

speechless

different by design

different by design  
the *speechless* report

The art museum has magic inside it.

Emil, three-year-old visitor



Visitor pressing button to activate Misha Kahn's installation.

# different by design

## the *speechless* report

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Dallas Museum of Art





Exhibition entrance wall with text.

<b>contents</b>	3	<b>introduction</b> an experiment
	7	<b>the exhibition</b>
	29	<b>wordless</b> explorations in installation signage, graphics, wayfinding, and design
	43	<b>exhibition catalogue</b> selections
	51	<b><i>speechless</i> interrupted</b> responding to the pandemic and social justice issues
	55	<b>there is no such thing as an average visitor</b> azucena verdín in conversation with sarah schleuning
	85	<b>museum visitors weigh in</b> highlights of the <i>speechless</i> visitor research study
	105	<b>next steps</b> recommendations for a path forward
	111	<b>last words</b> the designers weigh in
	117	<b>acknowledgments</b>
	121	<b>appendices</b>
	122	appendix a visitor research study: the report
	140	appendix b visitor experience survey: the questions
	146	appendix c visitor experience survey: follow-up phone interview questions
	148	appendix d <i>speechless</i> resources in print and online
	150	appendix e selected media coverage
	156	appendix f selected presentations
	158	appendix g notes and reflections on the convening
	166	appendix h contributors
	170	<b>photo credits</b>
	172	<b>credits</b>





Sarah Schleuning being interviewed about *speechless* by *PBS NewsHour*; she is standing in the Ladd's *Scroll Space* installation.

## introduction

### an experiment

*speechless: different by design* was an experiment—one that in its making involved seven artists-designers, dozens of museum staff members, nine scientists and researchers, many consultants, two museums, and the support of generous donors, foundations, and sponsors. Once it was created, the next step was presenting it to the public. After over five years of work, I am thrilled that thousands of visitors physically experienced the exhibition at the Dallas Museum of Art, and many more engaged with it virtually through our digital platform for the project.

“Never underestimate the impact  
of a single moment on the human brain  
to change the course of someone’s life,”

Dr. Daniel Krawczyk said at the *speechless* Convening, a two-day brainstorming event that brought scientists and the speechless artists into dialogue. I have long known that art has the power to change people’s lives in positive ways. After decades as a curator, with *speechless* I wanted to find new ways to reach more people with art—people who don’t interact with the visual in “standard” ways.

*speechless* explored different ways of interacting with art that diverge from the standard way of experiencing a museum exhibition—attending a show, viewing artworks (without touching them), reading

labels, listening to audio guides. This exhibition recognized that this model of experiencing museum shows, while widely practiced, is not the ideal model for all of us—it is not the way everyone learns. Expressed another way, the museum’s visiting public is not a monolith. Art museums excel at collecting, preserving, and displaying art. What we have not always excelled at is broadening the spectrum of how art is presented and how people engage with it. In offering unconventional multisensory experiences that went beyond speech and even beyond written words (in the form of conventional museum labels),

*speechless* tested our understanding of the ways  
in which we experience the world  
through our senses.

My opinion is that this experiment was a success, a rich and provocative learning experience both in the making and in the viewing, and I believe it broke new ground for what a museum show can be. But the true test for any museum exhibition is how it functions once on view. What did the visitors think? What about the artists-designers? That is what we explore in the pages of this report. The iterative nature of the framework of the exhibition makes this component especially valuable. By taking the time to evaluate *speechless*, we can better understand and further explore ways museums can innovate in their objective to be expansive and inclusive environments in which to experience art.

Unfortunately, the lifespan of *speechless* was interrupted by the coronavirus pandemic, which makes this publication even more significant, in my view, as it is a permanent record of an exhibition that was all too temporary. *speechless* was on view at the Dallas Museum of Art from November 10, 2019 to March 13, 2020, closing a week earlier than scheduled. The planned next stop for the show was the High Museum of Art in Atlanta, where it was to be on view beginning April 2020, but due to the pandemic, those plans were cancelled.

This report follows the publication of the exhibition catalogue *speechless: different by design*. That publication provided a behind-the-scenes look at the making of the exhibition through materials such as my in-depth conversations with the artists-designers, their working drawings and photographs of works in progress, feedback from the scientists and researchers who attended the Convening, and photographs of the installations. The catalogue went to print just after the exhibition opened. This report is the next step—what happened during the exhibition. In the spirit of the exhibition and the catalogue, this report also eschews a formal, closed-doors approach and instead invites readers into the experience by including discussions of the challenges we faced and reflecting on lessons learned.

I am delighted by the public response to *speechless*. In our evaluation, shared in these pages, we had an impressive eighty-two percent positive rating from our visitors. Additionally,

the show garnered extensive positive media coverage, including national media such as *PBS NewsHour*, *Forbes*, and more (see Appendix D). *Forbes* called it “A new exhibition that bucks the status quo...broadening the idea of visual communication.” *The New York Times* reported that the installations were “cutting-edge works.” *The Dallas Observer* noted that the show was “A vast immersive sensory experience.” And *The Dallas Morning News* reported, “In the age of these pop-up entertainment venues, whose only function is to provide a backdrop for the self-indulgent vanity shot, the DMA show aims to do precisely the opposite: arouse empathy.” And our exhibition catalogue (co-published by the Dallas Museum of Art and the High Museum of Art and distributed by Yale University Press) was awarded best in show by the Texas Association of Museums (TAM) Mitchell A. Wilder Publications Design Award Competition.

We are aware that not everyone reading these pages will have a copy of the exhibition catalogue, which is why we organized this report to function both as a companion publication but also as a stand-alone piece, complete with a section on the exhibition that includes descriptions of the installations, photographs, and bios of the artists-designers. Other contents include: a visual look at the exhibition catalogue through a selection of images; a description of the two *speechless* pieces, by Ini Archibong and Yuri Suzuki, that were revised in response to the pandemic; a conversation between myself and the evaluator who created the exhibition survey and wrote the Visitor Research Study, Azucena Verdín; highlights of the study (with the full study reproduced in Appendix A); recommendations gleaned from the experience of *speechless* for next steps for the DMA and other museums to consider; a concluding section in which the voices of the artists-designers are showcased; and a robust Appendices section that includes the study, the study questions, selected press coverage, and more. The report is written primarily in third person, but for this introduction, the “Next Steps” chapter, and the lead-in to the concluding words from the designers, I chose to address the readers in first person, as it felt more appropriate for those sections and also reflects the fact that *speechless* was both personal and universal.

As discussed further in the Acknowledgments, I am deeply grateful for the support that made this exhibition possible. Above all, I appreciate the willingness of the Dallas Museum of Art, the High Museum of Art, and the artists-designers to invest a great deal of time and resources to enter into this creative experiment with me.

We did not always know where we were going,  
and I believe the journey was all the richer  
thanks to our willingness to explore.





The exhibition banners on the Museum's exterior featuring a detail of Ini Archibong's *theonacle*.

## the exhibition

Pioneering, experimental, exploratory, collaborative, accessible, inventive, multisensory, participatory, unconventional, innovative—these are all words that have been used to describe *speechless: different by design*. The exhibition explored the vast spectrum of sensory experiences and new approaches to accessibility and modes of communication in the museum setting. The show debuted six original, site-specific, participatory installations created by acclaimed and emerging artists and designers—Ini Archibong, Matt Checkowski, Misha Kahn, Steven and William Ladd, Laurie Haycock Makela, and Yuri Suzuki. The artists' immersive works invited museum visitors to touch sound, hear place, picture thought, and shape space.

The result?

“The art museum has magic inside it,”

reported a three-year-old visitor named Emil.

The exhibition also issued a broader invitation, one that could even be construed as a challenge of sorts, in that it was intended not simply to be a stand-alone exhibition, but to invite the museum world at large to explore new ways of communicating through art, to expand museums' outreach to and role in the community, and to foster empathy, especially around the understanding of difference and neurodiversity.



Visitors experiencing the exhibition's welcoming central space.





Exhibition supergraphic used inside the Museum to announce the show.

*speechless* was curated by Sarah Schleuning, The Margot B. Perot Senior Curator of Decorative Arts and Design and Interim Chief Curator at the Dallas Museum of Art from March 2019 to May 2021. She hand-selected the artists and allowed them the space and time to conceptualize and create work in response to the themes of the exhibition. She also brought them together as a group and introduced scientists into the mix in the Convening (discussed below), which challenged assumptions and encouraged the artists to explore new territory.

“This exhibition was about blurring the boundaries between senses, media, disciplines, and environments to encourage visitors to interact and communicate through design,” Schleuning explained. “*speechless* was about what makes us as individuals unique—the challenges we experience through ourselves and others—ultimately defining the interconnections among all of us. Our perceptions, experiences, and differences should unite us instead of divide us, heightening our understandings and creating a greater sense of empathy in ourselves and our community.”

The artists-designers, tasked with exploring these themes, produced diverse and multi-faceted works. Their processes are discussed in a series of in-depth conversations with Schleuning in the Museum’s exhibition catalogue. As designer Misha Kahn explained, “I think museums can be a little isolating, a little rigid, and a little sterile. You’re usually held at (least) arm’s length from everything.” His installation deliberately subverted any attempt to remain at arm’s length—it involved a sculpture in which the objects “breathed” and almost hugged the visitors, reaching out to them. The other installations were dynamic and interactive in other ways, encouraging touch, engaging the senses, and as a result, questioning conventional notions of a museum exhibition.

The exhibition itself was organized in six spaces, also referred to as exploratoria, with each devoted to a different artist’s work. The space was organized with a middle area and “arms,” which led to the visual imagery of an octopus to represent it in the exhibition catalogue.

*speechless* was on view at the Dallas Museum of Art from November 10, 2019, through March 13, 2020. Due to the coronavirus pandemic, it closed a week early, and plans for it to be on view at the High Museum of Art in Atlanta beginning in April 2020 were cancelled.

## the convening

The exhibition was profoundly influenced by a gathering held in September 2018 in which the artists-designers, scientists, and Museum staff members spent two days engaged in conversation, information exchange, and brainstorming. The Convening, as it came to be called, was held at the Dallas Museum of Art and was co-hosted by the High Museum of Art and supported by the wish foundation.

The conversation at the Convening was wide-ranging and often unstructured (by design), with a focus on issues of sensory processing, accessibility for people with differences, the relationship between the museum and the public, and the power of art to foster connection. The Convening was unusual on several fronts. It brought together the artists-designers in advance of the opening of the exhibition, which rarely happens in group museum shows. To that end, it helped foster a spirit of inclusivity and collaboration. As the designers later noted, sometimes in group shows the goal seems to be to stand out from the pack. In contrast, in *speechless* the designers worked together to help chart the territory of the exhibition.

The Convening was also marked by the gathering together of scientists and artists-designers—two groups that are not typically in dialogue with each other. “I felt like we covered a lot of innovative ideas that rarely get voiced because artists and scientists do not often talk,” noted Daniel Krawczyk of the Center for BrainHealth; that sentiment was also voiced by several others.

“It has been a life-impacting experience to connect with both artists and scientists for a common mission—to bridge the gap of communication...even though we are coming from different backgrounds and perspectives, we all agree that our human potential is unlimited, and understand there’s not one direct path in life. Interacting with the artists and seeing their unique interpretation...has inspired my own creativity to think outside of what is typical,” said Tandra Allen of the Center for BrainHealth.

Scientists and researchers at the Convening included Tandra Allen, Daniel Krawczyk, and Audette Rackley from the Center for BrainHealth; Jenny McGlothlin and Linda Thibodeaux, both associated with the Callier Center for Communication Disorders; Tina Fletcher from the Texas Woman’s University; Bonnie Pitman, Distinguished Scholar in Residence at The University of Texas at Dallas; and Marianna Adams of Audience Focus Inc. Additional biographical information for the scientists and researchers can be found in the Appendices (biographical information for the artists-designers is included in the “Installations” section of this essay).

As Misha Kahn noted of the Convening, “So much of the takeaway had to do with the stories people had, which revolved around empathy and being more soft and understanding toward how different people are experiencing the world. That wasn’t exactly my attitude going in. I guess that sounds like I must have had the opposite attitude, which isn’t true.

It’s just that I was probably more focused on my personal wow factor,  
and then somehow it changed,  
where it all felt much more  
collaborative.”



In discussion at the Convening, a gathering of the artists-designers, scientists, and Museum staff that took place in October 2018 at the Dallas Museum of Art. From left to right: William Ladd, Sarah Schleuning, Steven Ladd, Ini Archibong, Aubrey DeZego, Skye Malish-Olsen, and Agustín Arteaga.



## empathy

The notion of empathy was a through-line in *speechless* from its conception. The seeds of *speechless* were personal, yet the personal quickly became universal. The exhibition's origins are connected to curator Sarah Schleuning's children. Her son Vaughn has a neurological motor-planning condition that makes speech difficult, and he was nearly non-verbal for the first several years of his life. This situation led Schleuning and her family to adapt to different methods of communicating, to become much more aware of the range of ways in which we process sensory information, and to develop an expanded consciousness, appreciation, and empathy for how people with neurological differences experience the world and how the world responds to them.

That expansion led Schleuning to develop and deeply question new understandings of the potential role of art, of museums, and of museum exhibitions in the lives of people with neurological differences. The theme of empathy was so interwoven with the conception of *speechless* and the research and development of it that it was part of the fabric of the inquiry, present in Schleuning's interactions with the artists-designers from the outset and explored with scientists and specialists at the Convening.

"I entered into Sarah's vision because I felt an intuitive understanding of her interest in alternate communications, especially those emphasizing empathy," said Laurie Haycock Makela. "*speechless* was an opportunity to create something new."



Sarah Schleuning with Laurie Haycock Makela and Sarah's children, Zuzu and Vaughn, who helped inspire the exhibition.

## installations



Early conceptual floor plan for *speechless*, annotated by Sarah Schleuning.



## *theoracle*

by ini archibong

*theoracle* explored non-traditional and participatory ways of experiencing sound. Handblown glass capsules on brass stands encircled a larger glass obelisk and a pool of water—when visitors rotated the glass forms, they changed colors as they created various harmonious tones that emanated from the custom-built synthesizer behind the back wall. Archibong wanted visitors to create pure sound while employing the principles of cymatics—certain frequencies affected the motion of the water in the pool, thus illustrating sound through movement, shape, light, and color. In Archibong’s words: “Step into an experience where blended sensory content is the response to interacting with agency. Your questions. Your actions. Your intent. All of these things are at play when you interact with *theoracle*.” *theoracle* was acquired by the Dallas Museum of Art in both its original form and a subsequent iteration, ~~*theoracle*~~, for the Museum’s exhibition *To Be Determined*, for which Archibong reconceptualized the installation in part to address how Covid-19 protocols silenced this work, which had previously been activated by human touch. Against the backdrop of the social unrest of the Black Lives Matter movement, Archibong also reflected on the realities of growing up as a Black male in America. As a consequence, he altered the harmonic tones from the serene beauty in *speechless* to an imposing drone, and the once-inviting, glowing sculptures were dimmed and rendered untouchable. The work was renamed ~~*theoracle*~~.

**Ini Archibong** (b. 1983) was born and raised in California. He is an award-winning, multi-disciplinary designer who trained at the Art Center College of Design in Pasadena and at L’École cantonale d’art de Lausanne in Switzerland, where he now lives. He has designed furniture and products for such luxury brands as Logitech, Hermès, Formentera, Lapidica, Bernhart Design, Knoll, and Sé. In addition to the Dallas Museum of Art, his work has been shown at the Victoria and Albert Museum, World Expo 2015 in Milan, Museo Bagatti Valsecchi in Milan, Salon NY, The Mass in Tokyo, and other showrooms and galleries around the world. He is represented by Gallery Friedman Benda. Recently, he designed the Pavilion of the African Diaspora, on view at the London Design Biennale in June 2021 and awarded the Best Design Medal.



*theoracle* top to bottom:  
visitor interacting with one of the orbs;  
installation view;  
Ini Archibong.



# glyph

by matt checkowski

*Glyph* was a series of short, intimate films of each of the exhibition’s artists-designers in dialogue. *Glyph* applied a word and image translation method devised for this project that transformed the artists’ words into images in real time, pulling the most popular search results from the Internet at that particular moment. As a result, the imagery of their words changed with each viewing. This provided “an opportunity to consider language in the modern moment—when devices, algorithms and machine learning increasingly stand between us and what we mean,” Checkowski explained. “We’ve always lost control of what we say—or create—the instant we share it, but our transmission has never been so filtered, remixed, and auto-corrected as it is today by technology that is supposed to connect us.” Checkowski’s interest in how technology is reshaping language and challenging the power of words globally was explored in *Glyph*, which among other things inquired into whether a more visual mode of communication might provide for a different type of understanding. *Glyph* was acquired by the Dallas Museum of Art.

**Matt Checkowski** (b. 1976) is an award-winning designer and filmmaker based in Los Angeles. He works across industries, art forms, and technologies, with the objective of creating work that changes the way people see and engage with the world. He has served as the creative force behind the dream sequences in Steven Spielberg’s *Minority Report*; The Sensorium, a first-of-its-kind interactive perfume museum in New York; and the digital media content for a science fiction opera at l’Opera de Monte Carlo. He was also the co-director of *Lies & Alibis*, a feature film starring Steve Coogan, Sam Elliott, James Marsden, and Rebecca Romijn, and he has directed dozens of nonfiction films. In 2006 Checkowski established the Department of the 4th Dimension, a multi-disciplinary studio working at the intersection of storytelling, technology, and branding; his clients include the Walker Art Center, MIT, Victoria’s Secret, Sephora, Unilever, Electrolux, and the University of California.



*Glyph* top to bottom:  
installation detail;  
installation view;  
Matt Checkowski.

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by misha kahn

Misha Kahn created a winding garden composed of vibrant, dynamic inflatables that moved in multiple ways, inflating and deflating continuously. Visitors could touch, sit, squeeze, and otherwise interact with the inflatable forms, observing the installation change around them and participating in the alteration. “I really wanted to play with all the types of decisions that go into making an image or sculpture—but instead of sorting them, condensing them and editing, just leave these possibilities floating in space. I wanted it to feel like those series of decisions manifested into some kind of gentle pulsating sea, where things are slowly changing and encroaching and retreating. Instead of being confronted with an edited thing, you’re presented with the option to meander this shifting forest and forage,” Kahn explained.

**Misha Kahn** (b. 1989) was born in Duluth, Minnesota, and graduated from the Rhode Island School of Design with a BFA in furniture design in 2011. His work exists at the intersection of design and sculpture, exploring a wide variety of media that range in scale from mouse to house. Kahn’s approach melds an array of processes, from casting, carving, welding, and weaving, to imaginative and singular modes of production. His work has been exhibited internationally and is in the permanent collection of numerous museums and public institutions, including the Dallas Museum of Art, The Museum of Fine Arts, Houston, and the Corning Museum of Glass.



\*(T3)\*(8)\*(J-)\*([.."]\*(7^)\*(4=)\* (F))\* (llii.)\*(A)\*(!s)\*(11)\*('v:'))\*

top to bottom:  
visitor relaxing on one of the sculptural  
elements;  
installation view;  
Misha Kahn.



*sound of the earth chapter 2*

by yuri suzuki

*Sound of the Earth Chapter 2* was a sound installation that integrated audio crowdsourced from around the world. The work took the form of a dark, spherical sculpture with which visitors could interact by placing their ears against the surface. Each spot on the sphere represented a different area of the world and “whispered” back a corresponding sound sourced from that region, enabling visitors to experience the globe in a fresh way, beyond text and words. Anyone around the world could submit audio via the DMA’s website. “I envisioned the idea of a dark, smooth sphere as a perfect way to subvert the senses and engage with the themes explored by the wider project of *speechless*,” Suzuki explained. “Although we live in a world more interconnected than ever before, how we experience it is often reliant upon the visual, either alone or combined with sound in some other form of content. This project is the result of a desire to present a primarily auditory portrait of the world.” The piece was acquired by the Dallas Museum of Art, and a new and digital iteration of it was formulated during the pandemic. Titled *Sound of the Earth the Pandemic Chapter*, as of this writing it continues to gather sounds from around the world, engendering a sense of community by providing access to these sounds through the online platform (access it at <https://globalsound.dma.org/>).

Yuri Suzuki (b. 1980) is a Japan-born, London-based sound artist, designer, and electronic musician who explores the realms of sound through exquisitely designed pieces that examine the relationship between people and their environments, questioning how both music and sound evolve and create personal experiences. His work is in several museums’ collections, including the Dallas Museum of Art and the Museum of Modern Art. He has had solo and group exhibitions at the Tate Britain London, Mudam Luxembourg, the Dallas Museum of Art, and the Museum of Modern Art Tokyo. In 2016, he received the Designer of the Future award from Design Miami. He founded his own design studio in 2013, working alongside Disney, Google, and Yamaha, among others, and joined Pentagram as a partner in 2018.



*Sound of the Earth Chapter 2* top to bottom:  
visitor listening to sounds emanating from  
the black sphere;  
installation view;  
Yuri Suzuki.



## *scroll space*

by steven and william ladd

*Scroll Space* was a vibrant and tactile installation that included a room created entirely of tens of thousands of hand-rolled textile “scrolls.” These scrolls were made in collaboration with 1,700 community members in Dallas and Atlanta through the Ladd Brothers’ community engagement program Scrollathon®, which brings the arts to underserved populations through hands-on creative workshops. The gallery also included a mural composed of portraits of all of the participants who created the scrolls. “Where in the past our artwork has been kept at arm’s-length, this work...[was] walked on, touched, smelled, seen and heard, all at once... We want people to feel connected to their community, connected to the artwork, and connected to us,” the Ladds said. Portions of *Scroll Space* were acquired by the Dallas Museum of Art; the High Museum also acquired parts of the installation with each institution collecting aspects of the piece that featured scrolls from their respective communities.

Steven Ladd (b. 1977) and William Ladd (b. 1978) are brothers who have created multi-disciplinary works combining sculpture, performance, design, and social activism since they began collaborating in 2000. They have exhibited at the Musée des arts décoratifs and had solo exhibitions at numerous American institutions, including their hometown institution, the Saint Louis Art Museum. Their work is labor-intensive and has varied from large three-dimensional murals to book bindings. Through their Scrollathon® they have worked with over seven thousand people, including children, hospital patients, and special-needs individuals. Their work is in the collections of the Dallas Museum of Art, Musée des arts décoratifs Paris, the Honolulu Museum of Art, the High Museum of Art, the Corning Museum of Glass, and the Mingei International Museum.



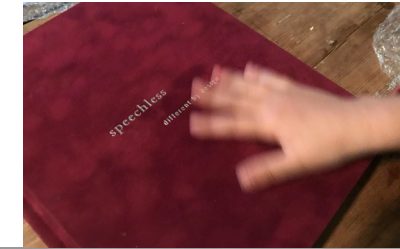
*Scroll Space* top to bottom:  
community member participating in  
the Scrollathon;  
interior of the structure with walls  
made of the scrolls looking into gal-  
lery with photo wall of participants;  
William and Steven Ladd.

## *speechless: different by design*

by laurie haycock makela

The graphic design for the exhibition, the exhibition catalogue, and this report were created by Laurie Haycock Makela, a leader in the field of experimental, transdisciplinary graphic design. Additionally, Makela's exhibition catalogue design was featured in the de-escalation room in the exhibition, where the walls (covered in acoustic foam to dampen the sound) were lined with page proofs from the catalogue. In this welcoming ovoid space, people were invited to sit and rest in comfortable rocking chairs and utilize weighted lap blankets and/or noise-cancelling headphones, all of which are means to self-soothe. The publication's non-traditional presentation—that of being displayed on the walls—offered visitors the opportunity to delve into the creative process of making a book and to read the interviews and text detailing the creative process involved in the making of the individual works and the show itself. Makela's design is known for being innovative and accessible. Her work on *speechless* contributed to the inclusive and interactive experience of the project. "I can honestly say I have never been involved in a more rare, beautiful, and meaningful collaboration, and I'm sixty-three, so that's saying a lot," said Makela. "This experience has changed me. I hope museum visitors and readers will feel the same."

**Laurie Haycock Makela** (b. 1956) has been a recognized voice of experimental graphic and transdisciplinary design practice and education for over thirty years in the United States and Europe. She has taught at prestigious institutions in Sweden, Germany, and Los Angeles. She was designer-in-residence and co-chair of the department of 2-D design at the Cranbrook Academy of Art, Bloomfield Hills, Michigan, from 1996 to 2001 with the late P. Scott Makela. Their studio, Words and Pictures for Business and Culture, produced print and new media for clients such as NIKE, MTV and Warner Bros. She was awarded the AIGA (American Institute of Graphic Arts) Medal, the profession's highest honor, in 2000. Recently, she became the first designer-in-residence at USC's Roski School of Art and Design. She called *speechless* "the project of a lifetime" when she was featured on Debbie Millman's podcast Design Matters.



*speechless: different by design* top to bottom: visitor feeling the plush, tactile cover of the exhibition catalogue; de-escalation space with rocking chairs, weighted blankets, and sound canceling headphones—the pages of the exhibition catalogue are affixed to the walls; Laurie Haycock Makela.



# speechless

different by design



Tactile title box designating the entrance to the exhibition, located in the Museum concourse.

## wordless

explorations in installation signage,  
graphics, wayfinding, and design

In keeping with its spirit of experimentation and its commitment to communicate in multiple ways and to minimize words, *speechless* explored alternative methods of conveying information about the exhibition to the visiting public. Where typically an exhibition's physical space has interpretive text in the form of text panels and labels and often wayfinding text, all of which prioritize verbal learners, *speechless* minimized written words and explored other modes of interpretation geared to prioritizing non-verbal learners and to being holistically accessible.

This work was done in consultation with the scientists and researchers who participated in the Convening (see Appendix F), notably Tina Fletcher, whose expertise includes a focus on improving participation in the arts for visitors with special needs. Members of the Museum team who had key roles in this process included Kerry Butcher, manager of the Center for Creative Connections; Jaclyn Le, senior graphic designer; Skye Malish-Olson, former exhibition designer; Emily Schiller, head of interpretation; and Emily Wiskera, manager of access programs.

Entering the exhibition, after passing the soft, tactile title wall at the entrance, visitors immediately encountered a wall with noise-cancelling headphones and spiral-bound booklets for the visually impaired, both of which were freely available. The headphones





Exhibition's central space with introductory wall text, stools, intro videos for each installation, and wayfinding color bands.





Details of the exhibition, from top to bottom: sound-canceling headphones in de-escalation space; view into central space from *Sound of the Earth Chapter 2*.

provided a way to block noise for those who desired or required reduced auditory stimulation. The booklet included Braille versions of the exhibition's welcoming entrance text, descriptions of each work, bios of the artists, raised line drawings of the layout of the galleries, images of the artists, and the informational graphics for each space. In providing these resources to all, the goal was to destigmatize their use as a signifier of difference.

The central space featured a comfortable gathering area with several stools. The aim was to create a welcoming space that served as an information hub, communal space, and physical palate cleanser between each installation experience. Visitors always passed back into this space before entering any other room. As a way to orient visitors, there were six monitors with informational videos on continuous loop. The thirty-second videos were produced by Matt Checkowski (whose work *Glyph* was one of the installations) and featured each artist-designer in their installation space demonstrating how to interact with their work. The intention was for the videos to serve not only as an alternative to text instructions but also as a preview of sorts, allowing visitors to become familiar with each of the spaces in advance. The monitors were installed floating above tactile wheat-pasted tissue-paper color fields. Each artist had an associated color that was capped off with a monitor. For example, if orange was the color stripe behind the Ini Archibong video, that corresponded with an orange arrow that pointed visitors into his space. The decision to use color to delineate each space was made to avoid any sense of hierarchy that would be implied by using numbers or letters to identify the galleries. The color selections were reviewed to ensure that they had enough tonal distinction to accommodate for color vision deficiency.

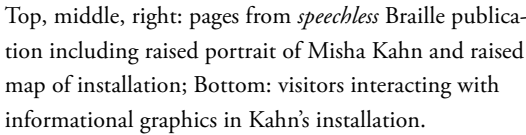
The only interpretative elements present in each installation space was the name and image of artist(s), the title and date of the work, and Jaclyn Le's interpretive graphics, which were another non-word-based way to explain to constituents of all ages how to interact and engage with the individual works. Le's informational images were non-gendered, simple, and conveyed ways to engage with the art, encouraging gentle touching, hugging, and even taking one's shoes off. She cleverly incorporated charming anthropomorphic blobs that hugged Kahn's inflatables, turned Archibong's capsules, immersed themselves in Checkowski's glyphs, etc.

Additional noise-canceling headphones were provided in Kahn's and Makela's spaces. In Kahn's space, the loud white noise of the blowers inflating and deflating the sculptures meant that some visitors would benefit from the headphones without realizing it in advance. Makela's space was the de-escalation space in which rocking chairs, weighted blankets, and acoustic foam were incorporated. The room was a place to decompress, to self-soothe if desired, and/or to engage with the presentation of the exhibition catalogue, which was printed out and installed page by page on the curved wall of the ovoid space.



Visitors relaxing in de-escalation space.








## Sensory Shift

Change your experience by shifting your senses.

Synesthesia occurs when one sense, such as sight, triggers another sense, such as smell, at the same time. The word *synesthesia* comes from the Greek words *syn* (together) and *aisthesis* (perception). Use the items in the Sensory Shift tote to experiment with different ways to alter your senses. Think about how our senses relate to each other, help us gather information, and may differ from the sensory experiences of others.



## Cambios sensoriales

Transforma tu experiencia cambiando tus sentidos.

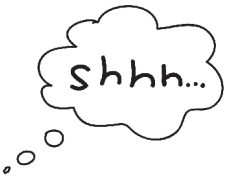
La sinestesia ocurre cuando un sentido, como la vista, provoca otro, como el olfato, al mismo tiempo. La palabra *sinestesia* viene de las palabras griegas *syn* (junto) y *aisthesis* (percepción). Usa los objetos en la bolsa de cambios sensoriales para experimentar con maneras diferentes de alterar tus sentidos. Piensa en cómo nuestros sentidos se relacionan, nos ayudan a recoger información y puedan diferir de las experiencias sensoriales de otros.

Sensory shift tote bags with contents displayed.

Additionally, sensory shift materials, which reinforced the themes of the exhibition, were provided through the DMA’s Pop-Up Art Spot, including free games that visitors could use to experience the installations in different sensory ways. This pop-up, created by Wiskera and Butcher, also provided sensory shift tote bags with items such as scent jars, headphones, textured gloves, colored glasses, and guiding prompts and questions for using these items. The purpose of these materials was both to help make the experience of the exhibition more comfortable for visitors with sensory challenges and to help neurotypical visitors better understand the many different ways we experience sensory stimuli in order to build sensory empathy. The Pop-Up Art Spot with these materials was offered on Saturdays and during DMA’s Late Night programming from November 15, 2019, to February 1, 2020. The offering was popular, with 948 visitors using the materials.

As with anything experimental, the responses to these materials were mixed, according to our formal evaluation as well as anecdotal evidence and observation. While some visitors reported that they would have liked more text, many visitors felt engaged and even empowered by the process of discovery and appreciated that the experience was not mediated by text-based interpretations. As with the individual projects and the spirit of the installation,

the graphics and interpretive and experiential elements were designed with the intention to de-center our normal practices in favor of thinking more holistically and inclusively while following Universal Design for Learning best practices.





Young visitors in Misha Kahn's installation wearing color-shifting glasses from the sensory shift tote bags.







Views of *speechless* exhibition catalogue: cover showing velvety, tactile fabric with silver embossing, and interior view showing the fore edge color effect on the pages.

## exhibition catalogue

### selections

The *speechless* exhibition catalogue, titled *speechless: different by design*, a hardcover print book, is the predecessor and companion to this report, which is produced as an e-publication only. The two publications were conceived as a pair from their inception, with the catalogue presenting the exhibition and this report exploring the responses to the exhibition.

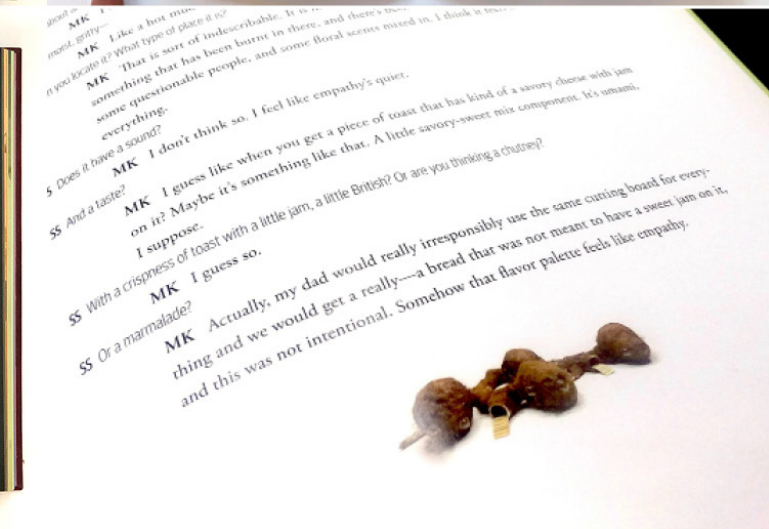
Both publications were developed by the same team, led by *speechless* curator Sarah Schleuning and designed by Laurie Haycock Makela, a leader in experimental graphic design. Beginning with the tactile velvet cover, the catalogue not only explores the themes of the exhibition, but also expresses them. The contents include in-depth conversations with each of the designers that emphasize the experimental process involved and provide a behind-the-scenes look at the making of the ground-breaking show. Because the exhibition de-emphasized words and text, the catalogue became the repository for text-based information about the show.

The catalogue was also the foundational design piece in the de-escalation space, which was one of the six site-specific, immersive, participatory environments in the exhibition.

The catalogue was published by the Dallas Museum of Art and the High Museum of Art and distributed by Yale University Press.

A selection of page views from the catalogue is included here. To view a video that shows a page-by-page view of the catalogue, go to <https://vimeo.com/513029060>.





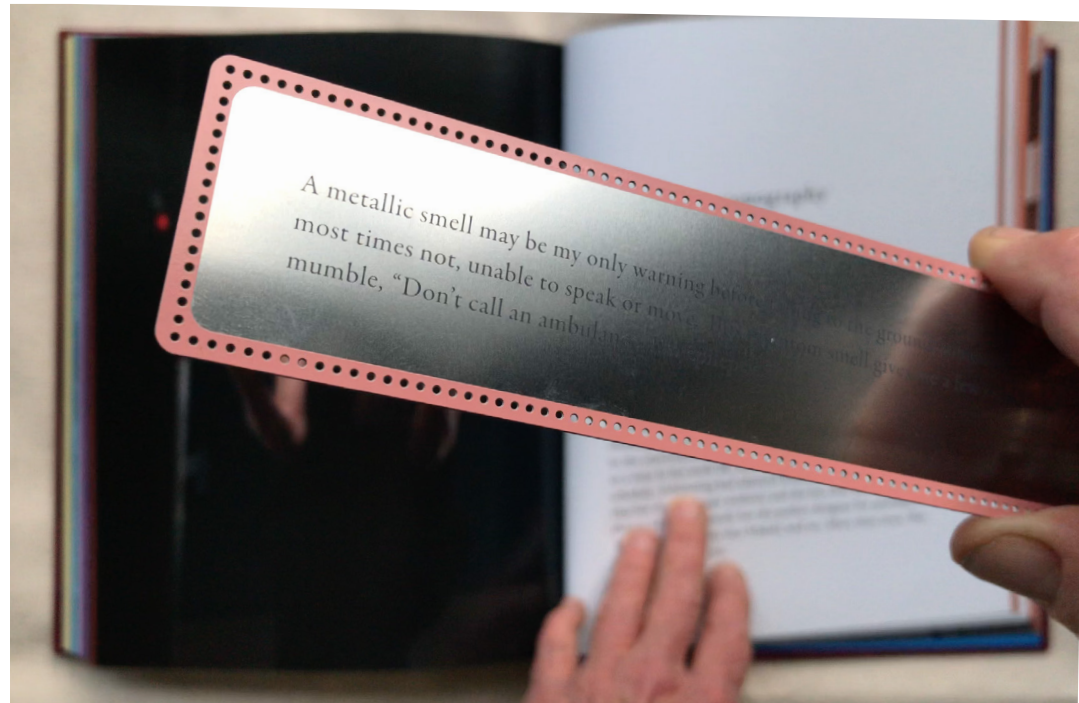
different by design: the *speechless* report



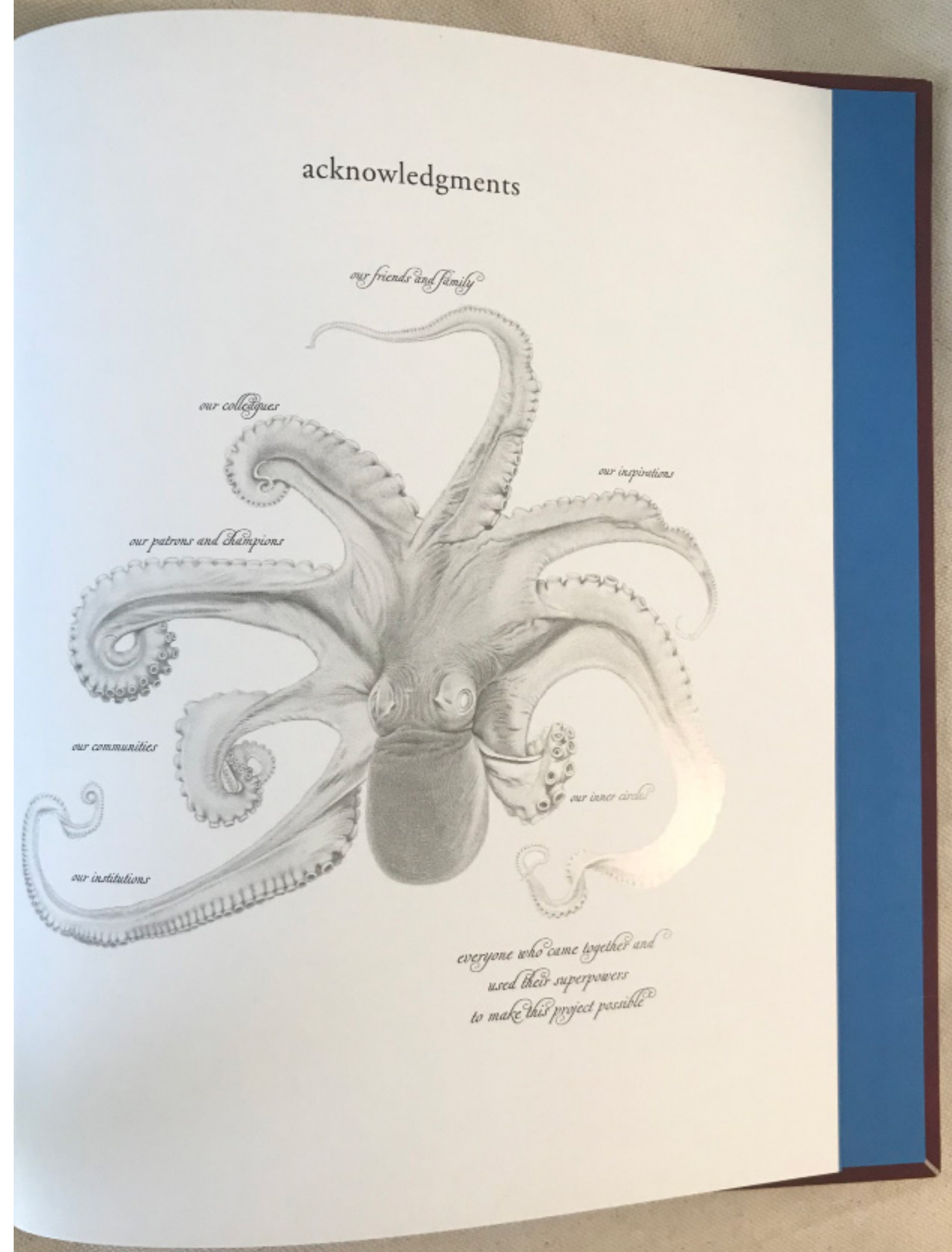
Selection of interior pages from *speechless* exhibition catalogue.

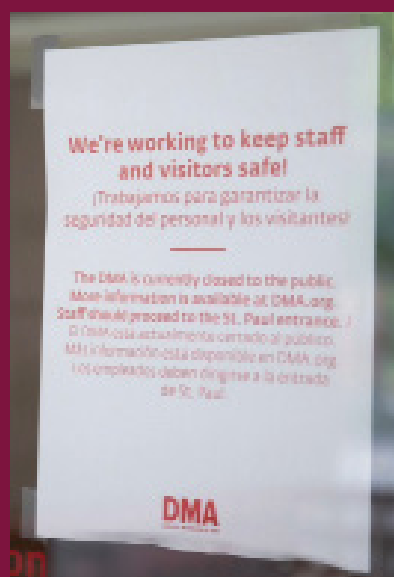






Left: *speechless* bookmarks featuring quotes from each artist-designer; Right: Acknowledgements page of exhibition catalogue.





View of the Dallas Museum of Art's Hamon entrance, closed during Covid-19 lockdown and close-up of door signage during lockdown.

## *speechless* interrupted

### responding to the pandemic and social justice issues

Like museums the world over, the Dallas Museum of Art's activities were interrupted by the coronavirus pandemic. On March 14, 2020, the Museum closed its doors to visitors for five months. In the case of *speechless*, there were repercussions that went significantly beyond the exhibition closing a week ahead of the scheduled date. From its inception, *speechless* was a collaboration between the DMA and the High Museum of Art in Atlanta, where it was scheduled to be on view beginning in April 2020. Plans for the exhibition to travel to the High were cancelled.

Additionally, much of the innovative nature of *speechless*, including its emphasis on interactivity and its many hands-on components (and even ears-on in the case of Yuri Suzuki's *Sound of the Earth Chapter 2* installation), involved close contact with artworks. Installations such as Misha Kahn's joyful, playful *(T3)\* (8)\* (J-)\* ([..])\* (7^)\* (4=)\* (F)]\* (llii.)\* (A)\* (!s)\* (11)\* ('.v:)\** suddenly looked threatening—a group of people in a room together, all touching and being touched by fabric that many others had touched that day and that could not be “sanitized.” Ditto the de-escalation room with its noise-cancelling headsets and weighted lap blankets, all touched by multiple hands. So too Ini Archibong's *theoracle*, with its invitation to touch and move objects in order to alter the movement of water and the sound being produced. These are experiences that had to be halted and as of this writing remain verboten.

Although plans had to change, and although further exploration of this type of innovative interactivity in museum settings is on hold for now and the foreseeable future, Covid-19 brought with it certain new opportunities to explore alternative forms of expression. Two of the six installations in *speechless* were altered, revised, or reimagined in response to the pandemic. Yuri Suzuki's piece *Sound of the Earth Chapter 2* evolved into *Sound of the Earth the Pandemic Chapter*. And Ini Archibong's *theoracle* was reconceived as *theoracle* and included in the DMA's exhibition *To Be Determined*, on view September 27, to December 27, 2020.



*Sound of the Earth the Pandemic Chapter* by Yuri Suzuki

This work by Suzuki, which went live on May 4, 2020, is a digital version of his piece for *speechless*. *Sound of the Earth the Pandemic Chapter* is a crowdsourced archive of sounds captured from around the world during the pandemic. The sounds, which might include such daily activities as a conversation with a family member, a meal being prepared, a fragment of a song, or vehicular traffic, were submitted from around the world (five hundred submissions were received in the first week) and then mapped onto a virtual rendering of the globe. In creating the digital audio experience, the DMA hoped to provide listeners with a sense of connection and shared humanity. Since lockdown “we suddenly lost all physical contact in public spaces and online experiences became much more important in people’s lives,” Suzuki explained. “In creating *Sound of the Earth the Pandemic Chapter* we were thinking about how people could experience the *speechless* project without any physical presence. I had to provide a web-based experience and make it as close to real as possible. But there are benefits. The web experience can reach people all over the world because it does not depend on going to a specific gallery or museum. Everyone can access it through the Internet.” Suzuki has even conducted a performance composed of sounds from the digital globe.

*Sound of the Earth the Pandemic Chapter* continues to gather sounds from around the world. As of July 2021, the virtual page ([globalsound.dma.org](https://globalsound.dma.org)) had received over fourteen thousand visits, with a high average time on page ranging from three to eleven minutes.



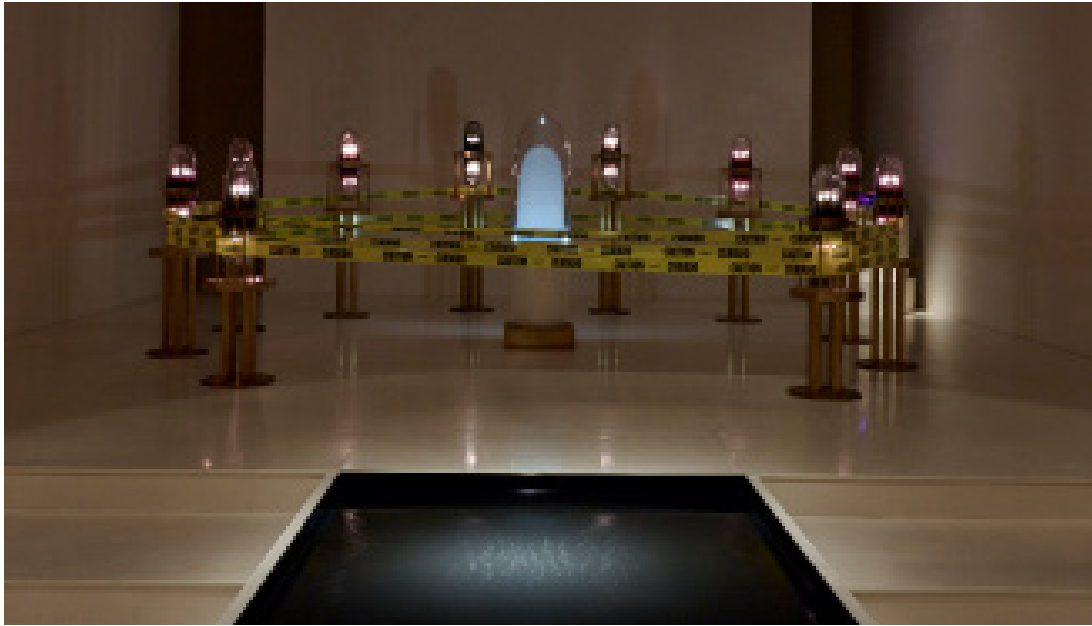
Webpage for Yuri Suzuki’s *Sound of the Earth the Pandemic Chapter*.

~~*theoracle*~~ by Ini Archibong

Ini Archibong reconceptualized his *speechless* piece, *theoracle*, for inclusion in the DMA exhibition *To Be Determined*, which explored how the resonance of art can shift when presented in new contexts and as viewers imbue them with their own personal meanings. The original piece was touch-activated, brightly lit, and harmonious. However, the new work is none of that—the title is struck through, it is surrounded by yellow caution tape that renders it untouchable, it is dimmed, with all lights focused solely on the movements in the pool, and the sound that it emits is an imposing drone. Archibong has explained that in addition to its commentary on the pandemic, it also was catalyzed by the Black Lives Matter protests during the summer of 2020, and is his response to growing up as a Black male in America.

“This was probably the first time that I allowed any of my pieces to make a statement of this nature,” Archibong said. “Even if I’m addressing a contemporary issue, I tend to abstract it into a universal. But based on the scenario and the situation, it made sense for me to bring something that was kind of ethereal down to earth, and to make a clear statement.

My vision for the future is to keep it as it is now  
until it seems appropriate to allow people to touch it again.”



Installation view of Ini Archibong’s ~~*theoracle*~~ on view in the exhibition *To Be Determined*.



Visitor interacting with one of Misha Kahn's inflatables.

## there is no such thing as an average visitor

Azucena Verdín in conversation with Sarah Schleuning

*Azucena Verdín, Ph.D., is an independent evaluator who produced the Visitor Research Study on speechless: different by design. In the following conversation, she and Sarah Schleuning, the DMA's Margot B. Perot Senior Curator of Decorative Arts and Design, discuss many of the considerations that went into designing the study, the results, and lessons learned. This wide-ranging dialogue considers themes of the exhibition, feedback on the individual installations, and successes and challenges along the way. Both Verdín and Schleuning are parents of children who are neurodiverse, a factor that for Schleuning was a catalyst for curating this exhibition, and for Verdín contributed to the multiple lenses through which she interacted with the exhibition. Verdín was previously on staff at the DMA as the Museum's evaluator, and as such she has a deep knowledge of the institution and its visitorship.*

### pure joy and wonder and play

**Sarah Schleuning:** We had many strategic conversations around how and what to evaluate for *speechless*. Before we delve into the data from the Visitor Research Study you developed and conducted, let's zoom out and look at it from a macro perspective. Based on people's responses and what you observed, what do you feel were the most successful aspects of the exhibition?

**Azucena Verdín:** People's expectations were just blown away, and that's not hyperbole. Most people went in with an expectation that this would be different, that this would be very multisensory and interactive and immersive. But I'm not sure that expectation aligned with a mental representation of what that would be like. If it did, I think most people were met with a reality that far exceeded what they were expecting. That in part was due to the variety, to how different the different artists' installations were. The different ways to interact, the appeal to the different senses. There was no singular pattern. The variety of ways the different artists facilitated interaction appealed to the



diversity of interests, the diversity of preferences, the diversity of sensory thresholds and sensitivities.

And I think, and this is my bias as a parent, but for people who did attend with family, there were even happier surprises. There were these different ways of interacting with the spaces and the objects and the sounds and the things that you couldn't see and the other people. And how that was met with joy, just pure joy and wonder and play. Many people go to museums to think deeply about what they're experiencing. And there was definitely some of that. But it also dovetails very nicely with people playing or people watching other people playing, or people noticing how their children were playing in a space that normally they wouldn't feel comfortable playing in, so I think that was the greatest success. I think this show really hit the mark in terms of the wonder and the joy and the play.

**SS:** Shifting now to the data, let's start with the fundamental queries. Did we meet our expectations? How did visitors perceive the show? What does the data from the survey tell us?

**AV:** At a very basic level of looking at the data, the majority of visitors had very positive things to say. Eighty-two percent had explicitly positive comments when we asked them, "What did you feel after experiencing this exhibition?" And the other eighteen percent were mixed. It wasn't that those eighteen percent were primarily negative, it was that some of those comments were ambiguous. I see that as a positive on multiple levels, one because eighty-two percent positive is a good number, and two because that balance of the eighteen percent is not explicitly negative. Anytime we are trying to buck the status quo there needs to be margin for that sort of disorientation or disequilibrium that ultimately is going to produce change.

**SS:** We definitely bucked the status quo in terms of information presented about the installations. A question I asked myself a lot was how and where to put the information. So we layered it. A tremendous amount was presented in the exhibition catalogue, which was fully on display and readable in the gallery, and we tried to keep the rest of the exhibition more freeform. When I have done museum projects that were external to the museum's building(s), such as on an outdoor piazza, this idea of minimizing text and information was super successful. But when presented inside the walls in *speechless*, there was a shift.

I think people had expectations of what they were going to be doing and the information they would receive. And that was part of what caused some challenges with the gallery attendants and the visitors. People were asking for information but we wanted to leave the experience open for interpretation. There is an inherent tension between providing information in a show like this and inserting yourself in people's experience. How much do they actually want to know? And how much does the artist-designer want to reveal in advance? Maybe one visitor wants to know in five words, not three paragraphs. Other people want the three

Are you bothered by intense stimuli like loud noises or chaotic scenes?

Do you seem to be aware of subtleties in your environment?

Do you startle easily?





Exhibition entrance with DMA staff members.

paragraphs, and so it's challenging to gauge what and how much to tell people. And there were variants—there was a big difference for some of the pieces in terms of whether visitors were alone or if there were other people already interacting with the pieces. When others were already there, visitors learned by example. But if they were alone, sometimes they either wanted or needed more of a push to feel comfortable to touch/engage with the works. In the end, it is impossible to know how much an individual actually wants to be told versus what they would prefer to discover on their own.

AV: You're absolutely right. We didn't measure whether people were there alone. We did ask people whether they felt it was more of a social experience or a solitary experience. We surveyed people on the weekends, and it was very busy. It would have been rare for a person to have been in any of the rooms by themselves. In the responses to some of these questions, some people said, "I didn't know what to do and then I saw someone, and I said oh, this is what you do," or "I was going to go quickly by the orb, but then I noticed that people were listening intently. So I thought, I'll give it a shot, too." Whereas other folks were not interested because there were other people and they were seeking a solitary experience. But I don't think people were intolerant of having to share the space, because that is the general expectation people had who were familiar with museums.

SS: So in terms of your findings, for a layperson reading your assessment of the exhibition, what would you want them to take away?

AV: The idea behind the Museum trying to be open-ended but also wanting to capture certain indicators or dimensions of experiences. I think we struck a balance between trying to capture dimensions of things like sensitivities and thresholds and experiences, but also maintaining that flexibility with the open-ended approach. And what that might mean to the layperson is that the show did what it set out to do from the perspective of a visitor seeking something nontraditional in terms of their schema for what an art museum experience should be. And more importantly, it really widened

this definition about what it means to be inclusive and  
what it means to challenge more ableist ideas,  
or ableist constructions.

SS: Can you explain what you mean by ableist construction?

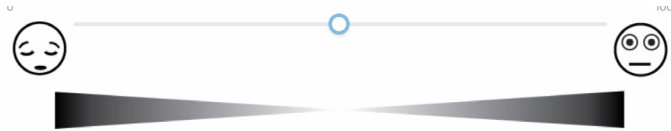
AV: Ableist constructions are those that, because they are so dominant in the way we operate in public spaces, they are invisible. And when these ableist ways of doing things, these norms, become invisible, they become very dangerous. What we found is that people, whether they were people with disabilities or not, including those with

different degrees and types and categories of disabilities, felt that there was something in the exhibition for them. That wasn't just by chance. This show was intentionally designed with that diversity in mind. Not only did visitors feel it was intentionally designed that way, but they were able to make a connection with a physical object or an idea or their representation of how they interacted with the objects and the ideas. And in those connections they found deeper meaning than they would have if they were coming to a show that they knew was designed with only aesthetic intention.

**SS:** What was the biggest challenge of doing this type of evaluation?

**AV:** As the person designing the evaluation, the biggest challenge was not knowing how different the group of people that would eventually attend *speechless* might be from the general visitor population of the Museum. I was familiar with a profile of the general visitor based on the investigation I led for the DMA in 2018–19 that analyzed the Museum's audience, so I had to base a lot of my assumptions out of my knowledge of the general visitorship. But of course, I knew that this group of visitors would probably be and look different, from a data perspective. That made me a little uneasy, because as we were in conversation about what questions to ask and how to ask them and how to scale them and whether to do it pictorially or with words or a combination of the two, I would ask myself whether it was appropriate for the population of visitors that would come to the show? And of course, I didn't know the answer; none of us did. A good evaluation surveyor tool is going to be calibrated so it's tapping into some of the nuances that reflect differences in the visitor body. However, when we added the interview component and we allowed for people

to give us more of their rich descriptions of their  
lived experience and interactions,  
that helped to fill out those missing edges.



Left: original survey slider icons (as shown in Appendix A, Fig. 1); Right: graphic re-interpretation of survey slider icons.



HIGH

emotional intensity spectrum

how strongly or weakly a person feels in response to stimuli

LOW







Visitor sitting on one of Misha Kahn's inflatables.

## empathy

**SS:** Let's talk about empathy. It was an integral part of the exhibition. So much about this show was motivated by a desire to explore and foster empathy without stating it explicitly. Yet it was not something we measured directly in the survey. That was a decision we made after extensive conversations.

**AV:** When you have a concept like empathy, it *is* measurable. There are instruments that can measure empathy, but there is an experiment involved—not something that happens in a lab, but the research team is manipulating the environment, or manipulating some variable, and controlling everything else. So when you measure your outcome, in this case it would be your empathy levels and the person's experience in the museum that resulted in the change. That's very difficult to do in a museum setting. You have to control what people see, when they see it, how long they see it, and the order in which they see the installations within the exhibition. You have to match people on several things, such as age. You have to test their empathy levels before they enter the museum. It made more sense to pull back and ask exploratory questions and then see if there were underlying constructs that related to empathy, but that were not empathy in and of themselves.

**SS:** Also, there are very different ideas of what empathy means. From a scientific point of view, you had questions such as: What is empathy? How are you defining empathy? How is empathy testable? Whereas I wanted people to have aesthetic empathy. In the show, we never explicitly talk about empathy because we were hoping there would be something like a ripple effect of seeing it, without being didactic, but I did talk about it extensively with the artists as they developed their pieces, and we discussed it in depth at the Convening. And as you just explained, I learned from you that it was going to be a very challenging thing to test.

**AV:** Instead, we resolved to try to measure people's sensory sensitivities or their preferences, to measure how intensely people experienced the installations, whether they were overstimulated or understimulated. In a scientific sense, when we talk about arousal, we're talking about the level of excitement or intensity people feel. Then we could ask the more common questions. Did you like the show? What did you like best? And we're interested in learning that because you don't want to put on a show nobody likes. Depending on those responses, were there any statistical correlations between how sensitive someone said that they were and their enjoyment levels? We wanted to think creatively and differently about how we tapped into questions of sensory information, sensory overload, and sensory underwhelm.

**SS:** And it's important to recognize that overwhelmed and underwhelmed are not necessarily "good" or "bad."

**AV:** Correct. We make assumptions that if you're overwhelmed, overstimulated, it's good or bad. And if you're understimulated, it could be bad or good depending on the context. What the interviews revealed is that it depends on a whole host of things, including what your expectations were, whether you were there alone, whether you were there with kids, and what your kids' profiles are as far as their sensory needs. People's sensory needs are so different. And coming from the perspective of who this show was designed for—obviously the entire community—but with a focus on a slice of the community with people who often get marginalized because they sense differently, they might think differently, they could interact with art differently based on neurological differences or other impairments. The word disabled is a controversial word. There are a group of people within the disability community that would say it's not the person who is disabled, it's the environment that disables a person.

**SS:** This idea that you have people who have low thresholds for sensitivity and high thresholds for sensitivity—the assumption is that if you're in the middle, you're normal. And that is a problematic view of "normalcy." Plus, a lot of the things we were interested in are invisible disabilities, so we weren't dealing strictly with issues like mobility or visual impairment. We were really interested in communication disorders, sensitivity disorders, things that some people don't readily acknowledge. Where something could seem like a negative result because they weren't stimulated in the way that we thought they would be, when you went back and calibrated who they were as individuals, then you realized that could be a space in which being underwhelmed was actually a really good part of the exhibition experience for them.

**AV:** Absolutely, and to your point about this range of arousal and this idea that if you're in the middle, you're "normal," we call that a dominant construction. The dominant construction of what normality is on some kind of an invisible scale where you're looking at something like arousal is very relevant in a museum where the people designing and curating experiences are wanting to arouse people in some way. But when you use a dominant construction like that, it's the use of language that automatically excludes, even if that's not your purpose. One of the risks of measuring things only quantitatively is that we tend to look at means because that's how statistics operate mathematically. But there is no such thing as an average visitor. Even if they are in the middle of some range of some variable, they're not "average."

**SS:** And how does this circle back to empathy?

**AV:** By asking these questions that we know theoretically are related to empathy, empathic arousal, and empathic decisions, what we're doing is challenging those dominant narratives, those dominant constructions about "averageness." What someone

in the middle of the range of some variable would consider to be too much is maybe just right for someone who has an invisible disability or is caring for someone with an invisible disability.

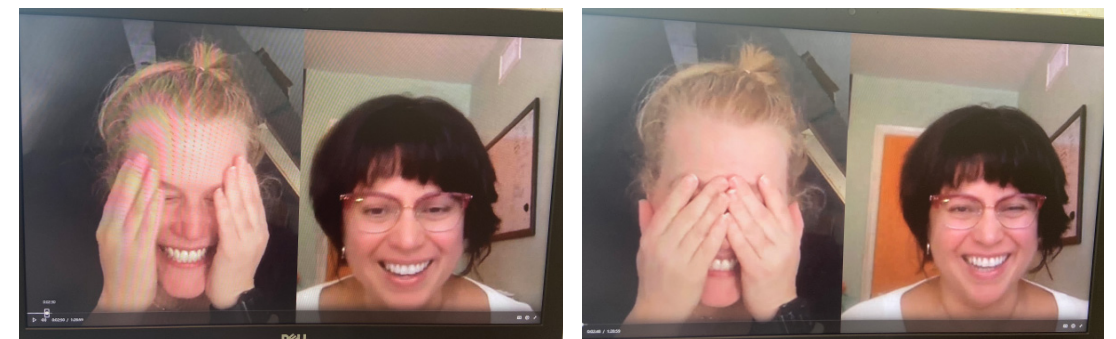
And the fact that it's just right is really interesting, because when you start to dig deeper, to ask why it is just right, what you find is that you get back to empathy in an interesting, circuitous way. When I interviewed the people who had either self-identified as a person with or a caregiver of someone with a disability,

especially with the caregivers,  
often they would relate to the person that they were caring for.

And that's empathy.

You're thinking about someone else's feelings. Someone else's thinking.

Those were the kinds of anecdotes and examples that came up in the interviews. People said things like, "I felt this way about this installation and then I thought about how my father, who has Alzheimer's, would experience it, or how my mother, who is blind, would experience it, and it shifted my perspective and it shifted my feelings." Then they kept going with this relational way of thinking and connected it to themselves in interesting, creative ways. Thinking differently and thinking about someone else's challenges or suffering in some cases gave them new ideas they were going to channel into either their work or a creative endeavor. It's a really generative way of talking and experiencing, and we would not learn it if immediately after they exited the exhibition we were only measuring what they learned or if their empathy levels changed.



Sarah Schleuning and Azucena Verdín during a video conversation about the exhibition.



## installations: data and observations

Matt Checkowski: *glyph*

SS: This was one of the more polarizing pieces for visitors.

AV: I think polarizing is such a great word because people had very strong emotional reactions. There was a group of visitors that found it to be highly intense, and that was a good thing. And then other folks who found it also highly intense but wanted to run from it. It was too much. It speaks to what someone's intensity rating or arousal rating is. It doesn't mean that it's interpreted the same way in terms of negative or positive valence.

What the interviews revealed is that for folks who described themselves as seeking more input, that was a really pleasurable space to be in. They were having multiple senses stimulated at one time and also trying to problem-solve, trying to figure out what was happening on the screens. Why are these words popping up? Is there a pattern? The combination of this cognitive curiosity with the sensory information, for those people who are input seekers, was a slam dunk.

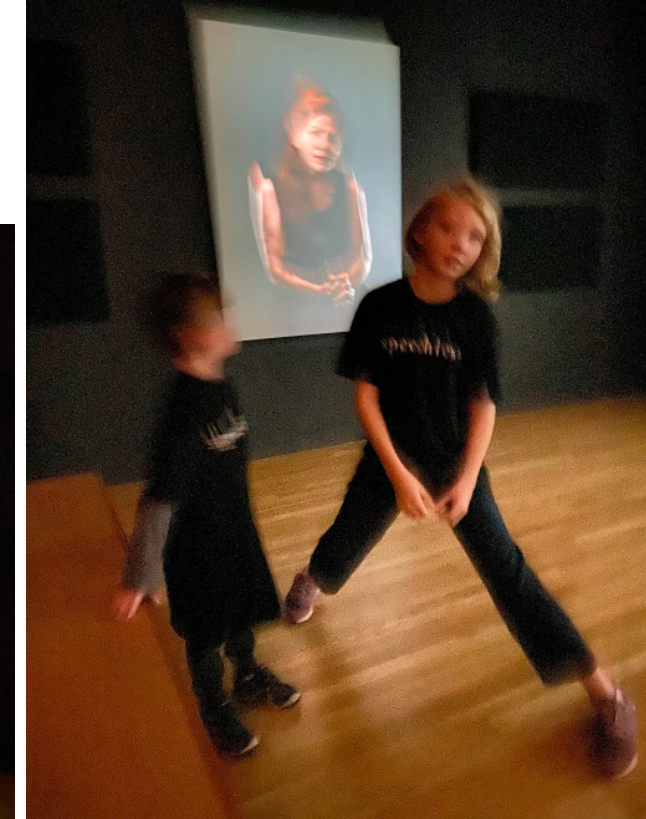
And then there were people like a woman I interviewed who is a very busy physician. She described her job as: "People are always in my face, showing me papers and graphs and charts. So when I'm not at my job, I don't want things and sounds and words in my face." She did not enjoy that room. She sees her weekends and her leisure time as something that should look and feel different from her work environment. But she had gone with her teenage daughters, and when she saw her daughters enjoying it, that reframed how she felt about it. She still didn't welcome it with open arms, but it increased her tolerance because she realized that her daughters have different preferences and sensitivities and need for input.

SS: It is so curious how the reflections of others can shift our own perceptions. Many of the spaces, when seen through the lens of others, did recast the experiences in various ways. Matt's room was very interesting because it had the most requests for more didactic information, but I said no, because I felt it would interfere with people's experience.

One of the ideas of the exhibition which was not to prioritize the written word. In museums we are so used to explanatory labels. And in daily life, those of us who don't struggle with the written word don't realize how often things are explained through text. But many people face daily difficulties with text-based information. In *speechless*, part of finding the meaning was through experiencing the works themselves. We found that many younger peo-



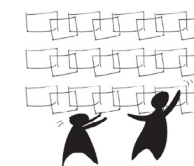
Views of Matt Checkowski's *Glyph*.



ple really gravitated to the flicker of images in Matt's room, but it was not consistent generationally in terms of who was attracted to it and who found it overwhelming or overstimulating. There were different ways to engage, so some people were entranced with the videos of the artists and that dialogue. And other people would stand right in front of the screens, riveted by the speech-to-image text.

AV: It was the only space where you could see all of the artists in breathing form—they were talking and moving and they came to life. As a visitor, I felt a little overstimulated in that room after a few minutes, but it also felt like a very special place, because it was my way of entering into dialogue with the artists.

SS: I love that it's a breathing, living project. If we showed it today, it would have different images. It is one of the many pieces we acquired from the exhibition into the collection at the DMA. I can't wait to show it again and see what is pulled from the Internet in five or ten years.







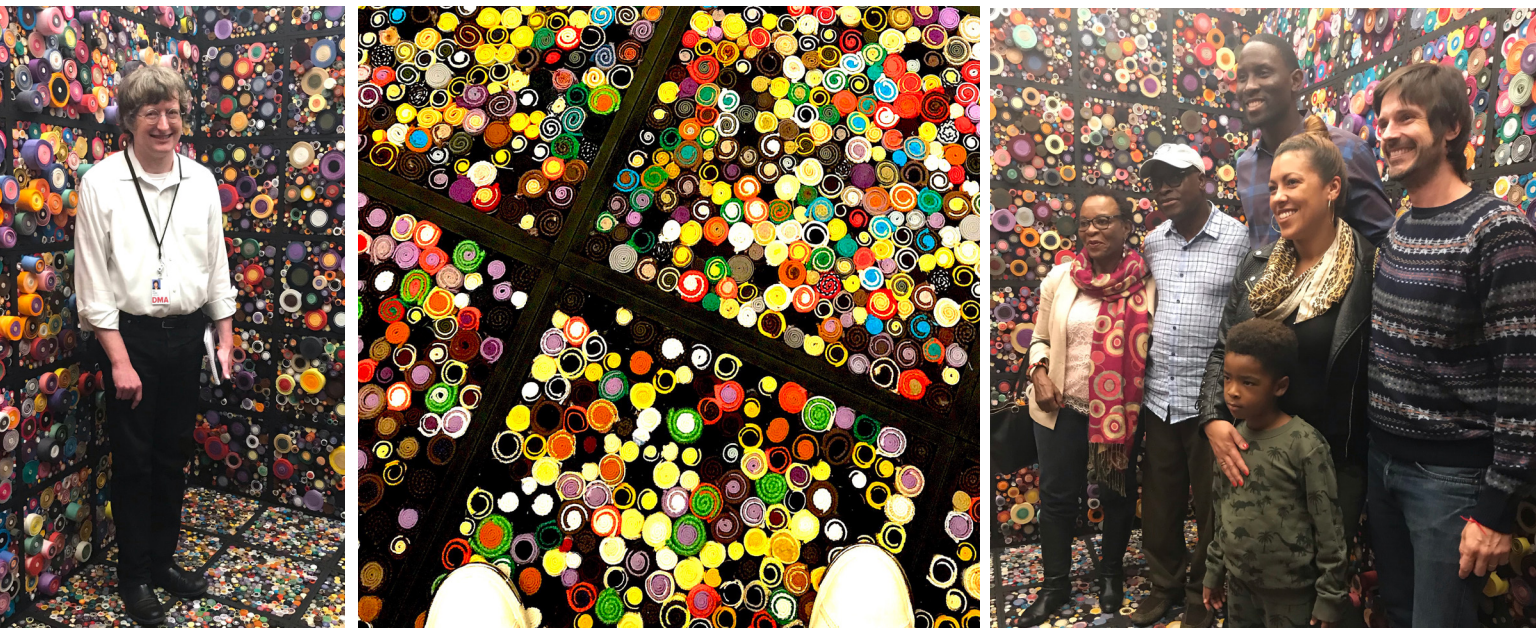
### Steven and William Ladd: *scroll space*

AV: People generally had very positive responses not only to the visual of how beautiful all the scrolls and the colors were, but they couldn't wait to touch it. Its very tactile appeal was the initial draw for a lot of visitors. But after they spent time seeing how it came together, a secondary draw was the community aspect [through the images of participants on the wall]. That was an unexpected art-to-community connection that people were happily surprised by and that made them care even more—that it was birthed, if you will, by hundreds of hands and getting to see their faces. This point of connection with the outside world didn't take away from their immersive experience in that space.

SS: It was probably one of the most photographed spaces, and people loved to be in there. We found people lying down, doing handstands, and climbing it. It was one of the more intuitive ones that people quickly understood.

AV: Were there any challenges with that space?

SS: We had a problem with the shoes on or shoes off. One of the graphic elements we made for that space was a visual of removing your shoes because the Ladds wanted people to remove their shoes in the space. However, we became concerned that people would hurt their feet as a result of some sharp pieces of hardware that were not part of the original floor but were apparently introduced during installation—we never resolved where they came from. But as soon as we became aware of the issue, we wanted people to leave their shoes on. However, the sign to take their shoes off remained up because internally we were not able to pivot quickly enough to take it down and re-do the wall. And our messaging to the gallery staff on the issue was not consistent. So we had some internal problems in responding to an unexpected issue. Part of what was revealed was the challenge of not planning in advance for making iterative changes to spaces.



Views of Steven and William Ladds' *Scroll Space*.



Ini Archibong: *theoracle*

AV: People had strong reactions to that room. It wasn't polarizing in the way Matt Checkowski's room was, but people felt a similar level of intensity. It was the combination of the water, the sounds, and the capsules, and its being so different from the experience of everyday life. Water and sound—it's not a combination people generally consider. When people talked about it, they always talked about the water. It was surprising, it was calming, it was soothing. People wanted to know more. It appealed to people's thirst for knowledge on different levels. On a cognitive level, on an emotional level, and on a kinesthetic level. People wanted to touch it and move it and make it do things, and I think that's what made it such an intense experience.

There were the folks who definitely pointed out that stuff had broken and had rubber bands around it. But even when people pointed those things out, it didn't necessarily take away from the breathtaking beauty of it. It was spectacular in how it seamlessly invited the gaze as well as the touch and the hearing. The folks I interviewed with kids talked about how much their kids enjoyed that integration and combination of ways to interact with it.

SS: It was such a bespoke piece with handblown glass. Everything was custom-made, and I think even Ini would agree that he was not anticipating the way people would use it, even though in the prototyping and design phase we went over this several times. It is hard to imagine fully how people will use a work; that is part of letting it live in the public space. He felt like people would respect the beauty, and for the most part, I think people did. People weren't particularly rough or aggressive. The problem happened with the capsules that turned 270 degrees and each of the ten capsules shifted some part of the soundscape in the room. But the challenge was, people didn't know when the capsules stopped.

So we put more graphics up, closer to the objects, as a visual aid, saying that it was 270 degrees, that they didn't spin endlessly, and not to continue pushing once you felt resistance. That's why we put rubber bands on, so that you had to stop.

Ini had envisioned communal playing engagement and a kind of world of listening to this music, but what happened was that people wanted to hear the sound shift. Whatever capsule they were on, they just kept pushing and pushing until they could hear it. And so people basically pushed past the point of the 270 degrees because they wanted that satisfaction. That was really eye opening. It happened the first day, and we were surprised. People were trying to hear the shift and to see it in the pool. And we were trying to say, be gentle, it's a little knob and you're moving all these little pieces at the same time, and it's all shifting things. It was a complicated space. There were stairs, there was water. There were these glass capsules you were turning.

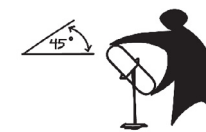


Visitors turn glass orbs in Ini Archibong's *theoracle* with and without rubber band stopper in place.

AV: And so that damaged the capsules, correct?

SS: Yes. Basically, it was over-loved. People absolutely loved interacting with the piece, but they were not gentle with it. And that led to another interesting learning moment. We had a lot of feedback about how the staff were interacting with visitors in this space. They had a tough balancing act. We limited the number of people permitted, and often gallery staff described to people what to do (and what not to do), what to expect, and how to touch the different pieces. So sometimes they were unintentionally over-informing the visitors. And sometimes not. There was an inconsistency in the delivery of information. And you gave me feedback that there were people who felt like they were being over-instructed, and it was kind of draining the joy from the experience.

AV: Absolutely right, because it took away from the sense of wonder and play, because now you have someone telling you what to do, how much to do, and don't go too far. The staff were protecting the art. But yes, there were multiple people who said, "I thought this was supposed to be my experience interacting with how I see fit to interact with the art. And now I have someone telling me to do it this way and not that way," and that took away from their sense of agency, their sense of how much authority they brought to their enjoyment in their experience.





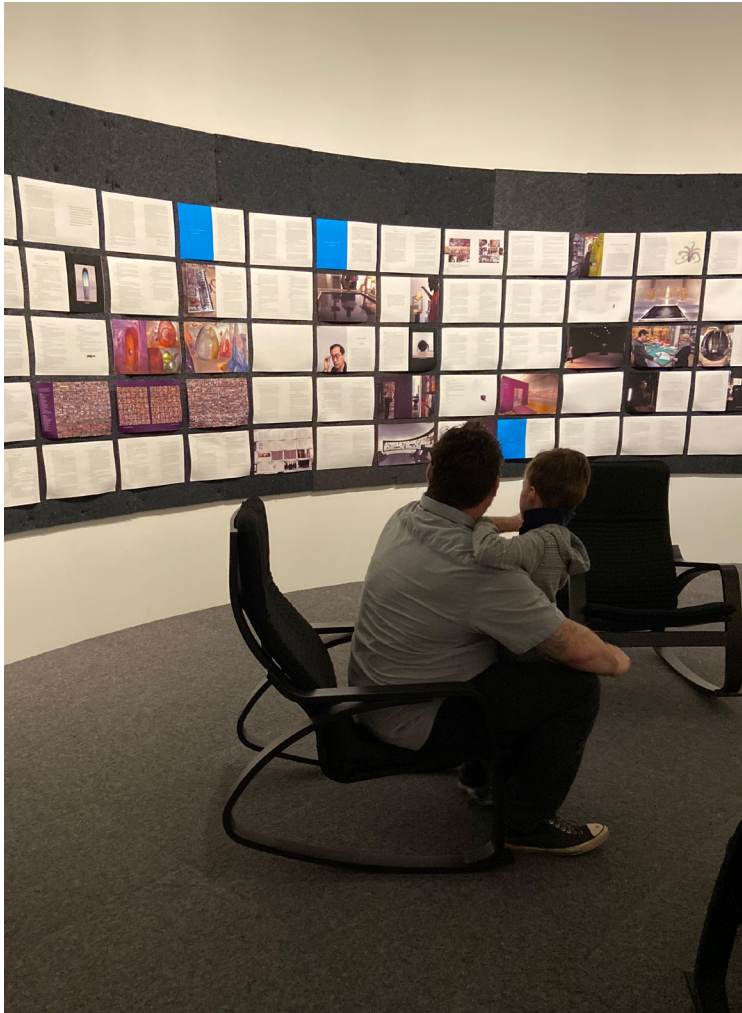


Laurie Haycock Makela: *speechless: different by design* [Exhibition Catalogue and De-escalation Room]

AV: People fell asleep in that room for good reason. What was interesting is that people responded well to having access to all of the text from the exhibition catalogue on the walls. But at the same time, they were able to close their eyes and disconnect and put on the weighted lap blanket and check out. Something unique about that room that people described is that it was not “either or,” it was not explicitly, “You must turn off all your senses in here,” because it wasn’t dark, and the walls were not bare or plain. But neither was it, “Come in here because we need you to read all of this material and receive more input.” That room struck a nice balance of the visitors being able to get all this input and information and be more cognitively stimulated or literally unplug and put on noise-cancelling headsets and get some soothing, some vestibular stimulation.

SS: So it seems like we struck a nice balance in that room.

AV: That message was very loud and clear from the very first time I set foot in any kind of museum meeting that mentioned *speechless*. This space was designed for when it had gotten to be too much and you went there to decompress. You didn’t have to decompress to the point where you fall asleep. Or you could recharge. Or you could just have that cocoon of silence that probably felt really safe and grounding for a lot of people. That was one of the goals that came out of the Convening—after talking to the scientists and the artists and curatorial staff, you wanted there to be a space where people felt safe and grounded. And I think that both from the survey data and from the interview data, that is what people got out of that space.



Views of people interacting with and de-escalating in Laurie Haycock Makela’s space.





Sarah Schleuning's children, Zuzu and Vaughn, who inspired the exhibition, sitting on an inflatable with Misha Kahn.

Misha Khan: (T3)\* (8)\* (J-) \* (l..") \* (7^)\* (4=)\* (F)] \* (lli.) \* (A) \* (!s) \* (11) \* (':v:')\*

AV: That room was so playful. I have my images as a person who went through it as an evaluator and then as a visitor and a mom, and also as someone who watched and listened to visitors talk about it. The vision that I have is people running through the space, children running through the space. It felt mazelike and when people talked about it, they talked a lot about movement in that room—their own movement and watching other people walk or run through the space. The movement of the balloons and the fabric. That was probably the room that got the most kinesthetic-related feedback from people.

SS: There were so many elements to the room. Did the multiple elements affect people differently?

AV: It was a little confusing for those folks who maybe were a little bit more rigid in what they expected. Some people walked right past the button that initiated it all, and once they had walked past it, it took them a while to figure out. So not having labels or data left some people feeling a little disoriented. But overall, the words associated with it were words like playful, movement, running, breathing.

SS: There were visitors who would sit on those recliners and watch the lights spin and totally zone out, and for them it was very meditative. And then if you had a lot of people in there, the room was full of people climbing onto stuff, hugging stuff, laughing, it had a more a party-like vibe.

And that was another space that had installation challenges due to the nature of some of the materials, like the silk bags, which kept ripping. That was intentional in some ways. We knew they would fray. But they were constantly being fixed, and then there was a disconnect around how touchable they were. One time I was in there and our staff kept following us and making sure we were following the rules. It was well meaning, but it was off-putting. From a gallery attendant perspective, it was a challenging room because they were worried about the safety of the art, but when people enjoyed it,

it created massive bursts of joy.  
It was probably the one room that also really elevated people,  
as long as you didn't mind your face in a silk bag.





Sarah Schleuning and her children walking through Misha Kahn's installation.

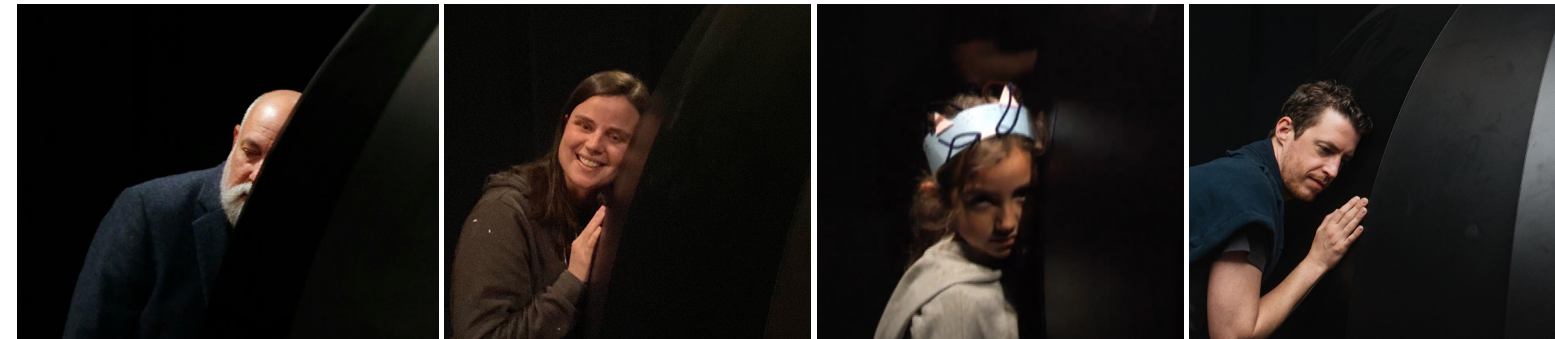


Yuri Suzuki: *sound of the earth chapter 2*

AV: That was the contemplative practice room for so many people. Going in there and being enveloped by the darkness. With the globe nested within this larger, darker space, it invited people not just to relax, but to lean in. To listen because if you were walking and talking, you might miss the sounds because the sounds were not spectacularly loud. You were meant to put your ear to the surface. And if no one else was in the room and you weren't seeing other people model that behavior for you, then you might have missed it. It allowed you to not just zone in and to narrow your attention, but more to kind of block out the noise and the loudness and the colors that were outside of that space. It was almost like it was calling you: "Come to me and lean into me."

SS: How did people respond to that space?

AV: People really enjoyed that. People didn't know what they were going to hear and were listening to the different voices and the conversations, but often not knowing what the voices were saying. It was like this escape, and they were immediately transported to another part of the world. That global connection was so much more real



Views of Yuri Suzuki's *Sound of the Earth Chapter 2*.

because you were listening in on these conversations—not in a voyeuristic way but in a very safe way, in this cocooned way.

There were folks who didn't like it. Some people found it wasn't stimulating enough, but for the people who really slowed down and enjoyed the stillness of it, it allowed them to enter into a different dimension and enter into someone else's reality through the voices in the conversations. People were really surprised by how much they enjoyed that, even though it was a much quieter way of interacting than say Matt's room or Misha's room.

SS: It was interesting because it is the one room where people had massive emotional responses. I know people who cried when they heard the sounds. And I loved seeing people in there almost in a meditative state, really listening and having this moment with the orb.

AV: Were there challenges in that space?

SS: There were a couple of challenges with that room. If you went in by yourself, it could be very easy to dismiss. If you didn't see someone listening, you might not investigate. Another was that it was not effective for people with hearing problems, and we did work with our specialists, but we never figured out how to directly address that.

Also, in that room we never spelled out what the sounds were, that this was about different geographies and there were thirty-two transducers and two unique sounds for each. We were happy with the mystery. But there were interactions with the gallery attendants, who were responding to the visitors' desire for information, and in providing information for people, sometimes it wasn't correct. That was a fail on my part. I should have provided content sheets for the gallery attendants so they had short, concise information they could provide to visitors.





## challenges

SS: Let's talk a bit more about some of the challenges of the exhibition. We talked earlier about Ini's piece, and that piece in particular showed me some of the issues institutionally with this type of a show. There were different constituents within the institution who had different objectives for the pieces. Our conservation and collections staff, those who are in charge of the care of the objects, had important concerns as they were basically co-parenting these objects in these experiences. There was a lot of repairing and fixing. The gallery attendants were often present when that was happening; they were seeing the problems and the repairing, and their desire was to care not only for the visitors' experiences but for the objects, to make sure everyone and everything was safe.

One thing we struggled with, particularly in Ini's piece, was striking the balance between how much is too much or not enough information? My point of view with Ini's capsules, and with all of the pieces really, was if they break, they break, because that is part of making experimental work that physically engages the public. They were not built in a way that anticipates how people wanted to use them, or we didn't understand how people would interact with them. It was part of the experimental process.

This was basically a giant prototype oven, and it was tested with thousands of people in real time. I thought that was great. I think it was harder for other people in the institution, because that's not the traditional museum approach, where broken means it goes and gets conserved. So we had some struggles, especially with my vision for what the experience was going to be and how it trickled through the institution and how it was projected out. In the end it was all positive and an incredible learning experience, but there was mixed messaging and confusion as we worked through it.

AV: Based on the interview data, people found it really hard to move beyond their established norms of how and when you touch or don't touch. And then you had the folks who maybe they were first time visitors, or had been before, but it had been a while, who were a little bit more fluid in their ability to stretch what is considered to be appropriate behavior. But you said the word: experimental.

SS: I think it's hard to be experimental. It is easy to do in words, but experimental is really hard to do in practice. In hindsight I wish I had had more meetings and check-ins about what was working, what wasn't, and again, this is where the iterative-ness of the experimentation was not built into the project, and I wish we had been meeting every two weeks or so with representatives from different Museum departments.

AV: What is your perspective on those challenges?

SS: Some of the struggles we had institutionally were around trying to pivot for a singular exhibition when the rest of the institution had a larger focus. That made it challenging, es-

pecially for those working the exhibition. We struggled with the consistency of how we were presenting the show.

Our front-of-house team wanted a definition of what the show was about. And our desire with the show was to be open-ended. That is not a universal desire. We know that there is a huge spectrum in the ways people learn and assimilate information. We know that what makes one person hesitate would make another person feel very engaged. People start from different places and go to different places. But it was very challenging in a museum setting. Especially in addressing the question: What is the show about? There were questions: What do you mean you don't want to tell people what the show is about? My response was always: We just want people to experience it. But those institutional responses were ones we continued to push against, and it was a challenge.

AV: So looking back at the full experience from the vantage point of several months after the show closed, how do you feel about it? Would you do it again?

SS: Without hesitation. Every aspect of the project pushed me. It is made me question the assumptions we make and the structures we naturally assume. We saw that something as simple as the layout of the design, removing a linear narrative from the installation, pushed some people and yet many of our visitors were totally accepting of it, especially many of the new audiences we brought in with this show. It was the same with the noise-cancelling headphones. Caregivers who regularly deal with overstimulated individuals recognized the option we offered with the headphones.

And I am humbled by and deeply appreciative of the Museum and all of my colleagues here who supported and added to the project, finding solutions and nurturing this experiment to make it successful. I think we are all proud of it. The experience also fostered intense, lifelong relationships, broadened my knowledge, and deepened my confidence to test boundaries and not be afraid to experiment, to fail, and to champion voices that are often excluded. It has made me want to do this more often, in other ways, and with other individuals.

I hope to keep challenging myself and others to experience empathy, not just have sympathy, for difference. And to recognize that difference is not other, it is within us all. I feel like the show gave voice to something I struggle to explain verbally. Ironically, I am often speechless in terms of how to describe this project and how it affected me. The shortest answer is that of all of my exhibitions, this one is my children's favorite. That means the most to me and makes me want to build on it. Looking back and looking forward, my favorite quote by the children's author Beverly Cleary captures my attitude:

“If you don't see the book you want on the shelves,  
write it.”



Visitors with glass obelisk in Ini Archibong's *theoracle*.

## museum visitors weigh in

### highlights of the *speechless* visitor research study

“It was a breath of fresh air for my brain,” one Museum visitor said of *speechless*.

That visitor was one of 235 people who took part in a survey about the exhibition. The survey was part of a larger evaluation titled the Visitor Research Study, conducted by evaluator Azucena Verdín. The rigorous academic study, which was approved by an external Independent Review Board, had two phases. Phase 1 was the survey. It was conducted February 1–16, 2020, and asked adult Museum visitors to respond to a series of seventeen questions immediately after viewing *speechless*. Eight of those respondents also participated in Phase 2, a follow-up telephone interview conducted February 18–March 13, 2020.

The full study is reproduced in Appendix A. The survey questions are the subject of Appendix B, and the phone interview questions are in Appendix C. Additionally, the study is discussed in depth in “There is No Such Thing as an Average Visitor,” the conversation between Sarah Schleuning and Azucena Verdín in this publication. Here, we provide highlights from the study along with a robust sampling of visitors’ direct responses to open-ended questions in the survey and the telephone interviews.

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Read the full report and view all survey and interview questions in the Appendices.  
The full study is reproduced in Appendix A. The survey questions are the subject of Appendix B  
and the phone interview questions are in Appendix C.



There were three open-ended questions. One of them asked visitors to describe their reaction to *speechless* (Table 1). Some of the words that came up again and again included: inspired; happy; intrigued; calm; relaxed; and creative. The responses were eighty-two percent explicitly positive and eighteen percent neutral or negative. Other words, therefore, were not as positive: overwhelmed; anxious; disturbed; and confused. This diversity of responses reflects the fact that people are so different that one visitor could exit *speechless* feeling “in awe and thoughtful” while another was “disturbed and anxious.”

As Verdín explains in her conversation with Schleuning, “It wasn’t that those eighteen percent were primarily negative, it was that some of those comments were ambiguous. I see that as a positive on multiple levels, one because eighty-two percent positive is a good number, and two because that balance of the eighteen percent is not explicitly negative. Anytime we are trying to buck the status quo, there needs to be margin for that sort of disorientation or disequilibrium that ultimately is going to produce change.”

That discrepancy is one of the through-themes of the exhibition: everyone is different. The study, among other things, sought to discover how these differences manifested in terms of people’s responses to the works on view.

Unpacking the responses further, analysis found that:

- Twenty-nine percent of survey participants had an association with (dis)ability or neurodiversity—either themselves or close relatives or both.
- Eighty percent of visitors with a child with a special need or difference had a positive response to the exhibition.
- Seventy-three percent of visitors who self-reported as having a special need or difference or health concern had a positive response to the exhibition.
- Eight-six percent of visitors with no association to neurodiversity or difference had a positive response to the exhibition.

## research questions

The Visitor Research Study’s primary goal was to examine the relationship between visitors’ sensory differences and their social and emotional responses in the exhibition. There were four primary research questions guiding the study.

### Research Question 1: What is the relationship between visitors’ sensory-sensitivity responses and their level of emotional stimulation in each room and in the exhibition as a whole?

Statistically significant correlations between sensitivity and stimulation were not found in the exhibition as a whole, nor in any of the installations except Ini Archibong’s *theoracle*. In that installation, visitors’ sensory-sensitivity responses (SENS) were statistically significantly correlated with their level of emotional intensity/arousal (EMO). This relationship is weak and negative. Note that this languaging does not imply a “weakness” or “negativity” in the exhibition but instead refers to a weak correlation between variables, in this case the visitors’ sensitivities and their level of emotional stimulation.

This finding actually has a possible positive implication, which is that the exhibition may have led visitors to have a de-escalation in their emotional state and to feel calmer. This data suggests that visitors with lower levels of self-reported sensory sensitivity (SOC) experienced higher levels of emotional stimulation (EMO) in this particular room. This was a surprising finding, but the telephone interviews shed further light on it. Visitors with children said they enjoyed how their child(ren) interacted with the installation. Children who might otherwise not engage in museum activities due to sensory sensitivities may have felt a sense of agency in *theoracle* because of the ability to modulate sounds and sights. The “negative” association seems to indicate a calmer state of being.

### Research Question 2: Is this relationship mediated by visitors’ association with a person with a neurological difference?

While this question could actually not be tested because there was not a predictive relationship between sensory sensitivity and emotional intensity, as described above, there was a very interesting finding that resulted from this question.

The evaluator analyzed the relationship between the visitors’ association with a person with a neurological difference or special need/health concern and their self-reported sensory sensitivity. A small but statistically significant association was found between the two, which suggests that having a special need or neurologically related health concern or being the caregiver of a neurodivergent person correlated with higher levels of self-reported sensory sensitivity. This is significant in part because it relates to empathy, as discussed in “There Is No Such Thing as an Average Visitor.”



**Research Question 3:** Are visitors' perceptions of the exhibition as a social experience predicted by visitors' sensory-sensitivity responses, emotional intensity, and association with a person with a neurological difference or special need?

An analysis was conducted to examine the relationship between visitors' social experience and three variables: sensory-sensitivity responses, emotional intensity, and association with a person with a neurological difference or special need. The results suggested that there was a relationship, and that knowledge of those variables explains almost twenty percent of the variance in the visitor's social experience score.

**Research Question 4:** How do visitors describe their lived experiences of *speechless: different by design*?

Analysis of the telephone interviews revealed four primary themes in terms of how people responded to the exhibition:

- 1 *stretching your mind*  
refers to the ways visitors described thinking and other mental processes during their interactions with the art;
- 2 *seeing through others*  
refers to reflecting on how others interpret information differently;
- 3 *scaffolded learning*  
refers to the manner in which Museum staff and design and interpretation elements facilitated visitors' understanding and expectations of how to engage with the art;
- 4 *original and inspiring*  
describes visitors' responses to the interactive nature of the exhibition, with all participants expressing a desire to see more non-traditional DMA projects that encourage multisensory engagement.







Visitors enjoying Misha Kahn's installation.

in their own words: visitors speak

The responses to the open-ended questions from the visitor survey and the follow-up telephone interviews provided valuable feedback. Visitors overwhelmingly appreciated the emphasis on multimodal sensory experiences for themselves or—for adults visiting with young family—their children. For some visitors, the variety of sensory information produced a comforting effect. As one participant said, “I loved the sensory aspect and the relaxing calm I felt in most rooms.” A sampling of those responses is reproduced in Tables 1 and 2.

Table 1: Visitor Responses to Open-ended Questions

After experiencing *speechless*, I felt (fill in the blank).

Peaceful	Happy	Zen
Amazed	Pensive	Creatively charged
Intrigued	Calm	Playful
Inspired	Engaged	In awe
Intense	Amused	Nervous
Bored	Confused	Deeply moved
Calm	Connected	Truly speechless
Curious	Curious	Elated and at peace
Confused	Joyful	Full of ideas
Thoughtful	In awe and thoughtful	Weird
Like I just meditated.	Happy	Aware
Attentive.	Overwhelmed	Quiet
Engaged	Amazed and peaceful	Enlightenment
Euphoric	Sleepy	Like I don't get it
Tranquil	Impressed	Exhilarated
Empty	Neutral	
Relaxed, inspired	Surprised	
Excited	Happy & staticky	
	Relaxed	
	Disturbed and anxious	
	Childlike	
	Unfulfilled	

Please tell us what you liked most about the *speechless* exhibition.

The globe of sound	It was a new way for me to experience art.
Everything	Feeling connected to the art on display
The interaction, it felt like a puzzle	It made me feel relaxed and aware.
Very unique	Community participation with scrolls
Sound waves on water	Water vibrations
The inflatable room with all the colors	I liked the separation and the distinct aesthetics of each.
All the different senses are involved and stimulated.	I loved the concept of live translation into words and images.
Topography. Felt like the air was a weight like the lap blankets.	Being able to interact with the art and the engaging sensory experiences
Engagement	The hands-on experience and the peacefulness
Original	The room with the black ball and the fact my kids got to interact with the exhibit
The emphasis on getting in touch with sensory experiences rather than cognitive ones	The immersion and tactile experience
Allowed me to venture into my own creative lenses and question my ability to create.	I loved the sensory aspect and the relaxing calm I felt in most rooms. It was a breath of fresh air for my brain.
I loved that it told the stories of the different artists and their expression of the same idea. The subtle interactions of the rooms like the sound and ball that you left thinking more about them.	The sensations it evoked—each was a unique sensory and emotional experience
The different types of stimuli	Seeing my scrolls in the exhibit

Full body sensations and interaction. I'm not a parent/caregiver but a teacher and have students with special needs.

It had an incredibly thoughtful design and overall a wonderful sense of childlike wonder that was refreshing to experience.

The interactive quality. Being able to touch the art.

The water sound room was entrancing

Nothing

I liked that it brings sensory stimulation to the general public. I am an occupational therapist.

I really like how normally when you come to an art museum you can't touch or get too close but this encouraged that and that was the intention of it.

I liked the interactive aspects of each piece. It is really hard for me to stay engaged if I only get to look at a piece.

I liked the creativity that went into the rooms.

The way it explored sensory input while providing decompression

Inclusion

It made me feel at peace.

I liked that you could physically interact with the artwork.

I loved the ideas shared and that it embraces our differences and celebrates our unique gifts.

What I love most is that it was interactive and really sparked curiosity.

I loved the exploration of human connection.

The ability to participate in the artistic experience

Science and current social relevance made it thought-provoking.

Touching sound

Discovery through exploration

Being inside the piece, the manipulation of space

Fun to experience touching with no words

I liked the ability to be involved in the art.

I enjoyed the black room because it was solitary... The black room with the ball made me feel as if I was spying on another person's dreams. Sneaking into their head but only with sound.

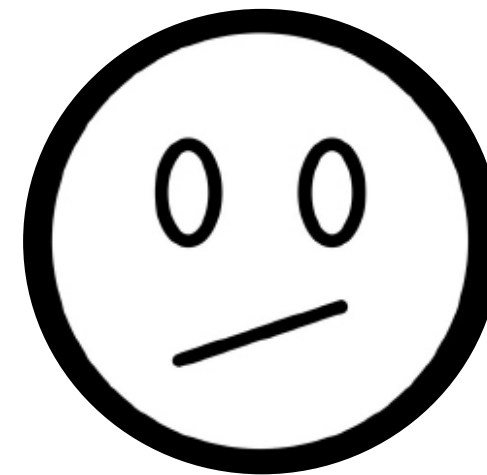


positive  
(82%)



peaceful  
amazed  
lifted  
euphoric  
childlike  
happy  
relaxed  
intrigued  
humbled

ambiguous  
(18%)



confused  
weird  
underwhelmed  
unfulfilled  
discombobulated  
sleepy  
lost  
overstimulated  
annoyed

Please tell us what you liked least about the *speechless* exhibition.

Nothing	The room with the lights and water was disappointing; it seemed to be one of the coolest ones but having it be so loud and having two people explain how to do everything took away the magic of curiosity and being able to discover and experience it for myself.
I wish there was an explanation for each room.	
Hard to say still in awe	
Too much auditory and visual stimuli	
The just rocking chair room (even though it was still cool)	I disliked the absence of written information describing the exhibits. Some rooms felt over-warm and stuffy. I felt I came away from the overall experience feeling slightly overstimulated, a bit confused and mildly annoyed.
N/A	
Underwhelming	
Loud noises in the inflating room	The balloon exhibit was odd.
I thoroughly enjoyed the entire exhibit.	Some kids running around took you out of the experience but the installation itself was great
The video room. Too much distraction.	Liked it all
It's great	I wanted even more.
Not enough information about the purpose of the exhibits	Nothing, everything was perfect Noise and confusion
Taking shoes off	The big black ball; only 'cause I wanted more of a story
	The sitting in chairs because I wanted to keep moving
	Nothing!

I wish there was more.	Video room a little intense for kiddo
Too short, and lamps were limiting (would've liked to turn them around 360 degrees).	All is exceptional
	Loved it
Nothing	Nothing!
I really enjoyed it all.	I wish there were more rooms.
I wanted to see more exhibits.	That it's leaving
No complaints	The closed off space when the exhibit inflated
No explanation about work in each room.	Instructions from staff before discovery via exploration
Hmmm, can't really think of anything I didn't like.	Loved it all
The <i>Glyph</i> one was a little dry, cool concept but would've been extremely cool if one could actually speak and have their speech made into pictures.	Nothing
	Too existential
Sometimes overstimulating	Awakened some mild germaphobia
The dark ball was not accessible for me and the wheelchair.	Not all exhibits had someone to explain what we were to do.
It felt forced.	Too many people. I know it was a shared experience but I would have enjoyed a quieter crowd. The pieces being loud was enjoyable. But the mass took away from the personal experience.
I wish there was even more room to play with things.	
The music in the water room	I just wish there was more.
Wanting more exhibits	





Visitors interact with the installations.



Table 2: Follow-up Semi-structured Interview: Selected Questions and Visitor Responses

These interviews were conducted by phone with a small group of Museum visitors who volunteered to participate. The following is a sampling of some of the questions asked and responses received; each letter (a, b, c) indicates a separate Museum visitor.

1. I noticed you responded \_\_\_\_\_ to the following survey question: “After experiencing the *speechless* exhibition I felt . . .” Can you tell me more about those feelings?

- a) *Sound of the Earth* made me feel alone but connected. [I] liked the reading room the best, really felt like...being “encased in air,” could feel the air weighing on me but in a comfortable way.
- b) [The word was “intrigued.”] Well, the exhibit is pretty unique, to say the least, and I think it had to do with the interactional aspect, which is of course the selling point. It’s one of those things where you have the room with the orb and it’s utterly silent and you have to get up close and make contact for it to function, versus the room with the resonant frequencies and the glowy orb things where the sense is more overwhelming.

2. I noticed you described your emotional intensity in \_\_\_\_ (specific exhibition room) as not very/moderately/highly (choose one) stimulating. Can you tell me more about how you experienced \_\_\_\_\_ room? Why do you think you felt this way?

- a) [*Glyph*] I have two children that have ADHD, and I have ADHD myself, but our reactions were kind of the opposite, and that may have to do more with where we are in life. It was interesting because my kids who have ADHD, their favorite one was the video room, which for me was just waaaaay too much. I did not like it at all. It was way too stimulating. But...work always has me stressed out. I never have alone time, so I like turning everything off.
- b) [*Scroll Space*] My husband and I had a laugh about it—he took a candid picture of me in the scroll room, and it shows my face in complete awe, like I’m looking at the most beautiful thing in the world. And he said, “I couldn’t help taking that picture because you looked so happy and wide-eyed.” I do think it was quite the experience. That room is the one I remember feeling the most intense feelings and also maybe because I felt very vested in it because I went this summer to the *Scrollathon*...I also think that every room was so original and such a non-traditional way of thinking about art and what art is. Very intense experience for me.

3. What was your overall impression with the amount of sensory information and stimulation in the entire exhibition? Optional: Can you tell me more about that?

a) As a whole it was fantastic. Unconventional, encouraging touch...things that you don't really expect from a museum.

b) I think it was good...it was fun to watch them [children] engage. . . they'd never been able to "see" the effects of a sound wave. And so that was fun, and the fabric room was also a favorite. They had a lot of fun in there looking at all the textures and touching all the different fabric rolls sticking out of the walls.

c) I knew what to do because they had the lap things and the earphones, so you could relax ... it was a neat way to experience your senses because you're covering up your listening and you're just rocking back and forth with your whole body. The weight on your legs made you tune into some of your senses more, which I thought that's what that whole exhibit was about. So I really liked it. I thought it was a really neat exhibit.

4. (Select interviewees only) We noticed that you are a caregiver of a child/adult (choose one) with a neurological difference. Do you believe this influenced your experience of the exhibition? If so, how?

a) Yes, I would say it did because I'm more focused on senses now...he has a love-hate relationship with anything auditory and so when I saw the advertisement for this particular exhibit I was like oh, that looks really cool! I wonder how he would like that because he gets to experience art through his senses. And so, yeah, definitely when I went in, I was kind of taking it from the perspective of him and it made me more aware. Just having him in my life makes me more aware of those things because it's his world!...I'm always curious about what it looks or sounds like or even touch, what it feels like for him.

b) It might have made me a little more aware of why the exhibit was important...But it was beyond a "this is a museum for handicapped kids." It was a "these are different ways of experiencing art for normal people, typical people." And so I think maybe having some children that are not neurotypical just made me more aware of the issues that can be present in kids and adults. So, I appreciated that, and...I appreciated the rocking chair room as I call it, and why that's valuable. I think it's valuable to put those kinds of places in more spaces that we encounter because there's hardly any...



Visitor relaxing in the de-escalation space.



Like if you went to a typical mall on a Saturday, that would be so nice to have a room that's just rocking chairs and beanbag pillows and quiet...I tend to get mentally very tired in overstimulating places like that, and so that was very much appreciated, and I could understand why it was so important.

5. You indicated that what you liked most about the exhibition was \_\_\_\_\_.  
Can you tell me more about that?

- a) We really liked the one with the vibrating water, the one where you could do the different things...I really enjoyed the textile one because of the colors. To me it really popped, it was neat to see all the colors and the fact that we could walk in and touch everything. And then my boys, they really liked the sound. My son especially because he likes the auditory, so the sound was cool to be able to touch. And the water was just neat. It was just neat to be able to move the different [synthesizers] around and move around and watch the water vibrate and jump up and down...we went to that one twice and we also went back to the textile one, the colorful circles, because I like that one a lot too, so we went back just to look at it again.
- b) Well, you get to touch the art! I mean already that's something uncommon, and it's a situation that's meant to be touched.

6. You indicated that what you liked least about the exhibition was \_\_\_\_\_.  
Can you tell me more about that?

- a) ["I wish there were more."] After experiencing it, I was hungry to have more of that kind of experience where you get to interact more with art rather than it being a visual medium. For me that's always more fun and more inspiring to be able to interact with things and change things and play with them and think about them in that way rather than just thinking about the visual representation of things.
- b) Having the metal exhibition broken was such a big let-down because the potential was so great there and it was a very nice, very cool concept...it was by far my favorite part of the whole exhibition. So, the fact that parts were broken was deeply disappointing.

7. Is there anything else about your experience that you would like us to know?

- a) That is what I mean by original. The exhibits that I've seen, nothing else comes to mind that has been quite so unique and such a different experience, so top marks for being a really original and memorable experience.
- b) I think that if y'all ever plan to do anything like that again, I think it would be really cool. I like the fact that it was hands on with your senses. I thought that was a really cool way for, especially the kids, and me to experience art. I just really enjoyed it. Really cool exhibit.

discussion

The Visitor Experience Survey's concluding discussion notes that while statistical analyses revealed significant associations between sensory sensitivity and emotional intensity in only one of the installations and not in the exhibition as a whole, this finding implies that aesthetic experiences designed with sensory differences in mind can result in surprising experiences of empowerment for people whose desire for sensory input may not be met with traditional (visual only) art museum media.

The study also found that visitors' emotional intensity predicted the level with which they perceived *speechless* to be a social experience. The finding suggests that certain visitors respond differently to exhibits that facilitate social interactions.

Whether or not the visitors were associated with someone with a neurocognitive functioning difference produced a small effect on their perception of the exhibition as more social than solitary.

The study interpreted these findings to suggest that experiences that facilitated social interactions for visitors who are familiar with issues of neurodivergence (based on their own or a loved one's differences) were perceived as more intense than for visitors who did not associate regularly with a neurodivergent person.







Visitor on floor of the Ladds' Scroll Space.

## next steps

### recommendations for a path forward

What did we learn from *speechless* that can be applied to the Dallas Museum of Art and perhaps to museum practice in general? The ideas, themes, and experiment of *speechless* resulted in provocative and inspiring discussions that have led to a more defined set of aspirations as well as certain concrete recommendations that museums might implement going forward. We know, based on both the Visitor Experience Study and our informal observations, that a vast majority of Museum visitors were very enthusiastic about *speechless*. Of course, there is the hope to do future exhibitions that further explore these ideas and themes. Despite the ways that the experience of the pandemic has changed people's willingness to touch and interact with objects in a public space, I believe we will find innovative ways to continue on this path. But mounting exhibitions is only one piece—and a very important piece—of broader investigation around the issue of who museums serve and how we can adjust to become much more inclusive.

Extending the focus out further than a series of exhibitions, *speechless* has valuable contributions to make to museum practice. We already knew that the museum visitor is not a monolith, and that the neurodivergent population typically has not been a primary consideration for museums. While we have not delved into why that is, we know it is time to address this omission. *speechless* confirmed this



knowledge and expanded our understanding of the importance of effectively reaching a wider audience. The question we are left with is: How might we advocate for and experiment with building and expanding our understanding and support of difference and disability while offering more accessible spaces and experiences?

## exploring next steps

The following is a preliminary list of next steps for the Museum to consider exploring to incorporate innovation around accessibility. The ideas range from very specific and particular to the experience of the DMA to much broader and/or holistic for the museum field in general.

- **de-escalation spaces:** To continue to advocate for spaces that offer opportunities for individuals to decompress, center themselves, and self-soothe. These spaces do not need to be large or completely hidden and can be as simple as a rocking chair or other seating with optional weighted lap pads and/or noise-cancelling headphones in a small, semi-protected area in the gallery spaces, special exhibitions, or other public areas within institutions.
- **flexible spaces:** The central space in *speechless* was the type of flexible gathering area that could be replicated in other exhibitions or even in spaces in museums that are not within galleries. In the case of *speechless*, this was an area where people could sit, rest, and review videos about the installations. They could return to this space in between interacting with the installations to decide which gallery to visit next. It was a convenient meeting point for groups of family or friends that wanted to view the exhibition on their own and then reconvene there. The seating was on stools that could easily be reconfigured so that the space could be adjusted to meet the needs of specific programs or groups.
- **noise-cancelling headphones:** Neurodiverse visitors and their caregivers may more comfortably experience the art when offered such aids as noise-cancelling headphones throughout galleries, a more friendly and accessible approach than only having them available by special request at the visitor service desk.
- **staff training and education:** Improving consistency of messaging to all staff at the DMA is a priority, as is creating better pathways of communication throughout the institution, implementing ways to check on or monitor when staff members may be struggling with the information, and investing in more in-depth training for all staff members who interact

regularly with visitors, both paid and volunteer. Implementing flexibility into the Museum's procedures so that when projects like *speechless*, which diverge from the "norm," require additional trainings and dialog, there is a strong commitment to the process throughout the run of the exhibition through listening, evaluation, and dialog within the institution and community before, during, and after the experience.

- **non-text-based interpretation:** For this project, information graphics and videos were provided in lieu of text-based labels and interpretation. Experimenting with these approaches as another option in tandem with (or without) text will provide for audience members who don't always prioritize written language as their primary source of gathering information about art. Alternative interpretation approaches could also explore other sensory options such as sound, taste, smell, and more. Likewise, options could be explored in the digital sphere to provide information, context, and interpretation through avenues such as podcasts, videos, graphics, and other means.
- **interpretation for the visually impaired and others:** Booklets offering information in Braille and with raised images were available for everyone, with the objective of making the show more accessible for the visually impaired. Art museums are typically so visually based that accommodating visually impaired visitors has not always been a priority, but there are simple measures that can help this population feel welcome. The booklets were utilized and enjoyed by many visitors, not only the visually impaired, and observation suggests that they helped increase awareness of, interest in, and empathy for sensory differences. Similarly, welcoming the hearing-impaired through such measures as ensuring that videos have captions are small but meaningful actions. The Museum regularly provides communication cards, originally developed for visitors on the autism spectrum, but those cards have also proven very helpful to English language learners and to visitors who speak other languages. Additionally, in terms of cards used for communication, an aspect of the original impetus for *speechless* was a frustration with the limitations of the Picture Exchange Communication System (PECS) in terms of nuance, emotions, and aesthetics—the Museum might explore developing card communication resources as a PECS alternative using works of art in its collection.
- **providing experiences for our wide range of visitors:** *speechless* was multisensory and multi-modal, providing avenues of engagement for many different learning strengths and learning styles. This emphasis on inclusion can be explored at the DMA and elsewhere in exhibitions and programming, including "traditional" exhibitions.

- **iterations and evaluations:** Providing opportunities and funding sources even on a small scale can allow museums to be more flexible, iterative, and reflective on the experimental elements. Having a dedicated source of funding that could provide opportunities and capacity for institutions to do this while projects are still up as well as the time to reflect after they conclude provides ways for institutions to continue to grow and build upon opportunities explored.
- **think tank:** For positive change to occur, there must be ongoing commitment to discussion and exploration. For example, the DMA could benefit from the establishment of a think tank or brainstorming group dedicated to creativity, innovation, and even rocking the boat. This group is not currently part of the institutional structure. By creating a dedicated group, the institution would be supporting this continued discussion. Group members could work together and with other Museum staff and consultants to identify more opportunities to expand accessibility and inclusiveness and create experiences that may prioritize “difference” over “typical” to strengthen and elevate access to art for all. Similarly, other institutions without such an internal system in place might explore this type of dedicated space and commitment to creative brainstorming.

parting thoughts

*speechless* started from a seed: my desire and need to communicate with my child. It then grew, nourished by the knowledge that art communicates ideas and can be a catalyst for change, and that difference and disability are more universal than we may imagine. Empathy, which fertilized this idea from its inception, is a through-theme of the exhibition and the impetus by which we can be challenged to evolve. *speechless* has shown us that the public is receptive, that

people are hungry for this type of experimentation,  
and above all, that art has the ability to challenge,  
to encourage understanding of difference,  
and even to transform.



Sarah Schleuning and visitor turning one of the glass orbs in  
Ini Archibong’s *theoracle*.





*Speechless* artists-designers and Museum staff members, pictured at the exhibition's opening. From left: Agustín Arteaga, Ini Archibong, Steven Ladd, Laurie Haycock Makela, William Ladd, Sarah Schleuning, Matt Checkowski, Yuri Suzuki, and Misha Kahn.

## last words

### the designers weigh in

In many ways, *speechless* has changed my professional curatorial practice. Several of the artists-designers likewise have said that *speechless* has had various lasting and positive influences on their work. In other sections of this report, we have explored the impact the exhibition had on Museum visitors. It goes without saying that none of this would have been possible without the enthusiastic participation of the artists-designers who were willing to take this journey with me. In this concluding section, the artists-designers share their take-aways, from the making of the art to their perceptions of the public response to their works to the ways in which the experience of *speechless* impacted them. Here are their words.

“I know the feeling I wanted people to have—  
this sense that art was not something to look at  
but something you could crawl inside of and feel enveloped by—  
like this kind of creative breathing cacophony of  
surface and volume and texture  
and light and motion and breath.”

—Misha Kahn

“The most rewarding thing was seeing the look on children’s faces  
as they were interacting with the sculptures,  
because that’s exactly what I had hoped for.  
The pure joy, enthusiasm.  
The unexpected was that we didn’t anticipate  
how excited people would be to be touching things.  
We didn’t expect breakage. So we weren’t necessarily prepared  
to damage-proof everything.”  
—Ini Archibong

“We hope they [Museum visitors] thought, ‘That was different! That was awesome!’ and then  
talked with their family or friends about what experiences they thought most appealed to  
them, what was unexpected, delightful, mysterious, and moving.”—Steven and William Ladd

“It felt like the visitors really appreciated how much they were challenged by the show and  
gave back to that by engaging more deeply.”—Matt Checkowski

“We [the artists-designers] got [the] same brief but  
our translation was totally different.  
It was quite great to see some people go really complicated  
as a way of addressing the issues.  
And some people were very simple.”  
—Yuri Suzuki

“I realized how ingrained my idea of the museum experience was—even though we were  
talking and thinking about how people would interact, I still imagined people being fairly  
passive. In reality that wasn’t the case—people were more willing to physically engage with  
things than I pictured. I think most of us [artists-designers] had the same hold up! I realized  
later how big a leap it was to go from people walking around looking at things to this possibil-  
ity of touching or engaging—and how oddly challenging it was to conceive of that and make  
something that was abstract enough, it could tackle an artistic impetus, but direct enough that  
people knew what they were free to do.”—Misha Kahn

“From its inception, the project piqued my interests and seemed suited to my design ex-  
perience. However, it came at a time when I thought I was no longer able to access those  
abilities due to a traumatic brain injury. Literally, I thought the project was over my head.  
Sarah trusted me to use that fear and neurological difference to enrich and develop the design  
for *speechless*.”—Laurie Haycock Makela

“There were some very strong and colorful visual pieces in the exhibition, and then mine was a  
very quiet piece, visually a blackout, a very subtle experience. I wanted to cut off the visual in  
order to focus on the tactile and the auditory. At the exhibition opening I was concerned that  
in context with the others, maybe my piece was not impactful enough or exciting enough or  
inviting enough. But some people resonated quite well. Some people are quite sensitive about  
sound. I saw a couple of people crying in front of the installation. That was an extreme reac-  
tion, maybe, but I felt like it was quite good.”—Yuri Suzuki

“People are open and excited to engage with technology  
when it’s not only ‘about’ the technology, but how we connect with one another.  
And we are amazingly adaptable and (now more than ever)  
open to finding connection in new ways.”  
—Matt Checkowski

“Collaboration and an open concept are rare, but what qualified *speechless* as ‘the project of a  
lifetime’ was that the creative process changed me: I not only see myself differently, but I see  
everyone around me differently.”—Laurie Haycock Makela

“We think of *speechless* as an approach, not as a touch exhibition. The way Sarah guided us to  
think about our projects and the way we intersected with experts at the Convening could and  
should be applied to exhibitions now. Sarah established a basic framework for an approach and  
now she needs to refine it and begin the planning of the next iteration.”—Steven and William Ladd

“In my piece, people have the experience of listening [to] sound through vibration and in  
absolute darkness in a way that is cut off from other senses. Suddenly we’re coming into the  
darkness and listening to sound, and we don’t have that kind of moment much. So it is about  
sparking the realization in people of the power of sound, and also I think about connectivity in  
a way. We share that we are human.”—Yuri Suzuki



“I got a note from a [Museum visitor] who was really interested in how the software, how the search engines were transforming the meaning of what was said. That the tech has a bias that we’re sometimes aware of (Facebook) but not always, particularly with things as ‘simple’ as translation. Basically, he loved how the work highlighted the invisible voice behind the screen that is really affecting how we connect.”—Matt Checkowski

“We had never had a curator encourage us to create a space in a museum  
and we had never fused that with our *Scrollathon* project.  
Now it feels like that will always be embedded in our practice...[and]  
it has become the seed of an international collaboration.”

—Steven and William Ladd

“We each had our own space. We each had our own take on the brief. We all came together... it’s like we are a family now that Sarah assembled and it’s like she brought in a bunch of orphans and we created a family for that period of time. And it’s great, whether it’s vocally or silently or just in the consuming each other’s work online, the support is still there.”—Ini Archibong

“I think [the exhibition] was interesting in the sense that it tried to tackle a massive ‘topic,’ which is the opposite of most museum shows or individual shows. The expansiveness of the idea is really interesting as a foil for how hyper-specific other shows are and to realize there is this huge spectrum when approaching making an experience.”—Misha Kahn

“The theme of empathy sticks.  
Turns out empathy and patience are part of the artistic practice.”

—Laurie Haycock Makela



The day before the exhibition opening, standing in *Scroll Space*, from left: Sarah Schleuning and her children, Laurie Haycock Makela, and Steven Ladd.





Young visitor experiencing Ini Archibong's *theoracle*.

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Wheat-pasted tissue-paper orange field, the wayfinding banner for Ini Archibong, leading to his installation, *theoracle*.

Different is who we are.  
This is about being different, seeing,  
feeling, hearing, smelling, moving,  
expressing differently.

Marianna Adams, *speechless* consultant  
author of “Notes and Reflections on the Convening”

## appendices

appendix a  
visitor research study: the report

appendix b  
visitor experience survey: the questions

appendix c  
visitor experience survey:  
follow-up phone interview questions

appendix d  
*speechless* resources in print and online

appendix e  
selected media coverage

appendix f  
selected presentations

appendix g  
notes and reflections on the convening

appendix h  
contributors



# visitor research study: the report

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Independent Evaluator

June 1, 2020

## Contents

- Introduction
- Purpose and Research Questions
- Methods
- Results
- Discussion

Calls for inclusive and multidisciplinary art museum exhibitions have been met with efforts to deepen institutional knowledge about the intersection of personal, social, and physical factors contributing to visitor experiences. Recent visitor evaluations conducted at the Dallas Museum of Art (DMA, 2019) suggest a majority of the audience cares deeply about experiences that signal respect for physical and intellectual differences. With a strengths-based approach to design that centers diversity of perception as a difference to be celebrated, *speechless: different by design*—a special exhibition presented from November 2019 to March 2020—offered visitors the opportunity to interact with works that drew upon multisensory inputs to produce responses unique to each visitor’s sense of touch, sound, sight, and movement.

With a focus on inclusivity broadly, and a decisively anti-ableist stance specifically, this research takes up questions of difference from a neurodiversity perspective. While the DMA Education Department has a deep history of developing respectful programming that values and centers the experiences of differently abled community members, exhibitions that are marketed to the general public have not taken on themes of *ability* as directly as *speechless: different by design*. Intentionally designed with consideration for the broad range of human sensory phenomena (e.g., sensitivities, thresholds, and preferences), the artists and curatorial staff were committed to facilitating an aesthetic experience that would reduce, rather than perpetuate, stigmas attached to neurodivergent cognitive functioning (e.g., autism spectrum disorder, ADHD, PTSD, sensory integration disorders, etc.). By creating an environment with affordances for interactions with art through touch, sound, sight, vestibular, and proprioceptive input, the speechless exhibition offered members of the public an opportunity to explore their own sensory perceptions through playful, creative, and immersive means. As we extend diversity to include the range of social experiences mediated by *speechless: different by design*, this research also sought to examine the social dimensions (e.g., solitary vs. social) of interactivity, given the depth of museum literature indicating that learning and growth is facilitated through socially mediated interactions (Dierking, 1989; Packer & Ballentyne, 2005).

Formative Evaluation Informing the Present Study

A convening of artists, researchers, scientists, and Museum staff members was organized to generate discussion on the design process of the then-untitled DMA “sensory project” (Adams, 2018). An initial analysis of the interdisciplinary presentations and conversations identified a set of categories and emergent themes that informed the design of the present research study. The following categories from the Adams (2018) evaluation reflected a list of desired visitor benefits (outcomes) expressed by the participants of this convening: (1) transformation, (2) esteem through learning, (3) social/belonging, (4) safety (psychological), and (5) safety (physical). The first category, *transformation*, indicated a desire for visitors to experience a cognitive shift in how one makes sense of art, ideas, the self, or metacognition (thinking about thinking). The second category, *esteem through learning*, tapped into an agentic sense of knowledge-making engendered by the exhibition and was expressed by the desire to create, discover, and nurture curiosity while feeling calm and relaxed. The third category, *social/belonging*, revealed participants’ desires to share their experience with friends and family while recognizing how the exhibition’s design facilitated social interactions. The fourth and fifth categories, *psychological safety* and *physical safety*, reflected the ways the exhibition provided sufficient information and accessible spaces that left the participant feeling settled (re-oriented) and grounded.

In summary, Adams (2018) concluded the overall findings from the meeting underscored the need to: (1) send clear messages, (2) design for visitor success, (3) design for inclusivity, (4) design for differences, (5) design for personal connection, (6) design for innovation, (7) design for reflection and reorientation, and (8) the importance of ongoing process testing.

This Study’s Purpose and Research Questions

Informed by the findings from Adams’ (2018) participatory study and guided by the principle of respect for individual differences, the present study used a theoretical and interpretive framework that centered *sensory-perceptual diversity* and *neurodivergence* among the DMA visitorship as strengths that reflect multimodal ways of knowing. **It is important to emphasize that the present study did not set out to measure sensory perception or neurodivergent behaviors in a clinical, medical, or otherwise diagnostic capacity.** Situated within an aesthetic and explicitly subjective artistic project, we privileged the visitor’s voice, subjectivity, and intersubjectivity as valid sources of knowledge. Moreover, the artists’ collective desire to create art that inspires empathy, perspective-taking, and concern for others (S. Schleuning, personal communication, October 2019) underscored the need to approach questions of *difference* with intellectual humility and let the visitor *tell us* how they experience social phenomena. Therefore, while the constructs of *sensory-perceptual diversity* and *neurodivergence* are grounded in scientific definitions (Aron & Aron, 1997; Ayres & Robbins, 2005; Betella & Verschure, 2016), we relied on self-reported indicators of sensory sensitivity and associations with persons (including the self) with neurological dif-

ferences to collect data on these two constructs. We also recognize that DMA visitors’ ways of knowing are deep, broad, and informed by unique cultural and socio-historical contextual realities.

As such, the present study used two-phased mixed methods designed to examine dimensions of visitors’ sensory, emotional, and social experiences of *speechless* while making space for both positivist (e.g., quantitative) and interpretive (e.g., qualitative) modes of inquiry. The purpose of this study was to examine the relationship between visitors’ sensory differences and their social and emotional responses in the exhibition. The following research questions guided this study:

- 1. What is the relationship between visitors’ sensory sensitivity responses and their level of emotional stimulation in each room and in the exhibition as a whole?
- 2. Is this relationship mediated by visitors’ association with a person with a neurological difference?
- 3. Are visitors’ perceptions of the exhibition as a social experience predicted by visitors’ sensory-sensitivity responses, emotional intensity, and association with a person with a neurological difference or special need?
- 4. How do visitors describe their lived experiences of *speechless: different by design*?

Methods

Sample and Recruitment

For Phase 1 of the study, a sample of 235 adults was recruited by trained DMA data collectors from February 1, 2020 to February 16, 2020. Data collection was limited to weekend days (i.e., Saturday and Sunday) across three consecutive weekends in order to maximize visitor attendance. Two data collectors were each positioned behind a kiosk at the entrance/exit of the *speechless: different by design* exhibition and greeted visitors as they exited the exhibition after which the data collectors promptly asked, “Would you like to participate in a research study?” Interested visitors were briefed on the study’s procedures, risks, benefits, and steps taken to ensure confidentiality. Participants who completed the survey were given a complimentary DMA notecard.

A subsample of eight adults was recruited between February 18, 2020 and March 13, 2020 for Phase 2 of the study by emailing participants from Phase 1 who had indicated a desire to participate in a follow-up phone interview. Participants who completed the phone interviews were mailed a copy of the *speechless: different by design* print catalogue. All procedures for Phase 1 and Phase 2 of the present study were approved by an external Independent Review Board (IRB).



Variables of Interest

To facilitate the readability and interpretation of methods, analyses, and results in the proceeding sections, Table 1 displays the extended name, description, and shortened identifier of each variable of interest whose measurement was necessary for the quantitative analyses.

Table 1  
Names, Identifiers, and Description of Constructs of Interest

Variable name	Identifier	Description
Emotional Intensity	EMO	How strongly or weakly a person feels in response to stimuli; also referred to as arousal and expressed as a point on a continuum between sleepy and wide-awake <sup>1</sup>
Sensory Sensitivity	SENS	The magnitude of a person’s detection of, and reaction to, sensory information <sup>2</sup>
Sociality	SOC	The degree to which a person considers their experience to be shaped by the presence of others or interactions with others (real or abstract) <sup>3</sup>
Association with neurodiversity	ASSOC	Whether or not the visitor identifies as a person with a neurological difference or is the caregiver of a person with a neurological difference

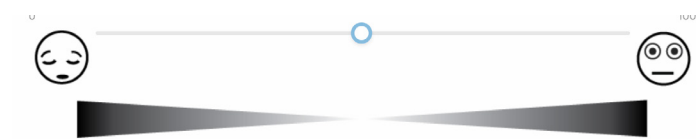
1 Sources: Betella & Verschure (2016); van Boven et al. (2010)  
2 Aron & Aron (1997); Farrow & Coulthardt (2012)  
3 Packer & Ballentyne (2005)

Measures and Data Sources

A Visitor Experience Survey was constructed for Phase 1 of the present study while a semi-structured interview guide was used for Phase 2 of the study.

**Visitor Experience Survey.** A 17-item survey was constructed by the Principal Investigator in consultation with Sarah Schleuning, the DMA’s Interim Chief Curator, Margot B. Perot Senior Curator of Decorative Arts and Design, and curator of *speechless: different by design*, members of the Adams (2018) convening, and members of the DMA Education staff. The Visitor Experience Survey (VES) was designed to capture visitors’ self-reported indicators of emotional intensity/arousal, sensory sensitivity, perceived sociality, and association(s) with persons (including self) who are neurodivergent or are experiencing special needs or special health concerns related to neurological functioning. Six questions asked the visitor to rate the level of emotional intensity/arousal (EMO) experienced in each of the six rooms, using a digital affective slider, scaled continuously from 0 to 100 and developed by Betella and Verschure (2016). The slider was flanked by two emoticons on either end of the slide (see Figure 1). The low arousal emoticon depicts a sleepy face, while the high arousal emoticon depicts an overstimulated/ wide-awake face.

Figure 1  
Digital Affective Slider Used to Measure Emotional Intensity/Arousal for Each Room



Item 8 asked visitors to respond to their perceived levels of sensory sensitivity (SENS) as indicated by responses on three questions taken from the Highly Sensitive Person (HSP) scale (Aron & Aron, 1997). The HSP was developed to distinguish characteristics of sensory sensitivity from personality (e.g., introversion) and emotionality and with recognition that individuals who self-identified as highly sensitive also reported feeling different and less welcome in certain environments (Aron & Aron, 1997). These first and third sub-questions were selected due to their high factor loading (.64 and. 50, respectively) on a unifying underlying dimension of sensory sensitivity of the HSP while the second sub-question (awareness of subtleties) had an explicitly aesthetic tone, which the researcher judged to be especially relevant to an environment in which engagement with art is the central focus.

Figure 2  
Questions Used to Indicate Visitors' Self-Reported Sensory Sensitivity

	Not at all		Moderately			Extremely	
	1	2	3	4	5	6	7
Are you bothered by intense stimuli, like loud noises or chaotic scenes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you seem to be aware of subtleties in your environment?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Do you startle easily?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Six questions were included in the VES to capture visitors' level of perceived sociality (SOC) in each of the rooms, measured on a continuous scale (0 to 100) from no sociality/solitary to highly social/shared. Also included in the VES were three open-ended questions, including the first item, which asked the visitors to describe how they felt after experiencing *speechless: different by design*. Two more open-ended questions were positioned at the end of the survey and asked visitors to identify what they liked least and most about the exhibition. The final question asked visitors to tell us if they had an association with a person with a neurological difference or special need/health concern (including self).

**Semi-Structured Interview.** Data sources for Phase 2 of the present study consisted of responses (n = 8) to a semi-structured interview conducted telephonically within three weeks of a participant's *speechless: different by design* visit. The interview guide consisted of nine questions that asked visitors to elaborate or comment on their responses to certain responses from the VES in order to more closely examine the nature of their experiences.

**Analytic Strategy**

**Phase 1.** Survey data were exported from Qualtrics to an SPSS file for quantitative analyses. Data preparation including calculating participant's average scores for sensory-sensitivity, emotional intensity, and sociality by taking the mean of each participant's responses to the six individual rooms. Raw scores were converted to Z-scores (standardized scores) for meaningful comparison across differently scaled variables. Pearson correlations and point-biserial correlations were calculated to examine the associations between **sensory-sensitivity, emotional intensity, sociality, and association** with a person with a difference (e.g., caregiver of a child or an adult with a neurological disorder or a special need). Analyses of Variance (ANOVA) were conducted to examine differences in group means of sensitivity, emotional intensity, and sociality between visitors associated with a person with a difference and visitors







without such an association. Multiple regression analyses were conducted to test mediation models for the second research question.

**Phase 2.** Interview data were saved as audio files and uploaded to NVivo, a qualitative coding software for transcription and thematic analysis. Coding strategies included identifying expressions of emotions, sensory stimulation, learning, cognitive stimulation, social interactions, and beliefs/expectations. Upon initial coding, the researcher collapsed or combined codes into categories based on similarities or patterns. Categories were examined for overlap and/or interrelatedness and are presented as themes.

Results

To facilitate the interpretation of findings in the proceeding sections, Table 2 includes two-dimensional shapes of varying colors assigned to each artist's installation. While we recognize that certain readers may find the discerning of selected colors challenging, they are included to offer an alternative to readers who may experience difficulties processing dense alphanumeric text. As the results are presented, infographic shapes will be shown alongside the respective artist's name when they are referenced in the results narrative.

Table 2  
Installations by Artist, Assigned Color/Shape Code, and Average Emotional Intensity and Sociality Scores (N= 235)

Artist/Installation	Shape & Color Code	EMO score (mean)	SOC score (mean)
Ini Archibong		61	64
Yuri Suzuki		46	40
Steve & William Ladd		58	56
Misha Kahn		59	67
Matt Checkowski		55	36
Laurie Haycock Makela		31	28

Note: EMO and SOC measures were scaled continuously from 0 to 100.



## Research Question #1:

What is the relationship between visitors' sensory-sensitivity responses and their level of emotional stimulation in each room and in the exhibition as a whole?

*That children who might otherwise feel excluded from mainstream activities due to sensory sensitivities may feel a sense of agency in the ability to modulate sounds and sights may explain the negative association, indicating that lower emotional intensity might reflect a calmer state of being.*

*(in Archibong's installation)*

Pearson correlations revealed that visitors' sensory-sensitivity responses (SENS) were statistically significantly ( $p < .05$ ) correlated with their level of emotional intensity/arousal (EMO) in *theoracle* (Archibong) only. Although this relationship is weak and negative ( $r = -.177$ ), this finding suggests that visitors with lower levels of self-reported sensory sensitivity (SOC) experienced higher levels of emotional stimulation (EMO) in this particular room. Data from the qualitative interviews provide some insight into this surprising finding, as visitors with children reported enjoying how much their child(ren) interacted with the moveable and interactive elements. One visitor whose son is on the autism spectrum reported that because he enjoys sound and auditory input, her son seemed to relish the combination of sensory stimulation and the ability to make water "jump up and down" (Participant 4). That children who might otherwise feel excluded from mainstream museum activities due to sensory sensitivities may feel a sense of agency in the ability to modulate sounds and sights may explain the negative association, indicating that lower emotional intensity might reflect a calmer state of being. Other participants attributed a sense of comfort to hearing the Gallery Attendants (GAs) provide instructions, suggesting the GAs' presence and guidelines helped some visitors organize and make sense of the sensory information in this room. Another participant who self-identified as a person with anxiety commented on the high amount of sensory input he experienced in *theoracle* but stated he did not feel anxious or overstimulated in this room; rather his focus was on trying to understand the artist's inspiration behind the design. The combination of instruction provided by GAs and the relative ease with which a visitor could manipulate sound and water elements in this space seem to influence the relationship between sensory sensitivity and emotional intensity.

Statistically significant correlations between sensitivity and stimulation were not found in the exhibition as a whole ( $p = .753$ ) nor in any of the other installations.

## Research Question #2:

Is this relationship mediated by visitors' association with a person with a neurological difference?

A mediation model could not be tested because the data did not meet the required conditions. In order to run a mediation analysis, a predictive relationship must exist between the independent variable (sensory sensitivity) and the dependent variable (emotional intensity). As noted in the section above, there is no statistically significant correlation between global (overall) SENS and EMO variables, indicating a predictive relationship does not exist.

*A visitor with ADHD who is the parent of two neurodivergent daughters described having a higher tolerance for sensory stimulation as she tries to imagine the world from her children's perspective. This was the case in Checkowski's installation, where she struggled with the amount of sensory input but acknowledged that her daughters enjoyed the intense stimulation, underscoring the importance of tolerating differences.*

We did, however, run a correlational analysis between a visitors' association with a person with a neurological difference or special need/health concern (ASSOC) and their self-reported sensory sensitivity (SENS). The variable ASSOC was coded dichotomously (0 = no association; 1 = one or more of the following categories: (a) being a person with a special need or health concern, (b) being the caregiver of a child with a neurological difference, and/or (c) being the caregiver of an adult with a neurological difference) while the SENS variable was scaled between 0 and 7, with a larger number indicating a higher sensory-sensitivity score. A one-tailed significance test was used because the researcher hypothesized there would be a positive correlation between SENS and ASSOC. A small but statistically significant association was found ( $r = .116$ ,  $p < .05$ ) between SENS and ASSOC suggesting that having a special need or neurologically related health concern or being the caregiver of a neurodivergent person correlated with higher levels of self-reported sensory sensitivity.

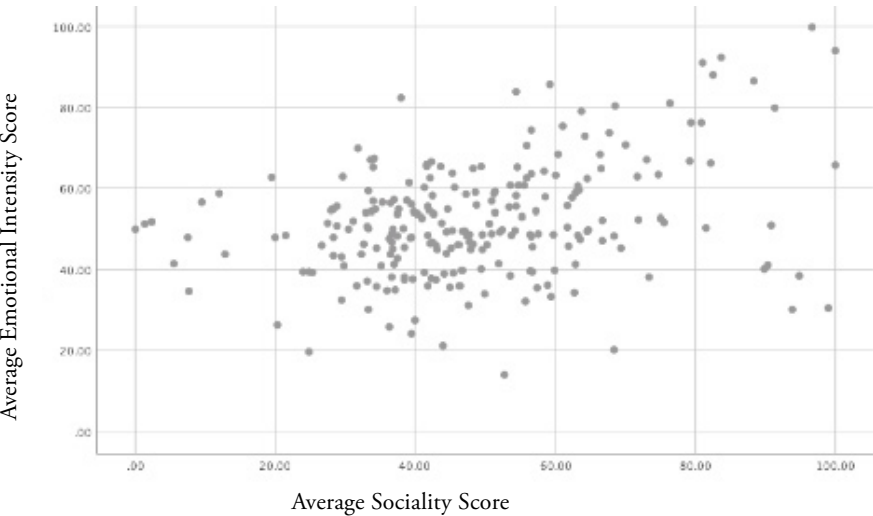
Although we will not speculate as to the underlying causes of this correlation, the qualitative data lend some support to this finding. One visitor whose father has Alzheimer's disease and whose mother is visually impaired described how she imagined her parents would experience the sensory stimuli afforded by the speechless exhibit. She wondered how bringing her mother to an art exhibition that does not privilege sight over the other senses might temporarily relieve her, the caregiving daughter, of the responsibility to interpret visual objects through verbal descriptions, as she is inclined to do in traditional art exhibition experiences. Another participant who self-identified as a person with Attention Deficit/Hyperactivity Disorder (ADHD) and who parents a child on the autism spectrum and another child with ADHD, spoke candidly about having a higher tolerance for sensory stimulation because she tries to imagine the world from the perspective of her children and their different thresholds or preferences for information. While this visitor said she prefers to "turn everything off" (Participant 2), she acknowledged that her neurodivergent daughters have sensory needs quite different from hers and was pleased that speechless afforded varied experiences for her entire family.

Research Question #3:

Are visitors’ perceptions of the exhibition as a social experience predicted by visitors’ sensory-sensitivity responses, emotional intensity, and association with a person with a neurological difference or special need?

A multiple regression analysis was conducted to examine the relationship between visitors’ social experience (SOC, the dependent variable) and three predictor variables: sensory-sensitivity responses (SENS), emotional intensity (EMO), and association with a person with a neurological difference or special need (ASSOC). The model with three predictors is statistically significant ( $p < .001$ ) with a small effect size ( $R^2 = .19$ ), suggesting that knowledge of a visitor’s SENS, EMO, and ASSOC explains almost 20% of the variance in the visitor’s social experience score. Of the three predictors, only EMO has a statistically significant correlation with SOC ( $\beta = .34$ ;  $p < .001$ ). The scatterplot in

Figure 3  
Scatterplot Showing A Weak But Positive Correlation Between Emo And Soc




Additionally, a meaningful difference exists between group means in the SOC score by ASSOC level (i.e., no association compared to any association with a person with a neurological difference). A small to moderate effect size (Cohen’s  $d = .26$ ) suggests a practical difference in sociality exists between the visitors without an association to a neurodivergent person ( $m = -.073$ ) and visitors with an association to a neurodivergent person ( $m = .183$ ).

Research Question #4:


How do visitors describe their lived experiences of *speechless: different by design*?

Thematic analyses of participant semi-structured interviews ( $n = 8$ ) conducted retrospectively revealed four emergent themes: (1) stretching your mind, (2) seeing through others, (3) scaffolded learning, and (4) original and inspiring. General inductive analysis of the qualitative data collected from the three open-ended questions of the Phase 1 VES ( $n = 235$ ) resulted in two broad categories of emotional responses, or what we are labeling “Affective Responses”: (1) positive appraisals and (2) vague or negative appraisals. The second category includes comments that were not explicitly positive but cannot necessarily be interpreted as explicitly negative either.

**Stretching your mind**  
*describes how visitors experienced their own thinking, problem solving, and other self-reported cognitive activity during their interactions with art.*

**Theme 1. *Stretching your mind*** refers to the ways visitors described thinking and other mental processes during their interactions with the art. This theme subsumes various categories, including brain activity, mental breaks, and meaning making. For example, Participant 8 described the perceived benefit to thinking about artists’ design processes, stating that in Kahn’s installation  “figuring out the art drew me in.” Participant 6 also described mental activity as a motivating factor and said, “the goal that I found for myself in that room was kind of to process the other rooms.” Participant 3 described the value of multimodal information and the lack of written interpretation as freeing, indicating that as an educator, “I am always reading papers, homework, or emails.” Not having to read text panels gave her a sense of relief, a shift away from the self-imposed expectation that she must consume textual information as a normative behavioral practice in an art museum. Participant 3 described the importance of asking questions and dialoguing with others in order to make meaning out of her interactions with the art. Other participants expressed that the exhibition sparked creativity and inspired them to deepen their own creative projects.

**Reflecting on how others interpret information differently is the essence of Seeing through Others.**

**Theme 2. *Seeing through others*** refers to the varied manifestations of other-oriented experiences described by participants. Categories subsumed by this theme include thinking about others’ challenges, family as context, caregiving, and neurodiversity. Participant 4 described not knowing whether her eight-year-old son, who is on the autism spectrum, would enjoy the exhibition, adding, “that’s one of the reasons why I really wanted to go and take them, both of them [her sons], but especially him to see how he interpreted it or see how he felt about it.” Another visitor, Participant 6, described his experience with *Sound of the Earth Chapter 2* (Suzuki ) as motivating him to think broadly about “how we process information differently.” He continued, “it got me thinking about how sound is generated and what our expectations of our mental images of the sound are, and how those match up.” Participant 3 explicitly attributed



**Scaffolded learning** refers to how human and interpretation elements heightened visitors’ awareness of otherwise imperceptible details. After reading about weighted air in text displayed on the central gallery’s wall, one visitor said, “I was struck . . . you can really feel [the weighted air] in here and without hearing anything. . . I was not expecting that at all.”

“Nothing else comes to mind that has been quite so unique!”

her experiences with *speechless: different by design* to helping her imagine the perspectives of people with sight, speech, or perception challenges, not just in everyday life but also with regard to fictional characters she is developing as part of her creative writing practice. Her experience as a community member who had participated in the Ladd Brothers’ *Scrollathon* ▲ enhanced her sense of connectivity as she walked through the installation and accessed memories of the experience while seeing faces of other community members whose embodied efforts were now a collectively created work of art.

**Theme 3. Scaffolded learning** refers to the manner in which Museum staff and Design and Interpretation (D&I) elements facilitated visitors’ understanding and expectations of how to engage with the art. Participant 1 expressed comfort in hearing the GAs explain to other visitors how to interact with the objects in *theoracle* ■, including limiting the number of visitors who could step onto the platform at any given time. This visitor described feeling a sense of order and re-orientation that occurred as a result of the GAs clearly circumscribing acceptable interactions with the installation, without which the visitor could not enjoy the art for fear that someone would damage the objects. Although the researcher did not ask explicitly about the visitor’s preference for textual interpretation or infographics, several participants described the infographics as generally helpful for understanding the nature of the expected interactions in each room. Participant 2 described how reading the text on the wall of the exhibition’s central gallery inspired her to engage in embodied thinking about what it meant to feel “weighted air.” She credited this text for heightening her awareness of this invisible but palpable sensory input as she walked from room to room. Participant 3, however, lamented the lack of written instruction for how to use the sandbags in the de-escalation room ☾ (Haycock Makela), and she wondered aloud whether visitors with anxiety might miss out on this opportunity for respite if the function of the objects was not expressed clearly due to lack of written text.

**Theme 4. Original and inspiring** describes visitors’ responses to the interactive nature of the exhibition, with all participants expressing a desire to see more non-traditional DMA projects that encourage multisensory engagement. Participant 3 compared *speechless: different by design* to exhibitions in art museums across Europe (where her parents live) and proclaimed that, “nothing else comes to mind that has been quite so unique and such a different experience, so top marks for being a really original and memorable experience!” Multiple visitors described the experience as being family-friendly or “really cool for kids” (Participant 4) because of the hands-on nature of the art. One visitor, a father, described this feature of *speechless* as inspiring him to take his family because it is important for him to expose his children to diverse forms of art at an early age. Participant 5 described the interactional nature of the exhibition as the “selling

point” while Participant 8 stressed how valuable he found the de-escalation room for providing a space to rest upon feeling mentally fatigued, adding that he was impressed with the room “because it was the opposite of what I normally expect at a museum.”

**Affective Responses from VES.** Inductive analysis of 202 responses (33 participants did not respond to this free-response option) collected from a question intended to capture visitors’ post-exhibition feelings (*after experiencing speechless, I felt (fill in the blank)*) from the Visitor Experience Survey yielded two broad categories of affective responses: positive and non-positive appraisals. Positive responses (82%) demonstrated explicit qualities of joy, enthusiasm, perceived benefits, relaxation, tranquility, and curiosity. Ambiguous or non-positive affective (18%) responses included some explicitly negative qualities, but primarily described appraisals that were neutral or difficult to interpret without corroborating contextual data. Illustrative examples of positive and non-positive affective responses are listed in Table 3.

**Figure 4**  
Percentage of Positive Responses Compared to Ambiguous or Negative Responses from Open-Ended Question on the Visitor Response Survey (n = 202)

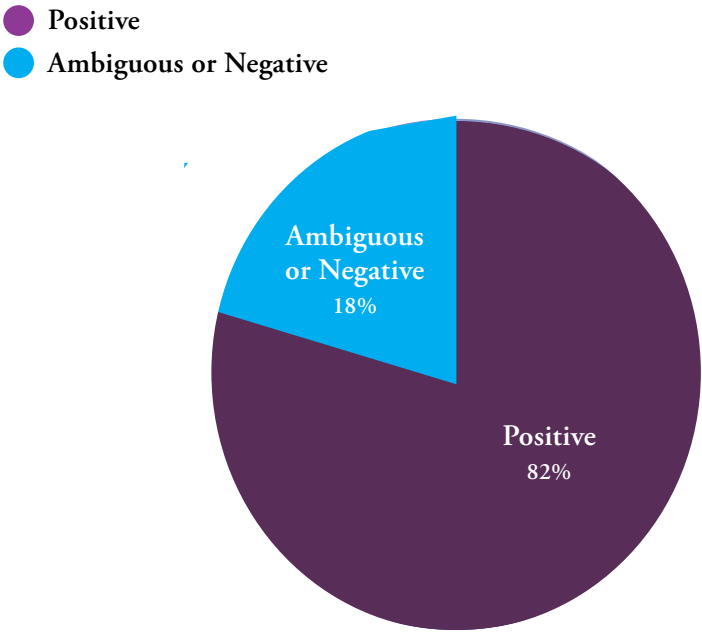


Table 3  
Examples of Affective Responses by Category (n = 202)

Positive (82%)	Ambiguous or Negative (18%)
Peaceful	Confused
Amazed	Weird
Lifted	A bit underwhelmed. I expected a little bit more exhibits.
Like I just meditated. Attentive.	Unfulfilled
Euphoric	Lost. Looking for the deeper meaning.
Intrigued, humbled	Discombobulated
Happy and relaxed	Slightly overstimulated, a bit confused, mildly annoyed
Childlike	Sleepy
Connected	Glad I don't have children

Discussion



With a profound respect for ability in all its forms, *speechless: different by design* sought to create a space that reduced the stigma of human differences associated with neurodivergence. This was made explicit by the investment in systematic inquiry of the design process, beginning with a convening of artists, scientists, scholars, and Museum staff members to brainstorm themes and categories of experience that they believed reflected desired visitor outcomes. These themes provided a theoretical foundation from which to build for the present research study and helped focus the guiding questions. The Principal Investigator worked closely with the Margot B. Perot Senior Curator of Decorative Arts and Design, Sarah Schleuning, to determine inclusive and reasonable methods for collecting data on visitors’ sensory sensitivity, emotional intensity, sociality, and their association with neurodivergence.

While statistical analyses revealed significant associations between sensory sensitivity and emotional intensity in only one of the installations and not in the exhibition as a whole, this finding implies that *aesthetic experiences designed with sensory differences in mind can result in surprising experiences of empowerment for people whose desire for sensory input may not be met with traditional (visual only) art museum media*. Interestingly, we learned that visitors’ emotional intensity predicted the level with which they perceived *speechless* to be a social experience. While we did not examine the possible causes for this correlation, the finding suggests that certain visitors respond differently to exhibits that facilitate social interactions. Whether or not the visitors were associated with someone with a neurocognitive functioning difference produced a small effect on their perception of the exhibition as more social than solitary. We interpret these findings to suggest experiences that facilitated social interactions for visitors who are familiar with issues of neurodivergence (based on their own or a loved one’s differences) were perceived as more intense than for visitors who did not associate regularly with a neurodivergent person.







Open-ended questions from the visitor survey and follow up semi-structured interviews with eight visitors helped us better understand the nuanced ways that adults, children, and families interacted with the space, the art, Museum staff, and each other. We learned that using infographics rather than traditional textual interpretation prompted visitors to think differently, or, as one visitor said it shifted “the emphasis on getting in touch with sensory experiences rather than cognitive ones.” Visitors overwhelmingly appreciated the emphasis on multimodal sensory experiences for themselves or—for adults visiting with young family—their children. For some visitors, the variety of sensory information produced a comforting effect. As one participant said, “I loved the sensory aspect, and the relaxing calm I felt in most rooms. It was a breath of fresh air for my brain.”

As expected, not all visitors enjoyed the amount of sensory stimulation that the installations afforded. While in the minority (less than 18%), negative appraisals of the exhibition were reflected in comments such as, “I was never able to focus. [It] may have been better with noise canceling headphones.” Other visitors provided feedback that may inform areas of growth for future interactive exhibitions. One visitor commented on their perceptions that “DMA employees seem a little nervous



about proximity to art,” a finding that is corroborated by interview data regarding the wear and tear on some of the art (e.g., Archibong  and Kahn ). Several visitors found the interactivity dimension to be excessive for sensory thresholds as was echoed by visitors who disliked the “dissonant” sounds and overall noise levels. Of particular import is a comment made by a visitor who pointed out the lack of a single woman of color artist, suggesting the need to expand the construct of “inclusivity” to reflect differences in the intersection of race, ethnicity, indigeneity, gender, and ability. Finally, Table 4 includes a list of examples of visitors’ open-ended responses to questions regarding their most liked exhibition characteristics mapped by artist/installation.

**Table 4**  
Examples of Most Liked Characteristics by Artist/Installation

Artist	Symbol	Comment
Archibong		Loved the sound and vibration room. I could stare at the ripples in the water all day
Haycock Makela		The earmuff room was amazing and the tactileness of so many rooms
Kahn		The inflatable room with all the colors
Suzuki		The sphere was probably the best; most moving piece
Ladd & Ladd		Community participation with scrolls
Checkowski		Room with the commentary web searches on screen

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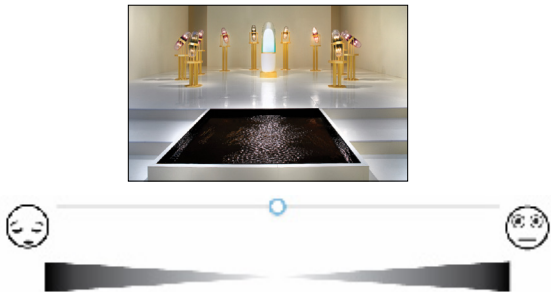
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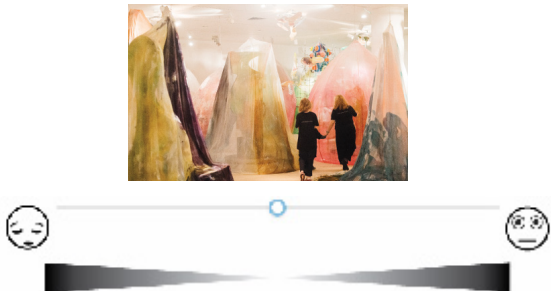
visitor experience survey: the questions

After experiencing *speechless*, I felt (fill in the blank):

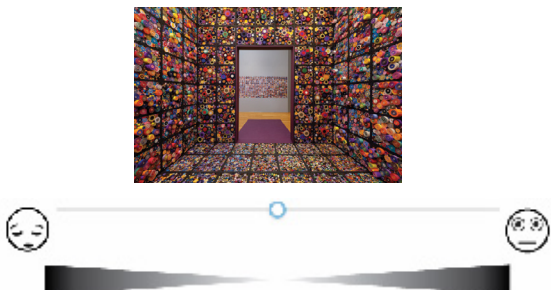
Move the slider to rate your level of EMOTIONAL INTENSITY (i.e., from sleepy/relaxed to over-stimulated) experienced in this room.



Move the slider to rate your level of EMOTIONAL INTENSITY (i.e., from sleepy/relaxed to over-stimulated) experienced in this room.

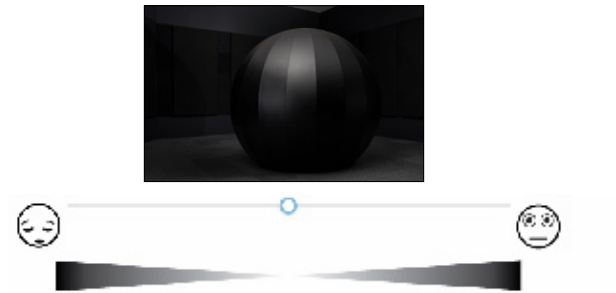


Move the slider to rate your level of EMOTIONAL INTENSITY (i.e., from sleepy/relaxed to over-stimulated) experienced in this room.

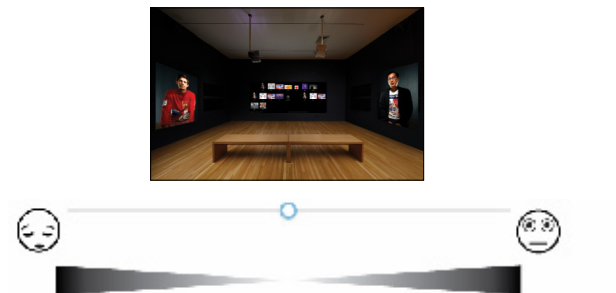




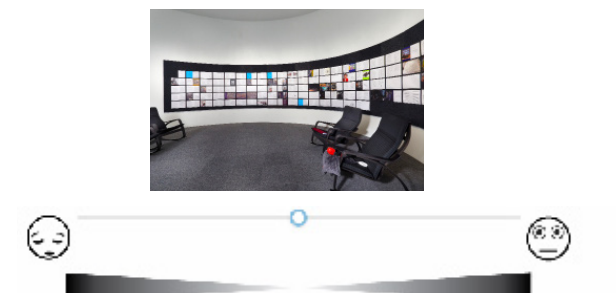
Move the slider to rate your level of EMOTIONAL INTENSITY (i.e., from sleepy/relaxed to over-stimulated) experienced in this room.



Move the slider to rate your level of EMOTIONAL INTENSITY (i.e., from sleepy/relaxed to over-stimulated) experienced in this room.



Move the slider to rate your level of EMOTIONAL INTENSITY (i.e., from sleepy/relaxed to over-stimulated) experienced in this room.



Please respond to the following statements according to the way you personally feel.

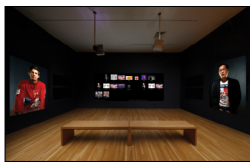
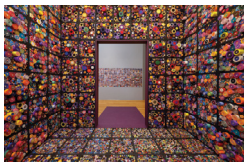
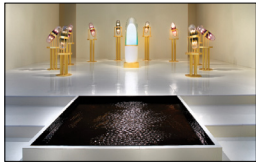
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Use the slider to indicate the OVERALL nature of your interactions in each room.

SOLITARY

0102030405060708090100

SHARED/SOCIAL



Please tell us what you liked most about the *speechless* exhibition.

Please tell us what you liked least about the *speechless* exhibition.

Are you (check all that apply)?

- ☐ a parent/caregiver of a child/adolescent with special needs (e.g., ADHD, autism, sensory challenges)
- ☐ a caregiver of a parent/adult with special needs (e.g., autism, dementia, Alzheimer's)
- ☐ a person with special needs or health concerns (e.g., ADHD, autism, anxiety)
- ☐ none of the above



visitor experience survey:  
follow-up phone interview questions

*Notes:* Because the interview was informed by visitors’ responses to the Visitor Experience Survey, the actual number of questions varied based on each interview participant’s unique responses. All interviews were conducted by phone and lasted between 20-30 minutes. Verbal responses were recorded using the Tape-a-Call app on the PI’s cell phone. The following questions were asked of all interview subjects, with additional questions determined by the PI during the actual interview.

- 1. I noticed you responded \_\_\_\_\_ to the following survey question: “After experiencing the *speechless* exhibition I felt . . .” Can you tell me more about those feelings?
- 2. I noticed you described your emotional intensity in \_\_\_\_ (specific exhibition room) as not very/moderately/highly (choose one) stimulating. Can you tell me more about how you experienced \_\_\_\_\_ room? Why do you think you felt this way?
- 3. What was your overall impression with the amount of sensory information and stimulation in the entire exhibition? Optional: Can you tell me more about that?
- 4. (Select interviewees only) We noticed that you are a caregiver of a child/adult (choose one) with a neurological difference. Do you believe this influenced your experience of the exhibition? If so, how?
- 5. (Select interviewees only) We noticed that you shared with us that you are a person with a neurological difference and/or health concern. Do you believe this influenced your experience of the exhibition? If so, how?
- 6. You indicated on the survey that you found the exhibition to be primarily social/solitary (choose one). Can you tell me more about that?
- 7. You indicated that what you liked most about the exhibition was \_\_\_\_\_. Can you tell me more about that?
- 8. You indicated that what you liked least about the exhibition was \_\_\_\_\_. Can you tell me more about that?
- 9. Is there anything else about your experience that you would like us to know?

*speechless* resources in print and online

Dallas Museum of Art publications and digital products for  
*speechless: different by design*

Exhibition catalogue  
*speechless: different by design* by Sarah Schleuning (Dallas Museum of Art,  
High Museum of Art, Yale University Press, 2019)

Award received: Best in Show, Texas Association of Museums Mitchell A.  
Wilder Publications Design Award Competition, 2020

Exhibition website  
[speechless.dma.org/](https://speechless.dma.org/)

3D virtual tour  
[speechless.dma.org/experience/](https://speechless.dma.org/experience/)

*Sound of the Earth the Pandemic Chapter* by Yuri Suzuki  
<https://globalsound.dma.org/>



selected media coverage

360 West magazine <a href="#">“Hot Tickets”</a> (pg. 99) March 2020 issue	ArtDesk Magazine (PDF) “Happenings” November 7, 2019
Architectural Digest Books: <a href="#">“8 Design Topics You Can Still Learn About Without Going to a Museum”</a> July 28, 2020	CultureMap <a href="#">“Dallas Museum of Art Presents speechless Opening Day”</a> November 8, 2019
Arts & Culture Texas magazine <a href="#">“THE ACTX TOP TEN: JANUARY 2020”</a> January 7, 2020	D Magazine <a href="#">“Some (Indoor) Things To Do in Dallas With Kids”</a> February 2020 issue
A&C TX <a href="#">“Listen, Touch and Wander: DMA’s speechless: different by design”</a> Online Dec. 12, 2019 and in print February 2020 issue	D magazine <a href="#">« Five Dallas Art Shows You Must See This December »</a> December 2, 2019
Antiques and the Arts Weekly <a href="#">“Dallas Museum Debuts New Works by International Designers”</a> December 20, 2019	D magazine <a href="#">“Dallas Museum of Art’s speechless Engages and Confuses the Senses”</a> November 12, 2019
Art & Seek <a href="#">“By PBS NewsHour: The ‘speechless: different by design’ Exhibit Uses Brain Science to Inform Art”</a> February 20, 2020	Dallas Morning News <a href="#">“Please Touch the Art”</a> Online November 8, 2019; In print November 10, 2019
Art & Seek <a href="#">“A Look Ahead: Highlights from the Art &amp; Seek Calendar”</a> January 8, 2020	Dallas Observer <a href="#">“Stay Cultured: The Best Virtual Things To Do With Your Family”</a> includes VR April 9, 2020
Art in America (PDF) “Brief” November 2019 issue	Dallas Observer <a href="#">“The Best Things to do in Dallas This Week: Jan 27-Feb. 2”</a> January 27, 2020
ArtDaily <a href="#">“DMA debuts multisensory design exhibition featuring new works by Yuri Suzuki, Misha Kahn, Ini Archibong, and others”</a> November 10, 2019	Dallas Observer <a href="#">“Dallas Museum of Art’s Newest Exhibition Makes No Sense Out of the Senses”</a> November 8, 2019

Digital Meets Art  
[“Exhibition in Dallas: speechless: different by design”](#)  
 January 7, 2020

Forbes  
[“How The Dallas Museum Of Art’s New Exhibition Is Broadening The Idea Of Visual Communication”](#)  
 November 11, 2019

FOX 4 KDFW-TV  
[“Fox4ward: An Artistic Experience”](#) interview with Sarah Schleuning  
 December 22, 2020; rebroadcast December 28, 2020 and on FOX website.

Galerie  
[“A Dazzling Design Exhibition for All the Senses Opens at the Dallas Art Museum”](#)  
 November 25, 2019

Glasstire  
[“Glasstire Podcast: Visitors Respond to ‘Speechless’ at the Dallas Museum of Art”](#)  
 March 4, 2020

Glasstire  
[“Speechless is a Welcome Stretch for the Senses”](#)  
 February 7, 2020

Grand Vie  
[“Must See About Town: Arts & Events”](#) (pg. 21)  
 Fall/Winter 2019 issue

Hyperallergic  
[“Interactive Installations Prod Visitors Out of Their Comfort Zones”](#)  
 December 31, 2019

Interior Design  
[“10 Questions with Ini Archibong”](#)  
 December 17, 2019

It’s Nice That  
[“Sound in Mind: Yuri Suzuki on his solo show at the Design Museum”](#)  
 September 6, 2019

KERA “Think”  
[“Please Touch This Art”](#)  
 January 6, 2020

KERA and Art & Seek  
 “Morning Edition” excerpt from “Think”  
 taped interview with Sarah Schleuning  
[“How a Curator’s Child Influenced DMA’s Recent Exhibit”](#)  
 December 12, 2019

Modern Luxury  
 “The IT List: Best Place to be Speechless”  
 January/February 2020 issue

Modern Luxury Dallas  
 “Agenda”  
 November 2019 issue

MUSEUM magazine (AAM)  
[“Speechless: A Sensory Exhibition Charts a New path to Accessibility in Learning.”](#)  
 January 1, 2020

Museum Archipelago podcast  
[“‘speechless: different by design’ Reframes Accessibility and Communication in a Museum Context”](#)  
 November 18, 2019

Narcity  
[“This Is Your Last Chance To Visit This Dallas Museum’s Whimsical Interactive Exhibit”](#)  
 March 10, 2020

NBC Channel 5 KXAS-TV  
 “NBC 5 News at 6”  
[“Speechless Exhibit Opens at Dallas Museum of Art”](#)  
 November 6, 2019

NBCDFW  
[“Touch the Art at Dallas Museum of Art’s ‘speechless: different by design’”](#)  
 November 13, 2019

New York Times  
[“Exhibitions to Fill an Art Lover’s Fall Calendar”](#)  
 October 23 online; October 27 in print

Observer  
[“Spring’s Best Museum Shows Celebrate the Influence of Daring Experimentalists”](#)  
 March 2, 2020

PaperCity  
[“Virtual Tours and Activities from Dallas Museums Make it Easy to Keep Learning”](#)  
 April 8, 2020

Paper City  
[“A Perfect Virtual Day in Dallas”](#) includes speechless VR Tour  
 April 2, 2020

Patron magazine  
[“DMA’s speechless: different by design defines the interconnections among us”](#)  
 November 7, 2019

PBS NewsHour  
[“The ‘speechless: different by design’ Exhibit Uses Brain Science to Inform Art”](#)  
 February 18, 2020

People Newspapers  
[“DMA to Explore Spectrum of Sensory Experience in Exhibit”](#)  
 June 28, 2019

Pin-Up Magazine  
[“Interview: Designer Ini Archibong on Making ‘Three-Dimensional Poetry’”](#)  
 March 2020 issue

SHARP  
[“Designer Ini Archibong is Working on a Higher Plane”](#)  
 July 13, 2020

Sight Unseen  
[“Inflatables Were Trending Even Before It Became Preferable to Live in a Bubble”](#)  
 April 1, 2020

Southwest (Airlines): The Magazine Online  
[“10 Events You Don’t Want to Miss This Fall”](#)  
 September 6, 2019

Surface (PDF)  
 “Design Dispatch”  
 November 6, 2019

Surface magazine  
[“The Breakout Year of Ini Archibong”](#)  
 September 23, 2019

Texas Standard (statewide NPR)  
[“Groundbreaking Dallas Museum Exhibit Pushes The Boundaries Of Communication”](#)  
 November 27, 2019

Travel & Tour World  
[“Four Seasons Offers 9 Reasons To Visit Dallas and Have all The Fall Feels”](#)  
 August 13, 2019

WFAA Channel 8 (ABC)  
[“speechless: different by design at the DMA”](#)  
 November 27, 2019

WXYZ-TV, ABC Detroit  
[“Detroit Pistons initiate public art project for Henry Ford Detroit Pistons Performance Center”](#) which is a Scollathon; DMA is mentioned  
 October 12, 2019



Selected Media Coverage Related to *speechless* for Yuri Suzuki

Antiques and the Arts Weekly  
[“Dallas Museum of Art, Yuri Suzuki Collaborate on New, Crowdsourced Work of Art”](#)  
 May 8, 2020

Architectural Digest  
[“Dallas Museum of Art is Creating a Crowdsourced Work”](#)  
 April 29, 2020

Art Daily  
[“Designer Yuri Suzuki Creates Crowdsourced Sound Work in Collaboration with DMA”](#)  
 April 23, 2020

ArtDesk magazine  
 “Happenings”  
 Summer 2020 issue

Artfix Daily  
[“Got Sounds? Dallas Museum of Art Collaborates With Designer Yuri Suzuki to Create Crowdsourced Sound Work as Living Record of Pandemic”](#)  
 April 23, 2020

[“Designer Yuri Suzuki & DMA Launch New Interactive Work Documenting Sounds Of The Pandemic”](#)  
 May 4, 2020

Broadway World  
[“Designer Yuri Suzuki Creates Crowdsourced Sound Work in Collaboration with DMA”](#)  
 April 23, 2020

Corriere Della Sala (Italy)  
[“I suoni della Terra durante la pandemia”](#)  
 May 25, 2020

CultureMap  
[“How to be part of a new crowdsourced work at Dallas Museum of Art”](#)  
 April 23, 2020

Dallas Morning News  
[“What Does Global Pandemic Sound Like? An Artist’s Black Sphere Tells Us”](#)  
 May 25, 2020

Dallas Observer  
[“Small Ways You Can Help Sustain the Dallas Arts Scene During this Crisis”](#)  
 April 28, 2020

Design Week  
[“Pentagram’s Yuri Suzuki is Documenting the Sounds of the Pandemic”](#)  
 May 6, 2020

Dezeen  
[“Virtual Design Festival: Yuri Suzuki Presents Sound of the Earth: Pandemic Chapter”](#)  
 June 12, 2020

Dezeen  
[“People more sensitive to sound during pandemic”](#)  
 May 21, 2020

Disengo  
[“Dallas Museum of Art announces crowdsourced pandemic artwork with Yuri Suzuki”](#)  
 April 23, 2020

El Poder de las Ideas  
[“Sound of the Earth: obra interactiva de Yuri Suzuki de Pentagram”](#)  
 May 5, 2020

Electronic Sound (UK)  
 August 2020

Elle Décor  
[“Our Design Favorites of the Week is a Symphony of Sound through Furniture”](#)  
 October 16, 2020

Elle Décor (Italy)  
[“LA DESIGN GALLERY DELLA SETTIMANA È UNA SINFONIA DI ARREDI CHE ANNULLA O ENFATIZZA IL POTERE DEL SUONO”](#)  
 October 12, 2020

Glasstire  
[“The DMA Collaborates with Yuri Suzuki for Sound of the Earth: The Pandemic Chapter”](#)  
 April 29, 2020

Houston Chronicle  
[Preview Picks](#)  
 May 28, 2020

It’s Nice That  
[“Pentagram’s Yuri Suzuki creates a crowdsourced sound archive of the pandemic era”](#)  
 April 23, 2020

Patron  
[“Your Voice Wanted”](#)  
 April 23, 2020

PBS NewsHour  
[“Creative Moment: Connecting Through Art When a Pandemic Keeps Us Apart”](#)  
 June 17, 2020

Selected Media Coverage Related to *speechless* for Ini Archibong

Curbed  
[“The Year in Design That Would Have Been”](#)  
 includes Ini Archibong  
 November 13, 2020

Dallas Weekly  
[“Black Artists Matter and the DMA Has Some Shows to Prove It”](#)  
 September 28, 2020

Design Miami  
[“American Design Stories: Ini Archibong”](#)  
 December 17, 2020

Dezeen  
[“Ini Archibong Updates theoracle installation at DMA to Comment on Racial Injustice”](#)  
 October 26, 2020

Financial Times  
[Ini Archibong: ‘I Created My Own Version of Success’ ”](#)  
 June 1, 2021

New York Times  
[“Ini Archibong: What We Believe About Storytelling”](#)  
 June 1, 2021

Wall Street Journal Magazine  
[“Designer Ini Archibong Reveals Inspiration Behind His Forthcoming London Biennale Installation”](#)  
 February 5, 2021

Whitewall  
[“Ini Archibong: Designing in the Flow State”](#)  
 November 12, 2020

ZOO magazine (Amsterdam)  
 C: Francois Malget/Ini  
 Winter 2020-21 issue

## selected *speechless* presentations

### Sarah Schleuning

#### 2019

Lecture, “*speechless: different by design*,” Late Night, Dallas Museum of Art, November 15, 2019.

Interview, “*speechless: different by design* Reframes Accessibility and Communication in a Museum Context,” Museum Archipelago Podcast Episode 72, aired November 18, 2019.

Panel discussion, “Different by Design: Research, Aesthetics and Innovation,” *Aesthetically Accessible Arts and Cultural Experiences*, Center for Brain Health, Dallas, December 2019 Other panelists were: Dr. Danial Krawczyk, PhD, Deputy Director, Center for Brain Health and Bonnie Pitman, Director, Art-Brain Innovations, University of Texas at Dallas, Center for Brain Health.

#### 2020

Interview, “Please Touch This Art,” *Think*, KERA Radio, Dallas, aired January 6, 2020.

Interview, “Her son’s language disorder inspired this cutting-edge art exhibit,” *PBS NewsHour*, February 18, 2020.

#### 2021

Panel discussion, “Aesthetically Accessible Arts and Cultural Experiences,” *From Access to Inclusion Symposium*, Arts & Disability, Dublin, Ireland, March 16, 2021. Other panelists were: Robert Softley Gale, Artistic Director and CEO at the Birds of Paradise Theatre Company; Maria Oshodi, Artistic Director and CEO at Extant (London, UK); Minday Drapsa, Artistic Director at the Riksteatern Crea (Sweden); and Kate Fox, Access Manager at the Manchester International Festival (Manchester, UK).

Online presentation, “Design for All: Sarah Schleuning on *speechless: different by design*,” sponsored by Museum of Design, Atlanta, and Connections School of Atlanta, March 30, 2021.

Interview, “The Future of Art,” *Deep Future Apple Podcasts*, moderated by Analee Newitz, released March 30, 2021.

### Laurie Haycock Makela

#### 2020

Lecture, “*speechless: different by design*: a case study,” USC Roski School of Art and Design, February 2020.

Lecture, “*speechless: different by design*: a case study,” Bend Design Conference, October 2020.

Interview, Design Matters Podcast with Debbie Millman, December 20, 2020.

Listen to the podcast: <https://www.designmattersmedia.com/podcast/2020/Design-Matters-Live%3A-Laurie-Haycock-Makela>



notes and reflections on the convening

Marianna Adams, President  
Audience Focus Inc.

November 12, 2018

The Convening took place September 6-7, 2018 at the Dallas Museum of Art. It brought together scientists, researchers, Museum staff members, and the artists/designers whose work would be on view in the (at that point unnamed) exhibition *speechless: different by design*. These individuals from divergent disciplines gathered for information-sharing and brainstorming when the exhibition was in the early stages of planning. The Convening proved to be critical to the exhibition, and like the exhibition, was experimental—bringing together individuals from professions who are not typically in dialogue (scientists and artists) and creating a space for dialogue. The Convening was supported by the wish foundation and hosted by the Dallas Museum of Art in conjunction with the High Museum of Art. This report conveys key aspects of the two-day dialogue.

Emerging Themes

Scientists/Researchers	Artists/Designers
<ul style="list-style-type: none"><li>• Success—feel successful</li><li>• Choice and control</li><li>• Inclusivity—recognize and ameliorate fears</li><li>• Demystifying invisible differences</li><li>• Build awareness that there are differences in the ways we perceive, respond, understand...</li><li>• Empathy</li></ul>	<ul style="list-style-type: none"><li>• Connect to the personal—share stories</li><li>• Connect community</li><li>• It's about love</li><li>• Cross-sensory, multi-sensory</li><li>• Experiential, do, create, explore, discover, experiment</li><li>• Open-ended: find new ways to engage beyond original intent</li><li>• Perception play: e.g., disorienting/reorienting; experience something from another perspective</li></ul>

What do the Convening participants want visitors to know, do, feel as a result of their experience at the exhibition? (This is sometimes referred to as exhibition outcomes or benefits.)

*Note: It might be useful to have artists and DMA staff rank the statements in each category as to how important it is that visitors walk away with that awareness. You may also want to delete, revise, or add statements in a way that visitors would express it.*

Category of Benefit	Ways Visitors Express It
Transformation	I felt a sense of awe and wonder in the galleries. I noticed/found connections between art and ideas. I changed or adjusted my understanding of something related to what I saw or did here. I appreciated something more about art and/or sensory issues that I hadn't so much in the past. Things I saw or did here made me pause and think.
Esteem through Learning	There were places where I connected with my creative/imaginative side. I had opportunities to explore and discover things on my own. I felt like I had control of the what, when, and why of my experience. I learned something new. I revisited or expanded on something I already knew about. My curiosity was stimulated and I want to see or find out more. Being at the museum made me feel calm and relaxed. I got to see or do things that I couldn't do elsewhere. I looked deeply or thoughtfully at art. I had opportunities to add my thoughts to a dialogue about the art.
Social/Belonging	There were places in the galleries that encouraged conversation and dialogue. People in my group shared our experiences with each other. I learned something about the people I came with. I had opportunities to share quality time with friends/family.

Safety (Psychological)	It was easy to figure out how to find our way around the exhibition. There was sufficient information for us to figure out the content and purpose of the exhibition. I clearly understood how to engage with the exhibition. The information provided helped me connect to my interests and experiences. The interpretation strategies (e.g., written labels, photo/picture directions, audio instructions) aided in my enjoyment and understanding of the exhibition.
Physical	I felt physically comfortable in the exhibition. There were places of respite where I could relax and/or reorient. I felt physically safe in the exhibition. The environment accommodated my particular sensory needs.

Summary of Key Themes in the Presentations and Conversations

- Send Clear Messages:**

In a sensory-based exhibition it will be important to send clear messages, visual and verbal, direct and indirect, about what is expected. Can you touch or not? It's not always clear in museums.
- Design for Visitor Success:**

Sarah Schleuning is trying to bridge gap between included and not included—people want to experience success.
- Design for Inclusivity:**

Inclusivity is a guiding principle and demystifying and building awareness for the unseen sensory and processing differences. It's important to recognize the basic fear toward those who are different and the fear of engaging by those who are different. There is a stigma.
- Design for Differences:**

The exhibition will need to be sensitive to the difference between sensory attraction and compulsion.

Different is who we are. This is about being different, seeing, feeling, hearing, smelling, moving, expressing differently.



**Design for Personal Connection:**

Sarah Schleuning noted that for a lot of us this exhibition is personal and the idea is to make that understandable/accessible for visitors.

How can the exhibition tell some of those stories? Are there places in the gallery where visitors can share their own stories as well as learn about the stories of others involved in the exhibition?

**Design for Innovation:**

Ini Archibong thought about the exhibition as experiential for the visitor, in which they have opportunities to experience something from another point of view, to explore what can be done with the space, to create new experiences.

The exhibition can be a good place where visitors find new ways to use and engage with the installations.

**Design for Reflection and Reorientation:**

There may be places where visitors can reorient or reboot, such as quiet spaces with calming blankets, tinted lenses, sound-cancelling headphones. Spaces for reflection and sense-making, for some feedback/reflection loops where visitors can reflect on how the installations affect them.

Matt Checkowski noted that the exhibition is about disorienting in order to reorient.

**Importance of Ongoing or Process Testing:**

Misha Kahn brought up a good case for doing ongoing testing with audiences when he described the design of his Cat Wall. Instead of the human client having the final say, he treated the cat as the collector/client and did testing with the cat.

Prompts for the reflection areas (visual, audio, written) will need to be tested to see how well they elicit reflections from diverse audiences.

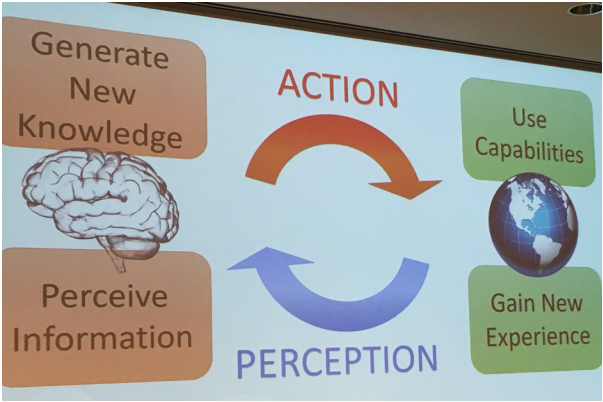
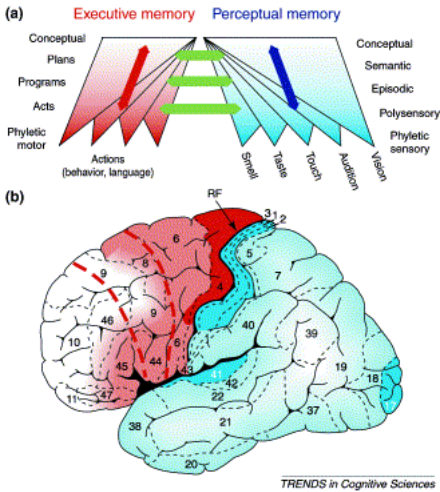
**Key Points From Scientists’ Presentations**

**Dr. Dan Krawczyk, Center for Brain Health, UT Dallas**

The back to front of the brain relationship is more important than the more popularly known left/right brain action. The back brain (aqua blue) is about auditory and visual perception, that moves from the concrete to more abstract. Front brain is about action—specific physical action like moving hands and legs to executive function, the ability to conceptualize plans for action.

In the middle of the classic Perception (blue arrow) and Action (red arrow) [pictured] “maybe what is missing in the center is art—that’s probably where art lives—the intersection between the representation of the world and how we impose action on that world.”

The brain is plastic, flexible: “We think we are seeing reality but it’s in our mind. We are creating it all the time. It’s why eyewitness testimony is faulty. We impose our own meaning on the event/situation.”



**Dr. Audette Rackley, Center for Brain Health, UT Dallas**

What is most important to remember is “there is so much capacity and potential for people in the early stages of Alzheimer’s.” With Alzheimer’s the ability to be plastic (for brain flexibility) is lessening. “When working with people with dementia we ask, ‘What can we do to slow the rate of change?’ Research shows that the environment and how they engage can impact quality of life and by using the abilities we have, we keep them longer. Use it or lose it.” “For every challenge there is a strength.” “How can we modify the environment to help people engage more successfully?” “Life does not end with a diagnosis.”

**Dr. Tandra Allen, Center for Brain Health, UT Dallas**

<b>The case for technology</b>	“We (all of us but particularly those with social cognition differences, the neuro-diverse, autism spectrum, and those with dementia) want to get to a place where we feel less like being different and see our continued similarities. There is a deep desire for connection and purpose in everyone.”
Immersive	
Safe to Fail	
Controlled Environment	
Customizable	
Remote	
Dynamic practice	
Real-time feedback	
Promote generalizations	
Fun & rewarding	

**Dr. Linda Thibodeaux, Callier Center for Communication Disorders, UT Dallas**

Studies the effects of hearing loss across sensory systems: “My work is more in wireless technology so cognitive resources can be freed up to make meaning rather than focus on the acoustic wave form—what did I just hear?” We all lose our hearing as we get older in two ways. There is a reduction in audibility (often addressed by an increase in volume and bass) and a reduction in differential sensitivity (often addressed by slowing down, more pauses, and enunciating).

**Jenny McGlothlin, Callier Center for Communication Disorders, UT Dallas**

People/children with sensory and developmental issues are “sometimes having a hard time being in their own body” so socialization, what we think of as proper behavior, is impossible. “That sensory motor loop sometimes gets broken down.” When the communication piece breaks down they just step away. People don’t know how to bridge the divide. “We pay more attention to the divide. I work with families on how you bridge that with people who are not sensitive to that divide.” Designers need to think about these issues of people struggling with normal life. It is important for everyone, those with and without sensory processing differences, to “have a shift in perspective, to see through a different lens.”

**Dr. Tina Fletcher, Texas Woman’s University**

Interest-in multi sensory environments and in environmental supports for sensory issues. “We created a multi-sensory environment (MSE) at our school. When receiving touch input it involves your whole body. You might have heard of a sensory room. With a MSE we look at the difference between anterior-posterior movement (rocking chair or glider, front to back to front). For most people it’s calming. Then we bundle that with neutral warmth or pressure on your chest and you rock.” [This application is a good example of Dan Krawczyk’s Perception to Action, back brain to front brain relationship. It is why rocking soothes us.] “Never assume that the way you process it is the way others process it. Some think it’s a wonderful experience others think not so much.” “Think of the exhibits [installations] like beads on a string,” they are unique yet connected, more beautiful together than separate. “When we do events for kids on the spectrum, we try not to make the sensory pods too appealing because kids won’t get out and experience the rest of the place.”



## biographical information for contributors to *speechless: different by design*

**Dr. Azucena Verdín**, a former Dallas Museum of Art evaluator, conducted the Visitor Research Study showcased in this publication. During her time at the Museum, she led the design of multiple evaluation projects, including the Bilingual Initiative aimed at identifying and removing barriers to equitable arts access for Spanish-speaking Latinx residents of the Dallas Fort Worth community. She is currently a visiting assistant professor at Texas Woman's University, where she teaches courses in family science and lifespan development theory and research. She is the recipient of the 2020 John L. and Harriette P. McAdoo Dissertation Award for research that impacts racial and ethnic minority families from the Racial and Ethnic Diversity in Families Section of the National Council on Family Relations.

### Dallas Museum of Art Staff Members

**Kerry Butcher** is an interdisciplinary artist and educator who has worked in galleries and museums across North Texas since 2012. Butcher is currently Gallery Manager for the Center for Creative Connections at the Dallas Museum of Art, where she oversees the development and facilitation of in-gallery materials, programs, and artist projects for visitors of all ages and abilities to engage with art.

**Jaclyn Le** has been designing at the Dallas Museum of Art since 2018. As the senior graphic designer under the Exhibitions department, Jaclyn designs the visual identities, environmental graphics, and interpretative materials for each exhibition. She loves working closely with her colleagues from various teams to bring exhibitions to life.

**Emily Schiller** is the head of interpretation at the Dallas Museum of Art, where she focuses on sparking and satisfying visitor curiosity through independent learning opportunities. Since 2017, she has contributed to over fifty exhibitions and hundreds of gallery changes. In addition to Schiller's attention to consistent, accessible, bilingual gallery didactics, she advocates for interpretive materials to serve a range of ages, interests, and learning modalities.

**Sarah Schleuning**, curator of *speechless: different by design*, is the Margot B. Perot Senior Curator of Decorative Arts and Design at the Dallas Museum of Art and from March 2019 to May 2021, she concurrently served as the Museum's interim chief curator. Schleuning has a record of organizing thoughtful exhibitions and programs that are not only high profile and highly popular, but also recognized for their contributions to scholarship. She provides more than two decades of expertise in forming relationships with living designers and artists, bridging the gap between historical and contemporary design, and exploring how engaging with art and design can extend beyond the museum's walls. Significant exhibitions and publication include: *Cartier* and *Islamic Art: In Search for Modernity* (co-curator,

2021), *Electrifying Design: A Century of Lighting* (co-curator, 2021), *Iris van Herpen: Transforming Fashion* (co-curator, 2016), and *Dream Cars: Innovative Design, Visionary Ideas* (2014).

**Emily Wiskera** has worked in museum education since 2011, with a specialized focus on accessibility and working with diverse populations. As manager of access programs at the Dallas Museum of Art, Wiskera oversees initiatives for visitors with disabilities, including programs related to dementia, Parkinson’s disease, autism, developmental or cognitive disabilities, and vision impairment. She is passionate about creating equitable experiences for all visitors.

**Eric Zeidler** is the publications manager at the Dallas Museum of Art. He oversees all aspects of museum publishing at the DMA and shepherds publications through every stage of editing and production. He was involved in the *speechless* project from the Convening onward and is very honored to have accompanied the other contributors on this creative journey.

Consultants

**Andrea Gollin**, editor of *speechless: different by design* and different by design: speechless, a report, is a freelance editor and writer who frequently works with museums, universities, and publishing companies on exhibition catalogues, books, collateral materials, and websites in addition to being a widely published writer. Recent editing projects include co-editing the books *Lair: Radical Homes and Hideouts of Movie Villains* (Tra Publishing) and *Robert Winthrop Chanler: Discovering the Fantastic* (The Monacelli Press).

The Convening: Scientists and Researchers

**Dr. Daniel Krawczyk** holds the Debbie and Jim Francis Chair in behavioral and brain sciences at The University of Texas at Dallas, is the acting deputy director of the Center for BrainHealth, and is an associate professor of psychiatry at the University of Texas Southwestern Medical Center. His research has focused on understanding reasoning through a multi-disciplinary approach that combines neuroimaging, cognitive psychology, and human neuropsychology.

**Dr. Tandra Allen** is head of Virtual Training Programs at the Center for BrainHealth. She leads the social cognition project studying pediatric and adult populations with social difficulties such as autism, schizophrenia, and other spectrum disorders.

**Dr. Audette Rackley** is Head of Special Programs at the Center for BrainHealth. Her current research focus is developing and conducting brain training programs for individuals with memory complaints

and Mild Cognitive Impairment. She has conducted cognitive-linguistic interventions for individuals with early stage Alzheimer’s disease and co-authored I Can Still Laugh, a book outlining a Brain-Health-developed approach to working with patients with dementia.

**Jenny McGlothlin, MS, CCC/SLP**, is a certified speech-language pathologist and faculty associate at The Callier Center for Communication Disorders at University of Texas at Dallas. McGlothlin specializes in the evaluation and treatment of feeding disorders for children.

**Dr. Linda Thibodeaux** is a professor at the University of Texas at Dallas and works at The Advanced Hearing Research Center, part of the Callier Center for Communication Disorders. A focus of her work is assistive technology for persons with hearing loss.

**Dr. Tina Fletcher** is associate professor at Texas Woman’s University. Her research focuses on the impact of art-making on clients and caregivers receiving occupational therapy and on improving participation in cultural arts and entertainment venues for visitors with special needs.

**Marianna Adams, Ed.D.**, founded Audience Focus Inc. to provide evaluation, interpretive planning, and professional development services for museums, cultural organizations, and other informal learning environments.

**Bonnie Pitman** is a distinguished scholar in residence at The University of Texas at Dallas where she researches and develops partnerships between UTD and cultural and health-related institutions. The former director of The Dallas Museum of Art, she is a national leader in the public engagement of art. A focus of her recent work has been ways that museums can use their collections and approach to close observation of works of art to enhance the diagnostic skills needed for medical practice.

*Note: Biographical information for the artists-designers whose work was on view in speechless: different by design is included in the Exhibition section of this publication.*

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*unable to speak,  
especially as the temporary  
result of shock  
or strong emotion*

pure joy and wonder and play