

拉菲克·安納度大數據藝術裝置的崇高美學

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The Sublime Aesthetics in Refik Anadol's Big Data Art Installation at the Wynn Palace

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PhD, University of Southern California, currently Assistant Professor of Communication at the University of Macau. Li's research mainly focuses on strategic communication management to promote social and cultural changes. She is especially interested in the general conditions under which the cultural and creative industries develop in a locale, the specific strategies and tactics employed by arts and culture organizations for sustainable growth, and the implications on public policy. She approaches this line of inquiry through blending research traditions from art business management and visual communication studies. Her latest endeavor is in new media art installations, their aesthetic and collecting value, the diverse curatorial practices around them, and their commodification and consumption patterns.

體，慵懶地醒來，嘗試著從“箱子”裡出來。它有著諸多如魚鰭一般的觸角，平靜小心地探查那透明的面紗，彷彿是個默劇演員在表演牢籠逃脫。或是一個白色的星球，在“箱子”裡從容地自轉，膨脹；但是其表面卻好像上演著千溝萬壑自生自滅的電影快放。它與限制它的那層透明的面紗摩擦著，擠壓著，彷彿要掙脫束縛，滾到我們空間中來。

正如這個裝置的名稱所顯示的，數據雕塑的表演來自於人類提取記憶時記錄的數據。數據來自加利福尼亞州大學舊金山分校的認知神經景觀實驗室（the Neuroscape Lab）。在那裡，學者們通過用腦電圖（electroencephalogram, EEG）²來測量腦電波的活動，進而研究健康和受損的大腦。安納度和這些學者們合作，特別投入了對提取長期記憶那一刻產生的能量信號數據的探究。腦電圖的數據將不可見的腦電波活動變為可見；而安納度機器智能算法則將腦電圖產出的數據創作成為如夢如幻的視覺表象。也就是說，《融化的記憶》是機器智能用其“腦”創造性地表達人類記憶活動的藝術成果。

歷史上主流藝術表現形式有諸多關注記憶的例子。人類和機器智能聯手創造藝術特殊的地方，是非人類能對人類思維過程進行分析和再創造。不得不說，這種能力著實有些“燒腦”。此裝置的名稱讓人不禁聯想到超現實主義大師薩爾瓦多·達利的名畫《記憶的永恆》（1931）。如果達利畫的那些柔軟的鐘表是“時空相對性的無意識的符號，是一場對我們固有的宇宙秩序認識概念遭到瓦解而進行的冥想，”³那麼安納度的這個裝置則是“超人類”對如何將人類獨一無二的特性之一視覺化所進行的白日夢。和達利的軟鐘表相似的是，不用努力去探究作品的名稱或展覽牆上的文字介紹，觀眾自然而然地會和眼前的意象產生一種共鳴，一種感情上的連結。安納度對記憶數據的戲劇化展現有種異空間的，詭異的美，讓你欲罷不能。和著重模擬大自然的崇高的《澳門流》相比較，《融化的記憶》似乎在模擬科技的崇高⁴，一種著迷和恐怖混合在一起的快感。

值得一提的是，安納度曾在某訪談中說他的這個作品與被提取的記憶內容沒有關係。他用視覺語言詮釋的數據，與在提取記憶的那個回憶者是“分開說節”的⁵。可以說僅僅是記憶的表層被觸及，從而不存在侵犯這個實驗對象的隱私。但這真是一個符合道義的選擇，還是僅僅因為人工智能還處在嬰兒期？這個問題的答案在審美和哲學上都影響深遠。在電影《銀翼殺手 2049》中，一個“記憶製造者”竟可以在機器人的大腦裡種植鮮活的，有著發自肺腑一般真實的，帶有劇情的記憶。安納度多次提到他在這部電影中獲得靈感，儘管他對記憶數據的抽象，戲劇化的視覺展示更偏向於冷淡、簡約和含蓄。至少目前如此。但在我們這個社交媒體，大眾監控的時代，科技早已開始永久性存儲我們的記憶，甚至常常不允許我們忘記。藝術家能否和倫理學家一起想象並執行限制人工智能發展的規則呢？

安納度曾說，“算法是我的畫筆，數據是我的顏料，光是我的畫布。”⁶對他來講，機器智能和歷史上運用到美術當中的非數碼技術沒什麼區別。總有藝術家會接受並使用新技術，而其他人繼續用現有的技術進行創作。2016年，參與谷歌藝術家和機器智能駐場計劃（Google's Artists

2 斯卡·戴聖莫格魯，《一個由記憶、人工智慧和建築構建出來的資料宇宙：拉菲克·安納度訪談》，2018，<http://digi.cult.it/articles/a-data-universe-made-of-memories-ai-and-architecture-interview-with-refik-anadol/>，獲取日期 22/9/2019。

3 丹恩·安納斯，《達利》（泰晤士和哈德森出版社，1982），145頁。

4 大衛·奈，《美國科技的崇高美學》（麻省劍橋：麻省理工學院出版社，1994）。

5 羅德里格魯，《一個資料宇宙》。

6 布萊恩·胡德，《藝術家拉菲克·安納度與勞斯萊汽車——探索人類在自動化時代的角色》，2019，<https://robreport.com/sheiter/art-collectibles/roffs-royce-refik-anadol-digital-artwork-2868779/>，獲取日期 22/9/2019。

and Machine Intelligence, AMI)⁷ 的安納度把用人工智能進行藝術創作的技能練得爐火純青。同樣參與過這個駐場計劃的其他藝術家們彷彿抱有同樣的視角和態度。對他們來講，機器智能本是客觀、中立的。藝術家們通過使用它來拓展人類對外在現實和對內在感官和認知過程的理解。一次採訪中，安納度說道，“在我自己對未來的設想中，機器並不會否決我們或給我們帶來滅頂之災。在我夢想中的未來，人們更關注自然，相信人工智能的客觀性，從而能看到解決問題的機會。”⁸

安納度的作品卻彷彿有更曖昧的態度：神話中的洪水滔天蔓延，似無止境；神秘不可知的生命體似乎要從牢籠逃脫。至少在當下，機器智能時代的藝術仍需要藝術家去搜集組織數據集，需要工程師構建算法。機器的智能目前還是有限的，因為信息和製作圖像的規範還是來自於人；電腦還依舊是個工具，而不是一個獨立的，有創造力的實體。但在還處在人工智能技術早期的我們，又怎麼能預知究竟人工智能會把我們引向哪裡呢？究竟是引向波希的人間樂園，還是他腦海中的地獄呢？

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As part of the first edition of "Art Macao", Wynn – Garden of Earthly Delight is a major art exhibition held at the two Wynn Macau integrated resorts between June 6 and October 6, 2019. The show references Hieronymus Bosch's famous oil painting known as *Garden of Earthly Delight* – a Northern Renaissance masterpiece portraying sprawling human and animal figures across landscapes covering three panels, Eden to the left, Hell to the right and a surreal, hedonic playground in the center. One cannot help wondering how the artworks chosen, especially the more immersive media-art installations, are in dialogue with this Dutch master's despondent vision of humanity's fate. The curator states the usual reading of Bosch's masterpiece as illustrating "the beauty and sumptuousness of life, while warning us of the dangers of excess." I will focus on two pieces in this show by Los Angeles-based Turkish artist Refik Anadol, who uses computers to dramatically visualize scientific data.

Entering Wynn Palace's white-cube like exhibition space, visitors are met by a 5-by-6-meter, floor-to-ceiling LED wall displaying a continuously looping digital animation film *Macau Currents: Data Paintings* (2019). In a purely abstract language of form, texture and motion, the work poetically renders high-frequency radar data collected from the sea currents around Macau, recorded in 30-minute intervals for 30-days straight, into a "data sculpture." The digital image looks like powdery liquid, blue pigment mixed with milk, gushing out of fountainheads big and small. Undulating waves of ice and snow, seen from above, chase and smash into each other in perturbing silence. Calling it a surface of fluid is only valid as the commotion goes, as the outer texture of the billows is made from millions of imbricating cubes, highlighting its nature as simulacrum. Techno-performative as it is, the

7. 蘇珊·福泰德，《拉菲克·安納度：21世紀的達芬奇》，2019，<https://interestingengineering.com/refik-anadol-the-leonardo-da-vinci-of-the-21st-century/> 擷取日期 22/09/2019。

8. 寇里莫格魯，《一個資料宇宙》。

imagery nonetheless invokes the deluge myth, the Great Flood that cleanses humanity in preparation for rebirth.

The monumental size of the LED wall is imposing, befitting an artist who often uses architectural surfaces as his canvas. Yet, the point-of-view is slippery in this artwork. We are floating above but also inside. Sometimes it appears as a macro view of galaxies colliding, other times it looks like a micro view of entangled amoeba. Anadol infuses the liquid dynamics with sharp detail and a complex, tactile surface, bringing the tumult uncannily near. By showing the artwork indoors where the LED screen is the main light source, with no railing or rope to keep viewers at bay, Anadol gives the viewer an intimate encounter with the sublime. Edmund Burke defined this term in 1756 as the overwhelming force in nature observed from a safe distance, or phenomena of violent destruction, what he called a "delightful terror."¹ The sublime calls for emotional shock as well as the pleasure of being able to reflect upon such shock. Anadol taps into this aesthetic tradition in art, yet he gives it an epistemological and aesthetical twist attuned to the intersections of data, artificial intelligence and human sensibility. What he and his machine learning algorithms accomplish is repurposing the original scientific data sets through a kind of controlled "hallucination," taking every single data point of Macau's territorial waters and manipulating them through an abstract visual language progressing over time, a kind of digitally performed sublimity only made possible by human-machine collaboration. Data sets of ocean currents, initially produced with the most straightforward instrumental rationality, are now made to dance with tactile, rhythmic lyricism revealing the kinetic beauty and power of liquid dynamics.

Anadol's next piece is *Melting Memories* (2018), a multiple-act film running on a same sized LED wall. Accompanied by a haunting soundtrack, digitally rendered streams of monochromatic, cement-like liquid (or air) first come alive in slow motion, inside a trompe l'oeil "box" framing the action. Within this "box" the sculptural waves churn and twist, break up and merge back together. The tension between fluidity and viscosity builds up, at times spilling over the frame! Then it subsides and retreats into a black screen before the next act begins. An invisible veil covering the "box" appears. Under the veil there is a gentle, sentient life form languidly wakes up and explores ways to get out. It uses its multiple fin-shaped tentacles to placidly probe the barrier as a mime trying to escape its transparent cage. In another act, a white planet rotates and expands with a sense of deliberation inside the "box"; its surface rips open revealing ravines and canyons while pressing against the transparency restraining it from entering our space.

Just as the title of the piece says, the performance of the data sculpture is built from data recorded during human memory retrieval. It came from the Neuroescape Lab at the University of California in San Francisco, where researchers study the functions of healthy and impaired brains by measuring brain wave activities using an EEG

¹ Edmund Burke, and David Womersley, *A Philosophical Enquiry into the Origin of Our Ideas of the Sublime and Beautiful: And Other Pre-Revolutionary Writings*, (New York: Penguin Books, 1998), 101-102.

(electroencephalogram).² Anadol collaborated with researchers and delved into the energy signal data that represents a moment of reminiscence in long-term memory retrieval. The EEG data makes the invisible visible; and Anadol's algorithms create a dreamy, visual interpretation of the EEG's output. In other words, *Melting Memories* is human memory seen, and creatively expressed, through a machine's "mind's eye."

Conventional art has dealt with the concept of memories throughout history. But what is unique about art created in conjunction with machine intelligence is its mind-bending power in revealing a non-human conception of the human mind. In fact, the title, *Melting Memories* is likely a nod to Salvador Dali's famous surrealist masterpiece *The Persistence of Memory* (1931). If Dali's soft clocks are "an unconscious symbol of the relativity of space and time, a Surrealist meditation on the collapse of our notions of a fixed cosmic order,"³ Anadol's is a transhumana's reverie on the visualization of our notions of what is uniquely human. Similar to Dali's soft clocks, there is a raw emotional bond or resonance that the imagery in the artwork triggers in the viewer, without us delving into the titles and the ancillary wall text. Anadol's eerie, dramatic visualization of memory data is other-worldly and haunting. Comparing to *Macau Currents: Data Paintings*, which seems to imitate the sublime of nature, *Melting Memories* invokes a kind of technological sublime,⁴ a mixture of fascination and fear.

It is worth mentioning that in an interview, Anadol explains that it does not matter what kind of memory is being retrieved at the moment of recollection. The data that is visualized was "detached"⁵ from the reminiscing individual; only the surface of the memory is skimmed, so to speak, hence without breaching the privacy of the test subject. But is this an ethical choice or a sign of the infancy of AI? The answers to this question have both aesthetic and philosophical ramifications. In *Bladerunner 2049*, a film which Anadol refers to as one of his major inspirations for this piece, a "memory maker" literally implants memories of colors, smells, and visceral narrative emotions into the brains of replicants. However, Anadol's abstract memory dramatization is impersonal, synoptic and metaphorical. At least for now. In our era of social media and mass surveillance, technologies have already been storing our memories for perpetuity, and often not allowing us to forget. Can artists join AI ethicists in imagining and implementing rules on the boundaries of AI?

Anadol says, "Algorithms are my brush, data is my pigment and light is my canvas."⁶ To Anadol, machine intelligence is like any of the earlier, non-digital art technologies: some artist will utilize it as a new medium, while others will prefer existing modes of creative

2. Yonca Keremoglu, "A data universe made of memories, AI and architecture: Interview with Refik Anadol," 2018, <http://digi.cult.it/articles/a-data-universe-made-of-memories-ai-and-architecture-interview-with-refik-anadol/>, Access 22/9/2019.
3. Dawn Ades, *Dali*, (Thames and Hudson, 1982), 145.
4. David Nye, *American Technological Sublime*, (Cambridge Mass: MIT Press, 1994).
5. Keremoglu, "A data universe."
6. Bryan Hood, "Artist Refik Anadol and Rolls-Royce Explore Man's Role in Automation," 2019, <https://robireport.com/sheltern/art-collectibles/rolls-royce-refik-anadol-digital-artwork-2868779/>, Access 22/9/2019.

production. It is an understanding shared by many of his fellow artists from Google's Artists and Machine Intelligence (AMI) residency program,⁷ where Anadol first mastered his skill in 2016. To them, machine intelligence is objective and neutral in itself, and artists use it to help expand human comprehension of both our external reality as well as our internal perceptual and cognitive processes. In an interview, Anadol explains: "In my version of the future, machines don't overrule us or destroy us. In the future I've dreamed of, people are more caring towards nature, they believe in the objectivity of the AI to see it as an opportunity to solve problems."⁸

The artwork itself seems to convey an attitude that is more ambiguous: the mythic flood raging and engulfing into infinity; an unfathomable life form struggling to escape its confinement inside the digital box. At least for now, art in the age of machine-intelligence requires artists curating data sets and engineers building the algorithms. One could argue there is limited "intelligence" at work in the machine as the information and its parameters for making these images are programmed by people. The computer is still more of a tool than an independent, creative entity. However, we are in the infancy of computer technology and have yet to see if AI leads us to Bosch's Garden of Earthly Delight or into his vision of Hell.

7. Susan Fountaine, "Refik Anadol: The Leonardo da Vinci of the 21st Century," 2019. <https://interestingengineering.com/refik-anadol-the-leonardo-da-vinci-of-the-21st-century>. Accessed 22/09/2019.

8. Keremoglu, "A data universe."

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