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Volume Authors Lanfranco Aceti and Omar Kholeif

Editors Özden Şahin, Catherine M. Weir

Art Director

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Editorial Address

Leonardo Electronic Almanac Sabanci University, Orhanli - Tuzla, 34956 Istanbul, Turkey

Email

info@leoalmanac.org

contact isast@leonardo.info.

Web

www.leoalmanac.org www.twitter.com/LEA_twitts www.flickr.com/photos/lea_gallery www.facebook.com/pages/Leonardo-Electronic-Almanac/209156896252

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LEONARDO ELECTRONIC ALMANAC CATALOG, VOLUME 19 ISSUE 5

Far and Wide

VOLUME AUTHORS LANFRANCO ACETI AND OMAR KHOLEIF

EDITORS ÖZDEN ŞAHİN AND CATHERINE M. WEIR

The Leonardo Electronic Almanac acknowledges the kind support for this issue of









Operational & Curatorial Research in Contemporary Art, Design,

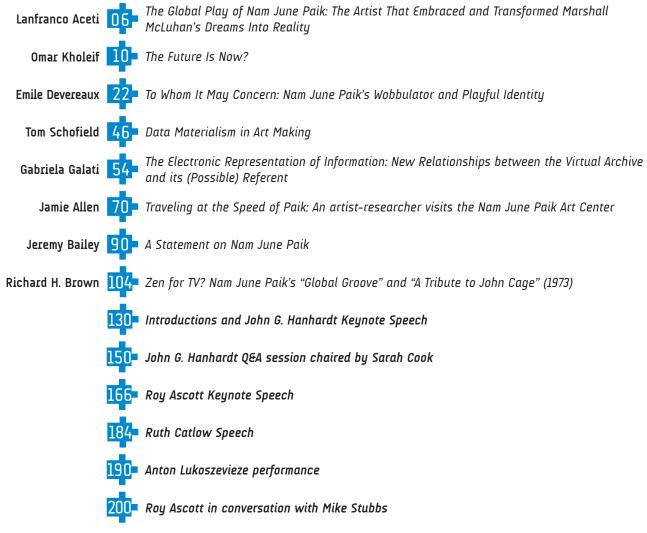
Steinhardt School of Culture, Education, and Human Development

This catalog is a LEA production with FACT (Foundation for Art and Creative **Technology).** It follows the first major retrospective on Nam June Paik in the UK with an exhibition and conference organized by Tate Liverpool and FACT. The exhibition Nam June Paik, December 17, 2010 to March 13, 2011, was curated by Sook-Kyung Lee and Susanne Rennert.

LEA acknowledges and is grateful for the gracious support provided to this publication by the Estate of Nam June Paik. In particular special thanks go to Ken Hakuta, Executor, Nam June Paik Estate.

Also, special thanks go to Mike Stubbs (Director/CEO of FACT) for his support.

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104 Zen for TV? Nam June Paik's "Global Groove" and "A Tribute to John Cage" (1973)

THE ARTIST THAT EMBRACED AND TRANSFORMED MARSHALL MCLUHAN'S DREAMS INTO REALITY

What else can be said of Nam June Paik and his artistic practice that perhaps has not been said before? My guess is not very much... and while I write my first lines to this introduction I realize that it is already sounding like a classic Latin 'invocatio,' or request to assistance from the divinity, used by writers when having to tread complex waters.

Nam June Paik and Marshall McLuhan are two of the numerous artists and authors who inspired my formative years. If one cannot deny Paik's love of play and satire imbued in popular culture and used to disguise a real intellectual and conceptual approach to the artwork, neither can easily be discounted McLuhan's strong advocacy of the powerful tool that technology can be, so powerful that is able to obscure and sideline the message itself in the name of the medium.

"Marshall McLuhan's famous phrase 'Media is message' was formulated by Norbert Wiener in 1948 as 'The signal, where the message is sent, plays equally important role as the signal, where message is not sent." The construction of this hybrid book, I hope, would have pleased Paik for it is a strange construction, collage and recollection, of memories, events, places and artworks. In this volume collide present events, past memories, a conference and an exhibition, all in the name of Nam June Paik, the artist who envisaged the popular future of the world of media.

Paik remains perhaps one of the most revolutionary artists, for his practice was mediated, geared towards the masses and not necessarily or preeminently dominated by a desire of sitting within the establishment. He also challenged the perception of what art 'should be' and at the same time undermined elitisms through the use, at his time, of what were considered 'non-artistic-media.' Some of the choices in his career, both in terms of artistic medium and in terms of content, can be defined as visionary as well as risky to the point of bravery or idiocy, depending on the mindset of the critic.

That some of the artworks may be challenging for the viewer as well as the art critic is perhaps obvious – as obvious was Paik's willing-

ness to challenge the various media he used, the audience that lowed him and the established aesthetic of his own artistic prac Taking risks, particularly taking risks with one's own artistic prac may also mean to risk a downward spiral; and Paik did not seem shy away from artworks' challenging productions and made use varied and combined media, therefore re-defining the field of ar placing himself at the center of it.

In the following decades, Paik was to transform virtually all as pects of video through his innovative sculptures, installations, single-channel videotapes, productions for television, and per formances. As a teacher, writer, lecturer, and advisor to found tions, he continually informed and transformed 20th century contemporary art.

Therefore, it seems limited to define Paik as 'the father of video art' when his approaches were to resonate in a multiplicity of fields and areas.

Paik's latest creative deployment of new media is through lase technology. He has called his most recent installation a "postvideo project," which continues the articulation of the kinetic image through the use of laser energy projected onto scrims, cascading water, and smoke-filled sculptures. At the beginning of the twenty-first century, Paik's work shows us that the cine and video are fusing with electronic and digital media into new image technologies and forms of expression. The end of video

fol- tice. tice,	and television as we know them signals a transformation of our visual culture.
of t and	When Mike Stubbs and Omar Kholeif approached me to create this book, the challenge was to create a structure for the material but also to keep the openness that characterizes so many of Paik's art- works and so many of the approaches that he has inspired.
15- 5, r- da-	I found the best framework in one of Paik's artworks that was pre- sented for the first time in the United Kingdom, at FACT, in Liver- pool, thanks to the efforts of both Stubbs and Kholeif.
)	My fascination with the <i>Laser Cone's re-fabrication</i> ⁴ in Liverpool was immediate and I wanted to reflect in the publication, albeit symbolically, the multiple possibilities and connections that underpinned the Laser Cone's re-fabrication and its medium, as well as Paik's and
	McLuhan's visions of the world to come, made of light, optics and lasers.
ser	The word laser is actually an acronym; it stands for Light Ampli-
<u>+</u>	fication by Stimulated Emission of Radiation. Nam June Paik un-
	dertook a residency with Bell labs, who were the inventors of the
5,	laser. It was here that he created his 1966 piece Digital Experi-
ng	ment at Bell Labs, exploring the stark contrast between digital
ета	and analogue and his fascination with technology in its material
ew	form. His work with Bell set the precedent for artists and musi-
20	cians to start using technology creatively in a new way. 5

NTRODUCTION

This catalog became a tool to mirror and perhaps 'transmediate' the laser installation "made of a huge green laser that [...] conjoin[ed] FACT with Tate Liverpool. Travelling 800 metres as the crow flies, the beam of light [... made] a symbolic connection between the two galleries during their joint exhibition of video artist, pioneer and composer Nam June Paik. Artist Peter Appleton, who was behind the laser which joined the Anglican and Metropolitan cathedrals in Liverpool during 2008 Capital of Culture, [was] commissioned by FACT to create the artwork, Laser Link, which references Nam June Paik's innovative laser works." ⁶

The catalog is in itself a work that reflects the laser connections, the speed of contacts, the possibilities of connecting a variety of media as easily as connecting people from all parts of the world. In this phantasmagoria of connections it almost seems possible to visualize the optic cables and WiFi that like threads join the people and the media of McLuhan's "global village" and the multiplicities of media that Paik invited us to use to create what I would like to define as the contemporary "bastard art." 🛽

Lanfranco Aceti

Editor in Chief, Leonardo E Director, Kasa Gallery



A NOTE FROM THE EDITOR IN CHIEF

For me personally this book represents a moment of further transformation of LEA, not only as a journal publishing volumes as in the long tradition of the journal, but also as a producer of books and catalogs that cater for the larger community of artists that create bastard art or bastard science for that matter.

ENDNOTES AND REFERENCES

- 1. Nam June Paik, "Cybernated Art," in *The New Media Reader*, eds. Noah Waldrip-Fruin and Nick Montfort, 229 (Cambridge, MA: The MIT Press, 2003).
 - 2. John G. Hanhardt "Nam June Paik, TV Garden, 1974," in Permanence Through Change: The Variable media Approach, eds. Alain Depocas, Jon Ippolito, and Caitlin Jones, 72 (New York and Montreal: Guggenheim Museum Publications and The Daniel Langlois Foundation for Art, Science, and Technology, 2003).
 - 3. Nam June Paik/Nam June Paik Studios' official Web site, "John Hanhardt's essay," http://www.paikstudios.com/essay.html (accessed January 10, 2013).
 - 4. Laser Cone, 2001/2010, Nam June Paik in collaboration with Norman Ballard.

installation view at FACT. Photographer: Stephen King.

- 5. FACT, "Laser Cone," FACT, http://www.fact.co.uk/projects/nam-june-paik/ laser-cone/ (accessed January 10, 2013).
- 6. FACT, "Laser Link," FACT, http://www.fact.co.uk/projects/nam-june-paik/ laser-link/ (accessed January 20, 2013).
- 7. Art as a bastard is interpreted, in this passage, as something of uncertain origins that cannot be easily defined and neatly encapsulated in a definition or framework. "Art is often a bastard, the parents of which we do not know." Nam June Paik as cited in Florence de Meredieu, Digital and Video Art, trans. Richard Elliott (Edinburgh: Chambers, 2005), 180.

The Future Is Now?

Far and Wide: Nam June Paik is an edited collection that seeks to explore the legacy of the artist Nam June Paik in contemporary media culture. This particular project grew out of a collaboration between FACT, Foundation for Art and Creative Technology, and the Tate Liverpool, who in late 2010-2011 staged the largest retrospective the artist's work in the UK. The first since his death, it also showcased the premiere of Paik's laser work in Europe. The project, staged across both sites, also included a rich public programme. Of these, two think tank events, The Future is Now: Media Arts, Performance and Identity after Nam June Paik and The Electronic Superhighway: Art after Nam June Paik, brought together a forum of leading artists, performers and thinkers in the cross-cultural field together to explore and dissect the significance of Paik within broader culture.

This programme was developed by a large group of collaborators. The discursive programme was produced by FACT in partnership with Caitlin Page, then Curator of Public Programmes at Tate. One of our primary research concerns was exploring how Paik's approach to creative practice fragmented existing ideological standpoints about the visual arts as a hermetically sealed, self-referential canon. Drawing from Bruno Latour, Norman M. Klein and Jay David Bolter, among many others - our think tank and, as such, this reader, sought to study how the visual field has proliferated across disciplines through the possibilities that are facilitated by technology. At the same time, we were keen to examine how artists now posses a unique form of agency - one that is simultaneously singular and collective, enabled by the cross-embedded nature of the current technological field.

These positions are explored throughout the reader and our programme and in this special edition of the Leonardo Electronic Almanac. Here, the artist who goes by the constructed meme of the "Famous New Media Artist Jeremy Bailey," tracks Rosalind Krauss's influence and transposes her theoretical approach towards video art to the computer, examining the isolated act of telepresent augmented reality performance. Roy Ascott gives a nod to his long-standing interest in studying the relationship between cybernetics and consciousness. Eminent film and media curator, John G. Hanhardt honors us with a first-hand historical framework, which opens the collection of transcripts, before further points of departure are developed.

Researchers Jamie Allen, Gabriella Galati, Tom Schofield, and Emile Deveraux used these frameworks retrospectively to extrapolate parallels, dissonances and points of return to the artist's work. Deveraux and Allen focus on specific pieces: Deveraux discusses Paik and Shuya Abe's Raster Manipulation Unit a.k.a. 'The Wobbulator' (1970), while Allen surveys a series of tendencies in the artist's work, developed after he was invited to visit to the Nam June Paik Center in South Korea. Galati and Schofield stretch this framework to explore broader concerns. Schofield considers the use of data in contemporary artwork, while Galati explores the problematic association with the virtual museum being archived online.

It is worth mentioning at this stage that there were many who join in contributing to this process, who did not partake formally in th reader or the public programme. Dara Birnbaum, Tony Conrad, Y Ono, Cory Arcangel, Laurie Anderson, Ken Hakuta, Marisa Olson, served as sources of guidance, whether directly or indirectly thro conversations, e-mails, and contacts.

Still, there remain many lingering questions that are not answered here, many of which were posed both by our research and organizational processes. The first and most straightforward question for Caitlin and I was: why is it so difficult to find female artists wh would be willing to contribute or speak on the record about Paik' influence? It always seemed that there were many interested par but so very few who were eager to commit to our forum.

The second and perhaps more open-ended question is: what wo Nam June Paik have made of the post-internet contemporary art scene? Would Paik have been an advocate of the free distribution artwork through such platforms as UbuWeb and YouTube? Woul he have been accepting of it, if it were ephemeral, or would he have fought for the protection of licensing? This question remains: cou an artist charged with bringing so much openness to the visual ar have been comfortable with the level of openness that has devel oped since his death? There is much that remains unanswered, a that, we can only speculate. Far and Wide does not offer a holisti biography or historical overview of the artist's work or indeed its thority. Rather, it serves to extract open-ended questions about how

ined iis oko	far and wide Nam June Paik's influence may have travelled, and to consider what influence it has yet to wield. Omar Kholeif			
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'S	1. See: N. M. Klein, "Cross-embedded Media," in Vision, Memory and Media,			
ties,	eds. A. Broegger and O. Kholeif (Liverpool and Chicago: Liverpool Univer-			
	sity Press, 2010).			
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DATA MATERIALISM IN ART MAKING

This short paper is a sketch of some pragmatic considerations for the use of data in the production of artwork. My practice as an artist causes me to encounter data as a series of daily material questions and this has encouraged me to develop a series of brief theoretical propositions and practical methodologies which will be outlined here. An overview of some art historical, broader culture or creative and lastly ontological imperatives for the consideration of data as an artistic material will be followed by some examples of data materialist art practice from my own work. These last will illustrate some simple methodologies which I have adopted.

by

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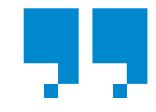
Tom Schofield PhD Candidate, Digital Interaction at Culture Lab, Newcastle University

DATA VISUALIZATION, BACKGROUND

Data visualization is the (fairly) recent phenomenon of graphing large or dynamic data sets, often with free and open source software. It is undeniable that this medium (if it can be considered as such) has been undergoing a burst of popularity over the last five to ten years, manifested through such blogs as infosthetics.com and informationisbeautiful.net. In the wake of this development, which has been influential in the development of my own work, whole communities have appeared, clustering around forums, barcamps and collaborative projects such as visualizar at Medialab Prado, Madrid.¹ DIY and DIWO (do it with others) practices are supported not only by physical institutions such as the various media labs but also through code sharing repositories such as Google code, github.com and gitorious.org.

On top of these resources the explosion of open source coding frameworks such as processing.org, openframeworks.cc, and libcinder.org, allow analytical and visual techniques previously only accessible to those with very specialized and often expensive training (either through university computer science degrees or vocational courses) to be adopted and even improved by individuals with extremely heterogenous backgrounds, often from the arts and humanities. We may add to this mix a political climate in many countries where government agencies are increasingly pressurised to release data into the public domain, in no small part due to the actions of 'open data' initiatives and the copyleft movement. Government data portals such as data.gov.uk, and the American equivalent data.gov, together with non-traditional data gathering and data mining tech-

In the face of the failure of significant political victory, in the absence of grand narratives, of banner calls, in the face of the abstract task of engaging with a world of slippery media we revert to our technological roots.



niques such as scraping and (legal or illegal) hacking are redefining the public's representational relationship with larger institutions as increasingly diversified interests vie to present their own interpretation of their own data conclusions.

Beyond the technically challenging questions of how data can be mapped are the questions of why one should map the textual or numerical into the visual.²

As has been discussed elsewhere, the diversification of data visualization from its traditional disciplines of statistics, science and engineering to other forms of experimentation in the territories of art, design and hacktivism ³ has precipitated a series of new questions about its role as an agent in our socio-political ecosystems. It is these why questions which will be discussed in the following paragraphs.

IMPERATIVES FOR THIS WORK

Art Historical

The Paik-Abe Synthesizer is an elegant or brutal mix of the material and social possibilities of broadcast media. An early hack which beamed (thanks to the involvement of WGBH-TV, Boston) right into the living room of suburban America. The very being of the synthesizer is constantly disrupted and warped according to the whims of its operator. Paik's work was seminal in the spawning of a whole subculture of hardware hacking and circuit bending. More recently, Phillip Stearns's synthesized digital camera images visualize in the most indexical fashion imaginable their own material limits.

As with Moholy Nagy's vinyl records and Nam June Paik's cathode ray televisions, Stearns deconstructs the technological inscription of his era. In so doing, the function of the digital camera is revealed, but its transduction inverted: A recorder becomes a synthesizer, the scientist an artist. In a single, simple gesture, these works exemplify a media archeology of the present.

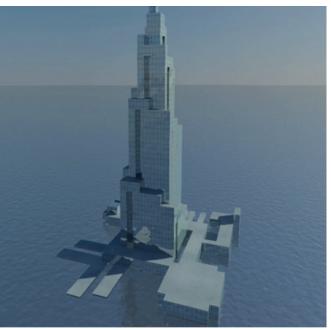
The reversal in direction of the transduction of one signal to another (light to electrical impulses gives way to short circuits which feed back to the sensor) represents a shift in the ontology of this object. The box brownie which has spent the last one hundred or so years becoming a black box is now exposed, no longer a 'point of passage' ⁶ in the network but a glitch, unavoidable and revealing. Such glitches caution against the promise of emancipation that revolutionary technologies are prone to. Attempts to subvert technologies for explicitly political aims are doomed to failure.

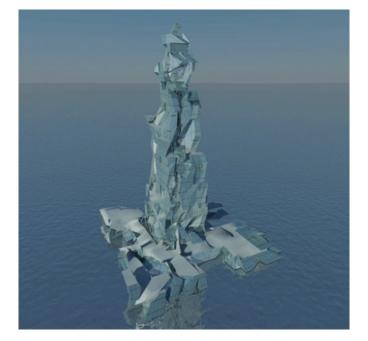
To be sure, sociologists and several conceptual artists such as Victor Burgin and Hans Haacke have shown that pervasive philanthropy and museum controlled 'taste making' do exert long term political control over the artistic tastes of the public. But given the costs and popular failure of technological art, it would appear an enormously inefficient means of swaying the masses, much less a means of promoting Technocracy as a successor to Capitalism. 7

In the face of the failure of significant political victory, in the absence Still from Burj Babil, fieldVentures, 2011. Used with permission via the Creative of grand narratives, of banner calls, in the face of the abstract task of Commons license. engaging with a world of slippery media we revert to our technological roots.

Cyberspace was supposed to bring us all together in a Global Village; however, what effectively happens is that we are bombarded with the multitude of messages belonging to inconsistent and incompatible universes instead of the Global Village, the big Other, we get the multitude of 'small others', of tribal particular identifications at our choice.⁸

The enduring popularity of retro computing technology in the electronic music scene represents one of Žižek's 'tribes.' Chiptune music (electronic music produced with old, often 8-bit music synthesizers) clings to *material* possibilities which are bound up with the history





Still from *Burj Babil*, fieldVentures, 2011. Used with permission via the Creative Commons license.

and culture of the technologies employed. By drastically limiting themselves to the tones possible with low bit-depth and unreliable equipment, chiptune musicians mark their cultural territory in a place, once subject to millions of dollars of game companies investment, but now left behind, a wasteland for squatting.

Data Ontologies

The 'ontology of data' as well as the 'materiality of data,' as phrases, will be held by some as oxymoronic. Data, as we know it is nebulous, distributed and always encoded. Data exists in clouds and streams instead of rocks and earth. Not only is data held to be non-physical but it is also relational and even hermeneutic. The lacuna between 'raw' binary and visual representations of data, for example, is filled with human agency. Just as sound without a listener is reduced to compressions and rarefactions of a transmission medium, data without a reader can be understood as simply pulses of electricity. The question of its being then can be defined variously as philosophical, social and/or material. Where then, in this picture of machines, philosophy and people is the being of data. Where is it, in fact, *located* rather than *manifested*?

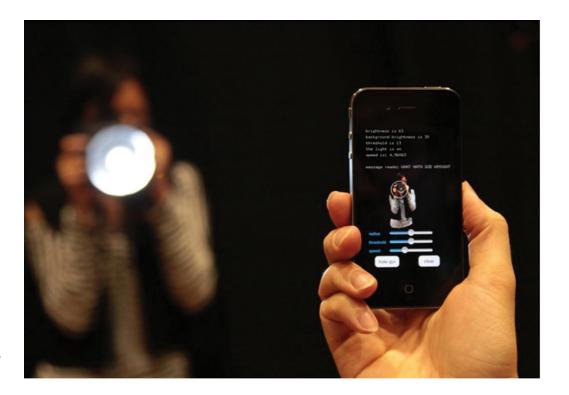
Being for Heidegger is not a static property of things but is specific to each situation and located in time. *Dasein* refers only to the being of those who can ask the question "what is being" but those interrogators are constantly engaged in a dialogical understanding of the being of their surroundings (*Umwelt*) and by extension the wider world. In Paik's work, in chiptune music, video moshing, glitch and all work which constitutes a real material engagement with technological objects or processes, what was ready-to-hand becomes presentat-hand. The tool is literally broken and can never be reformed in exactly the same way. Our relationship with that object has been reconfigured both in this close, limited instance but also with other similar objects as our associations with its brothers and sisters encounter the ripples of its death throes.

METHODOLOGIES

Taking literally the concept of data as a *physical* material, I adopt then used to re-make the model causing its eventual collapse (figure what appear to be appropriately physical methodologies in the treat-2). The final result of this process is a number of video sequences ment of the code structures of my work. There is already a host of showing the destruction of the tower as its source code file is transexcellent work (I'm thinking in particular of Casey Reas's 'process' lated into different languages. The abusive tearing of the object file series) 🔋 which takes self-generation as its methodology. In contrast, has a knock on effect through the rendering process to the visuals. then, I (in collaboration with my brother Guy Schofield as fieldVen-As planes of the model are pulled inside out and through one antures) ¹⁰ sought to explore the affects of *tearing* or *corruption* on other, 'z-fighting' appears. Z-fighting is a phenomenon in 3D graphics data material. which occurs when two planes attempt to occupy the same space. The renderer will allocate pixels from both planes seemingly at Burj Babil (Tower of Babel) is an installation work consisting of two random, causing a flickering effect. The initial artificially introduced elements: A video projection (figure 1) (dimensions variable) and a corruption therefore feeds back to the machine, causing uncertainty long (5 metres) strip of paper. The paper is a text print out of the and shattering illusions of physical space.

Burj Babil (Tower of Babel) is an installation work consisting of two elements: A video projection (*figure 1*) (dimensions variable) and a long (5 metres) strip of paper. The paper is a text print out of the source code used to generate a 3D computer model of the tower shown on the video projection. Throughout the file, the text comments (in between the vertex and face information) reveal a story of creation, violent and degenerating into snatches of different languages the further through the document one reads. The piece was shown at SIGGRAPH Asia 2011.

To create the projected image, the source code file has been subjected to a number of transformation processes which corrupt and destroy the tower in different phases. The processes transform the vertex and face coordinates from the source code file into the alphabet (A-Z). The results are then fed programmatically into a language translation service (Google translate). Most of the file is ignored since the sequence of characters does not correspond to real words. However when chance causes the character sequence to form a recognizable word this will cause a corresponding physical translation of that vertex point of the model. The resultant corrupted code is



Null by Morse, Tom Schofield. 2011. Used with permission via the Creative Commons license.

NULL BY MORSE

Null by Morse (figure 3) is an installation and performance based on Morse code. A series of messages are sent using an antique Morse signalling lamp. The messages refer to the inter-related histories of Morse code, disaster and war and include the final transmissions of the Titanic and perhaps the first ever message publicly sent via Morse: "What hath God wrought?" The messages can be decoded via an iPhone or Android app and are also displayed as a projection in the exhibition space. After the performance the signal lamp is left in place and participants are able to send their own messages.

If tearing and corruption articulate one possible, material engagement with data, translation or encoding suggest another. As has been previously discussed, if the ontology of data objects is constructed through a relationship between *Dasein* and a tool, the fusing of the two creates new kinds of being. By physically re-encoding messages, by becoming him or herself part of the physical and semiotic mechanisms of the messaging apparatus, the performer mixes creates new and varied ontologies which question our relationships with what Jane Bennet calls 'vibrant matter.' 12 Vibrant matter is a reconfiguring of our surrounding networks of actants to flatten previously sharply differentiated hierarchies between humans and objects.

CONCLUSIONS

Through a description of historical, philosophical and practical ex amples, I have described some working practices adopted by mys and others in data art practice. Through a brief overview of some torical and theoretical influences, I have suggested some imperat philosophical, cultural and personal for engagement in this area o making.

The accentuation of materiality, ontology and the redefinition of man agency in networks of objects is as pressing a concern for a making as it is for philosophy. The current spate of publications - *brant Matter, After Finitude*, **13** *Media Archaeology* to name but few – suggest that artworks which engage with these questions both timely and necessary. Works by Shintaro Miyazaki, Martin H Takeshi Murata, exemplify this direction and surely more are to fee

This essay was presented at After Nam June Paik, January 2011, Tate Live

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REFERENCES AND NOTES

al ex-	1.	"Visualizar," Medialab-Prado, medialab-prado.es/visualizar (accessed
/ myself		December 13, 2011).
some his-	2.	Warren Sack, "Aesthetics of Information Visualization," in Context Provid-
peratives,		ers: Conditions of Meaning in Media Arts, eds. Victoria Vesna and Margot
rea of art		Lovejoy, Christiane Paul and Victoria Vesna (Chicago, IL: University of
		Chicago Press, 2011).
	3.	Ibid.
n of hu-	4.	Stearns P, DCP Series, http://www.flickr.com/photos/57221817@No7/
or art		sets/72157626794392861/ (accessed December 14, 2011).
ons – Vi-	5.	DCP Series, Stearns, Allen J, Continent, http://continentcontinent.cc/
but a		index.php/continent/article/viewArticle/27 (accessed December 14, 2011).
ons are	6.	Graham Harman, Prince of Neworks, Bruno Latour and Metaphysics, (Mel-
in Howse,		bourne, AU: re.press, 2009).
to follow.	7.	J. Burnham, "Art and Technology: The Panacea That Failed," in <i>The Myths</i>
		of Information: Technology and Postindustrial Culture, ed. Kathleen Wood-
		ward, 211 (London: Routledge and Kegan Paul Ltd, 1980).
e Liverpool.	8.	Slavoj Žižek, "The Matrix, or, the Two Sides of Perversion," in Inside the
		Matrix: International Symposium at the Center for Art and Media (Karl-
		sruhe: ZKM, 1999), http://www.lacan.com/Žižek-matrix.htm accessed
		14/12/11 (accessed June 10, 2012).
	9.	C. Reas, "Works / Network B, a.k.a. Process 4 (Installation 3)," Reas' per-
		sonal Web site, http://reas.com/iperimage.php?section=works&view=o&
		work=network_b_s (accessed November 13, 2011) and G. Schofield and T.
		Schofield, fieldVentures' Web site, fieldventures.org (accessed November
		13, 2012).
	10). SIGGRAPH Asia, "Art Gallery," SIGGRAPH Asia, http://www.siggraph.org/
		$asia \verb"2011/artgallery-detail?id=\verb"52&session=artgallery&event=\verb"225" (accessed")" accessed and a statement of the session o$
		December 1, 2012).
	11	. J. Bennet, Vibrant Matter: A Political Ecology of Things (Durham, NC: Duke

- University Press, 2010).
- 12. Q. Meillassoux, *After Finitude: An Essay on the Necessity of Contingency* (London: Continuum, 2008).
- 13. E. Huhtamo and J. Parikka, *Media Archaeology: Approaches, Applications, and Implications* (Berkely, CA: University of California Press, 2011).

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