12. Sound examples: <http://www.labo-mim.org/site/index.php?2008/08/22/42-par-vagues>

13. Translation by the author of this chapter.

14. http://nt2.uqam.ca/repertoire/twelve_blue/plus

15. http://nt2.uqam.ca/repertoire/in_the_white_darkness/plus; http://collection.eliterature.org/1/works/strasser_coverley__ii_in_the_white_darkness.html

16. http://collection.eliterature.org/2/works/nelson_game.html

17. http://collection.eliterature.org/2/works/carpenter_in_absentia/; http://nt2.uqam.ca/repertoire/in_absentia/plus>

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ARTISTS' VOICES

EMBODIED ALGORITHMS: ON SPACE AND MOBILITY AS STRUCTURAL METAPHORS[1]

Romy Achituv

This short paper proposes the concept of 'embodied algorithms' to describe the use of models borrowed or derived from other disciplines as structural metaphors in works of art. The models may originate in fields as diverse as phenomenology, linguistics, or computer science, and while they may not themselves be computational or procedural, their cross-disciplinary/cross-modal implementation imbues them with a symbolic dimension that suggests a hermeneutical methodology (hence, 'algorithm') for constructing interpretive narratives.

The paper examines the constitutive role played by space and mobility in interpreting a series of the author's own artworks. For the sake of brevity, it focuses primarily on a single interpretive model derived from the writing of phenomenologist Georg Gadamer, and relates it to a number of digital models, or algorithms, employed in the works.

In his seminal work, *Truth and Method* (1975: 386-391), the German phenomenologist Hans Georg Gadamer speculated that it is in the movement between languages – in translations and interpretations – that new thoughts and meanings arise. From this perspective, translation might be said to represent a unidirectional trajectory: a leap, as it were, from one locale into another. Interpretation, on the other hand, could be described as a reciprocal motion between two locales, i.e., a form of paraphrase, with meaning generated in the course of perpetual motion between two semantic utterances.

The desire, and ability, to transcend the boundaries of one's locale are fundamental human characteristics. In *Laws* (1980: 33), Plato suggests that the origin of play lies in the need of the young to leap. Similarly, we might speculate that the ability to generate new thoughts and meanings, and indeed perhaps creativity itself, lies in the need of the mind to leap, to move beyond its own 'locale.' Novelty and creativity require not only space to maneuver, but also clear reference points. In other words, they require 'free-play,' the paradox of freedom within set boundaries.[2]

In a wide range of disciplines – phenomenology, psychoanalysis, and metaphysics, to name a few – motion and its relation to the attendant concepts of space and boundaries are considered fundamental for the production of meaning. If meaning is indeed predicated upon mobility (the motion between 'locales') then it may follow that hindering this motion, whether by restricting space or mobility itself or by frustrating the underlying desire to 'leap,' may undermine the very possibility of meaning.

The concept of movement between languages, which is constitutive of the dynamics of both translation and the broader search for meaning, is particularly pertinent to the interpretation of artwork, that is, to forging a relationship between image and word.

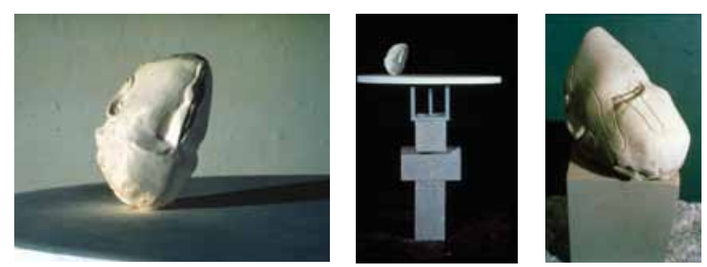
This model can be applied along two axes. The first relates to the spatial dynamic of spectatorship, which might be described as the reverberative, interpretive, motion between the spectator and the object of perception (the artwork), or, in phenomenological terms, between perception and cognition (a dynamic that also parallels the trial-and-error method of common scientific and creative practice). The second, or lateral, axis is internal to the artwork itself, forming the structural backbone of both its formal design and semantic reading.

The visual/physical representation of the relationship between space and mobility is a particular instance of a cross-modal 'import.' If we accept Gadamer's proposition, any structural model 'imported' into a work of art involves a process of translation, and is therefore a breeding ground for new ideas and interpretations.

Throughout the history of art, formal and structural features have expressed symbolic, religious, or philosophical ideas and ideals. Prominent examples include idealized canons of figurative representation from ancient Egyptian to European Baroque art, the analytical use of linear perspective in Renaissance painting, and stylistic devices that define the major 'isms' of modernism, such as the impressionist brushstroke, the cubist and futurist fragmentation of space and motion, and the diverse individual solutions invented by the American Impressionists (or their critics) in their pursuit of 'flatness.'

In art that has been canonized by the traditions of art history, the meaning of these devices is more or less fixed. It is presented as the interpretation either of *a priori* symbolism or implicit, yet uncontestable, intentionality (as in the dictums of Clement Greenberg). On the other hand, the more idiosyncratic the structural foundation of an artwork, the more it can be regarded as part of the distinct semantic palette of the artist. Furthermore, when the artist employs structural models that do not carry *a priori* cultural associations and allusions, their symbolic or metaphorical potential may become apparent only during, or even after, their implementation.

Following is a series of examples that explore the means by which various 'embodiments' of space and mobility guide interpretation of the artwork. In selecting these examples, I have



Muse (1984), *MUTE* (1984).

followed a route, by no means exhaustive, from physical 'analog' media (sculpture and photography), through digital time-based media (an interactive screen-based application), to works in which digital paradigms have been applied back to physical media.

Muse[3] and *MUTE*[4] (1984) are sculptural plaster mask-like heads that manifest space and motion in complementary, yet diametrical ways. *Muse* is constructed on a series of paraphrases that actualize the very concept of paraphrase. The piece suggests that the structure of paraphrase is predicated on distance, boundaries, and movement, and then recursively offers this structure as a spatial model for interpreting itself.

In *Muse*, two protruding elements 'sit' on the surface of a head -like object and define its features: a worm-shaped ear and an abstracted feminine figurine. The head itself is precariously balanced upside down, i.e., 'on its head.' The full name of the piece inscribed into the base, 'מיוז און HED' (phonetically pronounced 'Muse On Head'), conjures multiple puns, both visual and linguistic. Written half in Hebrew and half in English, and intentionally misspelled, it requires transliteration and translation back and forth between the two languages to be in any way coherent. It can then be taken to mean 'muse on head,' 'a museum head,' or 'museum's echo.' The name references Brancusi's famous *Sleeping Muse*, as well as the muse of the artist, and hence evokes the idea of creative inspiration.

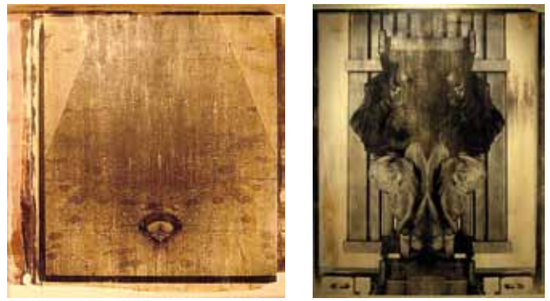
The 'head' therefore relies on a series of echoes (*hed* in Hebrew), interpretive reverberations that generate a variety of meanings in the course of back and forth translations (motion) between visual and linguistic phrases and paraphrases. The muse itself (both the figurine on the head and the piece as a whole) embodies this notion by countering the balanced state of rest of Brancusi's sculpture. Placed at one focal point of an elliptical base and tilted toward the other, it manifests the inability to occupy a centre, or a state of continual unrest, of perpetual longing. Thus, creativity is construed here as a frustrated dynamic, a constricted back and forth motion or resonance between two anchor points, between origin and destination, between signifiers/signifieds that perpetually point to each other.

MUTE, similarly a paraphrase of Brancusi's *Sleeping Muse*, is another almost featureless, mask-like sculpture of a head. But where *Muse* suggests that distance, boundaries, and movement are essential for the production of meaning, *MUTE* speaks to the effect of their negation. *Muse* offers motion, and *MUTE* thwarts it, and in so doing suggests a reading of the relationship between its explicit subject matter, the mute, and the symbolic representation of space and motion. Moreover, by visually embodying a negation of the spatial relationships represented in *Muse*, it can be said to be a paraphrase of the structure of paraphrase.

The head-like form bears an engraving of the outline of a hand extending across the face from the eye on one side to the ear on the other. Thus, the hand, which serves the mute subject as a tool with which to sign and engage in social discourse, as their primary means of extending into the social sphere, is symbolically turned back upon itself and denied spatial presence.

The collapse and inversion of the hand alludes to the stigma which prevents the individual from reaching out into the social sphere. This evokes the oppressive invalidation that lies at the heart of such stigma, an invalidation that denies the individual entry into language and the social dialogue required to establish their identity. *MUTE* thereby reifies the social gaze and its effect by 'importing' the spatial relationship of spectatorship into the physical artifact.

A similar structural device is employed as an editing principle in the *Homelessness: Architecture of a City*[5] project (1995-96), a photography series about homelessness in New York. Comprised of composite images that combine edited portions of photographs with their mirror-images, the works in the series create the illusion of a continuous space, with the figures appearing to be either doubled or reproduced through the symmetrical conjunction of their parts (The images were produced as temporary, graffiti-like murals printed directly on the walls of the exhibition space.)



Homelessness: Architecture of a City (1995-6). *Clam* and *Caryatid.*

The underlying aesthetic, formal, principle in this series is the doubling effect that equates image and reflection, creating composite figures within locked-in spaces. The singular (casual) reference of the optical photographic process is invalidated as multiple identical images are contained within one continuous space. When the integrity of the spatial illusion is maintained, these photographs may paradoxically come to indicate absence: the absence of individuality as the presence of anonymity. As in *MUTE*, the spatial constraint imposed by the rigid structural composition implies the paralyzing prescriptive power of social stigmas, and the restrictions they inherently place on the mobility necessary for the formation of identity.

In all the examples offered above, the production of meaning relies on a symbolic reading of space and motion. In terms of Gadamer's model, this symbolic dimension may be said to reflect the conceptual space, or fissure, opened up by the act of aesthetic representation, that is, by the dynamic of interpretation implicit in the cross-modal translation of concept to visual language.

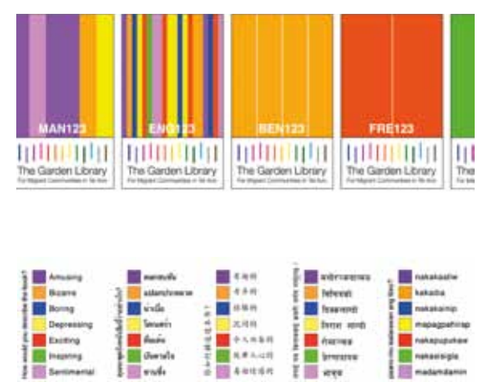
In sculpture and photography, expressions of the space-mobility relationship are necessarily representational. With time-based and interactive media, however, space and mobility are attributes of the media itself, and are therefore devoid of representational value. Non-linearity, for example, lies at the structural heart of digital technologies, and therefore, non-linear manipulation of space and motion does not, in and of itself, generate a representational relationship. In other words, it does not involve an act of 'translation,' but is simply a manifestation of what might be called 'standard digital behavior.' Consequently, for space and mobility to factor into the meaning attributed to works of digital media, they need to be structured (or rather constrained) in a manner that resonates with the subject matter of a given piece.

BeNowHere Interactive (*BNHI*, 1997)[6] is an example of an interactive installation in which constrained spaces and restrictions on interaction and mobility play a central role in directing the semantic reading of the piece. Employing a slit-scan photography technique, an active video window moves across the screen leaving a visual trail of the time and space of the cinematic path. The visible traces reconstruct panoramic landscapes, transposing the flow of time of the video stills into a panoramic spatial illusion.

The user can maneuver back and forth within the encapsulated -time modules by triggering new frames, new panoramic stills, and then stepping back to view the scenes unfold and come alive. This act of engaging with the *BNHI* application is an act of disruption. Every instance of interaction introduces a new spatiotemporal moment (a new frame) that fragments the integrity of the existing scene, determining a new beginning which, left uninterrupted, will activate a panoramic sweep that will create a coherent scene – at the expense of erasing everything it traverses along the way.

BeNowHere Interactive (1997).

The installation integrates twelve one-minute, 360-degree video panoramas filmed at four UNESCO World Heritage cities: Jerusalem, Dubrovnik, Angkor-Wat, and Timbuktu. The endangered status of the sites, which are threatened with imminent destruction by natural, social, or political circumstances, endows the scenes with the quality of time-capsuled specimens presented to the viewer/user for dissection and exploration.



The Garden Library for Migrant Workers (2008).
History stickers (Mandarin, English, Bengali, French).
Emotional categories stickers (English, Nepalese, Mandarin, Thai, Tagalog).

In this digital work, the structural attributes of the application take on symbolic implications. The looped time capsules echo the locked-in spaces depicted in the *Homelessness* project. The panning shot that seemingly has no beginning and no end, that perpetually unfolds back and forth in time, erasing itself while mirroring itself, implies a duration trapped, as it were, out of time. Moreover, although the motion appears to enable space to continuously unfold within the constrained duration, it is only an illusion created by the systematic mapping of frozen moments of time onto a spatial axis. Thus, the panning motion that repeatedly freezes slivers of space echoes the fact that the panoramic shot is itself frozen in time.

In addition, in contrast to most interactive games, artwork, or practical applications, user engagement with the installation does not advance the 'narrative flow.' Rather, by disrupting the illusion of continuous space, the non-linear interventions underscore the fragility and transience of the spatial coherency, thereby alluding to the subject matter of the piece.

Here, the very characteristics of non-linearity typified in random access data retrieval – the computer process of accessing data non-sequentially – the same characteristics that imply overcoming the constraints of time, are turned back on themselves (in a sense, paraphrased). It could be said that the power of the medium itself becomes the constraint imposed on the application.

As a procedural feature intrinsic to the medium, random access has no inherent semantic value. It acquires meaning in *BNHI* only by virtue of its structural affinity with the programmed interactive behavior of the work.

In contrast, the 'unstable' indexing and cataloguing system of *The Garden Library*[7], a public library serving the migrant communities of Tel Aviv, is a physical, cross-modal manifestation of a non-linear algorithmic paradigm. An open-air structure situated in the heart of a public park in the center of Tel Aviv, it was established in 2009 to serve the community of refugees and migrant workers who congregate in the park on weekends. The library has no walls or door, and is comprised solely of two bookcases supported by the walls of a public shelter that hold approximately 3,500 books in sixteen languages.

ARTEAM, the artists' collective that initiated and produced the library[8], sought to break away from traditional categories of classification and to realize a sorting and indexing system that would playfully manifest the values of an open society. Accordingly, the books are not catalogued according to genre or author name, but dynamically, according to reader input. On the inside back cover of each book is a sticker that asks, 'How would you describe the book?' and offers seven options: amusing, boring, bizarre, depressing, exciting, inspiring, sentimental.

When returning a book, the reader is asked to choose the word that best describes the emotion it evoked, and the color-coded adjective is added to the past history of responses on the spine of the book. The book is then placed on the shelves according to its latest emotional classification. In other words, the placement of the book is not decided by popular vote, but by the last reader, using a dynamic system that everyone can impact and in which every participant's input counts. The cataloguing system continually restructures the layout of the book collection, creating at any given point in time a transient 'wandering map' that reflects the readers' opinions and preferences.

The fluid indexing system reflects the shifting demographics and constant changes that result from the transient nature of

the communities that patronize the library. At the same time, it empowers each individual reader, enabling them to determine the mobility of every book.

ARTEAM thus sought to apply the non-linear algorithmic logic of digital technologies to the physical holdings of the library, transforming the book collection itself into a database that is habitually restructured on the basis of user input. The cross-disciplinary, cross-modal, application of the algorithmic procedure to the library's physical collection creates an interpretive space that directs attention to the structure of the cataloguing system.

Fruits of Labor (2012-13).
Heaven Lake and Baekdu Mountain).
Rice husk and rice husk ash.

The system transforms the library into a small, parallel world in which the books wander between the shelves as their readers wander the world, carrying with them their emotional history. Thus, *The Garden Library*'s cataloguing system offers a dynamic, interactive structure that mirrors the transience and mobility of its users, while at the same time affording these otherwise disenfranchised individuals agency over the system itself (Achituv 2011).

The systemic, algorithmic manipulation of space in the *Fruits of Labor project* (2012-13) consolidates many of the ideas discussed thus far, implementing them on a larger public stage. The notions of constricted mobility and transience, as well as the structural confines of the computer matrix and automated computer processes, all come together to construct a complex metaphorical system that alludes to the oppressive and isolationist practices of North Korea and the dire hunger they have begotten.

Fruits of Labor is a large-scale participatory performance planned for production in South Korea over the course of the coming year. It is semantically structured around the metaphorical meaning of rice husk, or chaff, a by-product of grain processing. The word is used in this metaphorical sense, for example, in the common expression 'to separate the wheat from the chaff' (taken from Matthew 3), and in Psalm 1:4, 'Not so the wicked. They are like chaff which the wind blows away.'

The event will involve between two and three hundred 'farmers' – a broad range of volunteers, including a core group of North Korean expats. Each participant will carry a distribution device containing pouches filled with rice husk of various shades, produced from a mixture of rice husk and rice husk ash. A series of grids will be projected sequentially on the ground. Each cell (or 'pixel'), approximately 1.5cm square in size, will display the index number of its required monochromatic shade. The participants will 'sow by numbers,' line by line, moving in parallel rows across the grids and from one grid to the next, gradually creating a 'print' of Heaven Lake and Baekdu Mountain, the national symbol of North Korea.

The scale of the project requires a systematic approach to producing the image that involves strictly regulating and choreographing motion through constricted space. The large number of participants will be directed to move in unison, simulating a series of out-sized printer heads or agricultural machines.

While the image emerges through methodical step-by-step accretions of motion, the individuals within the system are deprived of agency, their mobility wholly dominated by the orchestrated movement, the algorithm directing the process of production. They sow the field blindly, matching numbers to hues of infertile seeds, with limited perspective of the whole as it slowly comes into being.

As spectators of their own actions, however, they move along the axis of translation, from number to hue, from projection to feather-light husk, possibly recognizing in the course of the repetitive, reiterative, task a narrative suggested by their actions. We may hope, with Gadamer, that from this movement between languages, new thoughts and meanings may arise.

Notes

1. This article builds on ideas first presented by the author in *Locality in the Age of Virtual Transcendence*, a curatorial essay for Between Man and Place, an exhibition of contemporary art from Korea and Israel, Ssamzie Space, Seoul, S. Korea (December 2005), and in the article 'Algorithms as Structural Metaphors: Reflections on the Digital-Cultural Feedback Loop', slated for publication in *Leonardo: Journal of Arts, Sciences, and Technology* in 2013. An excerpt from the article was published in the ISEA2011 conference proceedings.
2. The German *spiel* and the Hebrew equivalent *mishak* mean both 'play' and 'free-play.' In Hebrew the word *mishak* is derived from the root *sahak*, meaning laughter. Indeed, play, laughter, and freedom seem not only to be inseparable concepts, but to define the very parameters of human creativity.
3. http://www.gavaligai.com/main/sub/sculpture/MUSE/MUSE.html
4. http://www.gavaligai.com/main/sub/sculpture/MUTE/MUTE.html
5. http://www.gavaligai.com/main/sub/photography/Home/Home.html
6. http://www.gavaligai.com/main/sub/interactive/BNHI/BNHI.html
credits: C programming consultant: Matt Antone; Footage: Michael Naimark and Interval Research Corp.)
7. http://www.thegardenlibrary.org
8. ARTEAM founding members are Romy Achituv, Marit Benisrael, Yoav Meiri, Hadas Ophrat, Nimrod Ram and Tali Tamir.

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STRINGING DISTURBANCES IN POETIC ARRAY SPACES: READING BY CLOSE READING

Loss Pequeño Glazier

La Degramaticalidad Increíble – A Statement

I begin from the position that the range of practices, beyond grammar, extending from language as material – whether visual, aural, written, performance, or digital – is an open field. That is, I affirm the belief that there is room for all artists, for all experiments; that the field is closed to no one.

Starting from such a position, an ample vista is imagined. This can be seen in the permission granted by William Blake, Emily Dickinson, Walt Whitman, Federico García Lorca, Jorge Luis Borges, William Carlos Williams, Hilda Doolittle, Charles Olson, Robert Duncan, Robert Creeley, some of the Language Poets and a small number of literarily aware New Media writers.

The field is vast and, given lessons learned from relativity theory, quantum physics, DNA sequencing, the Dalai Lama, from the provisional time-continuums of cinema, from the 'Swerve-of-fate Gothic arch [that] becomes Cerro-de-la-Silla' (Glazier 2012) its looming silhouette penetrating into the unfathomable chthonic realms of ageless impressions[1], from the spaces between words and tonalities of images in poems, from colors and images modulating before one's very eyes on the computer screen, and the vast distances reduced to nanoseconds by communications media, we have only begun to think of the possibilities. So there is no reason that any practice might be excluded.

At the same time, the time available to us as humans is not unlimited. Thus, one must make specific choices. That is why one always respects one's family responsibilities, one's own art practice, one's unwavering commitment to those they teach, and one's never-ending effort towards a greater understanding of the always-permeable richness of cultural configurations.

As regards the choices of time and art, I can only speak for myself. Trained as a painter and as a bibliographer, I like colors, I like words. There is some liberation in the text, whether printed, algorithm-generated, visual, sound-based or location specific, that speaks to my particular place in this Global Positioning System that identifies me as in the here and now. Of specific interest to me are several often-conflicting issues: how we create across languages, how language, like a star viewed from the earth's surface, is endlessly changeable yet somehow fixed, how everything we are is constituted by parts of other things – genetic, social, psychological, and cultural – and how we exist in relation to our own notion of time. There is space. There is matter. There is language as image and there is image as language. But to focus on specifics, let's look at this in a literal manner.

Reading Implicit Strings

On a more granular level, writing shifts. For example, look at author manuscripts. One can see that over the course of time, the features of the manuscript modulate: one word is crossed out, another is substituted; sometimes the original word is later reinstated where it was previously expunged. The conceptualisation here is not to look at this as a palimpsest, where traces of previous versions show through subsequent layers, rather; the mechanism is *digital* in nature – one that allows both versions to be read at the same time and with equal clarity, but with no material bleed.