Peau d'Âne: Where Wearables Meet Fairy Tales

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Abstract

This presentation looks at a work entitled "Peau d'Âne" which coalesces fairy tales, three meteorologically modulated dresses and wearable technology. Inspired by the Charles Perrault's fairy tale, "Donkey Skin", this project aims to incarnate three "impossible" dresses from the story in material form. The dresses take on the unique and mutable characteristics of the sky, moon and sun, translating these natural qualities into real-time and location-specific actuated garments to be used in a performance context.

Introduction

In the Charles Perrault fairy tale "Peau d'Âne", a young princess, whose kingdom's riches are dependent on a gold excreting donkey, orders the impossible — three dresses made of immaterial materials — from her doting stepfather to thwart marrying him. The first is to be made of the "sky" and should be as light and airy as the clouds. The second is to be made of "moonbeams" and should reflect the same lyrical intensity as the moon at night. The third, and last, is to be made of "sunlight" and should be as blinding and warm as the sun above.

Conceptual overview

This project is part of a body of research that focuses on relational and ubiquitous performance. Investigating historical performance-centric contexts and adapting new scenarios for wearable and sensing technologies, "Peau d'Âne" seeks to create a bridge between the symbolic percipience of fairy tales and current technological innovation. In particular, this project explores the potential for wearables to become agents of performativity.

Techno fashion

Technology is increasingly addressing our need to access information and maintain connectivity with others on a continuous basis. Bradley Quinn, on explaining why garments are positioned at the centre of technological and personal computing research, notes that:

Fashion, as an essential component of everyday life, provides the ideal means for information technologies to be constantly accessible and widely relied upon as they become indistinguishable from clothing."[3] As we negotiate an increasingly mobile lifestyle, technological research has been focused on creating multiple networks for communication along with new interfaces for accessing these networks. Reactive fashions integrating human-computer interfaces — fashion that can adapt and modulate depending on its environment or use — propose new and unique sets of social interactions. "Wearables" — microcomputers that can be worn on the body — and "smart" fabrics — responsive materials both hard and soft — can mediate this information between the self and the world. Examples of industry research in the field of wearables have centered on utilitarian

and entertainment applications such as: dynamic camouflage for military industry; biofeedback clothes to monitor the elderly or ill; and universal connectivity environments for 24/7 access to the Internet and entertainment media.

The "Peau d'Âne" project extrapolates wearable technologies' utilitarian drive to meditate on the potential for an aesthetic experience, symbolic imagery and data visualization. Translating climactic factors into active wearable displays, the "Peau d'Âne" project poetically embodies the chimerical fairy tale artifacts of a "sky", "moon", and "sun" dress via variegrated information displays. Lev Manovich coined the term "info-aesthetics" to describe a new culture of media arts actualized in the reconfiguring of information representation, dissemination, manipulation and analysis.[4] Looking at the industrial revolution's symbolic as well as material affect on modern art and society (motorcars, bridges, grain elevators, air travel), Manovich postulates that today's avant-garde is rooted in an historically analogous information/computer revolution. Technological presence in the everyday, and hence ready and proximal data access, has propelled distinct and innovative information interfaces, which have engendered new forms and meanings. Utilizing prevailing and emergent research on wearables, "Peau d'Âne" adapts technological innovations in the service of relational and ubiquitous performance where info-aesthetics are subsumed through a topical data anatomy of fairy tale costumes.

Technical overview

The three "Peau D'Âne" dresses were developed using parallel technologies expressed via different materials. A weather station culls live weather data transforming the dresses as they reflect the changing barometric characteristics of sky, moon and sun in real-time. Ambient weather variations are displayed by modulations in the dresses' designs/patterns and behaviours. Each dress is designed to respond to a certain set of weather fluctuations native to its particular meteorological characteristics as influenced by the sky, moon, or sun.

Three prototypes

Dress 1: "Sky"

The "Sky" dress displays a changing structure and movement based on flux in the wind velocity and direction. The dress is made of inflatable fabric pockets which expand to display real-time climactic changes. The greater the wind velocity, the larger the dress grows. Wind fluctuations create dress vibrations as the rhythm of the airflow in the dress is alternated (i.e. air will go in and out in a rhythmic fashion).

Dress 2: "Moon"

The "Moon" dress displays changing color patterns based on the 28-day cycle of the moon. These subtle transformations are made utilizing resistive heating in combination with thermochromic plastisol paints. Thermochromic paint is heat-sensitive, changing from one color state to another (or from opaque to transparent) when

exposed to a heat source. The "Moonbeam" dress is embroidered with conductive thread, which is slightly heated in order to trigger responses in the paint and thus represent the moon cycle as it appears and disappears. As the moon transforms from a small sliver to a full globe to a small sliver again, the dress' colours and patterns follow suit.

Dress 3: "Sun"
The "Sun" dress displays light patterns based on changes in the sun. The dress is constructed with an embroidered design of LEDs (light emitting diodes) and conductive fabrics and threads. The LEDs are set alight based on UV and sun intensity readings. The greater the intensity of the sun, the brighter the dress glows, emulating the sun itself. The more UV rays outside, the more the dress' LEDs are animated. The changing patterns of the fully addressable LEDs also graphically represent solar radiation changes.

Relational and ubiquitous performance art

Performance art today re-emerges as an important artistic discipline fashioned in a parallel climate of increased societal changes engendered in no small part by technological evanescence in the everyday. The possibilities for performative presence in a ubiquitous media system can be imagined in contemporary models of social connectivity/networks suggested in performance art.

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1 Breward, Christopher. 2003. *Fashion. Ox*ford: Oxford University Press.

2 Warner, Marina. 1995. *From The Beast to The Blonde: On Fairy Tales and Their Tellers.* London: Vintage.

3 Quinn, Bradley. 2002. *Techno Fashion.* Oxford & New York: Berg.

4 Manovich, Lev. 2001. *Info-Aesthetics Summary.* http://www.manovich.net/IA/.

5 Goldberg Roselee. 1988. *Performance Art From Futurism to the Present.* New York: Harry N. Abrams, Inc.