

TECHNOLOGICAL DUALITIES

Interpreting Pittsburgh through Technology

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DEFINING TECHNOLOGIES

Pittsburgh's social and cultural history is best defined through the technologies the people of Pittsburgh have invented, adopted, and refined to respond to the challenges of their times. This curation seeks to break down the idea of what should be considered technology. Technology is often exclusively viewed as the most modern machinery; however, this definition is a byproduct of colonialism and ignores the non-linear nature of progress and ingenuity.

By studying the history of Pittsburgh through the collection and analysis of artifacts, the conclusion that technology can not be defined in such binary terms becomes evident. This curation of technologies is organized into five categories that represent the breadth of what technology can be and what it has done for the city through time.

Spiritual technology: Refers to practices, tools, or techniques aimed at enhancing spiritual experiences, personal growth, or self-realization.

Ecological technology: Understanding how to work with and respond to the natural environment has been a continuous pursuit of human nature. This category looks at how humans have reacted to the world and how these practices have impacted ecology.

Navigational technology: This category encompasses advancements in how humans move through space.

Labor technology: This categorization refers to technologies that advance how work can be done. From the development of early tools to modern-day 3D printers, all of these inventions revolutionized people's ability to complete tasks.

Communicational technology: An understanding between people can be manipulated, spoken, indicated, or written, to list a few. These artifacts represent ways communication has been used as a device, and devices are used to communicate.

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This catalog is arranged chronologically then, within these time periods the artifacts are classified by the form of technology they represent.

The Native Era refers to pre-colonial Pittsburgh, which is considered any time before the early 1700s. The tribes that made up the region of Pittsburgh include the Lenape, Shawnee, the Iroquois, and the Susquehannock.

The Colonial Era ranges from the 1700s to the early 1800s. After French explorer Robert de La Salle made his way to Pittsburgh in 1669 the area became primarily settled by the English and Dutch.

Pittsburgh is perhaps most often associated with its Industrial Period which for the purposes of this curation will be referred to as beginning in the mid 1850s and ending in the mid 1950s. During this period the city of Pittsburgh reached its highest population in history and has never recovered since. This period is also defined by an influx of European immigrants seeking job opportunities.

This curation ends in the Modern Period which is defined as beginning in the late 1900s and continuing to today. This period represents Pittsburgh's most recent evolution to a city trying to restore and repair its air and water quality and work towards cultural and neighborhood development.

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GUIDE

Technological Index: Spiritual technology **Object:** Bead offering

Function: In Lenape culture beads represent a form of spiritual technology. A powerful Lenape chief's wife becomes gravely ill, so he prays to the Great Spirit at the Sacred Oak. He returns to his wife in good health. Later, the chief seeks for the guidance of the Great Spirit again as he fears a hostile tribe could attack, so he brings his finest blankets and beads as offerings. The offerings were accepted and there were no attacks. Yet, to colonizers greenery and trees indicate a visual hint of fertile land to establish a permanent settlement.

INSTRUCTIONS

Technological Index: Navigational technology **Object:** Stone

Native Era

Function: Native Americans often used rocks as maps, through carving on stone and using rocks as spatial markers they were able to navigate. Stones represent an early technology for mapping. When English settlers first came to the area of Pittsburgh they replicated the English practice of using rocks to build walls and demarcate land that they settled on. These alternative perspectives on the uses of stone both represent ways to instruct human movement; one through articulating space and the other through claiming it.





REVIVAL

Technological Index: Ecological technology **Object:** Ash

Function: Fire was one of the many elements that Native Americans respected and had controlled fires to intentionally clear areas. These fire practices led to diverse ecology and minimized the risk of catastrophic wildfires. Yet, colonizers and industrialists did not handle fire appropriately, which led to the pollution of several other elements. The ash serves as a reminder to reflect on the value of which Native Americans carefully treated fire in relation to their surrounding environment. This practice represents a form of ecological technology as Native Americans understood how to manipulate and control fire which is a necessary part of reviving forest ecosystems.

TRADTION

Technological Index: Labor technology **Object:** Stone tool

Function: Native cultures used hand made tools from organic materials like stone, animal remains like bones and skins, and wood. Native communities valued the craftsmanship of their tools and developed them with meticulous attention to function and design. Early technological advancements like these challenge the modern colonial perspective of what is considered a technological device. Native cultures associated a great deal of tradition with the construction of their tools, both in passing down construction methods and using these devices on a daily basis.

Jauregui and Velic





Colonial Era





BARTER

Technological Index: Communicational technology Object: Fur Function: Fur trade posts are one of the first occurrences in which a colonial hand has infiltrated Native American practices. The fur became an early form of what would be considered currency in modern times. As this exchange happened between Native Americans, but it transitioned to the Europeans becoming involved with the barter. It is in these exchanges where the Europeans were in need of obtaining furs that equal ground and dependencies were established between both parties. This practice of fur trading represents an early form of communicational technology. Through the physical exchange of goods Native people were able to come to an understanding with settlers based on an agreed language of trade.

PERMANENCE

Technological Index: Communicational technology Object: Drawing of Pittsburgh, 1809 Function: Colonial architecture was imposed onto land that was already occupied by the native tribes of the Lenape, Shawnee, Iroqouis and Susquehannock. Architecture was used as a device against native tribes to establish colonial control and presence. While architecture in a physical sense can control how space is organized and thus how an individual is able to move, a deeper social restriction can also be derived from the existence of structures. Architecture acts as text in this way to signify colonial permanence in presence to Native tribes.

Colonial Era





ESTABLISHMENT

Technological Index: Communicational technology Object: Records of Pitt Toenship, 1773 Function:On April 16, 1771, Pittsburgh's first local government was established as Pitt Township on what was known as lands of the Native Americans. The idea of establishing a territory from a western perspective refers to colonial practices of government like administrative architecture and paper records. This perspective ignores the existence of people before it has been physically recorded. The written record and instating of taxes acts as a form of communicational technology to institute the colonial definition of a town.

EXTRACTION

Technological Index: Communicational technology Object: Postage stamp, 1870 Function: The Pittsburgh seam is one of the most abundant seams in the world. The industry attracted waves of European immigrants as they left their homelands in need for jobs to support themselves and their family. The raw materials would be used to build countless amounts of structures in the U.S. Immigrants extracted valuable resources from mines, while being extracted from their homelands. The influx of Europeans led to the development of ethnic neighborhoods in Pittsburgh in which their only way of communicating with their loved ones was through postcards. Postage is a form of communicational technology that began to set globalization into practice.

Industrial Era

Industrial Era





INDOCTRINATION

Technological Index: Communicational technology Object: Child labor propagranda sign, 1913

Function: Industrialists, such as Andrew Carnegie, were developing the steel industry and rapidly building mills around Pittsburgh. There was propaganda surrounding the labor industry to encourage the social acceptance of child labor to produce more steel. People who were not part of the upper class often did not have a choice but for their children to work as soon as they were able to due to their economical needs to survive. Propaganda was used as a device to manipulate public perception through language.

RIGHT

Technological Index: Communicational technology Object: Strike posters, 1919

Industrial Era

Function: Skilled workers at mills began to protest for their rights, demanding better work conditions and better wages. Industrialists in their interest to make greater profits would lower production costs. The steel industry became more successful at the expense of workers rights and advocacy through protest. Communicating through striking advanced industry in the United States through forcing corporations to consider workers rights and it resulted in progress in the formation of workers rights unions.



NETWORK

Technological Index: Navigational technology Object: Bond of the Pittsburgh, Shawmut and Northern Railroad Company, February 1, 1902

Function: The expansion of railroad networks in Pittsburgh contributed to economic growth by facilitating the transportation of goods and raw materials. This led to increased industrialization and job opportunities, attracting a growing population to the city. However for workers it also presented social challenges. Issues such as labor disputes, working conditions, and disparities in wealth became prominent social concerns in the context of industrialization and urban growth.

DISCONNECTION

Technological Index: Labor technology Object: Steel decorative piece Function: The duality of steel as a symbol of Pittsburgh represents the disconnect between the working class that produces the steel and the upper levels of society that control the means of production. Company towns, where workers often lived in housing provided by the steel companies, reflected a hierarchical structure. The quality of housing, access to amenities, and overall living conditions were influenced by an individual's position within the steel industry. The wealthy aristocrats like Andrew Carnegie lived in steel framed mansions and were able to own decorative steel pieces like this artifact, while those that did the labor lived in wood homes. The production of steel advanced industry through the potential it presented as a tool to assist in the development of other adjacent fields, like the construction of buildings and infrastructure.

Industrial Era





STATUS

Technological Index: Communicational technology Object: Model car, 1915

Function: The widespread use of automobiles influenced urban planning. However, the automobile not only represented mobility in the sense of increased ability of individual travel, but mobility of social class. After the Great Migration from 1916 to 1945 for Black communities buying a car meant transitioning into a part of the middle class. The automobile in this era acted as an indicator of class and thus represents a communicational technology as it was a device people used to signify social status.

CROSSROADS

Technological Index: Spiritual technology Object: Jazz record featuring Duke Ellington, 1929-1934

Function: The emergence of jazz culture in Pittsburgh represented a form of resistance and pushback against the colonial mindset, advancing the spiritual practice of music making. Jazz communities often acted as havens where individuals could share their talents, stories, and experiences. Jazz is known for its improvisational nature and innovative spirit. In the face of racial discrimination, African American musicians in Pittsburgh and elsewhere used jazz as a vehicle for creative expression, pushing boundaries and challenging societal norms through music. Artists like Duke Ellington, Ella Fitzgerald, and Louis Armstrong all frequented iconic jazz clubs of Pittsburgh like the Crawford Grill.

Industrial Era



Industrial Era



MEMORY

Technological Index: Labor technology **Object:** Lightbulb

"Here's to the grim city of smoke, where the sky is but a memory and sunshine a joke, where the incense of stogies perfumeth the air-but in spite of her faults we all love to be there." Poem written in 1907 Pittsburgh by Meda Logan

Function: While lightbulbs can represent a form of innovation and progression in context of the air pollution the city of Pittsburgh experienced post World War II due to the overuse of steel production mills they represent a regression in terms of nature. Due to the extremely soot-polluted air Pittsburgh residents often had to turn to the technology of artificial light during the daytime. The means of production and innovation in this era took precedence over the health of people and the natural environment.

MANIPULATION

Technological Index:

Communication technology Object: Newspaper from a period known in Pittsburgh as Renaissance I, April 11, 1968

Function: This newspaper is from an era known as the first Renaissance in Pittsburgh. This era is defined by a time where the city was attempting to renew the damaged urban landscape in a post World War II time period where the air and waterways of Pittsburgh had become extremely polluted due to the intense industrialization. While the intention of the city was to repair and restore the natural environment, the concept of destroying that environment in the first place and opening the need for restoration is a byproduct of the colonial mindset that encourages overuse for the sake of economic production and progress. The invention of the printing press revolutionized communication and in this case allowed the city of Pittsburgh to advertise the rebranding of Pittsburgh moving away from its image as a polluted industrial city.

Im prevails

STROLLER





OPPORTUNITY

Technological Index: Navigational technology Object: Connect Card, 2024 Function: The Pittsburgh Light Rail System has played a role in the broader context of suburbanization in the Pittsburgh region. The location of light rail stations may have implications for racial and economic disparities in Pittsburgh. The light rail system grid is most concentrated in predominantly white neighborhoods that were formed as a result of redlining districts making it so that transportation routes disproportionately favor certain areas, which can influence who has access to employment centers, educational institutions, and other resources. The Light Rail System reflects the natural evolution of technology from navigational tools like stone to the development of public transports, like railways.

TRANSFER

Technological Index: Labor Technology Object: Fort Pitt Bridge souvenir magnet, 2024 Function: The Fort Pitt Bridge was the first computer designed bowstring arch bridge. The development of alternative forms of technology in Pittsburgh means that the economic base has moved away from steel production and blue collar labor. This progress may be ideal for some, but it has also meant that the population of Pittsburgh has never reached its industrial age height, meaning a large population of people were forced out of the city. The souvenir also signifies the rise in tourism that was not present in the industrial period. The industry of Pittsburgh has changed overtime as newer labor technologies are developed to accommodate Pittsburgh's shift away from being an industrial city.

NATURAL

Technological Index: Ecological technology **Object:** Phipps Conservatory Membership brochure, 2024

Function: The Phipps Conservatory was commissioned to be constructed by entrepreneur Henry Phipps who worked closely with Andrew Carnegie and was influential in the development and production of steel plants. The intention of a conservatory is to preserve nature and protect greenspace that benefits the natural environment, but the funding for this institution came from the money from an industry that continues to plaque the air and water quality of Pittsburgh today. This represents a new form of ecological technology; one that introduces the idea of controlling what is natural through the curation of ecosystems.

ITERATION

Technological Index: Labor technology Object: 3D printed item, 2024

Modern Era

Function: This artifact is a 3D printed project component made at Carnegie Mellon University. The Pittsburgh based university is partnered with NASA to work towards expansion and innovation in space travel. The shift in the city's economic base and move toward further exploration is reflective of a recurring theme of human behavior to push toward further control over the natural world. This labor technology also represents a new age of construction practices through the introduction of an alterative form of materiality and workflow.

CABINET INTRODUCTION

The curated artifacts are organized into compartments based on the form of technology they reflect. The Communicational Technology category represents the largest category supporting the base of the structure. This curation seeks to argue language power, in its many forms, to define the narrative of history, thus emphasizing this concept in the display. The compartment divides the cabinet, reflecting all of the other technological artifacts to invite the view to find throughlines of language within other technological forms. The Labor and Navigational Technology categories are then organized to reflect and contrast the Spiritual and Ecological Technology compartments, respectively, as these displays each possess strong ties to one another. Ecology encompasses human response to treating the natural environment, while Navigational deals with moving through that environment. Spiritual and Labor technology present as two vastly different concepts, but both share similar themes of devotion and obligations. These parallels pose the potential for interesting conclusions to be drawn by looking at these artifacts across categories, hence their proximities. Further, the Spiritual and Ecological groupings also have elements of intangibility and culture that connect their distinctions, justifying their adjacency. Finally, Navigational and Labor technology connect through their threads of physicality and production, explaining their pairing.