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HA-551 History and Theory of New Media

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<p style="text-align:center">Nancy Paterson: A Cyberfeminist Expanding Access to New Media Art</p>

Nancy Paterson has worked throughout her career to expand technological access for new media artists and open up opportunities within the field of computational arts. Her personal access to new technology stems from academia, and she recognizes that not everyone can gain access in this way. She specifically works to counter the sexism and male domination within the technology-developing fields of military and academic research, and has written essays outlining the Cyberfeminist goals that are demonstrated through her artworks. The exposure of her works' underlying systems of hardware, software, and conceptual framework demonstrates her desire to spread technological knowledge.

Paterson grew up in Ontario and Florida, and studied literature and philosophy at the University of Toronto before exploring her new media interests at the Ontario College of Art.[1] She then helped to found the first new media resource center and facility in Toronto, working to provide access to innovative technology on a larger scale. She now teaches at her alma mater and works at an artist-run media center in Toronto.[2] After changes in the early 1990's advanced Internet technology, she turned her attention in fine arts to utilizing rapidly developing technologies while exposing the systematic biases that they are built on.[3]

Paterson recognizes that new media and computational arts, along with other fields that rely on innovative technologies, can trace its history through the militaristic developments.[4] The United States military has been at the forefront of development for many of the technologies that database and computational arts rely on, and artists must counter the nuanced past of these technologies in order to utilize them for their own uses.[5] Female computational artists face specific difficulty as a result of the male domination and inherent female exclusion within this military stage, and as technology becomes ingrained in every aspect of our contemporary society, every woman faces this exclusion. Because of this, Cyberfeminism becomes more and more important; the computer technologies on which society relies come from a background of specific female exclusion in the military during their stages of development. Cyberfeminism recognizes the historical foundations of computer technology, and looks to actively combat and fight these societal balances and standards.[6]

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[1] Laurence, Robin. "Nancy Paterson- Stock Market Skirt," 3.
[2] Paterson, Nancy. "Stock Market Skirt: The Evolution of the Internet, the Interface, and an Idea," 238.
[3] Laurence, Robin. "Nancy Paterson- Stock Market Skirt," 3.
[4] Paterson, Nancy. "Cyberfeminism," 2.
[5] ibid.
[6] Paterson, Nancy. "Cyberfeminism," 4.

Along with the military industrial complex, academia has played a major role in the development of electronic, computational, and communications technologies. Again, this is a field in which women have historically experienced exclusion and restricted access to the cutting edge research and technology afforded to the academic community.[7] Paterson has discussed her relationship with the academic research community, specifically during the development of such academic networks as Usenet. With these connections, she was able to access communities of researchers and academics in a variety of fields that she would not have access to otherwise. Products of the early internet, such as this, were often tied to academic institutions and rarely afforded elsewhere, and because academia has historically excluded women, the female perspective is largely missing from cyberculture.[8] There are many positives to being involved in the academic scene as a new media artist, as academia supports the ideas of research and creativity, in addition to collaboration between hard scientists and artists.[9] Because of this, it is critically important for artists to occupy the academic context", and sexism and female exclusion in academia must be fought.[10]
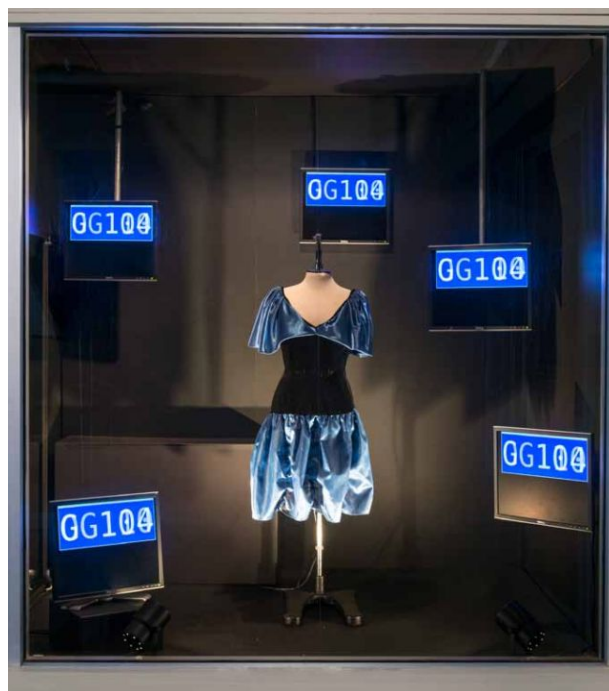
Paterson, Nancy. *Stock Market Skirt*. 1998. Photograph by Scott Massey.

This exclusion has resulted in computer and cyber- technology being consistently male dominated, preventing women from gaining technological control. The gender divide is very

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[7] Paterson, Nancy. "Cyberfeminism," 2.
[8] Paterson, Nancy. "Stock Market Skirt: The Evolution of the Internet, the Interface, and an Idea," 238.
[9] Vesna, Victoria. "Shifting Media Contexts: When Scientific Labs Become Art Studios," 5.
[10] Vesna, Victoria. "Shifting Media Contexts: When Scientific Labs Become Art Studios," 12.

evident through cyberculture, with, for instance, the trope of a woman gaining access to technology and becoming evil. She is a threat because of her power, manipulating the new world in an evil way.[11] With the 1998 piece *Stock Market Skirt*, which alters the hemline based on real-time stock market data, Paterson brings to light this objectification and manipulation of women, "[advocating] awareness of the systematic biases built into" technology and cyberculture.[12] The work shows this manipulation of womanhood by physically manipulating a physical object through technology.[13] *Stock Market Skirt* challenges women to participate in Cyberfeminism and control their own experiences in the new world rather than allowing the continued manipulation of women through male-dominated technology.[14]

Paterson, Nancy. *Hair Salon TV*. 1985.

In *Hair Salon TV*, 1985, Paterson displays various sampled clips with stereotypical imagery of women interacting with technology, providing direct evidence of the structural biases and expectations built into cyberculture.[15] This evidence proves the sexist imbalance within cyberculture, and invites female viewers to imagine ways to change this paradigm. "Cyberfeminism… acknowledges, firstly, that there are differences in power between women and men specifically in the digital discourse; and secondly, that Cyberfeminists want to change that situation."[16] If the playing field is leveled and equal access is granted, as Paterson argues will occur through movements such as Cyberfeminism, all prior claims to power are made null in the world of new media technology.[17] Previous social systems and hierarchies must not be

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[11] Paterson, Nancy. "Cyberfeminism," 1.
[12] Laurence, Robin. "Nancy Paterson- Stock Market Skirt," 3.
[13] Paterson, Nancy. "Stock Market Skirt: The Evolution of the Internet, the Interface, and an Idea," 234.
[14] Paterson, Nancy. "Stock Market Skirt: The Evolution of the Internet, the Interface, and an Idea," 233.
[15] Paterson, Nancy. "Hair Salon TV: A Computer-Controlled Video Installation," 15.
[16] Hawthorne, Susan, and Renate Klein. "Introduction," 2.
[17] Paterson, Nancy. "Cyberfeminism," 2.

maintained in the new world of technological freedom, and Cyberfeminists will use "the opportunity to redefine 'reality'".[18]
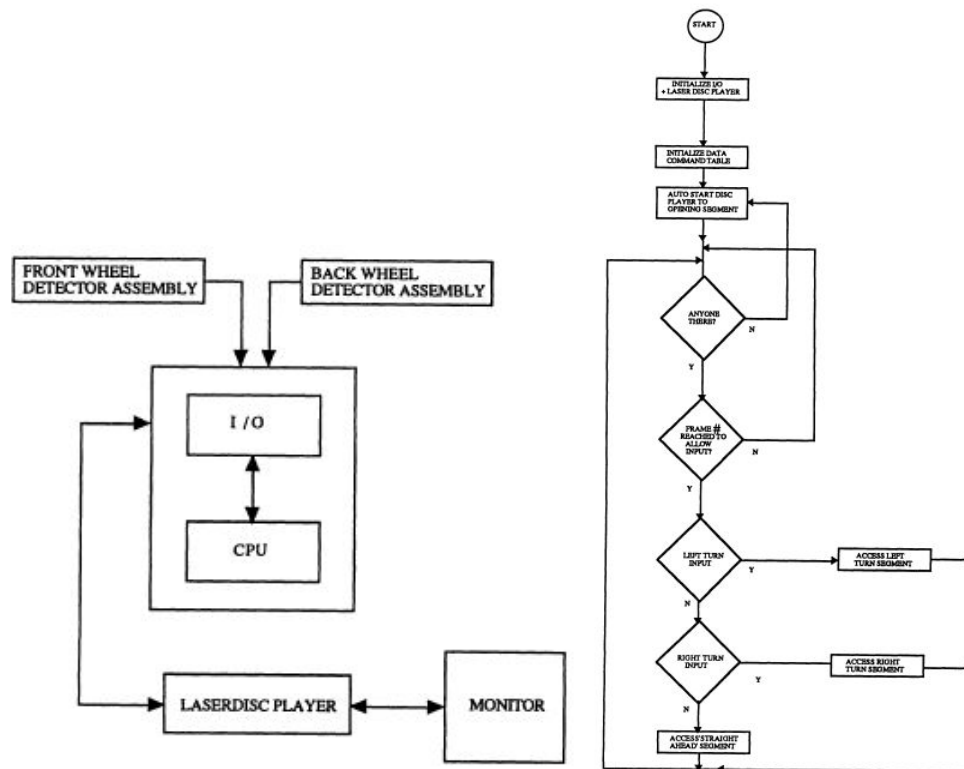
Paterson, Nancy. "Bicycle TV: Expo '92 Installation," 163-164.

Cyberfeminism emphasizes that access to computational technologies should be democratized for the most widespread opportunity creative expression and development. With this idea of access comes a personal judgement for individuals working with this technology with regards to the level at which they give away their secrets. The hidden technology, algorithm, or database that supports a new media work "always makes an inherently political statement about access and its control" by a function of its hiding.[19] Consistent with her pleas to Cyberfeminist supporters to enforce equal access to innovative computational technologies, Paterson attempts to democratize the web and access to computational technologies through both her collaborations and detailed expositions of her works. She goes into careful detail in her essays, explaining her projects even from the preproduction stages. With her direct explanations of her pieces, she indicates her willingness and desire to pull back the curtain and demonstrate the inner workings of her mind and art.[20] As shown above, flowcharts often accompany the text explanations of the works, outlining the conceptual, hardware, and software logic and processes.[21] Any viewer or

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[18] Paterson, Nancy. "Cyberfeminism," 4.
[19] Paul, Christiane. "The Database as System and Cultural Form: Anatomies of Cultural Narratives," 97.
[20] Paterson, Nancy. "Bicycle TV: Some Interactive Exercise."
[21] Paterson, Nancy. "Bicycle TV: Expo '92 Installation."

admirer of her work, her technical abilities, or the engineering practices necessary to complete her pieces can understand in detail the various elements of the work.[22] By exposing the logic and technology behind her works, she opens the door for artists who may not enjoy the same resources that she does.

Along with the expansion of access to technological tools comes the question of interface: what method of information retrieval and access is most efficient in order to spread an idea, tool, or other information? The flood of new information in the early days of computer technology enforced the need for modes of organization fine tuned to combat the constant flow of data regarding of individual sites, sources, and documents, in addition to their connections to one another.[23] Online culture necessitates new methods of parsing data, achieved through various interfaces and representations of data. *Stock Market Skirt* is an example recreating a common a common interface, mapping real time financial data to the manipulation of this object, and "exploring new means of collecting, storing, retrieving, and distributing information."[24] Past interfaces may be inefficient or unintuitive, and each attempt to visual data could prove the most desireable to a different unique individual's technological needs. Whether or not Stock Market Skirt is a more efficient interface, Paterson did receive an email from a stock broker saying that "he would rather watch the skirt than the DOW."[25]

Customization proves ever more important in the digital age, as each person's needs for information access are unique, and computational technologies allow for preset preferences and customized personal systems. "What distinguishes digital databases from their analog predecessors is their inherent possibility for the retrieval and filtering of data in multiple ways."[26] As Vannevar Bush suggests with the idea of the highly personalizable Memex in 1945, digital interfaces should serve each individual's unique needs, with trails of information and links between documents that specifically cater to your research history.[27] Paterson's interactive digital work, *The Library*, 2000, is a virtual visualization of the masses of new information within the technological age, formatted into the common and well understood organization of a library. This piece looks to translate the masses of online information into the simply understood library form, allowing any viewer access to the intuitive research database, applying the organizational strategies of our physical world to the digital age and its infinite sources of information.[28]

Artists primarily working with computer technologies are often in collaboration with programmers, engineers, and electricians. By working directly with the executors of the technologies they require, artists can better execute their ideas and visions. Collaborations such as this lead to groups and organizations intended to connect the two fields and encourage

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[22] Paterson, Nancy. "Hair Salon TV: A Computer-Controlled Video Installation," 16.
[23] Bush, Vannevar. "As We May Think."
[24] Paterson, Nancy. "Stock Market Skirt: The Evolution of the Internet, the Interface, and an Idea," 241.
[25] Paterson, Nancy. "Stock Market Skirt: The Evolution of the Internet, the Interface, and an Idea," 236.
[26] Paul, Christiane. "The Database as System and Cultural Form: Anatomies of Cultural Narratives," 96.
[27] Bush, Vannevar. "As We May Think," 40-45.
[28] Paterson, Nancy. "The Library."

collaborative works, such as Experiments in Art and Technology and the Critical Art Ensemble. The Leonardo journal, created in 1968, was meant to explore the intersections between art, science, and technology in a way that could be readily accessed by those interested.[29] Many of Paterson's own essays and other mentions of her work have been found in the journal, illustrating how her place in this collaboration and crossover of fields. In addition, she often names the programmer or engineer she works directly with, or at least mentions where in the process she handed her ideas and conceptual plans over to someone with the proper technical skills.[30] Her work reaches engineering audiences an accessible way because of her systems' design and implementation. During a presentation of the *Stock Market Skirt* engineers in the audience responded to the piece positively and described it as a "tele-robotic project."[31] Her pieces are likely accessible to engineers in this way because they often involve goals and directives with system design in mind rather than an art-object result.

In many of Paterson's essays about her own works, she spends a large portion of time discussing the preproduction and production stages. She emphasizes the process of creating her work from the ground up, and the development over time of her ideas and processes. The idea and concept, in addition to technical goals, play a seemingly larger part in Paterson's creative ambition than ideas of particular finished products.[32] The flowcharts that she involves in her explanations are visual indications of process and development, with the end products avoiding emphasis in comparison to the development of her ideas. The art object is simply a culmination of the processes and logic used to construct the system.

Technical aspects and goals have guided Paterson's hopes for her works, and even sometimes come to her mind as ideas earlier than concepts. *Hair Salon TV*'s "most important aspect" is the computer generated "display sequence,"[33] and *Stock Market Skirt* allowed her to conquer specific hardware and software challenges.[34] Part of the motivation of *Stock Market Skirt* was an idea of irony with bandwidth; while the piece's connection to the internet with real-time data-mapping is important, it is a piece that as a whole requires very little bandwidth.[35] Paterson's focus on both her technical skills and conceptual ideas indicate systematic nature of her finished art-objects, and prove that the physical objects simply prove as a documentation of the system and process by which they were created.[36] The focus lies on the creation of systems that exist and operate "as ongoing entities away from the viewer", accessed through a single art object that acts as an interface to the system.[37] This is consistent with Christiane Paul's argument that art in the age of information overflow depending on systems and computational processes

[29] Vesna, Victoria. "Shifting Media Contexts: When Scientific Labs Become Art Studios," 3-4.
[30] Paterson, Nancy. "Bicycle TV: Expo '92 Installation."
[31] Paterson, Nancy. "Stock Market Skirt: The Evolution of the Internet, the Interface, and an Idea," 234.
[32] Paterson, Nancy. "Bicycle TV: Some Interactive Exercise."
[33] Paterson, Nancy. "Hair Salon TV: A Computer-Controlled Video Installation," 16.
[34] Paterson, Nancy. "Stock Market Skirt: The Evolution of the Internet, the Interface, and an Idea," 233.
[35] Paterson, Nancy. "Stock Market Skirt: The Evolution of the Internet, the Interface, and an Idea," 236.
[36] Paterson, Nancy. "Bicycle TV: Some Interactive Exercise."
[37] Burnham, Jack. "Systems Esthetics," 15.

often honors its underlying databases as the priority rather than aesthetic.[38] Paul illustrates this priority by describing a split between a piece's "front end," that which the viewer sees and experiences as a piece, and the more important "back end," comprised of algorithms, software, and concepts.[39] The front end serves as an interface for the data being represented and controlled through the mechanisms of the back end. Paterson makes the back end of her works visible through her detailed explanations of hardware, software, and concepts. This reveal of the inside workings of her pieces shows the true value she places on process rather than art object, and the way in which system development guides her work and thinking process more so than a goal of a final object.

Nancy Paterson's work has consistently represented Cyberfeminist ideas through systems of data visualization. She has worked throughout her life as a new media artist with information and interfaces, giving the viewer visual access to a particular database, in addition to giving interested readers detailed overviews of system construction and processes.

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[38] Paul, Christiane. "The Database as System and Cultural Form: Anatomies of Cultural Narratives," 96.
[39] Paul, Christiane. "The Database as System and Cultural Form: Anatomies of Cultural Narratives," 97.

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