

Lapine en les pins: Where art meets research

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Abstract

This paper gives an overview of Arts-Based Research (ABR), exploring how creative works can be valuable within science, medicine and health, providing innovative, more accessible solutions in; research (data collection), evaluation (data analysis) and representation (data visualization). Through examples, the author will explore how artists can use their skills (complex aesthetics, material understanding, social engagement, pattern recognition and visual metaphor) within research and data management. We'll also explore how ABR may be a supportive tool for researchers who are motivated to create deeper and varied pathways for discovery.

What is Arts-Based Research?

ABR is a relatively new qualitative research method. The term was first introduced by Elliot Eisner, an art educator, in 1993. His argument at the time was 'for the use of artistic forms as ways to understand educational and social settings'. Over time, Eisner, along with other arts-based researchers, continued to conceptualize this method.

Patricia Leavy, a leader in the field, defines ABR as: "A transdisciplinary approach that adapts the tenets of the creative arts in research, evaluation, and representation. It acts as a bridge between art and science, using artistic practices (narrative, music, poetry, etc.) to investigate, illuminate, and communicate complex lived experiences and social issues." (18)

Let's look at some examples of how ABR can be used in these three areas of research.

Research (Data Collection)

ABR used at the data collection phase uses creative methods to generate data. This often takes the form of a researcher working within a community, or group, giving participants a prompt (research question) and a creative method with which to respond. Their responses become data, which the researcher collects, and moves to the next phase of research (data analysis).

A classic example of this is *Photovoice* where participants are given a camera and asked to respond to a prompt. The photos taken by participants in response to their prompt are collected as data. (7, 21, 32)

In 2023, *Artistic Conversation (AC)* was introduced by Dina Fried. AC is a novel qualitative methodology which integrates creative writing, visual art, and video documentation to explore the lived experiences of adults with ADHD. This method allows researchers to co-create art with participants, eliciting sensory-rich insights beyond traditional methods. AC advances ABR and qualitative inquiry by utilizing multimodal dialogue.

Evaluation (Data Analysis)

ABR used at the data analysis phase involves cleaning and modeling raw data, identifying patterns, trends and correlations and transforming it through creative processes. ABR moves data analysis beyond traditional text-based coding by utilizing creative processes to synthesize information.

Margaret Wickens Pearce's work is a good example of ABR being used in data analysis. Pearce is an interdisciplinary researcher whose work bridges cartography, Indigenous studies, and the arts. As a Maine-based, MacArthur Fellow (2025) and a citizen of the Potawatomi Nation, her work is characterized as using the "language of cartography" as a form of graphic expression, to center Indigenous understandings of

land and place with cartographic language. (21) And while she certainly produces works that are great examples of data visualizations, the process she uses in sorting, organizing and finding patterns in her data, is her own masterful method of data analysis. With a transdisciplinary lens, Pearce analyses and transforms data through her understanding of complex cultural and sensory interrelationship.

In *The Cold in Inuit Nunangat* (2026), Pearce includes two maps centered on Inuit Nunangat, the Inuit homelands in Canada. The two maps proximate the ways in which Inuit and their relatives steward their homelands, juxtaposed with the ways outsiders interfere with Inuit stewardship and self-determination through carbon emissions and other pollutants.

Giorgia Lupi's class titled, *Draw Your Visit with Data*, done at the Museum of Modern Art in 2017, is another example of analysing data with ABR. In her course, Lupi had her students explore the museum from a data analytics perspective. She asked students to look for patterns in the museum. This could be anything from; color groupings, country of origin, art movements, or a particular artist's work. As a response to the data they collected, the students fashioned a visual map of their insights. (20) About this work, Lupi said, "The workshop was part of my ongoing research that I call 'Data Humanism'...we are ready to question the impersonality of a merely technical approach to data, and to reconnect numbers to what they really stand for: our lives." (20)

I can see within Lupi's project the framework for something similar involving medical professionals. As pattern recognition is essential in nearly every medical discipline, using an art museum as a scaffolding, medical professionals could explore and develop their skills within a broad experiential format.

Representation (Data Visualization)

ABR used in representation (data visualization) is the skill of arranging and presenting data in an understandable visual form. ABR data visualization moves beyond traditional academic reporting to foster broader engagement with research findings. By using

creative formats such as; digital storytelling, exhibitions, 3d modeling, performances, poetry, installations or video, research becomes accessible, experiential, and engaging, both within and outside of the academy. (6, 15, 19, 22, 23, 24)

Especially in this age of AI, as data generation is becoming more and more vast, and we find ourselves without the ability to properly utilise the data we're producing, there is a growing need for improved ways to process data. Data visualization with arts-based methods is emerging as a leading method to effectively synthesize and work with data globally. (10) This is especially true within healthcare, where in 2024 alone, approximately 30% of the world's data was generated by the healthcare sector. (37)

It has been proven that implementing and adopting visualization techniques in healthcare can positively affect clinical decisions, improve patient outcomes, and benefit resource planning, while enhancing healthcare outcomes overall. (1,10, 24) In addition, research demonstrates that thoughtfully designed visualizations can substantially narrow the comprehension gap between those with low and high levels of health literacy. And can help compensate for limited non-native language proficiency. (3)

Indeed data visualization in healthcare is actually nothing new. In 1854, Dr. John Snow created the first example of data healthcare-related visualisation. He created a map of the outbreak of cholera in London. Each bar in the map represents one death and its location. (28)

Four years later, in 1858, Florence Nightingale, a military nurse, created a Rose diagram, which compared the relationship between soldier deaths, resulting from either sanitary conditions or from battlefield wounds. (31) Both of these examples were effective tools for communicating public health situations, and both helped to change public policy. (2, 29, 31)

Obviously much has changed since the 1800's. But data visualization tools have not evolved with the 'volume, velocity, variety, and veracity of the data'. (1) Pie charts and spreadsheets can't keep pace with the levels of complexity we are experiencing. These

days, we require more dynamic, nuanced, interactive and sometimes sensory, data management methods. (1,10, 24)

In order to truly push the potential of data visualization, and grasp its growing complexity, we need designers, cultural scouts, and wayfinders. We need people with training and expertise in; design, complex aesthetics, material understanding, social engagement, pattern recognition and visual metaphor. They need to be able to build systems, contextualize data and communicate complex information, through visual, experiential or sensory pathways. Many contemporary artists are in the unique position to bridge this vast expanse. (12)

In fact, on the other side of the data visualization, is data storage. And one of the most compelling innovations in data storage was discovered by an artist. In 1988, Joe Davis, in collaboration with scientists and researchers, encoded a 5x7 matrix, representing an ancient Germanic rune, into the DNA of E. coli bacteria. This work marked a seminal, artistic intersection between art, information science, and biotechnology. Davis' DNA storage offers extreme storage density, with one gram of synthetic DNA able to store about 455 exabytes (roughly two-and-a-half times the total data that existed on the Earth in 2025). DNA storage is durable, lasting hundreds of thousands of years, and could hold the world's entire digital archive in a small room. With work still needed related to cost and data retrieval, DNA storage remains the most compelling, powerful and sustainable solution to data storage. Thank you, Joe Davis, artist and wayfinder. (16)

With their already highly compatible skills, I see two primary challenges for artists. First the need for more opportunities for highly specialized education to develop expertise in visualization, collaboration and research. Not as add-ons, extras or after-thoughts, but as equal stewards. And second, the need for receptive infrastructures for transdisciplinary research, along with committed collaborators. Did somebody say, explanatory pluralism?

Here are a few inspirational examples of what some other artists have done with data visualization.

Artist Justus Harris created medical visualizations titled, *Diabetes Data Sculptures* (2018). Harris' small-scale sculptures were done as a response to the data he generated from daily management of his Type 1 diabetes. This is what Harris says about his sculptures; “.Utilizing the sense of touch, sight, and sound as a dynamic method of storytelling, art can communicate where traditional spoken word and data representation fall short. For me the often invisible fluctuations of blood glucose I experience, as someone living with type 1 diabetes, can be visualized and shared...These sculptures take the thousands of blood glucose readings and other variables that I collect each month and consolidate them into color coded and tactile summaries of that data.” (15)

Artist Aaron Koblin's work *Flight Patterns* is another good example of innovative data visualization. Koblin processes huge data sets from the Federal Aviation Administration. The combination of complex raw data with visual art aesthetics, reveals air traffic data as a luminous complex web of lines. And quickly allows the viewer to visually process multiple patterns not visible in raw data. (17)

Artist, Dr. Susan Smith, collects her data by traveling to locations across the country and collecting PFAS contaminated soil, water and plant material. She then transforms her samples into pigments, paints, dyes and solutions, which she uses to create botanical prints, textiles and sculptures. Of her work, Smith says, “It's important to make...[the impact of PFAS] understandable to people. To make tangible things that you can put in your hands, and see with your eyes, can really help to do that. Art and science can be really powerful when they work together.” (36)

David Bowen's *tele-present water* is a sculpture that captures live data from US National Oceanic and Atmospheric Administration buoys. Live movement from the surface of the ocean is transferred from the buoys to the sculpture's data center. And in real time, a net-like form translates the movements registered by the buoy into live movement in the gallery. (30) In 2024 Bowen completed another work titled, *tele-present air*, using a similar technique, but instead harnessing the wind in a field of wildflowers.

My own sculptural work uses ABR in both data analysis and data visualization. Decision making involves sorting theories, finding patterns, choosing material, establishing formal design elements and researching historical/philosophical narratives. *Fléchée* is an example of some of the ways I use ABR in my creative practice.

Fléchée

Materials: Phosphorescence (beads, yarn), Maine-made wool, glass.



This work was knitted in the tradition of the arrow sashes (ceintures fléchée) worn by Franco American 'runners of the forest' (coureurs de bois). Coureurs de bois were independent French-Canadian fur traders working during the 17th and 18th centuries. They were based primarily in the Québec region of North America, but traveled extensively throughout the interior to build trade with Indigenous people in the Great Lakes, Ohio Valley and Hudson Bay. Ceintures fléchée were used by coureurs de bois to hold their winter coats (capotes) closed. The arrow sashes also served as a bag/pocket to carry (or latch) belongings. And importantly, during heavy labor, the ceinture fléchée was tied tightly around the waist, serving as lumbar support. (4, 13, 25, 26)

While still somewhat controversial, it is generally agreed that the design and crafting of arrow sashes came from blended traditions of Québécois, Métis, and First Nations (Iroquois, Heron-Wendat, Algonquin). Using the finger-weaving methods of Indigenous tribes in the area, combined with French textile skills and use of wool as a fiber, ceintures fléchée were predominantly made by Québécois women for coureurs de bois.

At the time, ceintures fléchée were a symbol of status. And became a valuable trade object, especially throughout the Hudson Bay region. Even today, arrow sashes remain a marker of proud cultural identity, within both Québécois and Métis communities.

While *Fléchée* is a unique example of colonial-era cultural exchange (Indigenous, Métis and French), this work does not imply long term peaceful relationship among First Nations tribes and French settlers. (5, 14) Nor does it minimize French colonial impacts on the land and First Nations inhabitants. Instead, it captures a moment of historical cultural exchange, as well as marking a deeply rooted shift between reproductive labor and industrial capital.

The fabric in *Fléchée* is the result of a two year collaboration with the Advanced Structures and Composites Center at the University of Maine, where it was knitted on industrial textile equipment. The process of industrial knitting is important to the concept of this work as machine knitting offers a sharp contrast to the exquisite handmade textile work done by Franco-American women, as reproductive labor. In addition, having *Fléchée* knitted with a machine also acknowledges the essential role Franco Americans had in building the industrial textile industry in New England. (3, 9, 25, 26, 38)

With the shift of textile works from domestic to factory, textiles were taken out of the hands of the community, and given to machines. This shift recontextualized the once essential handmade textiles, done almost exclusively by women, to something that was suddenly 'less than' machine, and renamed 'craft'. Industrialization 'disembodied' what once required the skill and expertise of highly trained community makers and craftspeople to machine-made, mass-producible items. (40)

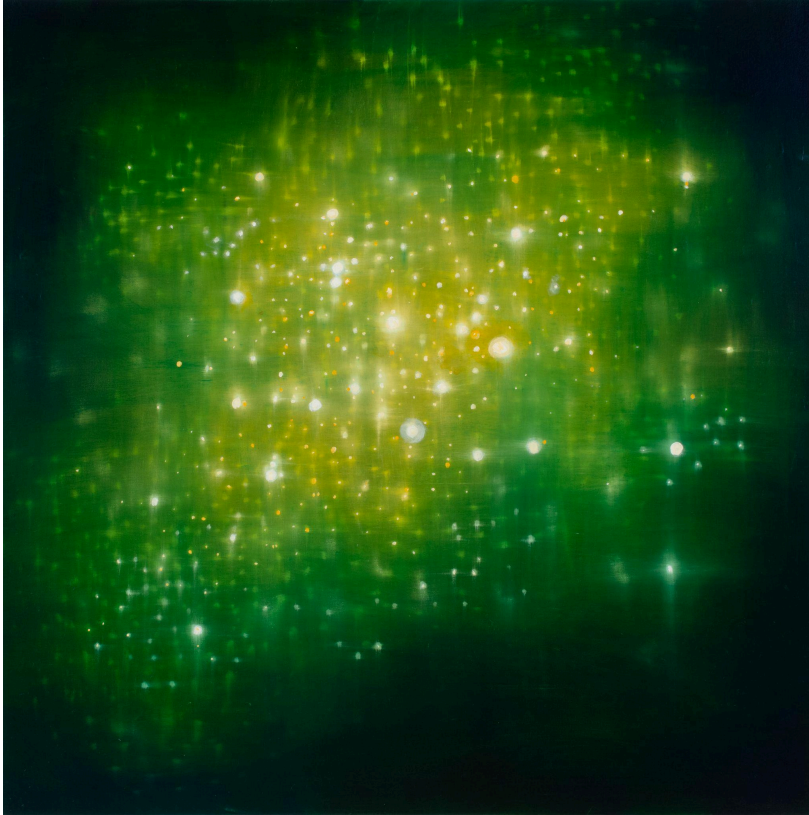
Fléchée was designed in the traditional Thunder Flash (Éclairs) design, with lightning bolts running along the length of the sash on either side. And where the thunderbolts meet in the middle, they create repeating arrows that run down the center of the cloth. With both beadwork and sash utilizing phosphorescent materials, when *Fléchée* is viewed in darkness, the lightning bolt design is visible.

Fléchée allows the viewer to experience history in both light and shadow.

Stellar field (1)

Materials: Oil on canvas

Size: 36"x36"



Night

In the very beginning, when the universe expanded,

Everywhere, and all at once,

the winged,

the two and four legged,

the rooted and the swimming,

We were all specks, suspended in the galaxy.

Tiny lights, they say.

Around then, or not long afterwards, gravity came to be.

And with it, that particular way we fall.

And so things started to fall, as they do now,

into place.

It was also around that time, or not long afterwards,

when the thing that holds us all together somehow,

came into being.

And in this way, things did.

They started to come together somehow.

But that was a long time ago, and we humans, we often forget these sorts of things.

Like how things come together.

And when we do, we set out searching, with our only human longing.

Yearning for our forgotten pieces.

And sometimes in this ecstasy, we end up there again,

staring at the sky and those tiny specks of light,

trying to remember.

And it seems, in the moments when we do,

it's the stars, casting their light familiar,

who remember our lost pieces,

Home.

Conclusion

This was a short overview of ABR, but hopefully I was able to convey how creative methods can expand and deepen inquiry, offering an innovative bridge between the arts, sciences and cultural works.

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