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KEIJI ISHIDA (BFA 23)

To alum Keiji Ishida, reinvention means evolving, adapting and transcending previous limitations to progress personally and collectively. “As an artist, I allow change in my work—it’s what keeps me moving, and the only way I think I could survive,” says the recent graduate of the Illustration program, whose work was commissioned for the debut issue of *ArtCenter On*. That work—which includes visual sound effects (e.g., “Da! Da! Da!”) inspired by the late Japanese manga artist Shigeru Mizuki—tells the story of a friendly robot gardener who, despite being upgraded to look menacing, must still comply with its original programming. Influenced by skateboard and street-wear culture, Ishida has worked with clients that include Apple, Netflix and Paris-based Nozbone Skateshop. Visit artcenter.edu/on to read more about the artist. — Solvej Schou

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ON REINVENTION

Welcome to the very first issue of *ArtCenter On*. In the works for more than 18 months, this brand-new publication from the College continues the legacy of our long-running *Dot* magazine and has been designed from the ground up to highlight the important discussions taking place both in our classrooms and in the world at large.

Since becoming ArtCenter’s president in July of last year, not a day goes by that I’m not surrounded by great minds driving critical conversations in our fields. For example, this past summer the College held a symposium titled “AI in Teaching and Learning at ArtCenter,” in which faculty members dove into such weighty topics as the appropriateness of introducing AI-related tools in the classroom and the technology’s uncertain relationship to intellectual property rights. It was a timely discussion about the impact this technology is having on both education and the industry, and a great example of the kind of meaningful dialogue happening daily at the College.

Amplifying urgent topics that require the attention of artists and designers is where we believe *ArtCenter On* can truly make a difference. Unfortunately, there’s no shortage of such topics that the next generation of creatives must confront—climate change, economic and political instabilities, and a host of social and political tensions, to name just a few. Fortunately, the fearless work flowing from the minds of our students today assures me that they’re ready for the challenges ahead.

Each issue of *ArtCenter On* will focus on a theme. This issue’s theme is “Reinvention,” which felt appropriate as the College adapts to a post-pandemic reality. How we teach, learn and work continues to evolve at a time when institutions of higher learning are being challenged to prove their value. ArtCenter is not immune to these matters. As we propel ourselves headfirst toward our 100th anniversary in 2030, it is our responsibility to rethink, reimagine and reinvent how we deliver the most relevant and meaningful art and design education possible to our students.

I hope you enjoy this new publication, that something you read here resonates with you, and that it helps spark further discussions within our growing ArtCenter community.

Karen Hofmann
President

AGREE NER, CL EANER RIDE

FROM 4D-PRINTED CARS TO “15-MINUTE CITIES,” THE FUTURE OF SUSTAINABLE PERSONAL TRANSPORTATION OFFERS ALL KINDS OF POSSIBILITIES

SOLVEJ SCHOU

Imagine a car with an exterior of 3D-printed copper, gleaming raw and reddish brown, streaked with a sanding pattern. Its interior is woven of wool, cotton and hemp, naturally dyed using avocado, black beans and logwood. Knotted fabric covers its seats. No paint, no finish, no glue. Ready to be recycled.

These ideas were the focus of *Ultimate Sustainability*, a 2035 concept electric vehicle project by [Ahyoung Roh](#) (BS 23), a



recent graduate of ArtCenter’s Transportation Design program and a recipient of the 2021 Denhart Family Sustainability Scholarship Prize. Roh exhibited the project at the Pasadena Convention Center this past April for Grad Show, the College’s showcase of graduating students’ work, which takes place multiple times a year.

“Cars will destroy the environment, so the industry needs to change *now*,” said Roh, whose project was inspired by the natural dyes that she saw her mother, a paper craftswoman, use while Roh was growing up in South Korea. “Future cars should be decomposable.”

Roh is not alone in her concern over the environmental damage being inflicted on the planet by our vehicles. In 2022, California regulators passed legislation to ban the sale of new gas-powered cars by 2035. And this past April, the U.S. Environmental Protection Agency (EPA) proposed sweeping emissions cuts for new cars and trucks

through 2032, which the agency projects will slash more than 9 billion tons of carbon dioxide emissions through 2055.

Those are great starts. But what else could the future of sustainable personal transportation look like? There are as many answers to that question as there are cars on the freeway during rush hour. And, like Roh’s project, many of these answers are filled with creativity, criticality, blue sky ambitions and, importantly, hope.

MAKING SHIFTS, REWRITING RULES

According to the California Energy Commission, more than 1.5 million zero-emission electric vehicles—including battery electric and plug-in hybrids—have been bought in the state since 2011, surpassing a goal set for 2025 and making up 40% of all EV sales in the U.S. In the push for sustainable transportation, California leads the pack, with regulations, rebates and improved vehicle batteries paving a solid path.

“We’ve been a site for innovation and leadership for the country and the world,” says Los Angeles County Acting Chief Sustainability Officer [Rita Kampalath](#).



“California has driven the industry because we’re such a large state and economy. We have the opportunity to make shifts happen.”

Kampalath points to OurCounty, a regional sustainability plan whose goals include a fossil fuel-free L.A. County and

Unless otherwise noted, all portraits are courtesy of the respective individuals.

a convenient and affordable transportation system that will enhance mobility and quality of life while reducing car dependency. One example target: By 2045, 50% of all trips in the county will be by foot, bike, micro-mobility (e.g., scooters) or public transit.

That's easier said than done. Kampalath acknowledges the longtime draw of identifying with one's personal vehicle as a space of privacy, expression and freedom. She points out that Ford's F-150 Lightning electric truck was intentionally made to look like the original gas-powered Ford F-150 to appeal to customers who still want a traditional-looking vehicle.

But equity, she adds, is what should truly underlie everything having to do with sustainability. Affordable housing, for example, could allow people to actually live near where they work. "A lot of our focus with the sustainability plan is really about how to reduce the amount of vehicle miles traveled," she says.

Also critical is creating a circular economy, closing the gap between the production of vehicle materials and the managing and recycling of those materials after their design life is over.

Kampalath believes the work she and her colleagues have started will carry on as more students who are committed to sustainability enter the workforce. "There's a huge need for new ideas and for people to stay engaged," she says.

Of course, industry will need to commit to a more sustainable future. And thanks to policy pushes and consumer demand for greener options, major car companies in the past few years have been catching up with the EV startups.

In 2021—13 years after Tesla debuted its first vehicle powered by a lithium-ion battery, and 12 years after Rivian was founded—Volvo announced plans to become a

fully electric car company by 2030. That same year, General Motors (GM)—whose brands include Buick, Cadillac, Chevrolet and GMC—pledged to stop making gas-powered passenger cars, SUVs and vans by 2035. Honda's goals for 2050 include carbon neutrality for all its products. And Hyundai broke ground in late 2022 on its first U.S.-based EV and battery manufacturing plant.

"Thoughtful and sustainable designs will become a baseline expectation for young designers—that's where the world is moving," says GM Lead Exterior Designer [Laura Arias](#) (BS 14), who joined GM's



Courtesy of GM/Laura Arias.

Southern California—based Advanced Design team in early 2023 after working at Fiat Chrysler. The team's new studio is scheduled to open in Pasadena in 2024.

"As creative people, we are empathetic by nature and want to take care of each other and the planet, and that's the center of design," says Arias, also an assistant professor in ArtCenter's Transportation Design program. "GM's viewpoint on sustainability and reaching net zero is part of why I joined the company. I liked the open-armed acceptance of a future with autonomy and electrification, and I wanted to be part of this era of innovation."

Arias reflects on how far car design innovation and sustainability efforts have come, from her first vehicle, a large 1982 Oldsmobile Cutlass Ciera "boat of a car"—"with a velvet blue interior!" she laughs—to the impact of electrification on exterior

design five to 10 years from now. "Some of the fundamental rules are changing," she says. "You no longer have an engine. There are tangible effects on the chassis and on how you physically make a car."

Honda R&D Americas Creative Lead [Michael Tsay](#) (BS 92), who has designed



interiors at Honda since the mid-'90s, is part of the team in Southern California working on Honda's human-machine interface (HMI) concept, which revolves around semi-autonomous technology.

A longtime professor in the Transportation Design program, Tsay grew up in the Midwest, where he drove his father's hulking Mercury Cougar. Today, his students design sleek cars that convert into offices and sleeping berths. But even with such future-facing concepts, he says, the use of natural materials holds a strong appeal for students—like Roh. "One of the bad habits we've gotten into in automotive design is decorating with synthetic materials, like fake wood," Tsay says. "Having materials be genuine and natural is a key point."

Currently, for a soft door panel, a hard plastic substrate is made, then topped with a soft foam layer. "That's not necessarily recyclable, because it has to be glued to a piece of leather," Tsay says. "Instead, in the future, couldn't we just make it out of something that's naturally soft? We believe customers would value that and pay extra."

Experimenting with the rules of car design will be the norm at ArtCenter's Mullin

Transportation Design Center, set to open for the Spring 2024 term on the College's South Campus. Designed as a destination for future-thinking transportation designers and a creative hub where a variety of art and design projects can be realized, the center will feature 31,000 square feet of specialized labs, classrooms, exhibition spaces, offices and studios—including a fabrication studio, a vehicle architecture lab and an art and process lab.

"This space truly symbolizes who we are and our vision for the future of art and design," says ArtCenter President Karen Hofmann of the new center, which is housed in a renovated supersonic wind tunnel and will also be the new home of the College's Hyundai and Kia Innovation Lab, a space dedicated to research and design that explores the user experience. "The center will boost explorations not only in transportation design, but also in industrial design in general—really capturing the collaborative spirit of our students, faculty and staff. It's going to take creatives of all types to make our future one that's sustainable for generations to come."

MOVING BEYOND BOXES OF STEEL

What do futurists see as the future of sustainable personal transportation?

"There's a constellation of options emerging," says [Nick Bartlett](#), a director at the Future Today Institute, who leads the



organization's transportation and manufacturing team. He says one of these will be the continued electrification of passenger vehicles. There's automation, including drones, which could offset the use of certain vehicles. The trend of electric bikes is expected to continue, says Bartlett. There are also "auto rickshaws"—electric, three-wheeled, open taxis, such as tuk-tuks—popular in cities across India, Thailand and Bangladesh.

"Then there's 4D printing, which could be a game changer," says [Mark Bryan](#), a



senior foresight manager at Future Today. 4D printing includes standard-layer 3D printing, but adds the ability to pack the product—a car—light and flat, like a chair, and then have it "self-inflate" when unpacked. An entire car could be printed in only a few days, with only the tires and battery needing to be added. "It could become so cost-effective that people could print their own car and be able to retrofit it if they have a disability," he says.

Sustainable vehicles also go together with sustainable city infrastructure. Smart city technology, which uses sensors to direct traffic, could be used to push vehicles in specific patterns, and the roadways themselves could harvest the kinetic energy generated by the traffic, says Bryan.

Israeli company Electreon has created wireless charging and electric road technology to enable EVs to charge while parked,

idling or driving. In 2022, the company partnered with Ford, the state of Michigan and Detroit energy company DTE to work on building the first wireless charging road for electric vehicles in the U.S. China, which has set a goal of 40% of vehicles sold by 2030 being electric, is also building charging roadways.

One critical issue with EVs is the environmental and societal impact of the mining of cobalt and lithium for lithium-ion batteries in countries like Chile, Argentina and Bolivia. Lithium extraction impacts soil and contaminates the air, affecting the health of people in communities near the mines. Researchers have been looking into iron and silicon as possible alternate elements to mine.

Nevada-based company Redwood Materials is building a global battery supply chain—the first in the U.S.—and producing anode and cathode components from recycled batteries. A swath of the country that extends from Michigan to Alabama is becoming known as "the battery belt," says Bartlett, for its production of electric batteries and components.

And then there's the question of what to do with those lithium-ion batteries when they need to be replaced. "EV batteries offer a second-life opportunity when hooked into wind turbines to absorb excess charge and store energy," says Bryan.

And while the nostalgia of one person owning one car as a symbol of independence is strong, that may change in the future. "I can see fractional ownership of multiple different autonomous vehicles that all perform different services—one autonomous vehicle could provide you mental health and wellness spaces on the way to meetings," Bryan says.

For [Geoff Wardle](#), former executive director of ArtCenter's Graduate Transportation Systems and Design program, the



future of sustainable personal and public transportation is intertwined, starting with the idea of a "15-minute city"—one in which people could walk or travel within just a 15-minute radius of home for work, school, health needs, food and entertainment.

Wardle, who grew up in England, says that "we need to imagine the future as communities." Picture large areas of Los Angeles County becoming 15-minute cities over the next 50 years, with people walking, hopping on a scooter or riding a bike—all of it "better for our health and the environment," says Wardle.

"I do think the majority of people in the future will persist in preferring to ride in their personal capsule from A to B," Wardle adds. "Public transportation operators will need to reimagine their services if they are to persuade people not to use their personal cars as default mobility."

Earlier this year, on a bright April afternoon at California Institute of Technology



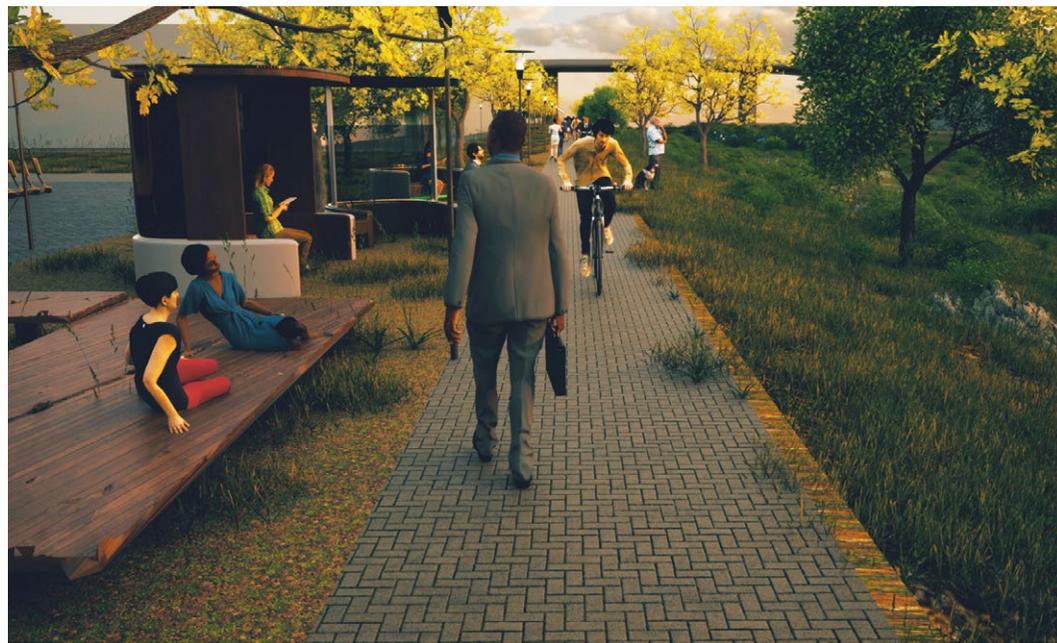
Courtesy of Lakshmy Narayanan.

in Pasadena, Wardle met up with a team consisting of ArtCenter Professor Lucian Rosca (BS 89) and graduate students [Enea Sernesi](#), [Lakshmy Narayanan](#), [Luke Pezzimenti](#) (now an alum) and [Aravind Aanand](#) (Assistant Professor Giulia Amoresano was not in attendance). The team had gathered for the finale of Pando Days, an annual program that brings together colleges and universities of the greater L.A. region to help advance Los Angeles County's sustainability goals.

Sernesi, from Italy, previously studied transportation design and plans to work with both public and private institutions. Narayanan, from India, studied architecture and wants to work within the intersection of policy and design. Pezzimenti, from the U.S., has a career in industrial design and wants to go into systems innovation. Aanand, from India, previously studied engineering and recently snagged a UI/UX internship at Audi.

The students' Pando Days project, *Mobilizing L.A.'s Transportation Future*, proposes a holistic vision for the L.A. metro area by 2050, with the goal of making transportation universally affordable and sustainable for the area's diverse residents and economy. And it uses the upcoming 2028 Summer Olympics in L.A. as the impetus to begin addressing these issues now.

In a video visualizing the project's 2050 future, an animated character, Daisy, leaves her apartment in L.A.'s Boyle Heights neighborhood to travel first to a work meeting at the nearby L.A. River Corridor, then on to a business trip to San Diego. She has a choice of several mobility options: e-bike, bike, scooter or a slow mobility vehicle. She decides on the last option, an autonomous, electric open-air module with a swoop of glass that allows her to see people along the way, as well as to chat with a friend who's sitting in his wheelchair in a similar vehicle.



When Daisy exits at the River Corridor, nature is everywhere, along with food vendors, and people having work meetings at various stations along the river. She meets up with coworkers, and together they take a large, extra-capacity autonomous Connect L.A. vehicle—also transparent and clear—to share the trip and cost.

“Right now, we are encouraged to enclose ourselves in boxes of steel and move around the city in our own isolated space,” said Sernesi. “We wanted to think about mobility in a *different* way. Mobility can also be a social environment, where people can see each other and communicate.” Repurposing freeways and buildings and implementing adaptive reuse—especially with the 2028

Olympics on the horizon—were also top of mind, said Pezzimenti.

“Our blue sky for the future is: How do we reimagine how we move around?” said Narayanan. “That’s why our project has five different systems that work as a whole, together. Sustainable personal transit is more about how you approach the word ‘mobility’ itself.” ●

Renderings of *Mobilizing L.A.’s Transportation Future*, a project created by ArtCenter students for Pando Days. Images courtesy of Lakshmy Narayanan.



THE KEY TO CRITICAL TRANSFORMA TION

TO DISMANTLE WHAT'S NOT WORKING,
ORGANIZATIONS MUST EMBRACE
DIVERSITY, EQUITY AND INCLUSIVITY

KEVIN BETHUNE

Adapted from *Reimagining Design: Unlocking Strategic Innovation*, by Kevin Bethune. Copyright 2022. Reprinted with permission from The MIT Press.

FROM CHAPTER 1: FACING UNCERTAINTY WITH HOPE

Reimagining Design represents my statement of optimism for a world undergoing exponential change and critical uncertainty. Whether from accelerating computation, political division, or macroeconomic forces, periods of uncertainty increase our disposition for wanting improvement and, in some cases, revolution. I believe in creativity and critical thinking as necessary vehicles to instigate forward progress. Let's use our creativity to imagine new futures that can inspire hope. Equitable, sustainable, ethical, and culturally imaginative futures give us a better sense of direction and helpful visionary context to steer the things we build today. We now have the opportunity to embrace uncertainty as the real variable that it is and to take a proactive stance versus just reacting to it. I write to you with a sense of hope, pulling from my lived experiences and lessons learned as a multidisciplinary Black professional navigating corporate America. In my unorthodox path through engineering, business, and design, curiosity has been the defining thread

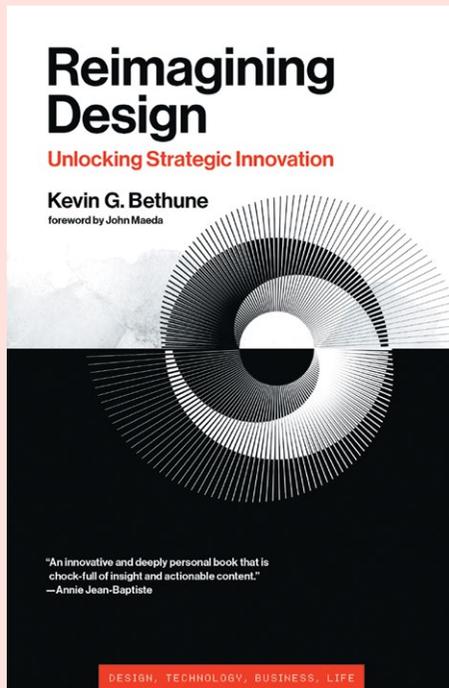


Kevin Bethune in his Redondo Beach studio. Photographed by Juan Posada.

through every chapter of my experience. It guided me through many unexpected transitions and forks in the road. Despite my being an introvert, my curiosity gave me the energy to reach out and connect with others to learn, investigate, and take on new challenges. Conversations led to opportunities to experiment and stretch myself, sometimes while working for free. Those experiments bred evidence, and that evidence helped me navigate key decisions that would radically change my life.

At the same time, following my curiosity did not mean the journey would be easy. A simple desire to connect the dots was sometimes met with indifference. While working for companies, some didn't see it as my place to inquire about things happening outside my immediate department. As my career progressed, my experience began to cut across disciplines. Some interpreted that as me being too generalist or fickle with my career. I remember one person wiggling their hand in my face, the gesture meant to indicate that I was unfocused because I did not follow the same career steps they did. Life did not afford me the same opportunities to enjoy their starting point. I took nothing away from them, but they were taking the validity of my lived experiences away from me. As I journeyed forward, I learned to ask questions of senior leaders to help develop my strategic intuition. **I had people scowl at me for having the audacity to network with folks above my pay grade when they would applaud others for doing the same.** I simply wanted to learn from these leaders and seek their mentorship, but others found that ambition threatening. I have had folks smile in my face and undercut me behind my back. Their insults, innuendos, and casting of doubt eventually found their way back to me. It hurt. I've spoken in meetings and had peers pretend not to hear me—and then recognize someone else for saying the exact same thing.

By sheer existence, I was a threat. I sometimes wondered why these moments were happening to me. Why was I implicitly told to "know my place" and stick with the status quo? A number of reasons ran through my head. Was I crossing a political line and encroaching on someone else's territory? Would that make my own team look bad if I reached across departments? Maybe someone stuck in their own details was threatened by my taking the leap to connect the dots and rationalize the bigger picture. Often, I felt their body language, their tone, and their visceral indifference. They said so much without saying a word. I found myself constantly being put in a position to mentally put two and two together, while trying not to overtly judge the people that clearly had the freedom and power to judge me. **I spent so much energy trying to make others comfortable, while subversively wanting to make an impact with good intentions.** I get politics, and I've learned to walk with tact in corporate America. What I struggled with the most were the negative reactions to my curiosity, presented without the honesty about what motivated the antagonists who chose to resist me. I couldn't help but wonder if it was covert bias, ignorance, or racism toward



Reimagining Design: Unlocking Strategic Innovation, by Kevin Bethune (MIT Press, 2022).

my skin color. Maybe it was? Maybe it wasn't, but it was a terrible mental position to be in nonetheless: a common reality for many Black professionals who grow accustomed to being the other in the room as an underrepresented minority.

Despite spending so much effort rationalizing people's behavior or trying to make them comfortable with my presence, I can say that I listened to my gut when it mattered. I surely had my share of trials and tribulations, but my convictions carried me to unique career opportunities via which I could leverage all of my experiences to help others solve new problems. My curiosity eventually became a strength. I could help teams address newly emerging realities because my aperture was wide open. Ultimately, any antagonist behavior stemmed from their fear and insecurity, not mine. **But I must admit, I am human. I am a Black man who is sometimes exhausted from constant microaggressions. I would be lying to say those slights didn't cause me to shrink. Over time, I learned to discard the negative energy and find sources of positivity to propel me forward.** Thankfully, for every nine detractors I would encounter, I would find one advocate (coming from all races, genders, and creeds) who encouraged me to follow my heart. Those generous souls would coach me to do the deep work in exploring what was possible, while transforming myself in the process to walk forward with greater confidence and credibility. I no longer shrink. I only share this to inspire you to keep going when the world sometimes pushes back on you.

Many of us work inside large established firms, where you can't just shift an org chart overnight. Despite our aspiration, design may not be instrumented in the ways that can foster multidisciplinary innovation. Many of us may work in startups for which design does not yet play a significant strategic role, especially when we're running with limited budget until the next fundraising round. We can't be naïve enough to think it will be simple to change the paradigm. Yet the times require us to move fast and with conviction. My friend and mentor John Maeda, chief experience officer at Everbridge, regularly issues his annual *Design in Tech Report*, recently rebranded as the *CX Report* at the start of 2020. Within it, he celebrates design having an important influence on computation and raises questions about the impact computation will undoubtedly have on business, society, and the environment. I believe John probably had most of his new report roughed out by the beginning of 2020, but the arrival of COVID-19 sent everything into a spin. John's predictions only magnified in a matter of days and weeks, not years and decades. COVID-19 isolated us, made us uncomfortable, put us on edge, and forced us to grapple with grave concern for our loved ones. For anyone who experienced a loss or suffered from COVID-19, my heart goes out to you. **Many safeguards that were supposed to protect us did not, and that made us question the integrity of the systems within our global society.**

Beyond COVID-19, something else was brewing that would ultimately shake us to our core. On May 25, 2020, George Floyd was murdered by police in Minneapolis, Minnesota, after a string of killings, including Ahmaud Arbery in Georgia, Breonna Taylor in Kentucky, and many other told or untold stories, setting off the reawakening of the Civil Rights Movement. Black Americans witnessed these events with a usual state of numbness that our community has endured for over four centuries. Non-Black Americans and the broader world witnessed this tragedy with sheer horror, as the events were vividly displayed by the power of social media. These moments shook the world and helped everyone understand that they should have been listening to the stories of Black Americans all along. As a member of the Black community, these stories were not new. My friend Nikole Hannah-Jones brought threads of systemic racism to life in her opus work, *The New York Times Magazine*'s "The 1619 Project," which illustrates how chattel slavery influenced the wiring of many of America's institutions that we navigate today. Stories of tragedies and assault within my own family were recounted often by my parents. When my mom was about two years old, white supremacists burned down her family home. A newspaper clipping shows my mom being held by my grandmother, with some of her other siblings lined up along the burnt ruins in the background. When I was roughly that young, our family home was targeted with spray paint (reading "ni**er get out"), and a brick was thrown through the window of the backyard patio door.

Despite the jarring shock of overt racial attacks, Black Americans also remember the covert racism they deal with in the places where they spend a lot of time. Within companies and academic institutions, Black Americans experience racism in the form of microaggressions, gatekeeping, and passive-aggressive manipulation that manifests in glass ceilings and exclusion. Often, these behaviors get couched under the haze of “unconscious bias” or seeking “culture fit” as organizations evolve. I believe these behaviors are actually very conscious, based on the choice to not educate oneself about the threads of systemic racism in America and not recognize power and privilege in one’s present position. For my white colleagues, this does not mean that you didn’t work hard to achieve your post or that you didn’t have difficulties in life. However, Black Americans have been one demographic that’s been completely left out of the American dream, and we have to recognize the systemic barriers that are hardwired into our society and that inhibit real progress. When thinking about the trends in John’s *CX Report*, I worry that many of these injustices will further exacerbate and multiply under the exponential power of computation. Take, for instance, the fact that artificial intelligence and facial recognition technology incorrectly identified a burglary suspect, resulting in the wrongful arrest of Robert Julian-Borchak Williams in Detroit, Michigan. If we design without eradicating bias and the threads of white supremacy, then the systems we create will become exponentially harmful and further widen socioeconomic disparities.

When we look at most institutions and enterprises, the systemic threads of racism and injustice have influenced a lot of the tendencies and cultural norms we feel and experience every day. We feel it when there’s so much pressure to encourage our youth to find “good jobs” so that they can grow up and feed institutions of extreme capitalism, gentrification, and exploitation with their money. We feel it at work when there’s a heightened sense of urgency over everything, it seems, versus what’s actually important, which may be better served by slowing down to address critical matters of concern. These threads come from white supremacist cultures of exploitation and winning at any cost, especially at the expense of others. We can see it based on the history of enterprises’ hiring, the diversity (or lack thereof) of their teams, and the lack of authentic connection with the market. **There is clearly a mismatch when you look at self-proclaimed “world leading” or “industry-leading” brands not mirroring the societies they serve when you peel back the curtains.** My friend and author-confidant Kat Holmes dealt with this directly with ableism in her book *Mismatch*. She offers as rubrics: “Recognize exclusion...Learn from diversity...Solve for one. Extend to many.” I think these also apply to examining systemic injustice and how we might influence change. We miss out on key insights, human connections, and significant business value creation when Black, Brown, and Indigenous voices are left out of opportunity.

Kevin Bethune’s family (his mother held by his grandmother) stands in front of the ruins of their home, which was burned down by white supremacists. Courtesy of MIT Press.



I see this continuing to play out in the design field, with Black representation being approximately 3 percent and Brown 7 percent, respectively, in the United States. This is unacceptable when compared to the demographic makeup of our nation. Although we are a small community, Black and Brown designers are out there, and we represent a pipeline of exceptional talent. It's been extremely challenging to find sustainable pathways that invest in our long-term success. Also, many of us found our way into design through unconventional means because design wasn't celebrated as a viable path at the beginning of our careers. Often that's held against us when interviewing for self-proclaimed "world-class" studios that fail to include any of us within their walls. I think about outstanding design voices like Aida Davis (founder and CEO of Decolonize Design, a global consultancy delivering transformative change to individuals, organizations and communities), who found her way into design conversations from a prior background in community organizing. Follow her work if you want to see examples of how she's elevating above existing design thinking pedagogies to promote a unique approach toward community-centered design. Many design studios hire to "comfort fit," and it shows in their makeup and cultures. In my experience shaping design at BCGDV, I can truly say that we tried to hire folks with different backgrounds, lived experiences, and talents to really push our thinking—and push they did. Amazing designers like Ronald Clark, Leticia Cervantes, Lydia Timlin-Broussard and La Mer Walker really shaped our approaches and culture.

I believe diversity, equity, and inclusion needs to be treated as a critical business imperative. This is not some touchy-feely, feel-good extracurricular project. Enterprises need to address this as a systematic transformation, inclusive of a cohesive strategy, with rigorous implementation at every step.

In the wake of George Floyd, some companies felt pressured to acknowledge the moment by placing a black square on Instagram or light platitudes on LinkedIn. But audiences are far savvier and more connected. We can easily see what employees were saying inside their walls behind the external messaging. "Receipts" (evidence of past transgressions) are being shared on Twitter all the time. Who's for real and who's faking it? Who's paying lip service and who is holding themselves accountable to the expectations of their audiences? A few design executives pulled me into conversations with their teams at large multinational corporations. Online, you can find a discussion with my good friend Mauro Porcini, chief design officer of PepsiCo, in which we addressed some of these issues out in the open. I often advise these companies to consult real DEI experts who can offer their teams honest and objective counsel. At the very least, I encourage them to begin with an education on systemic racism and white supremacy. Reading stories like "The Warmth of Other Suns," by Isabel Wilkerson, or *The New York Times Magazine's* "The 1619 Project" is a healthy start to begin to understand the systemic roots of injustice for Black people trying to find a way for themselves after slavery ended.

Once everyone reaches a baseline of understanding and adopts an antiracism posture, they can begin to drive a strategy and enact bold steps of change. What does this have to do with design transformation? We can see that design, computation, business, and social injustice are now incredibly intertwined. Since my conversation with Mauro, I've been approached by more companies and with increasing frequency. My design executive peers want to see transformation in their own ranks and feel that I could offer some objective perspective as a Black professional with unique lived experiences. The more conversations I have, the more I realize that transformation related to diversity, equity, and inclusion cannot sit in isolation to design transformation. It just can't. If we believe that our potential to serve the world is contingent on our ability to ensure that our teams are representative of the world's diverse makeup, I think we should see a lot more DEI traction. People need to start believing this. The more connected the world becomes, the more demographics will look at brands, saying, "Who are you, and where are the people that look like me inside your walls?" Taking DEI seriously will lead to relevant, sustainable, and viable business growth.

If we want growth, then we need to fuel it with viable innovation, inclusive of the different innovation growth archetypes. To fuel innovation, we need to empower our teams to make creative sparks and connections among a diversity of inputs and insights. We need their creativity, and we also need them to push hard against the status quo, which often hides bias and systemic imbalance. **A diverse, equitable, and inclusive organization has a better shot to dismantle what is not working. We have to honestly evaluate our team makeup and lead with courage to shift to a more representative composition.** As Kat Holmes provoked us to do in *Mismatch*, we need to question the "how" behind our approaches too. Design thinking has provided significant business value, but it can also spread considerable harm when we conceive of solutions from an ivory tower, without adequate, diverse representation. The tools become harmful in the hands of folks with bias, prejudice, and approaches, only to be validated by more folks with bias. How should our methodologies change? If we want folks to leverage their diversity, creativity, and convictions to achieve successful innovations, what enablers do we need to put in place to support and empower our people to do their best work at an optimal level? Ultimately, we need to treat this as a critical transformation. ●

Kevin Bethune (MS 12) is the founder and chief creative officer of dreams · design + life, a think tank that delivers design and innovation services using a human-centered approach. Bethune's background has spanned engineering, business and design in equal proportions over his 25-year career. He also serves on the Board of Trustees for ArtCenter College of Design and as Board Chair for the Design Management Institute (DMI).

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ADAPT OR DIE

GENERATIVE AI IS POISED TO ALTER THE CREATIVE LANDSCAPE FOREVER. WHAT DOES ITS ARRIVAL MEAN FOR ARTISTS AND DESIGNERS?

MIKE R. WINDER

In the 1992 *Star Trek: The Next Generation* episode “Schisms,” several crew members of the Enterprise share a vague memory of awakening in the middle of the night atop a table. To get to the bottom of this mystery, they gather in the holodeck, a space in which the computer can render objects, individuals and environments as lifelike, 3D holograms. Like a forensic sketch artist, the computer builds the crew's recollections in real time as each person adds new details:

“Computer, decrease the table’s surface area by 20% and incline the top 15 degrees.”

“Make this a metal table. Lower the surrounding light level.”

“Computer, give me a bright light right above the table. An overhead lamp.”

“Create a metal swing-arm. Double-jointed. Total length: one meter.”

“Computer, produce a pair of scissors attached to the armature.”

“There were noises coming from the darkness, strange, like whispering.”

Thirty years after the airing of that episode, Lynda.com co-founder and ArtCenter Trustee Bruce Heavin (BFA 93) addressed the College’s Fall 2022 graduating class at the Pasadena Convention Center.

“This was adapt or die time,” said the artist and entrepreneur, recalling the disruption experienced in the worlds of graphic design and photography in the early 1990s as a result of software such as Corel Draw, Adobe Photoshop and QuarkXPress. “It didn’t take much for some [art directors] to feel displaced. A lot of them considered retiring. Some adapted to the computers with a renewed sense of enthusiasm.”

Heavin never used the term “AI”—he didn’t need to. The parallels to today’s uncertainty, due to the rise of text-to-image generative AI programs, was lost on no one.

Just three months prior, game designer Jason Allen made headlines by entering AI-generated artwork in the Colorado State Fair and winning first place. Shortly after that, the Internet was abuzz with works generated by AI programs like Midjourney, DALL-E and Stable Diffusion. Social media overflowed with selfies that were transformed via AI into painterly portraits. The San Francisco Ballet caught flack for using AI-generated artwork to promote its annual performance of *The Nutcracker*. And artist Johnny Darrell employed AI to imagine how the film *Tron* would have looked had it been directed by surrealist Alejandro Jodorowsky.

“Every night I’m working on leveling up my skills, and I feel like if I stop, the train is going to go by,” says Gerardo Herrera (BFA 91), associate chair of ArtCenter’s Brand Design and Strategy MDes program and the director of brand experience at Design Studio Nuovo. Herrera has spent the past 11 months diving headfirst into AI and passing his newfound knowledge on to his students. Though no stranger to the fast-paced tech world (he’s worked for over 15 years with outfits like Nokia and Samsung), he feels today’s pace of change is unprecedented.

As the former director of packaging in the Graphic Design program, Herrera made it his goal to fully understand the applications and implications of AI in his arena. The AI-generated designs and workflows he has shared with his upper term students include packaging concepts he created for octopus-infused olive oil, flyfishing gear, and high-end tequila. In turn, his students have used AI programs to create packaging concepts for projects ranging from an educational card game for the Dublin Zoo to a Hawaii-inspired tropical juice.

Herrera recalls receiving some insightful feedback when he first began introducing

AI to his classes. “One of my students said, ‘You have lots of experience, so you know what you’re doing. But I feel like I shouldn’t be working with [AI] yet,’” says Herrera. “They’re coming to ArtCenter to learn the skills, the craft, the thinking, the terminology.”

In other words, he says, they need to know their stuff stuff backward and forward so that when they’re telling somebody else—or something else—what to create, they’ll know what they’re looking for.

Herrera says the current moment reminds him of the arrival of the Mac computer. “I told my students how, back in the old days, I would tell the typesetter how to set the type, the point size, the tracking, the word count,” says Herrera. “Then, when the Mac showed up, everybody became a typesetter. However, because I understood that language, when I sit down at my computer, I know exactly what I want when I’m using the interface.”

Sho Rust (BFA 15) is founder and CEO of the Missouri-based company SHO.ai, which helps organizations such as branding firm Labbrand, public radio station WETA and Rust’s alma mater, ArtCenter, incorporate AI into their workflows. “Something people underestimate is how much better experts are at using these tools than non-experts,” Rust says. “Give a kid a hammer, and he’s not going to build a house.”

He remembers the excitement he felt back in 2015 when research laboratory OpenAI, maker of ChatGPT and DALL-E, announced it would make its research open to the public. “That was a beautiful thing, because now anybody could have access to their [large language] models,” says Rust, who was working for consulting firm BCG Digital Ventures at the time. “Previously, those models were exclusive to big tech companies, which made it hard for anybody else to compete.”

He continues, “Once I started digging into OpenAI’s research, it quickly became clear to me that [AI] was the future.” In 2018, when the first version of GPT came out, he had an epiphany of sorts: “I decided that either this technology was going to replace me, or I could turn it into a tool that people like me could use.”

Rust created a few prototypes that were promising enough that several of his friends and colleagues decided to leave their gigs at the time to follow him into this new arena. “I convinced really smart people from all over the world—from Venice Beach to New York to Paris—to move to Missouri and work out of my grandma’s garage for a year,” he says, with a laugh.

One thing his team figured out quickly was that the quality of the AI’s output was dictated by the quality of the data input: “We learned we needed really good, quality data, and a management system so that companies could train and create their own AI models.”

Rust and Herrera recently co-taught a seven-week generative design workshop with Brand Design and Strategy’s lead professor of system design, Christian Saclier, who also serves as PepsiCo’s vice president of design innovation. In that workshop, Rust showed students how AI programs, when supplied with detailed client information (e.g., a company’s mission, core values, history), can create very specific and personalized outcomes.

“Their output was amazing across the board,” says Rust, adding that one of the things that excited him most about the course was seeing how the AI gave the students “superpowers” when it came to the iterative aspect of the creative process. “AI takes the pain out of failing,” he says. “You can fail 10 times a day, 100 times a day—it’s no big deal. All those crazy ideas

Student Janine Hernandez used Midjourney to create mood boards and this concept for a card-based children’s game for the Dublin Zoo.





Gerardo Herrera created these images of an haute cuisine dish and a limited-edition bottle of octopus-infused olive oil using Midjourney.



you have, you can test them out in ways that you've never been able to do before."

But exactly how generative AI programs unleash those superpowers is a bone of contention among some artists and designers, because these programs were trained with art and design harvested from the Internet—work created by human beings who were not credited or compensated by the companies creating the AI programs.

For Rachel Meinerding, co-founder of artists' rights advocacy group Concept Art Association, this leads to one conclusion: AI-generated artwork, in its current state, is unethical. This past May, Meinerding spent time lobbying in Washington, D.C., making that case. Though not a concept artist herself, Meinerding is married to ArtCenter alum Ryan Meinerding, who heads up the visual development department at Marvel Studios.

"Ours is not an anti-tech attitude, as there's a lot of potential with AI when it comes to the fields of science and medicine," she says. "But human creativity is not a problem that needed to be solved. And what generative AI is doing in the creative field is actively filling the role of an artist. It's straight-up job replacement."

Meinerding points to a recent Goldman Sachs study that estimates up to 300 million jobs worldwide could be lost due to generative AI programs. And she's quick to push against the narrative that AI is actually democratizing art. "Yes, there are people who make a good living from being professional artists, but 'the starving artist' is a trope for a reason," says Meinerding, adding that most people become artists not to strike it rich, but because it's their passion. "A lot of working-class and middle-class people could end up losing their jobs," she says.

Despite her concerns, Meinerding is hopeful for the future. She feels fortunate

that the Concept Art Association began advocating so early in the discussion, and she's grateful that donations from members have made it possible for the organization to lobby in D.C.

Also encouraging for Meinerding, when it comes to lobbying, is that intellectual property is a concept that U.S. lawmakers historically are eager to protect.

Sarah Conley Odenkirk, a partner at Cowan, Debaets, Abrahams & Sheppard LLP, specializes in art law and has a clientele that includes artists, digital platforms, arts organizations and creative innovators. "If your business model is being built on the raw material of other people without any concerns as to whether that material is protected or not, you're building a commercial venture on the backs of artists," she says. "That's not okay ethically or legally."

But what is and isn't ethical or legal when it comes to AI is not always straightforward.

Odenkirk points to a February 2023 decision by the U.S. Copyright Office, reversing its 2022 registration of copyright to Kris Kashtanova for their comic book that included images generated by Midjourney. After learning more about how Midjourney creates its imagery, the office determined that the structure and the text of the comic book could be copyrighted, but the imagery could not. "The copyright office has long held that only humans can own copyrights," says Odenkirk. "Machines, animals, anything nonhuman may not own a copyright."

In January of this year, artists Sarah Andersen, Kelly McKernan and Karla Ortiz filed a class-action lawsuit against Stable Diffusion, Midjourney and DeviantArt, calling those companies' AI image generators "21st century collage tools that violate the rights of millions of artists." The suit calls out how users of those programs enter into



Musa Victoriosa (2023), by Karla Ortiz, is the world's first painting to use Glaze to cloak its imagery from AI. Courtesy of the artist.

their prompt the words "in the style of," followed by a specific artist's name, in order to convincingly produce art in that artist's style. However, "in the U.S., artistic style is not protected," says Odenkirk.

Further complicating matters is that in 2022, the Court of Appeals for the 11th Circuit held that simply removing metadata from an image was not enough to prove copyright infringement is intended, making it harder to prove that a company that strips metadata from an image before using it to train an AI program is in the wrong. "Eventually, we may have guidelines and regulations concerning how materials are gathered by AI companies," says Odenkirk. "We may see obligations being placed on those companies to make sure their datasets are 'clean,' meaning they're bringing in material that's been properly licensed and is properly attributed."

Until that day arrives, artists may need to find other solutions to protect their works.

"This is a really critical time right now," says Ben Zhao, a professor of computer science at the University of Chicago who, along with his graduate students in SAND Lab (Security, Algorithms, Networking and Data), developed a program to help artists protect their work. "In the next few months, we could see dramatic changes for the future," he says.

Last October, Zhao was invited to a large town hall in which hundreds of artists explained to him the existential threat they felt generative AI presented to their industry and their livelihoods. The artists wanted to know whether a facial recognition protection program Zhao and his team had developed could be used to prevent AI programs from mimicking their individual styles. After investigating the matter, Zhao and his students got to work, and the result was Glaze.

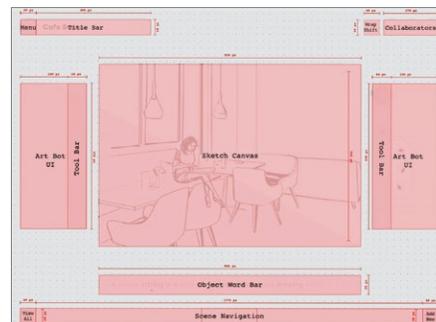
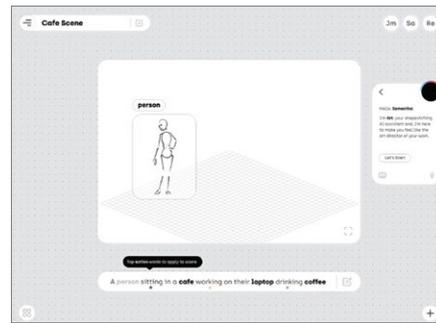
As Zhao explains it, when an artwork is processed through Glaze, the effects it adds to the image have a minimal impact on how humans perceive the work. But if AI tries to use that same image to learn and reproduce the artist's style, it faces a number of distortion barriers, and it can even be tricked into creating a work in a completely different style (cubism, for example). "The Glaze effects are robust and can't be circumvented," says Zhao. "They are computed on a pixel level so they're fully integrated with the image. You can try all the normal things—change the image's format, resample it, take a screenshot, etc.—the effects remain."

Teaching students about AI's abilities and limitations is something ArtCenter's Interaction Design Chair Todd Masilko (BS 96) and Professor Jenny Rodenhouse (MFA 15) have done for seven years in *AI and Agents*. The duo, along with former chair Maggie Hendrie, now a dean overseeing Interaction Design and other programs, created the course after noticing a trend emerging during assessments with graduating students. Masilko says, "Our students are very detail- and process-oriented, and yet, when discussing their portfolio, they'd get to a part of a project that involves AI and say, 'And then this happens because of AI.' It was apparent that AI was equal to magic."

He continues, "A mobile app proposal wouldn't make it through a class without a discussion of whether it was technically implementable on a phone. So we decided students needed a course where they were actually making projects with the medium—a place where they could understand AI's capabilities based on the way it actually works."

In the first few weeks of *AI and Agents*, students get their hands dirty with a variety of AI programs, which, Rodenhouse says,

While still students, alums Rodney Edwards and Siladityaa Sharma created *Arter*, a conceptual AI tool to help the user feel like an art director.



helps fuel later classroom discussions that counter what they may have understood about AI through popular media. For example, she says, just understanding how an AI program recognizes visual objects is more complex than many think: "If you want an AI program to know *cat*, it doesn't understand *cat*. It can understand certain patterning of light and shadow in cat imagery, but that's all the program can replicate."

She adds, "That's part of the challenge of working with emerging tech—there's the promise, the 'hope' narrative, and then there's what the technology is actually capable of doing." The key, she says, is for students to discover those limitations for themselves. "We're not demystifying it—by engaging with the medium, the students are demystifying it for themselves. And once they understand how it works, that's where they discover the really rich opportunities."

One example Rodenhouse and Masilko point to is a 2020 student project called *Arter*, by now-alums Rodney Edwards (BS 21) and Siladityaa Sharma (BS 20). The two are currently full-time product designers at Microsoft and Meta, respectively. Three years before ChatGPT, Midjourney and the like started making headlines, *Arter* presented a concept for a tool that would assist design teams with the storyboarding process for client presentations.

Via a deceptively simple UI, users interact with with a "shape-shifting AI Assistant" named Art, whose role it is to make the user feel like an art director. A video explaining the process shows a user typing the words "A person sitting in a café working on their laptop, drinking coffee." The program then highlights verbs and nouns from the sentence. When the user drags the word "person" into a blank square, a simple 3D model of a person appears in the square, and Art then prompts the user for more details: "I see

you dragged your first object into the scene to sketch. Fancy! Tell me a little bit more about what the sketch of the person should look like."

The project went on to win multiple awards, including Gold at Muse Design Awards 2020, Silver and Bronze at International Design Awards and a Best Case Study at Bestfolio. Many people were convinced it was an actual product. "People were asking us, 'Is this a startup? Can you build it?'" says Rodenhouse. "It would have cost us millions just for the data to train it." Adds Masilko, "But right now, it would be the perfect VC-backed startup."

ArtCenter Trustee Bill Gross, founder of tech incubator Idealab, likens the rapid advancement of generative AI—"where a computer can take a trillion words and a trillion images and synthesize them in a nano-second"—to the meteorite that struck the Earth and wiped out the dinosaurs. Just like that meteorite, generative AI is a disruptive event, he says.

"New animals, including humans, evolved from that explosion," says Gross, who believes AI is the biggest technological advancement since the advent of Netscape Navigator in the mid-'90s. "AI is an explosion of new opportunities. And just like when that meteor struck, right now there are lots of clouds overhead. Will there be some bad actors? Yes, for sure. But there's also a lot of new scurrying around happening and new beautiful things that will emerge." ●





The Sotera Advanced Helmet is designed to prevent accidents. Courtesy of Joe Doucet x Partners.

IN PRACTICE: JOE DOUCET

In the event of an accident, there is an 80% chance of injury or death on a motorcycle, compared to about 20% for passenger vehicles, according to the National Highway Traffic Safety Administration. For alum Joe Doucet (BFA 99)—a New York City-based designer, entrepreneur, inventor and creative director—that statistic was unacceptable. In 2019, he and his team went to work on a solution.

The result? An elegant concept called the Sotera Advanced Helmet. While most helmets are designed to minimize injury after an accident, Sotera is designed to actually prevent them by making the rider more visible to other drivers. The helmet is equipped with a USB-rechargeable LED lighting panel to make the rider more noticeable in an array of lighting conditions. Built-in accelerometers detect when the rider is braking and switch to a red color, alerting drivers behind them.

Believing the innovations could reduce accidents and save lives, Doucet opted not to patent the invention and offers it freely to all manufacturers. “I began the project with a goal of commercializing the helmets,” he told *Dezeen*. “Prior to filing the patents, I realized that the innovation had great potential to save lives. That would be like patenting a seatbelt and having it available to only one company.”—Mike R. Winder

Visit artcenter.edu/on to learn more about Joe Doucet and his work.



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