Gray Area, etc. There are a smattering of places, and we are all parts of nonprofits that need better-educated funders, frankly."

Wendy Levy of The Alliance advocates for a Creative Workforce Development Act that would fund activities to deepen the arts in our business and technology infrastructure. "We're working on this from both the federal and state government level."

> **If we want to see the full range of stories out there, we really have to make more of an effort to find filmmakers from all backgrounds and empower them.**

# Resources

*Links for all resources at makinganewreality.org/resources*

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**Journalism DEI Resource Wheel & Tracker**

Democracy Fund has compiled lists of organizations, scholarship funds, and other educational opportunities for funders to support. See the education and training links on the Wheel, and check the more extensive Tracker for lists of Historically Black Colleges and Universities, Hispanic-Serving Institutions, and Tribal Colleges with journalism programs and professional organizations serving specific communities.

## Teach emerging media-makers to be entrepreneurs

One of the critical interventions interviewees identified was expanding ownership of production and technology companies, especially from traditionally marginalized artists. The emerging media industries are young enough that the opportunity to put a stake in the ground is still plentiful, with the right focus and seed resources.

"It's not just about getting people into the pipeline to be producers," said Joshua Breitbart in the Office of the Mayor of New York City, "but having people there at the point of that initial commercialization of the new technology, so that even if you're creating some stratification within the medium, in terms of higher- and lower-resourced projects, at least you've tried to keep all the historic race, gender inequities at bay."

However, operating this way will mean that artists and media makers need to learn new skills. "We need to empower artists to become sustainable and better understand what it means to deal with business and finance," said Moira Griffin, who was at the Sundance Institute at the time of her interview. "We need to educate the finance community — the VC community, the people who are investing in these projects, who are investing in these early-stage companies — about why it is important to fund diverse creative entrepreneurs. That is truly critical. It didn't happen in film and television until much later, after prime real estate was claimed."


↳ Visual artist Carissa Potter wrote "How to turn your art practice into a business: A guide to building a sustainable business on top of your art practice" (thecreativeindependent.com/guides/how-to-start-a-business-from-your-art).

Establishing a discovery and investment vetting process that aims to support traditionally underrepresented creative entrepreneurship in emerging media may be critical to changing the diversity and wealth gaps described above. This includes funding, as well as incubator and accelerator programs that could support entrepreneurs with mentorship, coaching, and connections to resources. Not only would this create greater equality and parity, but it would also pollinate new innovations in media.

Maureen Fan talked about the importance of investing in diverse creative entrepreneurs, because change doesn't happen unless the leadership understands, cares, or comes from diverse communities, in terms of both identity and expertise. "You need the top down because people hire people like themselves. This is not only in terms of racial diversity, but discipline diversity. The reason why people in each company are biased is the people who have power are biased. Whatever the CEO cares about gets resourced."

However, Barry Threw of Gray Area Foundation described the recommendations to support artist-entrepreneurs in order to bridge the gaps in representation and power in emerging media as "a reaction because we don't have any public funding for the arts."

He went on to reflect on the tensions between systems that encourage artists to be entrepreneurs and systems that provide funding for artists to be artists. He is not against artist entrepreneurship but suggests it may be problematic if it forces the artist to skew creative choices toward profitability and away from other important values, such as critical societal reflection and transcendence. "There has to be some sort of argument for social responsibility, that we invest in art without expecting a return in capital," he said.

*Making a New Reality* interviewees expressed support for the idea of an impact-investing fund aimed at intersectional artists and creatives who want to be social entrepreneurs. Creating such a fund will require some reframing. "There are similar stigmas that go both ways and are counterproductive in this field. Artists reject business and capitalism, and venture capitalists don't take people who are creative as serious and accountable. Those stigmas need to be torn down, and institutional partners are the ones who have credibility on both sides," say executives from Scatter.

"A lot of women, especially in the doc world, get funded by foundations in a kind of hand-to-mouth, not-for-profit environment. What's great about a social entrepreneurship model is they get investments to create a viable company. It seems like some kind of an impact fund or a startup fund can help get these ventures off the ground and not relegate them to having to constantly be reliant on 501(c)(3) funding. They can get to commercial viability and trade in a real market," suggested Gigi Pritzker of Madison Wells Media.

Pritzker suggests that while it might make sense in some cases to train the makers to be more business-minded, a model that pairs female makers with a business advisor might work better. “I don’t know that you always want to convert someone into something they aren’t,” she said.

Media strategist Jennifer Arceneaux makes a similar point: Investing in artists or creative entrepreneurs is important, but the vetting, cultivation, and overall support for that person might look very different than for someone coming out of an MBA program — especially if you are asking the creatives to invest the majority of their time in business management rather than creating art.

“I love my artist-entrepreneurs, and, as a business executive, we get on and can get things done very quickly. However, I would caution against building a model that relies exclusively on an artists’ entrepreneurial impulses or specific business expertise. Another possibility might be an agency or studio model, similar to an architecture firm or creative agency, anchored by the visionary artist as ‘artistic’ or ‘creative director’ but balanced by a ‘managing partner’ responsible for business development, operations, and management.”

“Let’s be frank,” she said. “Building in this way requires resources and is in many ways a luxury only afforded to established artists with large studios and a high level of commercial success. The innovation is in exploring how corporations, foundations, and cultural institutions can do more to support and incubate a flexible model that allows for both the traditional artist and artist-entrepreneur to thrive. I think we need to move beyond a focus on tactical and practical business training and support for artists. It’s a more complex issue.”

# Resources

*Links for all resources at makinganewreality.org/resources*

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**Creativity Connects: Trends and Conditions Affecting US Artists.**
A 2016 report from the National Endowment for the Arts that examines the need for artists to develop entrepreneurship skills and collaborate across sectors.

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**List of Arts Resources During the COVID-19 Outbreak.**
In the face of the pandemic, artists and media makers have been working to rethink both their business models and their creation models. Updated regularly, this collects online workshops, resources, and grant opportunities for artists.

50

**"The Death of the Artist — and the Birth of the Creative Entrepreneur"**
In this 2015 thought piece from *The Atlantic*, William Deresiwicz explores the history of art markets and the tensions between creative production and commodification.

## Expand pipelines to address disproportionalities

"I've been in a range of media organizations where there is a very earnest and well-intentioned effort to create training programs or internships to bring people in at an entry-level into the system," said Nelson. "But oftentimes, we hear that people just don't believe these candidates exist. I think we need to see real investments earlier on in the process, like Black Girls Code, where there can be systemic engagement to build that pipeline."

Filmmaker Silas Howard also recommended this capacity-building approach: "We're working with communities that are starting far behind their peers. [LGBTQ+ homeless youth] want what we all want. They want not to just survive; they want to be artists and prevail. I'm looking for programs to try and pull them in. What we need now is a foundation. We need to build story-makers from the ground up."

To build capacity, companies such as Overbrook Entertainment are implementing new production models, producing work in traditionally underrepresented communities, and ensuring that many aspects of their films are created by or include members of said communities. Basically, there are new models of capacity-building that guarantee the privilege gap is not a factor in who gets a shot at the entry-level positions in an emerging industry.

Artist Michael Premo said, "I love the fact that these radio stories have exploded in the podcast world, and I think there's a lot of similar, untapped potential in the VR space. At the moment, you need to have a fully baked idea that needs to be fully funded (and another part-time job) to play, and that's not really playing."

A lot of VR makers have invited their friends-and-family networks into projects, allowing them to fail and succeed mostly privately and autonomously. Unfortunately, those with the resources to tinker in VR have not generally been inviting people beyond their friends-and-family network. They have involved few people of color, for example. Efforts such as Sundance Institute and YouTube's VR Day Lab for women and people of color, the HTC Vive Impact Fund, and AllStar Code are working to educate and invest in people from underrepresented groups. Community-based media production spaces will become increasingly important access points, allowing people who do not have $90,000 to buy VR equipment to start tinkering.

Yelena Rachitsky of Oculus is working to get VR tools into the hands of university students across the country through a program she started called NexGen. Oculus is partnering with 11 universities, enabling students to create VR. She said students are adept at picking up the skill sets and outperform most professionals in both production speed and production quality.

# Resources

*Links for all resources at makinganewreality.org/resources*

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**The Code Cooperative**
This New York-based organization is run by people of color who learn, use, and build technology with communities impacted by incarceration.

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**Black Girls Code**
This organization works with girls of color ages 7 to 17 "to become innovators in STEM fields."

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**Girls Who Code**
This group aims "to close the gender gap in technology and to change the image of what a programmer looks like and does."

## Foster digital and cultural literacy

Most members of the general public are still unaware of the role that algorithms or AI play in their lives; improving computer science literacy is crucial. "The positive impact of AI will depend not only on the quality of our algorithms but on the amount of public discussion," said Mustafa Suleyman, co-founder of Google DeepMind, in a 2016 *Christian Science Monitor* piece.

Many interviewees call for emerging media and technology to be interrogated by a representative global community of thought leaders. However, leaders who don't understand the tech cannot adequately evaluate its ethics, legality, and utility. Both leaders and citizens must be better educated about technology if we are to have more constructive input and debate.

Artist and activist Nancy Schwartzman said, "If you don't even know how these algorithms are working, you don't know how to change and fix them to keep you, your behavior, and your data protected." Schwartzman is one of a number of activists, including Matthew Mitchell (founder of Crypto Harlem), Mimi Onuoha (co-author of the *People's Guide to AI*), Katy Bisbee (founder of Public VR Lab), Sasha Costanza-Chock (co-founder of Collaboration Design Studio) and Stephanie Dinkins (founder of Project al-Khwarizmi), taking on the role of educating communities about the privacy infringements and surveillance tactics in physical and digital spaces. These activists share best practices about how to secure devices, teach people how to review terms of use and privacy agreements, spot surveillance technology, and understand legal rights and other important information.

Some interviewees call for more institutional interventions. For example, investing in STEAM education can help bridge the gaps between arts, humanities, science, and tech. Sarah Wolozin of MIT's OpenDocs Lab called for code and hardware engineering to be cultivated as fundamental literacy skills in the 21st century. "First, you had to teach people to read, because we were writing books. Then we had to teach people to understand visual imagery, and now, we need to teach people how to understand computing, programmatic thinking, and algorithmic thinking."

Educating people in these new media does not have to be expensive or limited to those with elite resources. Tracy Fullerton of USC Games explained, "You can teach people interactive storytelling with free tools, like Twine. You could use paper to teach these things, and it becomes so much more practical, and then it becomes about a design methodology." She went on to clarify, "I'm not saying you shouldn't also give people access to technology. They should also have access. But pick your battles. You don't want to just teach people how to use VR because next week it will be something different. You want to teach them what a procedural narrative feels like."

Finally, a focus on educating the citizenry to become tech, media, and culturally literate could help us to design a better infrastructure and system for utilizing these new capabilities, and it could help humanity transition to the "post-work" future that AI threatens. We can focus on developing skills that will build upon and complement work that AI will take over.

# Resources

*Links for all resources at makinganewreality.org/resources*

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**"Advancing Racial Literacy in Tech"**
Jessie Daniels, Mutale Nkonde, and Darakhshan Mir argue that racial literacy must be taught alongside media literacy and other initiatives in order to have a substantive impact. This Data & Society report (2019) identifies the shortcomings in any uni-dimensional approach and defines a framework for moving forward.

55

**Teaching Tolerance's Digital and Civic Literacy Skills**
Geared to 6–12 students, this framework — complete with exercises and video — helpfully melds media literacy with civic literacy.

56

**"Everything you need to teach digital citizenship"**
Common Sense Media's education division created this curriculum for K–12 educators.

## Combat algorithmic bias — preemptively

In an inequitable society, algorithms will only reflect and compound inequalities unless they are limited in use and carefully, intentionally designed and held accountable to the concerns of people harmed by them. According to Frank Pasquale, a Professor of Law at the University of Maryland and author of *The Black Box Society: The Secret Algorithms That Control Money and Information*, the first wave of solutions to algorithmic ails focused on transparency and on improving existing systems. But as scholars, technologists, and social critics have researched the outcomes of existing systems, they are raising a new set of questions: Do we need specific algorithm–based programs at all? Who gets to govern applications such as facial recognition and predictive analytics?

As Pasquale wrote on the blog *Law and Political Economy* in 2019, this second wave of thinkers is asking: "If these systems are often used for oppression or social stratification . . . isn't it better to ban them, or at least ensure they are only licensed for socially productive uses?"

Others frame solutions less as a ban than a pause. Jamie Williams and Lena Gunn, who write for the Electronic Frontier Foundation, point out a set of questions that everyone creating code should ask when designing technology to mitigate the negative ramifications of an algorithm gone wrong, as in Indiana's welfare system algorithm that led to a child's death; or bias data that erroneously racialized the prediction of child abuse:

### Questions We Need To Be Asking Before Deciding an Algorithm is the Answer:

**01** — Will this algorithm influence — or serve as the basis of — decisions with the potential to negatively impact people's lives?

**02** — Can the available data actually lead to a good outcome?

**03** — Is the algorithm fair?

**04** — How will the results (really) be used by humans?

**05** — Will people affected by these decisions have any influence over the system?

↳ Jamie Williams and Lena Gunn for Electronic Frontier Foundation (www.eff.org)

↳ UCLA Professor Safiya Noble documents sexism and racism implicit in tech platforms, particularly Google.

Safiya Noble, author of *Algorithms of Oppression: How Search Engines Reinforce Racism*, told NPR in 2019:

*The way that algorithms get better is when society gets better: when we don't discriminate, when we have ways for people to be restored after they've been discriminated against.... The technology is not going to be able to mitigate that long legacy of data and information that's feeding it...*

*I think we're going to have to reconcile that we need public policy. We need anti-discrimination laws that are specific to the tech sector and the way that tech is predicting decisions or foreclosing opportunities or opening up opportunities. We need to be able to see into those processes, but it's not enough just to make the code transparent.*

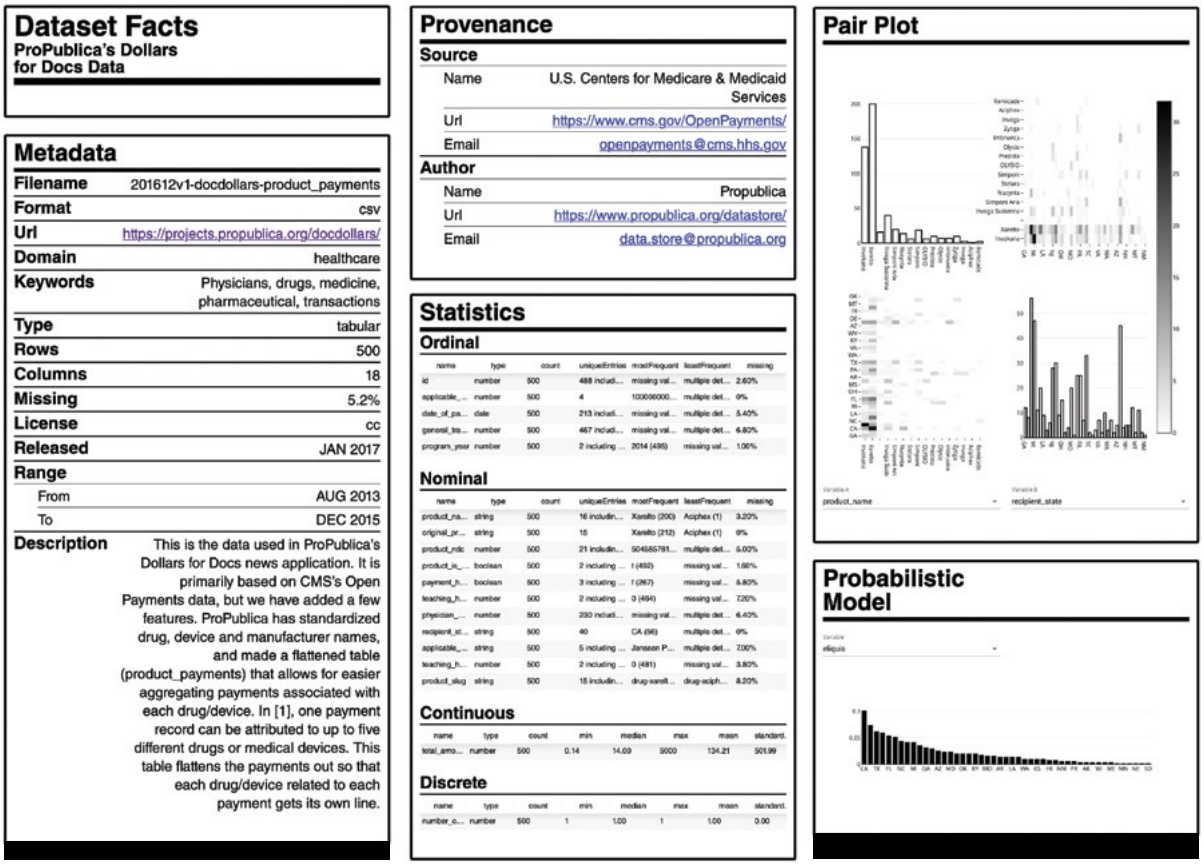
Noble has suggested a counterintuitive solution: "slow media." She says: "Billions of items per day are uploaded into Facebook. With that volume of content, it's impossible for the platform to look at all of it and determine whether it should be there or not."

Government regulators could set limits on how quickly content circulates. As Noble explained: "Maybe you'll submit something and it won't show up the next minute."

Ruha Benjamin, Associate Professor at Princeton University, argues in *Race After Technology: Abolitionist Tools for the New Jim Code*, that the need for algorithmic accountability is urgent. She recommends three questions posed by danah boyd and M. C. Elish in 2018 as "a starting point for any tech equity audit as it relates to AI systems."

- What are the unintended consequences of designing systems at scale on the basis of existing patterns in society?
- When and how should AI systems prioritize individuals over society and vice versa?
- When is introducing an AI system the right answer – and when is it not?

Revolutionizing algorithmic accountability requires better data sets. The Data Nutrition Project (datanutrition.org) may be one piece of the solution. Sets that have been thoroughly vetted — including by people commonly discriminated against in data collection — could earn an "equity" label similar to labels on organic foods. O'Neil Risk Consulting & Algorithmic Auditing (ORCAA), a small firm led by Cathy O'Neil, also offers a seal of approval. To be effective, equity audits must be independent and enforceable.




One way to combat biased datasets is to create a standard label, similar to "organic" or "gluten-free" badges, that identifies datasets that have met scientifically rigorous benchmarks. The Data Nutrition Project aims to create a standard label to drive better, more inclusive algorithms. (Image: datanutrition.org)

# Resources

*Links for all resources at makinganewreality.org/resources*

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**For the most up-to-date resources, follow on Twitter**

Safiya Noble @safiyanoble
Ruha Benjamin @ruha9
Data & Society Research Institute @datasociety
Data for Black Lives @Data4BlackLives

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**Our Data Bodies Digital Playbook**

This collaborative, participatory research project is centered on marginalized communities in Charlotte, North Carolina; Detroit, and Los Angeles. It examines strategies for marginalized adults to protect their digital privacy, self-determination, and data rights.

59

**A People's Guide to AI**

This comprehensive beginner's guide uses a popular education approach to explore and explain AI-based technologies so that people of all walks have the chance to think critically about the kinds of futures automated technologies can bring.

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**The Algorithmic Justice League (AJL)**

"An organization that combines art and research to illuminate the social implications and harms of artificial intelligence. AJL's mission is to raise public awareness about the impacts of AI, equip advocates with empirical research to bolster campaigns, build the voice and choice of most impacted communities, and galvanize researchers, policymakers, and industry practitioners to mitigate AI bias and harms."

## Promote interdisciplinary collaboration and include artists in spaces of power

We can advocate within each sector to promote other sectors and raise critiques about siloed environments. Engineers, technologists, and scientists can educate colleagues on the value of the arts and storytelling. Art serves as:

- A mirror of society,
- A means of celebrating and interrogating the state of the world,
- A means of examining the inner and outer life of the human condition,
- A means of imagining complex possibilities, and
- A means of informing our future design and societal choices.

Conversely, those working in the arts and humanities can educate their peers on the roles and processes of engineering and technology. Rigorous scientific and optimization methods help us:

- Unlock the potential of the resources around us,
- Solve problems and ease pain thresholds, and
- Invent ways to make the "impossible" possible.

Gamemaker and filmmaker Navid Khonsari suggested that technologists and creatives develop a shared language to help understand each others' fields. "The technologists are strictly looking at what's in front of them and how to take that hardware and software and expand it to give the creators or developers more liberties. And that's fine, but it's still going in one direction. I think you have to attach the education of these two different sectors so that they can come together as one. All we come across are technologists that need creatives, and creatives that need technologists, and I don't hear about efforts to bring these two together so they're working cohesively."

Yelena Rachitsky of Oculus points out one model for promoting collaboration across these sectors. "I'm working with Carnegie Mellon. They put people in groups of 4 or 5 that include a designer, a director, a coder or engineering person, and a producer. They tell them they're all equal to each other, that everyone's opinion is just as valued as the other opinions. I love that model. I think the first part is bringing awareness and creating systems that are integrated from the beginning."

Many interviewees called for the establishment of a culture of bridge-building between the arts, sciences, and technologies. We should encourage mathletes to study painting, dancers to study coding, and historians to study biology or tech.

Maybe these gaps between technology and the arts will organically disappear as new generations of tech-savvy folks emerge in the arts. Of course, our education system will have to provide the structure to cultivate those hybrids in a meaningful way.

Interviewees also advocated for embedding artists and humanities scholars in tech centers. This is not a new idea. However, some interviewees who have served as artists-in-residence recently complained that the current implementation practices made them feel like tokens with no real opportunities for collaboration or integration.

"The late 1960s was a utopic moment characterized by risk-taking and cross-collaboration, when we saw a handful of science and tech institutions embrace collaborations with artists," said Jahn. "Some of the better-known ones include Xerox Parc, Center for Advanced Visual Studies at MIT, when Robert Rauschenberg started working with Billy Kluver from Bell Labs, and Artist Placement Group (APG). APG spanned more than two decades and placed more than 1,200 artists in government, science, and industry.

"In the U.S., Mierle Ukeles was an artist embedded with New York City's Sanitation Department for several decades. Her work has really helped embedded practices receive more attention," she continued. "These are North American and European examples of embedded art practices. In the Global South, there isn't a divide between art and life, so embedded practices are less binary. A common reaction is, 'Well, of course, we're embedded in society. Of course, we're socially engaged.' "

"There are city governments now, like in Mexico City, that have cross-sector teams of artists and technologists. They are given shared office space, and, when there's a civic problem, that creative team is activated to build some new code, to write a new algorithm, to create a story-driven campaign, to connect people to services, and to make life better in that city. That's a model that needs to be replicated and supported [elsewhere]," said Wendy Levy of the Alliance for Media Arts + Culture.

Re-igniting the ethos of cross-pollination by embedding artists in tech, business, policy, and science environments might help us develop a shared language and innovative visions of how to use emerging technological and scientific capabilities to design a livable and equitable future.

Sarah Wolozin, director of MIT OpenDocs Lab, observed that "people want us at the table. They understand now that we're in a visual world. I think more and more institutions are realizing how media can help further their mission. There's a lot more crossover from Planned Parenthood to the UN [to the] The World Economic Forum."

Several interviewees suggested that more artists should be incorporated in spaces of power. Barry Threw of Gray Area said, "I believe artists are uniquely suited to respond to quickly changing psychological social environments. Art is vital to put into these contexts [science, policy, technology]. Otherwise, I think you're flying blind. The other side of it is important, too. Usually, in the art context, people don't like to talk about things being functional. But I see a vital role for artists to have a functional place within technology innovation and development and politics."

VR producer Lynette Wallworth's long-term engagement with the cultural director of the World Economic Forum (WEF), Nico Daswani, exemplifies the advantages of breaking down silos in spaces of power. In the past, the Forum invited artists to present their work, almost as a reward to the attendees at the end of the day (e.g., an evening concert by Yo-Yo Ma), but the artists were not invited into the conversations. Wallworth and Daswani modeled a different, more integrated way of including artists' voices in the dialogue. Wallworth presented transformative works about climate change, indigenous land rights, nuclear test bans, and constraints on mining policies over a period of several years of WEF programming. This allowed the artwork to become a part of key conversations. Wallworth replicated that level of engagement at other global policy forums and was named one of the top 100 most influential people in foreign policy by *Foreign Policy* magazine.

Claudia Peña suggested a complementary approach to support or catalyze organizations to make the arts a core value. She noted that the civil rights organization Equal Justice Society positions itself as a hybrid of the arts, law, and social science with the tagline "transforming the nation's consciousness on race through the law, social science, and the arts."

Of course, this recommendation to embed artists in centers of power needs a discerning approach. Interviewees advised selecting artists who can speak comfortably and persuasively with the business community, politicians, engineers, and technologists while maintaining their artistic values. Interviewees also recommended that interdisciplinary programs establish rules of engagement and expectations to ensure reciprocal environments. However, the onus should not strictly be on the artists to "fit" into the spaces of power. Levy advocates for building capacity within companies and organizations so they understand what it means "to have a filmmaker or a theater maker or a poet at the table."

Wallworth and multimedia artist Skawennati warned against monopolizing artists' time with strategic design conversations, where they are talking more than creating. It is important to have artists included but not at the cost of making their art, which requires a very different headspace, time for reflection, inspiration, and play. Also, artists cannot feel used by the process; they must want to engage and be clear about the value proposition to their own work.

For these kinds of programs to succeed, they must have clear missions, compelling value propositions for all involved, and achievable measures of success. The outcome should not be a high-impact art project or clear innovation in technology or social system design. It may be much more specific, especially at first. Longitudinal observations and success measurements must be considered.

# Resources

*Links for all resources at makinganewreality.org/resources*

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Here is a list of just a few **institutions and think tanks working to figure out the future of emerging media and tech**, which could be target partners for programs to embed or engage artists:

– The Leverhulme Centre for the Future of Intelligence at the University of Cambridge
– World Economic Forum Center for the Fourth Industrial Revolution
– Association for the Advancement of Artificial Intelligence
– MIT Institute for Data Systems, and Society (IDSS)
– The VR/AR Association (The VRARA)
– Open AI
– UC Berkeley Center for Human-Compatible Artificial Intelligence
– Augmented Reality for Enterprise Alliance (AREA)
– The Ethics and Governance of Artificial Intelligence Initiative
– Center for Humane Technology

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**Our Brave New World**

This *Immerse* series by Paulien Dresscher examines cross-disciplinary labs in the Netherlands as artistic practice, and "the various technical, philosophical, ethical, and mind-expanding questions arising at the intersection of art, science, technology, society, and the future."

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***Byproduct***

This book by Marisa Jahn (YYZ, 2010) outlines a robust culture of artist residencies and fellowships embedded in science and technology institutions in the mid-twentieth century. She notes that despite the resurgence of embedded residencies today, the history is under-chronicled, which can lead to organizations wasting cycles by reinventing the wheel.

## Design for justice, well-being, and prosperity

One of our interviewees asked: What if a country's success was measured in terms of citizens' quality of life instead of gross domestic product? That's the idea behind various efforts to reframe societies, including the Legatum Prosperity Index, which measures progress towards "inclusive societies, open economies, and empowered people," the UN's Human Development Index, which posits that "expanding human choices should be the ultimate criteria for assessing development results," and the World Happiness Report.

Other interviewees called for ethics in design standards, especially for consumer platforms. They wanted protections for individual rights and freedoms and the values of justice to be a top priority, building on the Design Justice Network's design principles:

**01** — Take an iterative approach to the ongoing process of your group, project, organization, or community development;

**02** — Communicate expectations clearly;

**03** — Establish protocols of participants to feel welcomed to express their thoughts and ideas, as well as raise any red flags that might hinder participation;

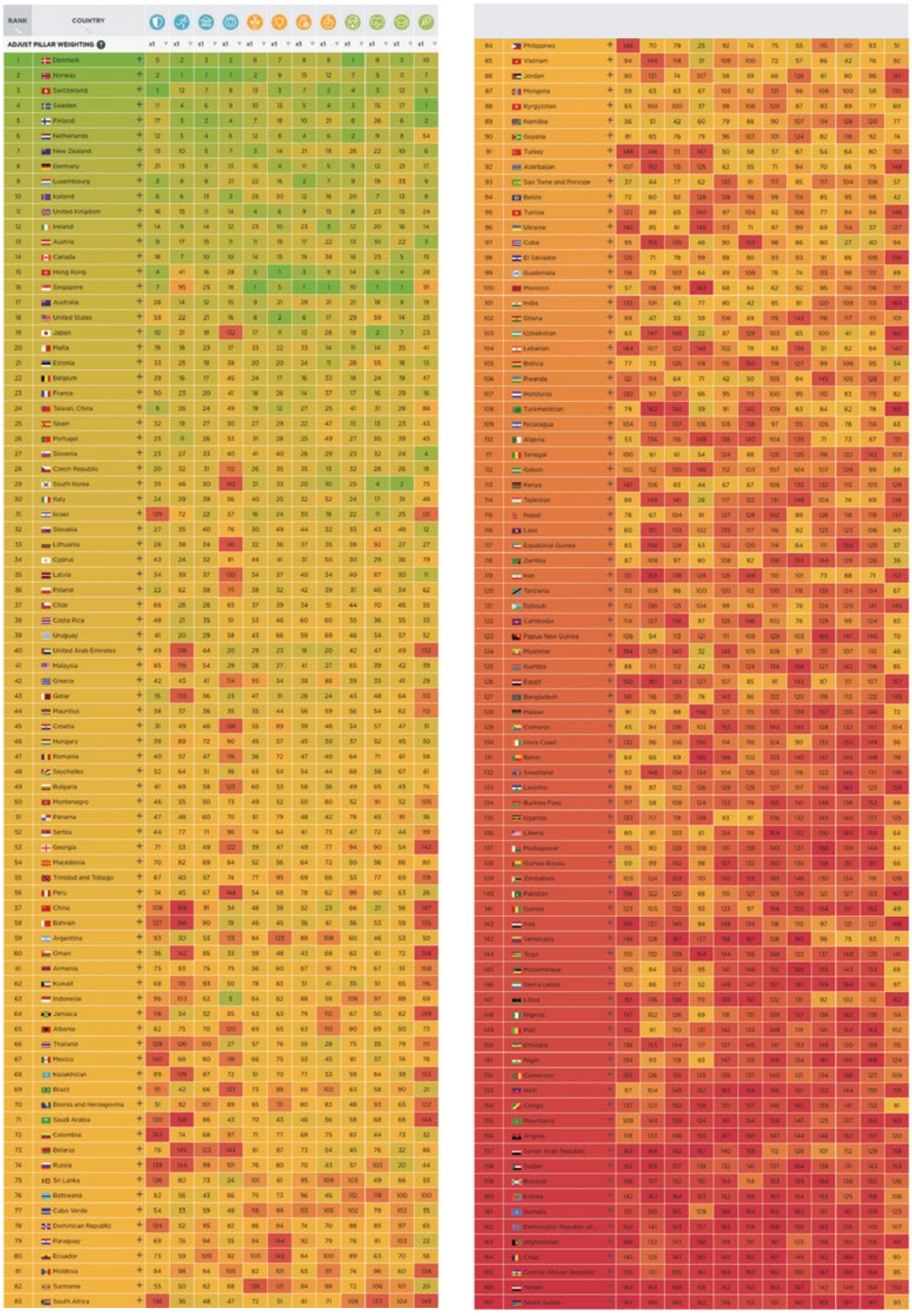
**04** — Allow people to set appropriate boundaries around their participation and engagement (e.g., the ability to opt-out of triggering processes);

**05** — Listen deeply;

**06** — Be aware of the dynamics of power and privilege, so you can help mitigate their impact on equity;

**07** — Consult on resolutions; adjust the design or process as needed; and check-in and reflect on the process or environment dynamics again.

In addition to these principles, we are seeing a growing use of legal instruments that require justice to be designed into the process of innovation or development. For example, some in the entertainment industries have pushed for inclusion riders or “favored nations” contracts, which require companies to proactively combat inequities in hiring, employment, and business dealings.



↳ As a measure of national wealth, gross domestic product is a deeply limited gauge. Alternatives such as the Legatum Prosperity Index include humanist, social, and environmental factors to provide a more holistic — and useful — 21st century tool.

Filmmaker and activist Sabaah Folayan had an insightful reflection on the need to engage in active communication about boundaries and expectations to achieve inclusion, noting "it is a matter of setting boundaries and requesting that expectations be made clear, knowing that we live in a world where most are conditioned to see Black people setting boundaries as an act of hostility. In some cases, our attempts to set boundaries are met with responses ranging from anger and denial to tears over a perceived 'attack,' regardless of how calmly and kindly we approach the situation."

Being able to put one's ego and defensive reflexes aside, calm the fight-or-flight instinct, and really listen, is critical for anyone working to be a part of an inclusive space (although it ain't easy... and we are likely going to fail every once in a while). Folayan explained: "For white people, whose physical well-being is not bound up in the eradication of white supremacy, this is most critical. They must be the ones to silence their visceral emotions and truly hear us, for those emotions are typically based on deep-seated racial conditioning and an incomplete understanding of the reality we all share."

Folayan also challenged the notion that increasing inclusion means increasing minorities in majority spaces, when, especially in the case of "people of color," you can expand the aperture to see the reality that the "minority" is the majority. One solution could be a cross-pollination of mental health professionals and developers in the design process. Designing for mental health could be a critical way of mitigating pathologies underlying cyber-bullying and trolling. As Joe Unger of Pigeon Hole Productions pointed out, LA-based Riot's *League of Legends* is a game with hundreds of millions of fans. It was the first gaming company to hire sociologists and ethicists to create an in-game, user-driven justice system. Homophobia, sexism, and racism were reduced to 2% of all *League of Legends* matches.

Design may impact some communities differently than others. How do the stressors that come with poverty, disrupted or displaced family structures, or disabilities affect the impact of media content? UCLA Law Professor Claudia Peña suggested that emerging media creators be trained in trauma-informed design practices: "We've been developing a curriculum to educate lawyers on how to be trauma-informed. It's made progress in the field of medicine and social work, and it's spreading to other industries. If we're committed to not being stuck in siloed frames and wanting to reduce the possibility of harm, it would be helpful to think of VR creators as being trained in 'trauma-informed' programming or design."

Diversity, equity, and inclusion do not have to be a zero-sum proposition — they are strategies of sustainable abundance and well-being. When we design for the margins and for justice, we establish balance and allow everyone to benefit from the development of these latent human potentialities.

# Resources

*Links for all resources at makinganewreality.org/resources*

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**The Center for Humane Technology Resources**

Founded by Silicon Valley employees who left their jobs, the Center for Humane Technology counters practices such as addictive design in interactive and social media. The nonprofit has a number of cross-disciplinary initiatives designed to educate students, educators, and legislators about the impact of emerging technologies — and the urgent need for new infrastructure and accountability. The group's podcast, *Your Undivided Attention* is a great place to start, and the website is continuing to expand with new resources.

65

***Design Justice: Community-Led Practices to Build the Worlds We Need***

Sasha Costanza-Chock (MIT Press, 2020) explores practices that allow marginalized persons to lead in designing their own communities, dismantling structural inequality and advancing collective liberation.

66

**Collocate** (creator of the Design Justice Platform) and **Allied Media Projects** have been leaders in catalyzing thinking, practices, systems, and pedagogy to help media makers design for justice.

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**Civic Signals**

Co-directed by Eli Pariser — the author of the bestseller *The Filter Bubble* — and Talia Stroud, who founded the Center for Media Engagement at the University of Texas at Austin, this project is researching ways to create "public-friendly" digital spaces inspired by lessons from urban planning.

## Prepare for unintended consequences

Makers need to take care not to become swept up in the fantasy that new affordances — that is, the new ways in which an emerging media form allows users to interact with it — mean that humans will magically act in new and altruistic ways. They need to decouple their own good intentions from the possible harms that might result from their inventions and take a hard look at actual outcomes, rather than just intended ones.

At the dawn of the Internet, many prognosticators suggested that the web would be a boon to democracy and social justice — it would break down barriers, unseat gatekeepers who were narrowing public discourse, provide unlimited free information to those who could not previously afford it, and spread the gospel of pluralism. While some of these techno-utopian projections have come true here and there, the evolution of the Internet — and especially social media — over the past 25 years has spawned a host of what economists call "negative externalities," or in plain English, horrible unintended consequences (see page 146).

As Andrew Marantz observed in "The Dark Side of Techno-Utopianism," a 2019 *New Yorker* piece, "After more than a decade, the most powerful social-media entrepreneurs, now businessmen in their thirties, finally seem to understand that their imagined techno-utopia is not going to materialize. This realization may be a sign of maturity; it may be a calculated response to internal pressure from investors or a strategy to stave off regulation; or it may be a simple defense mechanism, a reaction to being shamed. Within just a few years, the general public's attitude toward social media has swerved from widespread veneration to viral fury."

Similar rosy predictions have been made for a number of the emerging media forms this toolkit addresses, such as VR, which was predicted to turbocharge empathy but has fallen short. The pandemic has revealed a slew of disturbing new uses for mobile and IoT technologies such as connected thermometers — originally touted as increasing convenience for consumers, they are now being repurposed to track their movements and relationships. The consequences of this remain to be seen.

"The Good Internet believed in the promise of community — that if you could build one, anything was possible. You didn't need gatekeepers, and you could accost the powerful without fear," wrote Jason Linkins in a 2019 *New Republic Piece*, "The Death of the Good Internet Was an Inside Job." He continued: "But as Nick Denton noted in Gawker's last post (2016), "the readers don't have the power.... [W]hen you try to make a business out of that freedom, the system will fight you. As our experience has shown, that freedom was illusory. The system is still there. It pushed back. The power structure remains."

One way that designers try to suss out possible uses is "human-centered design" — a discipline that puts user needs and practices at the center of developing new products. Yet, even this practice, which centers empathy, has generated its own negative outcomes.

As Rob Girling and Emelia Palaveena wrote in "Beyond the Cult of Human-Centered Design," (*Fast Company*, 2017), "If followed blindly and left unchecked, this cult of designing for the individual can have disastrous long-term consequences. A platform designed to connect becomes an addictive echo chamber with historic consequences (Facebook); an automation system designed to improve safety undermines our ability to seek information and make decisions (the plane autopilot); a way to experience a new destination like a local squeezes lower-income residents out of affordable housing (Airbnb). Each of these examples is recognized as a real product or service design feat. Yet by focusing on the individual user alone, we often fail to take into account broader cognitive and social biases. By zeroing in on the short-term impact and benefits of our designs, we spare ourselves asking the really hard question: Are we designing a world we all want to live in today and tomorrow?"

Instead, they suggest, what designers need is to integrate their work with systems thinking, to ask larger questions such as "At what cost?" and to practice "backcasting," which involves defining an ideal outcome and then working backward to figure out what it will take to achieve this in the present. They cite as an example the *Circular Design Guide* (circulardesignguide.com), which offers tools for creating products that are sustainable and reusable, saving resources and reducing waste.

> **The pandemic has revealed a slew of disturbing new uses for mobile and IoT technologies such as connected thermometers.**

**The Impact Pack from Dot Connector Studio** helps media makers and funders design projects and figure out how they make a difference.



↳ A new suit designed for *Making a New Reality* helps emerging media makers identify unintended consequences of their projects. Learn more at dotconnectorstudio.com/cards.

# Resources

*Links for all resources at makinganewreality.org/resources*

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**The Impact Pack: Unintended Outcomes**
In order to help media makers and technologists think through the ways in which their productions might trigger unintended results, we've developed a new suit for Dot Connector Studio's Impact Pack that we're releasing in conjunction with this toolkit. Co-author Jessica Clark developed the Impact Pack to help makers, funders, and advocates develop social impact strategies for digital media projects. The original deck included an array of positive outcomes — this new suit allows users to add in negative ones so that they can consider ways in which their work might be misused.

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***Consequence Scanning* manual**
Developed by doteveryone, a think tank focused on supporting responsible technology, this manual provides innovators with a roadmap for events that help teams "think about the potential impact of their product or service on people and society."

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***The Signals Are Talking: Why Today's Fringe Is Tomorrow's Mainstream***
This book by Amy Webb (PublicAffairs, 2016) provides practical steps for forecasting, scenario planning, and navigating the ever-changing landscape of emerging technologies. Webb leads the Future Today Institute, which also provides an invaluable and free annual report on tech trends.

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**COVID-19 Civic Freedom tracker**
This tracker from the International Center for Not-For-Profit Law "monitors government responses to the pandemic that affect civic freedoms and human rights," focusing on emergency laws associated with issues central to media, including disinformation, internet access, press freedom, privacy, and access to information.

# Create New Forms of Public Media

Just as, in previous decades, public broadcasting and public access television created space "on the dial" for educational, informative, independent, and community-based programming and dialogue, in previous decades, we now need public support for those same functions via emerging media forms.

Interviewees talked about the need to develop and support many different forms of public media. For reference, here's a thumbnail sketch of various efforts to establish public space in digital media over the last two decades.

**Goal #1: *Get everyone access***

According to many public media advocates, one of the highest priorities for creating safe and equitable digital space is providing free public wi-fi via platforms that have equal access to the "information superhighway" and that do not track your data without a fully transparent, opt-in approach. This has been a focus of advocates since the 1990s, but as Claudia Peña, Lecturer at UCLA School of Law, pointed out, it wasn't until 2011 that "the UN declared internet access a human right." Efforts to get various populations online and to teach them how to use digital platforms and resources have been ongoing since the advent of the web in the 1990s, first with a focus on dial-up, and then broadband, and now high-speed Wi-Fi and fiber. For both making and consuming many current forms of emerging media, high-speed connectivity is a requirement. The pandemic has revived the urgency of this question, with lawmakers calling for expansions in broadband infrastructure.

**Goal #2: *Get everyone access to safe and equitable platforms***

The rise of social and mobile media over the past 15 years has resulted in consolidated social platforms that rely on user-generated content to attract customers and draw in advertisers. The dream of an open, democratized web that marked the early days of the internet has given way to proprietary sites. As a result, the debate about how to build or maintain public space in this digital environment hinges on questions about how to move away from corporate-controlled communication, conversation, and distribution.

**Goal #3: *Increase diverse representation, leadership, and participation in building the new Internet***

Maybe the point for real intervention is further down the media innovation timeline in Web 3.0, which technology experts suggest will be powered by blockchain technology or become "the new Internet"? In addition, we have to consider the features of immersive media and decentralized object-based devices and environments. Katy Bisbee, founder of Public VR Lab, is among those starting with the same approach as Web 1.0: Get everyone access to immersive media.

Cities especially need to create checks-and-balances to the proliferation of these technologies, so they do not cut out traditionally marginalized communities from the benefits — or disproportionately burden them with the consequences. In order to do that, experts need to be designated to observe the technology and the adoption patterns closely, as well as help start-up companies or business units think through the consequences that may not even be on their radar.

**Goal # 4:** ***To ensure diverse minds and communities are leading in the design of our AI future***

Or is it already too late even to intercede in the construction of Web 3.0? Should we focus on Web 4.0 or the ultra-intelligent electronic agent — here even your body could be integrated with the web via wetware? How do we create AI infrastructure that provides alternatives to the corporate systems? Smart economic systems built on blockchain are being thought of as the means to democratize the industries built for in Web 4.0. If data is akin to oil in its value for this industrial revolution, then being able to track and monetize your contributions of data might be a way of decentralizing power and prosperity.

Whatever form emerging public media takes, there are a number of pressing questions that need to be resolved. These include:

- How to make the public media case?
- How to define the public media mission?
- How to define non-commercial measures of success?
- How is public space funded in this new paradigm of media?

Whatever the model, it must be nimble enough to evolve in real-time and have resilience when it experiences failure. It has to be transparent yet robust in its security infrastructure to protect the individual rights of its users. It may also need to be modular, so it can deliver content and provide platforms of many different kinds.

Ideally, the model would also create onramps for participation among those who could not otherwise afford to be involved. Multimedia producer Ziad Touma said that soliciting participation in emerging technologies from underprivileged communities is challenging because they can exist in "survival mode." Obtaining access to experimental and media tools can be a luxury for those with the privilege of not having to worry about their basic daily needs. This creates a conflict of priorities for anyone engaged in supporting underserved communities. Touma asked: "How do we make it worth their while to spend time in that space? How do we create a support system for these voices and artists?"

Investments in future technologies in traditionally undercapitalized environments can help those communities make infrastructure leaps. The Catholic Church invested in radio infrastructure throughout Africa and Latin America 80 years ago. The proliferation of cell phones in the Global South has played a

fundamental tool for growing emerging economies. If we do not support underserved communities in a manner that allows them to participate in this innovation cycle, they could be exponentially and perpetually behind, further affecting their economic situations.

Even at the state level in the more well-developed areas of Africa and South America (the continents with the lowest GDPs, according to The World Bank and International Monetary Fund) interviewees have described challenges with launching sizable investments in emerging media that might help both regions become serious players in the global emerging media marketplace, because they require resources beyond the existing infrastructure and resource priorities.

Ingrid Kopp of Electric South said, "There is some VC money here, but philanthropy money is still mostly overseas. Of course, a lot of the major foundations have regional offices [here], but it's still very much American or European money that is funding or supporting African projects." She said that one important strategy that could change this dynamic is to "figure out local, diverse sources of funding, financing, and support — because it would really change the conversation."

The pandemic has made the stakes of bringing the whole world online and providing tools for not just media consumption or creation but verification crystal clear. Practically overnight, our digital public sphere became our *de facto* public sphere. Debates about how to reform and regulate existing digital media platforms, already raging in late 2019, have only become more urgent in 2020. While public media is most often thought of in terms of national systems, this is a global issue, which will require international thinking, collaboration, and experimentation.

Sci-fi writer and media critic Annalee Newitz wrote a November 2019 piece for the *New York Times* titled "A Better Internet is Waiting for Us." In it, she explores how the current social media platforms are destroying our open public sphere, and the technologists, scholars, and activists striving to build better alternatives. "We need to stop handing off responsibility for maintaining public space to corporations and algorithms — and give it back to human beings," writes Newitz. "We may need to slow down, but we've created democracies out of chaos before. We can do it again."

> **Investments in future technologies in traditionally undercapitalized environments can help those communities make infrastructure leaps.**

# Resources

*Links for all resources at makinganewreality.org/resources*

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**Contract for the Web**

Experts and citizens across the world worked to create this contract "to make sure our online world is safe, empowering, and genuinely for everyone." It is designed to allow governments, companies, NGOs, and citizens all to sign on to a set of shared principles. Current co-signers include the governments of France and Germany; major tech companies and platforms such as Google, Facebook, Microsoft, and Amazon; advocacy groups such as the Electronic Frontier Foundation and Reporters Without Borders; civil society groups such as Wikimedia and Avaaz; and many others. While some might question the efficacy of such a contract given the actions of certain co-signers, it is an example of an effort to coordinate systemic change.

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**The Case for Digital Public Infrastructure**

This essay by Ethan Zuckerman for the Knight First Amendment Institute lays out the arguments for how the history of public media might inform a strategy for building "a thriving future of democratic communications."

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**"We Need a Media System That Serves People's Needs, Not Corporations"**

In a piece adapted from his 2019 book *Democracy Without Journalism?*, media scholar Victor Pickard offers five approaches for creating a publicly owned media system, including establishing non-commercial options, breaking up media monopolies, regulating news outlets through public interest protections, enabling working control of newsrooms, and fostering community ownership and oversight of outlets.

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**InnoPSM**

This "research network on innovation in public service media policies" brings together academics from different disciplines and countries to work with stakeholders on ways to support new forms of funding, content innovation, distribution, and accountability.

# Build better worlds together

World building is a design-thinking process that involves participants from a diverse range of experiences — such as scientists, inventors, storytellers, artists, doctors and others — together to imagine solutions for real-world issues, or to imagine story worlds. The concept is that the more voices and experiences involved in the development and research of this world, the stronger the world itself will be. Understanding and using world-building techniques can help emerging media makers craft stronger, more diverse narratives and products that appeal to a wider range of users.

Multiple perspectives and experiences can exist in the world that's being built, reflecting the multitude of experiences and thoughts in our current world. The goal of working across industries and personal experiences is to avoid siloed ways of thinking. The power of this process lies in the fact that if your process is strong, you can actually make a world that can transcend or tie together different production platforms such as a film, video game, and graphic novels. It also means that the prototype of your world could be used to predict and solve real-world issues.

The world building process is often used in production design, writing science fiction or cyberpunk novels and in the creation of video games. The tool is not just for fiction — it has also been used as a way to impact the real world.

Alex McDowell, the production designer behind the film *Minority Report* (2002), is the founder of the World Building Institute (WBI). The key aspects of Alex McDowell's world building model are narrative development, prototyping, and output. He used the process when designing *Minority Report*. This ended up not just impacting the aesthetic of the film but also influenced the direction of technology in the world, when 100 patents were filed for ideas first shown in the film.

The WBI also established a process that empowered communities in parts of the Middle East and Africa to first build a vision of themselves in 20 to 50 years, and, then — using immersive media, interactive design, and storytelling practices — supported participants to create a shared vision. In 2017, Sundance Institute's New Frontier program partnered with WBI and Pigeon Hole Productions to build on this process and establish models of self-determined and democratized imagination.

We asked Paisely Smith, who has conducted world-building sessions with Sundance and others, to contribute to this section of the toolkit. Smith and designer Caitlin Conlen lead Feminist Futures, a workshop that makes the principles of world building accessible to diverse audiences.

Toolkit co-author Kamal Sinclair leads the Guild of Future Architects (GoFA). In Spring 2020, GoFA created a 10-week series using the principles of world building to think through ways in which the coronavirus pandemic might serve as a watershed moment to rethink our policies, lifestyles, and values. Learn more about this at medium.com/guild-of-future-architects.

## Resources

*Links for all resources at makinganewreality.org/resources*

Here are some other initiatives that use science fiction, futurism, and healing narratives to innovate, empower, and support community-building:

**The Initiative for Indigenous Futures (IIF)** is "a partnership of universities and community organizations dedicated to developing multiple visions of Indigenous peoples tomorrow in order to better understand where we need to go today."

**Playable Cities** catalyzes new ways of connecting people and thinking about the city (i.e., Future Lagos).

**And Also Too,** a collaborative design studio, uses community-centered-design processes to make beautiful, powerful things.

**Feminist Futures,** a world building workshop series that teaches hands-on, DIY design-thinking tools to build a distant, utopian, intersectional feminist future.

**The Design Futures Initiative,** a nonprofit organization built on the desire to shape preferable futures through the lenses of Speculative Design and Futurism.

**The World Building Media Lab** at the University of Southern California's School of Cinematic Arts.

# Appendices

### Categories of Emerging Media

The forms of emerging media are changing all the time. Here are brief definitions of innovative media types that *Making a New Reality* interviewees identified as "emerging."

### Interviewees List

Kamal Sinclair interviewed these producers, artists, technologists, curators, scholars, executives, investors, journalists, philanthropists, and legal experts for *Making a New Reality* in 2016–2017.

# Categories of Emerging Media

The following are a broad set of categories and trends that the *Making a New Reality* research identified as "emerging media."

**ALTERNATE REALITY GAMING**

An alternate-reality game (ARG) uses the real world as a platform and employs transmedia storytelling to deliver a narrative that players can alter. The form is defined by intense player involvement with a story that takes place in real time and evolves according to players' responses. The game's designers — rather than AI — actively control the characters. Players interact directly with characters in the game, solve plot-based challenges and puzzles, and collaborate to analyze the story and coordinate real-life and online activities. ARGs generally use a variety of media but the internet generally plays a central role.

**AUGMENTED REALITY/MIXED REALITY**

Augmented Reality (AR) and Mixed Reality (MR) overlay digital content on the physical world while allowing users to look at the world through a smart tablet, phone, or a heat-mounted display. Examples include Pokémon Go, Melissa Painter's *Heroes: A Duet in Mixed Reality*, and the Google Translate app.

**BIO-RESPONSIVE/ BIO-CONNECTED STORY**

Bio-responsive or bio-connected works use biometric technologies in story experiences. Some examples include *The Ascent*, *UKI*, *My Sky is Falling*, and *Superhuman Sports*. Practitioners are pushing the boundaries of technologies that enhance human senses and capabilities, including exoskeletons, spidervision (a 360 field of view in 180 view), peripheral vision, haptic feedback, equilibrium control, muscle remote control, emotional expression sensors, overall augmented eyewear, and more. The cutting edge of this category manipulates biological matter to perform tasks.

**CO-CREATION**

Co-creation involves a constellation of media production methods, frameworks, and feedback systems that serve as an alternative to a single-author vision. In co-creation, projects emerge from a process and evolve from within communities and with people, rather than for or about them. Co-creation also spans across and beyond disciplines and organizations, and can also involve non-human or beyond human systems. The concept of co-creation reframes the ethics of who creates, how, and why.

**COSPLAY**

In cosplay, audiences connect with a story by dressing up and pretending to be a specific character. Cosplayers attend conventions and form lively communities. Some cosplayers have become so popular that others have written games around them. Researcher Joseph Unger has found that cosplayers are disproportionately members of marginalized communities: Aspergers, LGBT, social anxiety, veterans. The impact of this industry and fandom has changed the way studios think about the worlds they are creating.

**CROWDSOURCING**

Crowdsourced media projects invite audiences to play in and contribute to a storyworld. High-quality, low-cost tools for media generation have made it much easier for community members to participate in the creative process, enabling co-creation, civic media, and fan fiction. Examples include *HitRecord*, *Outside Stories*, *Question Bridge*, *The Counted*, and *Sandy Storyline*.

**DATA STORYTELLING**

Data storytelling uses data collections to make stories about the human experience and environment. Once considered a niche skill, data storytelling is now considered fundamental for journalists. Landmark data visualization artwork includes *We Feel Fine*, *I Want You to Want Me*, *Artificial Killing Machine*, *Derive*, and *Dear Data*.

**DOCUGAMING**

Docugaming is designed to give agency to players in a nonfiction story. It can have the effect of raising the stakes for the audiences and exposing certain vulnerabilities or grey areas in real dramas. Examples include 1979 *Revolution*; *That Dragon, Cancer*; and *Everything*. Other forms of docugaming include text-based nonfiction games including Zoë Quinn's *Depression Quest*, and *Walden, A Game*, a first person simulation of the life of Henry David Thoreau at Walden Pond.

**EPHEMERAL SOCIAL MEDIA**

Ephemeral social media platforms enable interpersonal communications but do not by default permanently store them, for example: SnapChat.

**ESCAPE ROOMS**

In this form of emerging entertainment, audience members are locked up — usually in teams — in small spaces and given a series of clues, puzzles, and tasks to solve in order to escape. Lighting, music, and a variety of digital media can help create imaginative settings and moods.

**GENERATIVE ART**

Generative art refers to art that has been created with the use of an autonomous (non-human) system, or Artificial Intelligence (AI). Human creators may consider the generative system representative of their own artistic ideas or view the system itself as a co-creator. "Generative art" often refers to algorithmic art (algorithmically determined and computer-generated), but artists can also make it using chemistry, biology, mechanics, smart materials, manual randomization, mathematics, data mapping, symmetry, and tiling. One example is *New Dimensions in Testimony* (NDiT), which used advanced natural-language software that allowed audiences to verbally interact with the recorded 3D image of a Holocaust survivor.


**ESPORTS**

Esports is a form of streamed or live competition using video games. LA based Riot's *League of Legends* is a popular example. Esports has boomed during the pandemic.

**GEOLOCATIVE OR GEO-AWARE EXPERIENCES**

Geolocative projects use a global positioning system (GPS) in mobile devices to connect a story to place and coordinate live interactions. Examples include *The Silent History* and *The National Mall*.

**GESTURAL INTERFACES**

In touchscreen gestural interfaces, users control a device directly through their movement. Free-form gestural interfaces don't require the user to touch or handle them directly. Some examples of artistically rich, gestural projects include *CLOUDS*, *Treachery of Sanctuary*, and *Shadow Monsters*.

**IMMERSIVE THEATER**

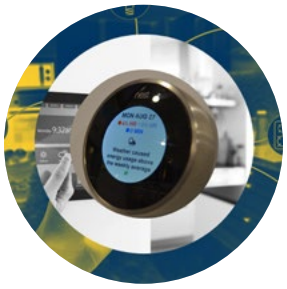
Immersive theater combines a wide variety of interactive elements with site-specific theater. Examples include *The Willows* in Los Angeles and *Sleep No More* in New York.

**INTERACTIVE FILM AND BOOKS**

In interactive media, users can engage with and change the story in a variety of ways, providing customized experiences. Examples of interactive film include: *Possibilia*, *ROME*, *Late Shift*, *The Last Hijack*, *The World in Ten Blocks*, and *Room 202*. Interactive books are most commonly designed for kids, as a way to engage preliterate children with the magic of books. Many of these are not digital and involve fun play with a grownup. Herve Tullet's *Press Here* is a popular example.

**INTERACTIVE INSTALLATIONS**

Interactive installations are high-touch, context-rich story experiences that aim to transport visitors to another place. Many are designed to promote multimedia franchises, such as Skybound's digital-to-live campaigns for *The Walking Dead* and SyFy's experience for *The Magicians*. Others, such as Meow Wolf (based in Santa Fe, NM) seem to exist in their own universe.



**INTERNET OF THINGS (IOT)**

The Internet of Things refers to common consumer electronics — from air-conditioners to refrigerators to room lighting and medical devices — that can be monitored or programmed via the internet. These include smart home tools, connected cars, bluetooth-enabled medical devices, and environmental sensors. Internet of Things experiences include projects where artists and audiences integrate their bodies into the telling of a story by using smart objects, wearables, sensor-tracking projection mapping, and connected or smart environments.

**LIVE CINEMA OR PHYSICAL CINEMA**

The power of cinema meets live storytelling. Live documentary may or may not include live narrative alongside moving images, live scoring, projection mapping, real-time data analysis, internet searches, and dance. Examples include: Sam Green's *Utopia in Four Movements*, Braden King's *HERE [The Story Sleeps]* and performances by Terence Nance and Travis Wilkerson.

**OMNIDIRECTIONAL DIGITAL MEDIA**

This category includes any story form that can go in any direction (forward/backward, left/right, linear/nonlinear, macro/micro, deep linked or layered). This can allow for curiosity-led dives down wormholes to deeper content. There are various forms of branching narrative related to the direction of the interaction — for example, *Pry*, by artists Samantha Gorman and Danny Cannizzaro.

**SMART ENVIRONMENTS**

Spaces that storytellers use or create that have multiple immersive and smart technologies, as well as analog tools that augment a physical experience (for example, sensors that trigger experience-related smells, allowing users to touch VR/AR content via infrared light, 360-degree 3D film glasses, plus analog items like fans and omnisound.) This includes works that employ character, dialogue, and collaborative production in physical cinema — and works that compel audiences to integrate their bodies into the telling of a story with smart objects, wearables, and connected environments. Examples: *Be Boy Be Girl*, *Birdly*, *Cyrano: Alex in Wonderland*, *Just a Reflektor*, *Lyka*, *Can't Get Enough of Myself*, *Tableau*, *Peg Mirror*, *Lyka's Adventure*, *OMW*, *Fru*, *The Quinn Experiment*, *Postcards to My Younger Self*, and *Magic Dance Mirror*.

**OLFACTORY EXPERIMENTS**

Olfactory experiments include media projects that engage the sense of smell. Examples: *Le Musk*, *Famous Deaths*.

**PROJECTION MAPPING MEDIA**

Projection mapping allows the maker to project images and words onto the physical world. This technique uses architecture, landscape, objects, and bodies as canvases for moving images, optical illusions, and mixed reality. Examples include: *Klip Collective*, *AntiVJ*, and *Heartcorps*.

**TRANSMEDIA STORYTELLING**

In transmedia storytelling, fragments of a story are scattered across many different platforms for the audience to piece together (like a puzzle). Transmedia storytelling often provides opportunities for audience participation, interaction, and co-creation. Second-screen experiences are one well-adopted way that transmedia storytelling has seeped into mainstream entertainment culture. Examples include *East Los High*, *Year Zero*, and *Half the Sky*.

**SOCIAL ART PRACTICE**

In social art practice, the artistic and creative medium is but a tool to transform the actual "canvas" — people, groups, and societies.

**TACTILE DIGITAL MEDIA**

With the proliferation of touch-based hardware and the advancement of haptic technologies and sensors, touch interfaces have become a storytelling tool. Examples include *Evolution of Fearlessness*, *HUE*, *Biophilia*, and *Real Virtuality*.

**VIRTUAL REALITY**

Virtual reality encompasses a suite of technologies that brings audiences or players into a visually and sonically immersive world. Some of the approaches to making VR include:

- Monoscopic or stereoscopic 360 film,
- Light field camera capture 360 film,
- Volumetric capture or photogrammetry that capture VR performances, objects, landscapes or structures for real-time game engine environments,
- Room scale environments,
- Hyper-reality (full-body and sensored object interactive VR),
- Synchronized screening VR, and
- Social VR.

# Interviewees List

To better understand the challenges involved in making emerging media more inclusive, researcher Kamal Sinclair interviewed a range of stakeholders, including producers and artists, technologists, curators, scholars, executives, investors, journalists, philanthropists, bureaucrats, legal experts, and activists from 2016–2017. Below we've included their names and affiliations as of December 2019:

- *Carmen Aguilar y Wedge*, Co-Founder of Hyphen-Labs
- *Jennifer Arceneaux*, Director of Strategy Integration, Culture Council Emerson Collective
- *Lyndon Barrois*, Co-Founder, Blackthorn Media
- *Karim Ben Khelifa*, independent artist
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- *Jenn Doung*, Co-Founder, Sh//ft
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- *Marisa Morán Jahn*, independent artist and scholar
- *Eline Jongsma*, artist
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- *Franklin Leonard*, Founder, Black List
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