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Matthew MacKisack

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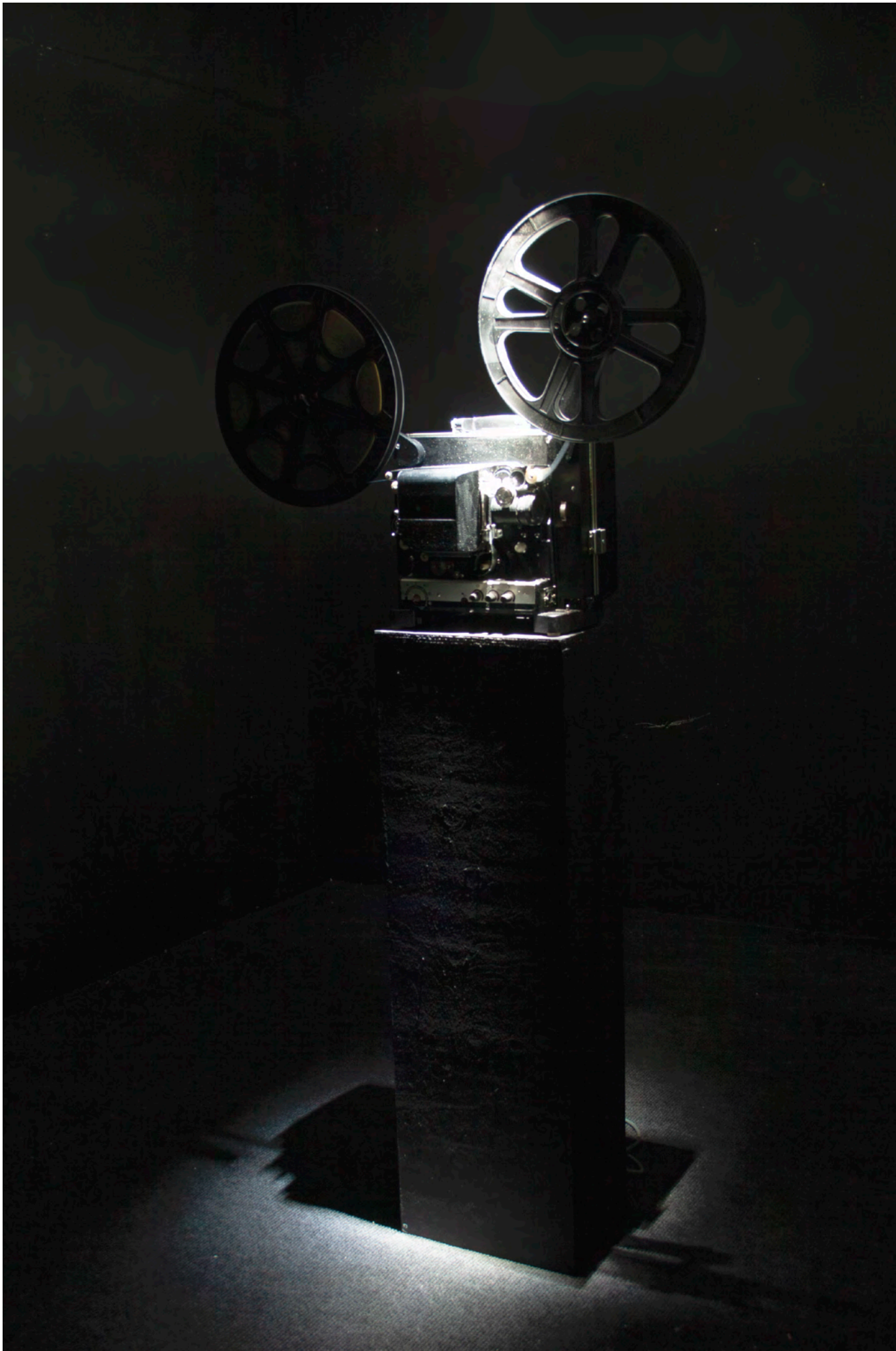
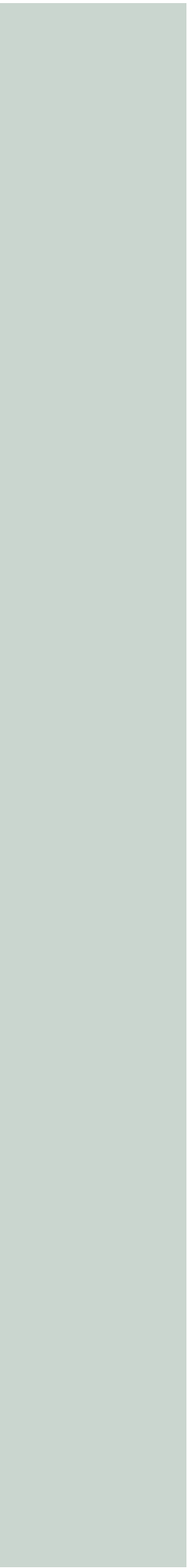
*Now let us try for a moment to realize, as far as we can,
the nature of that abode of the damned which the justice
of an offended God has called into existence for the eternal
punishment of sinners.*
— James Joyce (1916)

The Experiment

Let's begin with the test-subject: a woman who sustained severe traumatic brain injury in a road accident, in the summer of 2005. After an initial comatose state, she opened her eyes and demonstrated cycles of sleep and wakefulness. But although "reflexive behaviour" was preserved, there was nothing which could be regarded as "voluntary" or "willed" responses... from the upper or lower limbs'; indeed, there were "no overt motor responses to command" at all.¹ On the Glasgow Coma Scale—a standardized measurement designed to reliably and consistently assess how deeply an individual is comatose—she rated a lowly 4 out of 15: she was in a *vegetative state*.

The term "vegetative state" was coined in the 1970s for an increasing number of people who, following damage to the brainstem or midbrain, and facilitated by improving life-support methods, had moved out of coma but not "into" consciousness. Someone in a vegetative state has sleep-wake cycles and breathes

without support, but their responses and movements are reflex. For clinicians attempting to establish the level of consciousness in brain-damaged patients, this absence of volitional movements means the absence of consciousness. The patient's brain may be damaged in such a way, however, that the capacity for volitional movement is lost, but some neural and mental functioning is spared. Driven by this possibility and the increasing capacity of modern scanning technology, researchers, since 2000, have used neuro-imaging techniques to look directly at patterns of brain activation in response to different stimuli. Thus, five months after her catastrophic injury, the 23-year-old woman became a test-subject. Her experimenters—a team lead by the neurologist Adrian Owen—had hypothesized that if, when asked to engage in certain mental activities, she produced fMRI scans indistinguishable from those of "healthy" subjects asked to do the same, she could be deemed as conscious as they are.



The day of the experiment, in-ear headphones are placed on the subject who is then moved into the scanner. Following a series of trials to assess whether speech perception is taking place, the subject is presented with a number of mental imagery tasks: verbal instructions, fed in through the earphones, to imagine certain activities. These are alternated with instructions to rest, and repeated ten times. The first is a “motor” task: “Imagine playing tennis. [30 second pause] Now just relax. [30 second pause] Imagine playing tennis. [30 second pause] Now just relax”, and so on. The second instruction, a spatial navigation task, is to “imagine visiting the rooms in your house, starting from the front door.” This is also repeated ten times, in alternation with the instruction to rest.

The Presence of Consciousness

Owen and colleagues found that patterns of brain activation observed during the imagery tasks “were indistinguishable from those observed in healthy volunteers performing the same imagery tasks in the scanner.” For the researchers, this demonstrated that the patient could understand and respond to spoken commands. Coupled with “her decision to cooperate with the authors by imagining particular tasks when asked to do so,” representing a clear act of intention, the response confirmed for the researchers that the woman was “consciously aware of herself and her surroundings.”

Key to the interpretation of the woman as conscious, then, was that she obeyed instructions to *imagine*. And that she imagined *determinedly*: to prove that the observed brain activity could not have been involuntarily triggered by the word “tennis,” Owen and colleagues staged a supplementary control condition in which a healthy volunteer showed no activation in the relevant brain areas when presented with the isolated words. The researchers thus remained convinced that the patient “was consciously aware and purposefully following the instructions given to her.”² Now, imagining playing tennis and walking round one’s house is a clever part of the experimental design. Unable to generate “external” communicative behaviour, a form of “internal” behaviour is required, and the presence of mental imagery is readily legible by scanners. But imagining in accordance with given instructions is more than a neat experimental component—it is what marks the patient as conscious, what raises them from the vegetative level to the properly human. It transforms them.

Instructed Imagining

The instruction to imagine has a history of being used for just this purpose. Constituent of shamanic healing practices for many thousands of years,³ it entered modern European cultural consciousness via Ludolph of Saxony’s *Vita Christi* (1374) and Ignatius of Loyola’s *Spiritual Exercises* (1522–1524). The *Exercises*, which led participants through visualizations of inspiring episodes in the biblical narrative, were widely influential, and not only as the keystone in the founding and promulgation of the Jesuit order. They directly informed Rene Descartes’ *Meditations* (1641): both prescribed mental imagery exercises, not just to convince the reader of the truth their propositions, but, as Zeno Vendler⁴ has suggested, to bring about a change of will, a transformation in the self.

Imagining was similarly transformational as a central feature of the pedagogic writings that emerged from the public academies of art in Early-Modern Europe. The intellectualisation of art and its production, resulting from the desire to dissociate from the repetitive, manual labour of the workshop and establish painting and sculpture as liberal arts, resulted in the “true” artist’s work being a mental, rather than physical, act. For 16th and 17th century Italian academicians, painting was understood, writes François Quiviger, as “primarily a mental image conceived in the imagination of the artist before its transcription on the canvas or the panel.”⁵ In 1585’s *Della nobiltà della Pittura*, Romano Alberti describes this process in the following terms:

[...] the painter cannot produce any form or figure [...] if first this form or figure is not imagined and reduced into a mental image (*idea*) by the inward wits. And to paint, one needs acute senses and a good imagination with which one can get to know the things one sees in such a way that, once these things are not present anymore and transformed into mental images (*fantasmi*), they can be presented to the intellect. In the second stage, the intellect by means of its judgement puts these things together and, finally, in the third stage the intellect turns these mental images [...] into a finished composition which it afterwards represents in painting by means of its ability to cause movement in the body.⁶

In concert with a wider cultural disparagement of “productive” labour by comparison with “symbolic” labour,⁷ having and exercising a “good imagination” becomes just as essential to painters as their manual skills of execution. This expectation lasted as long as the academies: in the late 18th century, Joshua

CHIMNEY PIECE

Build three thousand chimnies so it will look
like one from a certain point and three thousand
from another point.

1964 spring

Yoko Ono, *Chimney Piece*, 1964.
Published in *Grapefruit* by Yoko Ono, 1964.
Photo: © Yoko Ono.

Reynolds would tell his students that “every man forms a picture in his mind of the action and the expression of the persons employed” in a historical or mythical narrative, and that “the power of representing this mental picture on canvas is what we call invention in a painter.”⁸ Ultimately, formulating a “mental picture” or “*idea*” of the work before they made it marked the maker as special—*sentient*, a level of being above that of the mechanically outputting artisan.

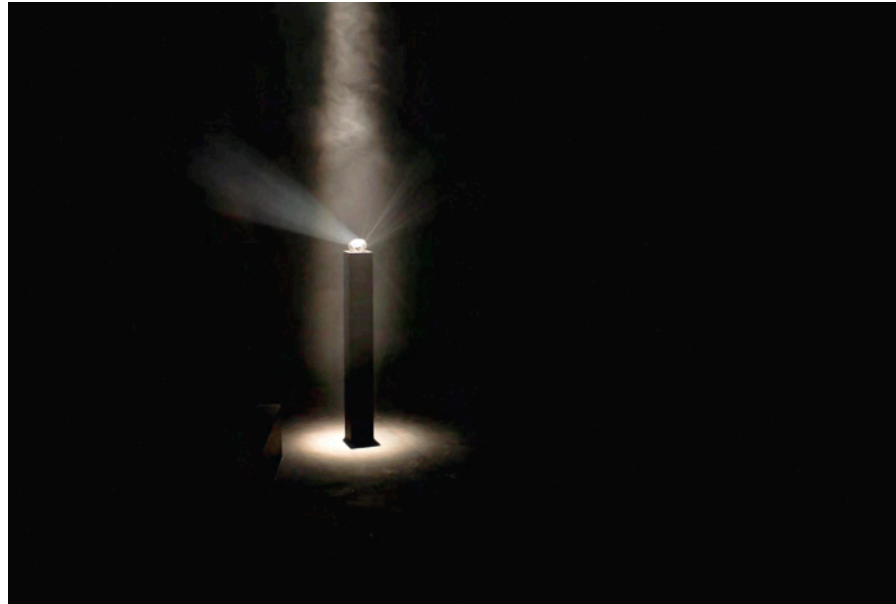
Imagine Your Self Better

Meanwhile, if the religio-therapeutic use of imagining to heal and change decreased with the rise of modern, empirically-based psychological treatment,⁹ it returned with aplomb when psychology took its cognitive turn in the 20th century.¹⁰ Observing a causal connection between imagery and emotional distress, psychiatrist Aaron Beck advocated the methodical modification of upsetting imagery in order to improve cognitive and affective states. The resultant “Cognitive-Behavioural” Therapy, or CBT, is now the dominant mode of psychological treatment: instructing the imagination takes up its historical mantle of transforming the self.

The instruction, however, is not issued in a vacuum. In each instantiation, there is a specific self that the subject should be transformed into. For Renaissance academicians, imagining marked the maker as “one of us”—a practitioner of a liberal art, not a craft; within religious and therapeutic practice, programmatically stimulating a subject’s mental imagery serves to realign beliefs and behaviour to a governing system. In the case of Loyola’s *Exercises*, that system is Counter-Reformation Christianity; CBT trains the individual to adapt to the social and economic realities of a neoliberal political economy. “You can use imagery to prepare yourself for an upcoming stressful situation and desensitize yourself to the pain to better cope,” advises one popular guide:

For example, suppose your employer has laid off some of your co-workers. You were told additional layoffs are coming. You know there is a chance you will be next. Visualise the scene when your boss tells you. Repeat the image until you feel less emotional about it. If you do this for several days, when it does happen, you will be better able to cope.¹¹

Exercises like these use the capacity to generate mental imagery to instil flexibility: visual imagination is made a tool with which to fashion an acceptable self.



Emily Wardill, *Sea Oak*, 2008, 16mm film, installation, 51 min.
Photo: Courtesy of the artist.

The De-instrumentalisation of Imagining

Several artists since the 1960s have responded to this instrumentalising of the imagination by aping the form—an utterance commanding the addressee to do something virtually—while making the commandment pointless, nonsensical or unresolved. The instructions compiled in Yoko Ono’s *Grapefruit* (1964), which mostly begin with the imperative to “Imagine...” or describe a scenario to be imagined, are key examples. Indeed, works such as *Snow Piece*—

Think that snow is falling.
Think that snow is falling everywhere
all the time.
When you talk with a person, think
that snow is falling between you and
on the person.
Stop conversing when you think the
person is covered by snow.¹²

—could almost be excerpted from a CBT session, but a session that gets the therapee nowhere, that prepares them for nothing. Others in *Grapefruit* are bistable, like “duck-rabbit” figures: “Build three thousand chimnies so it will look like one from a certain point and three thousand from another point” (Ono, 1964). As with the Zen *koans* that structure them, they aim to defer a locus of meaning around which a self might cohere.

It is significant that Ono's instruction works appeared in the early 1960s. The preceding decades had seen the rise to ubiquity of corporate and political propaganda that had, in the words of its founding exponent, set about "creating circumstances and... pictures in the minds of millions of persons" with which to "regimen[t] the public mind."¹³ The sequential, repeating, sensory evocation of the radio commercial, so effective in binding the listener to the message is, in *Snow Piece* or *Chimney Piece*, detached from any message. Their free-floating purposelessness presents instrumentalised imagining with its distorted reflection.

More recent art re-mediate this attack, deactivating the instruction, this time, by exposing its workings. Emily Wardill's *Sea Oak* (2008) consists of a spot-lit film projector playing a 51-minute soundtrack on imageless black leader. Members of a Californian think-tank, the Rockbridge Institute, are heard discussing their research into contemporary political rhetoric, and the tendency to "create within peoples' minds frames which relate to their own sense of identity."¹⁴ One interviewee talks about how the term "bird," for example, suggests a common imagined being, which, because of its generality, has a wider range of association and investment than a specified kind of bird. *Sea Oak*, in the tradition of structuralist film, and particularly Hollis Frampton's *Poetic Justice* (1972), where written directions for shooting a film are placed one at a time before the camera, brings these mechanics of evocation to the surface. Wardill removed the visual image track because, she says, the Institute's research is, "about language on its own conjuring up images in the minds of individual listeners"; doing so forces the viewer to become a listener and attend to that conjuring process. *Sea Oak* thus returns us to the vegetative test-subject—whose imaginings in the darkness were spot-lit by the scanner, captured, and put to work—and reminds us that we, as political subjects, share her predicament.

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2. Adrian M. Owen, Martin R. Coleman, Melanie Boly, Matthew H. Davis, Steven Laureys and John D. Pickard, Response to Comments on "Detecting Awareness in the Vegetative State," *Science*, vol. 315, no. 5816, 2007, 1221.
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Matthew MacKisack is a cultural historian interested in relationships between modernity, artistic practice and the mind. He is currently a Post-doctoral Research Fellow at the University of Exeter Medical School and a Visiting Research Fellow at China Academy of Art, Hangzhou. His research has been published in *Cortex*, *Frontiers in Psychology* and *Interdisciplinary Science Reviews*; in 2019, he co-curated the exhibition *Extreme Imagination – inside the mind's eye*.