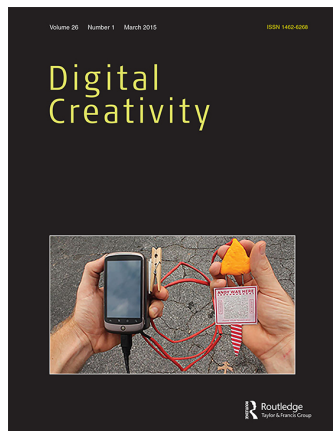


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The BirdMan: hybrid perception

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Abstract

Why should we commune with the environment surrounding us? It's because communing is the most ecological strategy for human beings, who coexist with other humans and even other creatures, whereas there is no way of knowing the experience of other creatures. 'Qualia' are none other than relational properties in a complex system of human beings in nature. This article explores how to perceive others' perception through a BirdMan experiment. The BirdMan, a half-man and half-beast creature, born in a subconsciousness, attempts to share its mind with others. As a venue for new experiences transforming and recreating human perceiving experiences, the work becomes a meta-methodology exploring the meaning of other beings' experience. While encountering in between different perceptions with hybrid perspectives, ecological narratives and empathy can be realised. It suggests to us that the way we perceive and understand this world is not the only way.

Keywords: BirdMan, embodied cognition, hybrid perception, qualia, ecological commune, empathetic mind, narrative

1 Introduction

1.1 Artistic and ecological possibilities of perceiving the others' perception

BirdMan is a virtual creature that appeared in an artist's dream due to a traumatic and distressing experience. We consider it as a metaphor to represent hybridity of perception and identity between the self and the other; from this inspiration we have developed an artistic and semi-scientific experiment for hybrid perception. The goal is to explore the possibility of perceiving others' perceptions, to commune with them and with the world at large. The semi-scientific approaches are based on the theories of 'embodied mind' in cognitive science and new media interactive digital technologies. We suggest that non-linguistic metaphors based on a new hybrid perceptual device and narratives can be methodologies by which we can ecologically empathise with others. We ground our work theoretically in the thought experiment of the mind-body problem by Thomas Nagle (Nagle 1974) and theories of 'qualia' by philosophers and cognitive scientists including Daniel Dennett (Dennett 1992). In addition, we examine how zookeepers communicate with animals, based on scientific knowledge such as cognitive scientific research on eye movement and ornithological research of a bird's visual system, and an artwork consisting of a hybrid perceptual device created as an interactive installation within the context of a natural history

museum. This article provides a scientific analysis of the artwork and aesthetic theory of hybrid perceptions and identities.

2 Hybrid perceptions, identities, and qualia

2.1 Why we do want to commune with the others and the world?

We communicate with the environment that surrounds us because that is the most rational strategy for us as human beings who coexist with other humans and even with other creatures. Can we commune with the Other besides human beings, such as animals, plants and inanimate objects? Although linguistic communication would be impossible with them, can we communicate with them in a non-linguistic way such as with empathy?

Gibson's ecological theory (1986) interprets perception as an inferential process, or as a reconstruction of the whole body from a bare skeleton. According to his concept of 'affordance', the stimulation around an organism is structured and the centre of the nervous system, including the brain, does not need to process sensory stimuli in order to obtain information, but needs only to resonate with the information already within the stimulation (Shapiro 2011, 29–30). He also considers perceivers as actively exploring their environments. So actors collect information that would otherwise be unavailable, which creates new perceptions.

According to Beer (2003), a dynamicist, our brain, body and the world are coupled. This means that understanding the behaviour of one component *requires us* to understand the behaviour of another. The environment, body and brain are all dynamic systems that are continuously interacting with each other. The brain as a nervous system is *embodied* and the body is *situated*. Following this concept, how can we experience another's perceptions (multi-point of views; viewpoints based on the circle of causality involved in brain, body and environments) in the natural world?

2.2 BirdMan and shamans with hybrid perception and identity

BirdMan is an artist's alternative personality (alter ego) on which his hybrid perception and identity is projected. In Korean tradition, some shamans can share their own bodies with the deceased soul. Whenever a shaman is possessed by the spirit of the dead, s/he acts, speaks and senses like another person, as if borrowing the perception of the deceased. This moment looks like a coexistent state of the living body and the dead in which perception and identity of the two is hybridised. Throughout North Asia, shamans used to wear a plumed hat and *Sotdae*, a tall wooden totem pole with a carved bird on its top. Carved birds on *Sotdae* are usually ducks, wild geese and gulls; religious and symbolic animals that were believed to communicate with the heaven, the water, the earth and the human beings.

Park's study of relationship between shamanic narratives and hybrid identities due to dislocation indicates that the Korean shamanic ritual, *Shin Kut*, functions as the context as for a young shaman suffering from dislocation. The initiation involves experience by transformation and overcomes sufferings such as dislocation, disconnectedness and powerlessness through rituals. After the initiation, a young shaman can obtain a hybrid identity through engaging with spirits and other persons (Park 2011, 44)

The BirdMan embodying the psychological fear of birds and guilt for negligence is a sort of shamanic creature for connecting and relocating the dislocated identity and mind in a post-industrial social context, where art remains one of the few cultural practices that retains the mythic force of traditional ritual.

2.3 What is it like to be a bat? (Thomas Nagle)

In 'What is it like to be a bat?', Thomas Nagle writes that since the human imagination is limited by that which we can embody or which we know from prior experience, we can never know or understand what it is to be a bat. According to him, there is no way for human being to know and experience the bat's experience

through reductionist thinking. He criticised a reductionist in error, insisting that the mind–body problem was unique unlike reductional materialism such as the water:H₂O problem or Turing machine:IBM machine problem or the gene:DNA problem (Nagle 1974). Nagle’s dilemma is also a core problem in the BirdMan project: how to integrate the physical body and the mind?

In his recent book, *Mind and Cosmos*, the mind_body problem is not a local problem with the relation between mind, brain and behaviour in living animal organisms, but is related to our understanding of the entire cosmos and its history. The understanding of mind is not enough to be explained in the personal point of view, because mind is partly formed from relationship with physical world (Nagle 2012, 3, 8).

2.4 How do we share our raw feeling, ‘qualia’? (Daniel Dennett)

We represent the philosophical concept of subjective and objective feelings co-existing as one as ‘qualia’. Daniel Dennett asserts that ‘the raw feeling’, which is often called and misunderstood as ‘qualia’, is not one of ‘seeing’ but one of perspectives. It is not the individual’s private one, but is none other than a relational property in the complex system in between the perceiver and the perceived (Dennett 1992, 369–411). Based on

Gibson’s idea and Nagle and Dennett’s critical mind, our problem space is composed as follows: (1) Are there any possibilities of being as much like the Other as possible? (2) Whenever I try to represent and compose the other’s lives, they are always distorted. How could this distortion be minimised?

3 The birth of BirdMan

One morning, as Gregor Samsa was waking up from anxious dreams, he discovered that in bed he had been changed into a monstrous verminous bug. The Metamorphosis (Kafka 2009)

3.1 The birth of BirdMan in a dream and the artwork from the recall memory

Artist Jeong Han Kim’s personal trauma and dream sequences gave birth to the ‘BirdMan’ character. The artwork represents the artist’s desire to communicate and share his fascination with this hybridised creature. In the work, the artist explores possibilities for human beings to overcome their own limitations in perception due to physical and psychological reasons. This work was inspired by the Buddhist epistemological idea that the ‘Self’ is not different from the ‘Other’ (Fronsdal 2006), as well as Gilles Deleuze’s ideas on



Figure 1. Binocular rivalry and transformation from the horizontal eyes’ position to the vertical eyes’ position ; the skeleton of the BirdMan with a wing and a human arm, shows the traces by which the atrophy of vertically positioned eyes and the evolution to the horizontally positioned eyes can be shown.

memory that our relationship with time will always be elusive and imperfect (Deleuze 1986).

As for the artist's memory, BirdMan is the virtual existence made by psychological trauma. Such psychological trauma was created with the sense of guilt and conscience about the non-human existence. The artist notes the origin of the BirdMan's like this:

When I walked along the street at Times Square in New York City in 2004, I saw a dead pigeon flattened on the road by a car. The bird's wing was torn. This reminded me of a forgotten memory, my trauma. When I was younger, about 6 or 7, I had a severe fear of birds. One day, I had met a wounded bird in a dead alley, but I could not help it. It was a very strange emotional shock for me. I felt both fear and guilt because I could not help the bird. After then, as I did my best to understand why I felt guilt and fear of birds, I suffered more because I still don't know why. Had the bird died feeling ill-will towards me?

Years later, as an adult, he dreamed of a monster with a bird head and a wing on only one side. This bird spoke to him in bird language and he learned its language.

The artwork BirdMan has been created in order to overcome the trauma in the artist's memory and to communicate with the bird. The methodology taken for the channel of communication begins with understanding the other and by scientific knowledge accumulated, such as ornithology. First, based on the personal collective memories and the ornithological knowledge, the part which has the biggest difference between the two existences (men and birds in this case) was explored. As its result, the difference in the ability and sense of vision between the human and bird was chosen as the focus, although there are other differences in motor ability between the two based on the human body's arms and bird's wings.

In the human, each eye sees a slightly different view of the world and this binocular disparity functions for human beings to recognise depth and distance perception. Human beings see either one of the oriented gratings or the other but not both together, and continue to alternate back and forth, which is called binocular rivalry (Alais and Blake 2005). Research for binocular rivalry is about questioning what happens when two completely different images, not the same image from different eye views, are presented to each eye (Friedenberg 2012, 43–45). In



Figure 2. BirdMan: hybrid perception, interactive media installation.

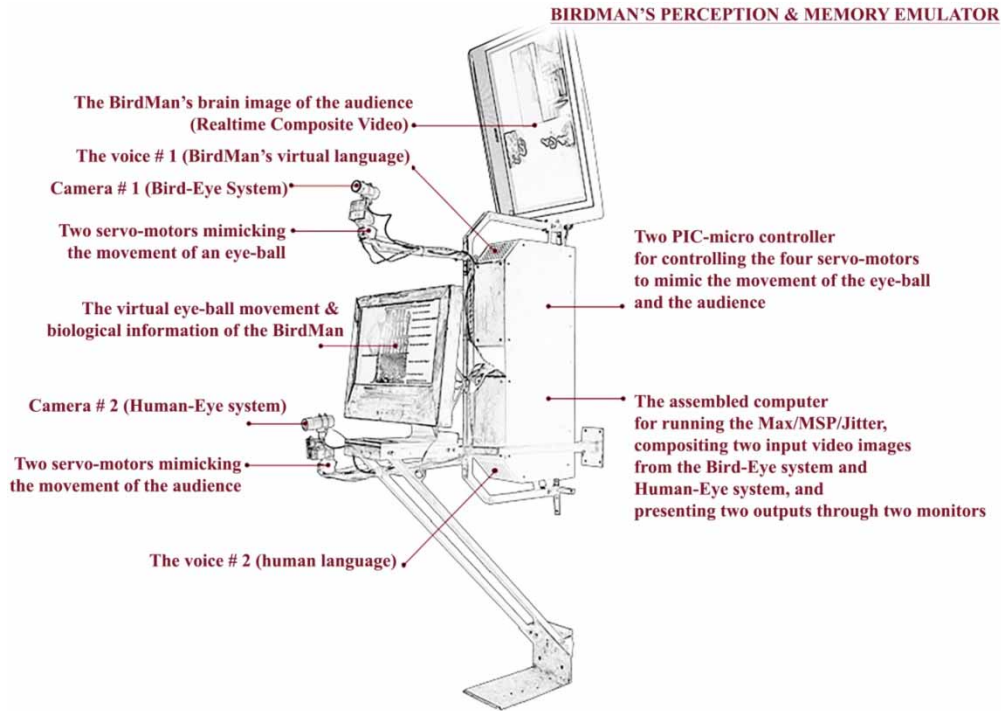


Figure 3. BirdMan's perception and memory emulator.

BirdMan artwork, audiences experience binocular rivalry between a human bare eye and a bird eye represented by the emulator.

The reconstructed skeleton of the BirdMan has a human eye and a bird eye. What does BirdMan see? While humans can't recognise thirty frames per second and have only one fovea on each eye, birds, highly visual creatures, can recognise 200 frames per second, and some birds have multi-foveae. The fovea is a small depression in the retina of the eye where visual acuity is highest. Birds have a wider range of sight than humans. How does BirdMan's brain synthesise two kinds of perception? Imagining a perceptual mixture of a human and a bird eye, an emulator to approximate BirdMan's method of seeing is made.

The machine eye, mimicking the characteristics of a bird eye and a human eye, moves vertically and horizontally and takes the role of an interface selecting and playing one of the recorded video clips about BirdMan's memory. 'Digital autopoiesis (auto-creation)' representing both

real-time perception and stored memory simultaneously is thus realised.

3.2 Technical review of the artwork

The BirdMan eye-perception emulator is composed of two real-time video cameras, four servo-motors, a PIC micro-controller, and Max/MSP/Jitter software. Video cameras capture and track the movement of an eye and send the real-time video. In the computer, Jitter (a visual programming application) sends two X-Y values of the pupil's central position to the micro-controller. Then the micro-controller controls four servo-motors and makes the two cameras move horizontally and vertically according to the movement of the eye's pupil. The video image of the surveillance camera on the servo-motors is sent to Jitter again, and after that, the recorded video clips about BirdMan's memories and video images captured in real-time are composited together. These images are played like a 'jump-cut' with time delay and

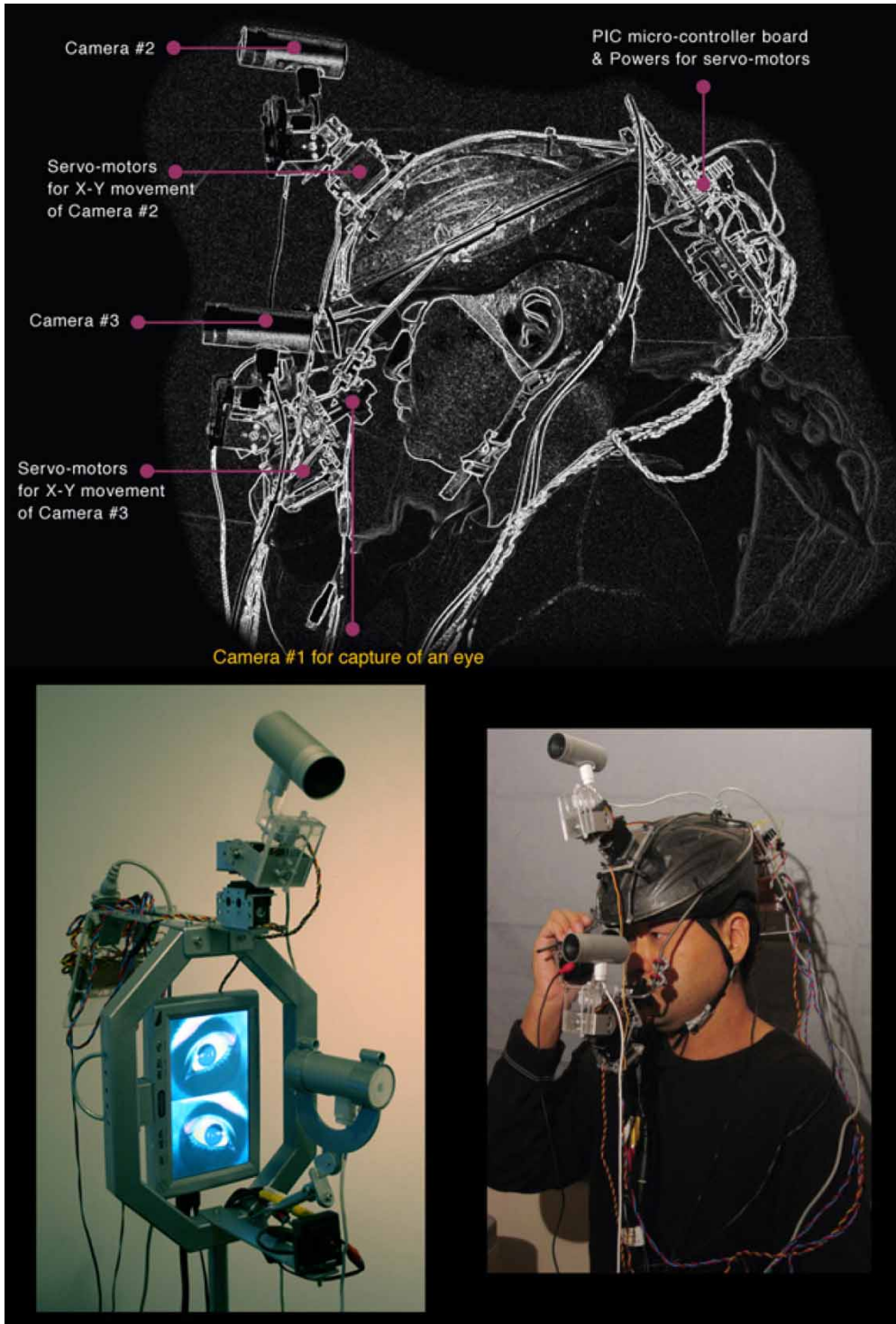


Figure 4. The Eye-PD (perception drawing) system.

repetition similarly to human memory. Along with the device of experiencing BirdMan's visual perception, the skeleton of BirdMan is installed next, and the overall presentation contextualises in the natural history museum in order to make this BirdMan as if an extinct animal.

4 New perception, metaphors and narratives

At that time I had a daily ritual. I would go to the Buddhist temple on the mountain behind my house, to pray and perform 108 bows. On the path to the temple, my shadow always walked ahead of me. It was impossible for me to pass it. I thought to myself that my shadow was "infinity with an end", "moving with me. I understand human life in terms of 'limits' and 'relationships'. 'Time' is a 'limit' for humans, as are the perceptions of the individual. It is through 'relationships' that there is the possibility to overcome these 'limits'. People's relationships participate in the opening of human limits through interactivity. (From the artist's note written in 1999)

4.1 Talking or empathising with animals and nature

This section describes the new perceptive world created by the BirdMan through exploring the new narratives by hybrid perception. This is to search for possibility of perceiving the other's perception. Marc Hauser who wrote *Wild Minds: What Animals Really Think* (2001) says that by the ability of distinguishing himself from the other we can determine that an animal can have a mind. According to his research, there are lots of animals that can recognise their individual self, for example orangutans and rhesus monkeys. He argues that besides primates, lots of animals have a certain 'tool kit' of a collective mental ability and can acquire knowledge regarding objects, numbers and spaces. In *The Parrot's Lament* (2000), Eugene Linden secures evidence of animals' thinking ability and consciousness

by collecting experiential stories from the zookeepers from all over the world. Through this, Linden introduces interesting experiments showing that animals also can understand the mind and emotion of others.

These kinds of explorations are the efforts to overcome human-centred thoughts such as consciousness and mental ability, which have inevitable relationships with the human language or confines of the language. Such attempts keep reminding us that the way we perceive and understand the world around us is not the only way. There might be diverse versions of consciousness and mental abilities in perceiving this world beyond humans' ones.

4.2 Communicating with the others through three steps suggested by the BirdMan

The BirdMan artwork has been designed to take the audience to a new world of experience.

4.2.1 Step 1: change your perceptions and conceptualise by sensing and acting

In the framework of 'embodied cognition', conceptualisation is made through acting and sensing. From the informative object, it takes new perception and turns it to new conceptualisation. The BirdMan project began to ask the following questions: How do you as a human being conceptualise the world? In the world of BirdMan, can the audience transform their perception and enabling them to collect information from others or altered environments beyond their physiologically and perceptually situated environments?

4.2.2 Step 2: create your network of replacements (metaphor)

In Lakoff and Johnson's (1999, 2003) theory, the condition of the body determines basic concepts, which then participates in metaphors, which in turn permeates just about every learned concept. If this is right, then new perceptions create new metaphors. In the perspective of theory of embodied cognition, 'replacement' is the concept based on research of a dynamical system and

autonomous robots. Dynamicists and roboticists think that brain, body and environment are involved in the circle of causality. Likewise, with BirdMan's new perception, through the process of sensing and acting, the network which is composed of new metaphors is constructed.

4.2.3 Step 3: build your new embodied constitution and new ecology

The third step is a process to embody information of perceptions and network of metaphors, which are acquired during steps 1 and 2 through hybrid perception and distortion of perception. New embodiment or constitution as 'physical qualia' (Jackson 1982), is composed of sensory-acting through new hybrid perception, new metaphors, new conceptions, new environments and new ecology.

Using the BirdMan emulator, the audience is situated by transformed perceptual interactions with environments, and they try to conceptualise the world depending on comparing and networking metaphors. New perception evokes new conceptions.

4.3 Experiencing infinity with an end through life and narrative

'The human, all too human (Menschliches, Allzumenschliches)' identity is an accumulation of these limited and distorted perceptions (Nietzsche 1996). When the human's experience of 'time' and 'interactivity' are combined, the individual's story or narrative will be created. The story is a way to endlessly create meaning and significance, just like life. As French philosopher Paul Ricoeur puts it, life resembles a 'story'. A 'story' comes out of the human's struggle to keep up with the rapid flow of time (Ricoeur 1990, 100–152).

5 Conclusion

When the new 'self' and 'others' are combined in time and space with the device for hybrid perception, we could expect that 'qualia' or 'the mind before thinking' create new identities in between the individuals, including human beings and non-human beings. 'Qualia' are bridges and metaphors

through which we can communicate with each other, and are also moments of the events through individuals who create their own narratives. This artistic and semi-scientific experiment enables us to make sense of what otherwise seems like random, discontinues moments and perceptions. The narrative created with hybrid perception is the combination of memory and biological records that creates a sense of identity. Ecologically and creatively, humans are able to live depending on the meaning of events they create, not through human judgment but through perception as Other. We, as human beings, endlessly create our stories on the premise that there might be infinite ways to communicate with the others. We use them to create the idea of the self in the past, in the future and in the cosmos. As Bertolt Brecht once inspired us, 'a human producing one-self is art, and that is life' (Brecht 1964).

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