



DOCUMENT

UFD0011 John Gerrard Robin Mackay Franziska Aigner

Gesture as Playlist

Three presentations from the 2015 event explore the historical and contemporary relationship between choreography, technology, control, and subjectivation

1. John Gerrard: Exercise

This is a presentation of my recent work—specifically in relation to the use of motion capture within the work, in response to the question of ‘Gesture as Playlist’. To begin with, I am going to talk about *Exercise (Djibouti)* 2012, a commission for Oxford University and Modern Art Oxford. Those entities approached me in 2011 and asked if I could respond to the 2012 Olympics. I don’t have a great interest in sports or in the Olympics, but what I was rather interested in was the idea of national display and performance. I proposed that I would produce a piece in response to two pictures of the American Army from the DVIDS military archive. These are photographs of what’s called a mass casualty exercise. I wanted to deal with the subject of spectacle and how power represents itself—in this case in military exercises propagated via the media, but in another instance through competitive sport.

At the same time I was also looking at things like ‘ARMA dance’. ARMA is a military sandbox type environment where you can play out different scenarios, but people have integrated found motion capture sequences into this environment to produce a form of ‘machinima’.

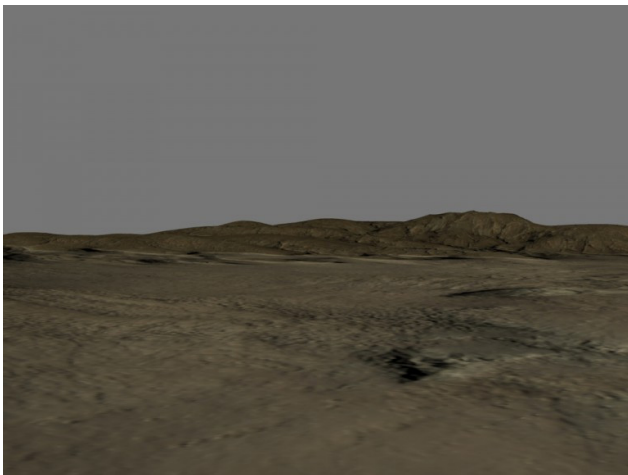
So this idea of simultaneity and control and collage emerging within the digital; also subjects like big dog, which is a robotic pack carrier being developed for the US military—and also drones—all of these things were present in my thinking at the time, but alongside spectacles like the Beijing Olympics opening ceremony which was reputedly performed by members of the Chinese army, on the basis of the precision that was required for the spectacle to operate.



So on that basis I proposed that I would produce a piece called *Exercise (Djibouti)*.

In the following photographs you see me in Djibouti, which is a small country in Africa that primarily functions as a military base for Western powers. The mass casualty exercises documented in the DVIDS reference images happened on this lake bed. Here I am documenting the scene by taking four to five thousand pictures of the scene.

And in time following an extended production involving teams of modellers, programmers and producers, it becomes a virtual world.



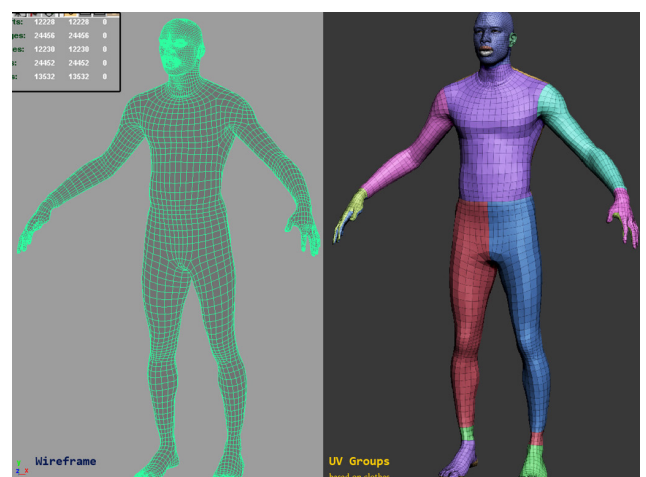
I required participants who would take part in the proposed work; so I worked with a group of athletes who were in training for the Olympics (none of them actually made it to the Olympics but when I was working with them they were training for it). We brought these three athletes to a 3D scanning studio: here you can see that process unfolding, where they are transferred as portraits into the virtual.

Here they are turning the athlete-actor, scanning all sides to create what I call a 'sculptural photograph'.

And so what we have in the end are these very beautiful 3d 'casts' of these figures—what you are seeing here is a 3d model realised as a still image.



And then of course they are optimized to travel into the virtual, into a game engine environment.

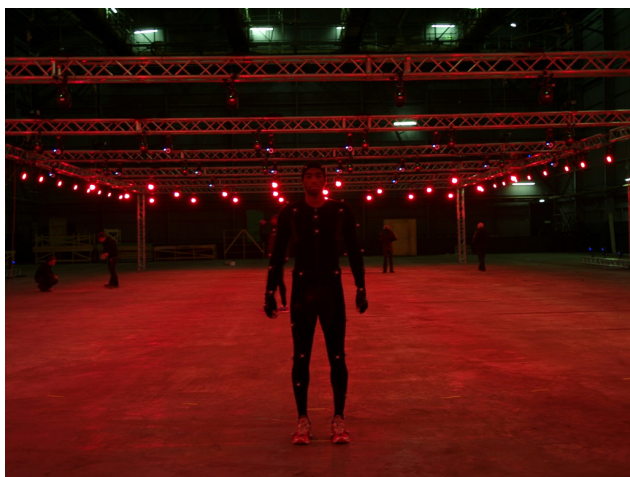


The underlying concept of *Exercise (Djibouti)* was that we would have a fictitious performance which would be timed by the release of camouflage smoke—as seen in the reference DVIDS photo—in the colours of the prism.

The performance would be a figure of eight, an infinite loop that would occur over time, from dawn to dusk, every day. I work within algorithmically generated worlds that unfold over an annual period. I construct a stage as such and put a series of behaviours in play within it—which give rise to the simulation of light across an annual orbit.

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We were very lucky to be given access to Shepperton Studios, where they had a large motion capture studio set up a mainstream movie. That's very unusual—normally motion capture studios are much smaller than this, but this was football pitch sized. And we were allowed in on the day before actors arrived, and got to run our athletes in a figure of eight for three hours until they could no longer run. We ran them to the point of exhaustion, and captured that entire process. Here you can see the athletes, managed by their trainer, executing these figure of eight runs.¹



What we get are these beautiful captures of figures running in space. That information is then assigned to those portrait scans, and the piece unfolds.

I won't talk in too much detail about this, but we also needed to produce virtual smoke—again, the reference pictures come from the military media



archive DVIDS. So we spent a year rebuilding the virtual smoke simulator, which then functioned in the work. I want to show this piece of footage because I think it says something quite interesting. Now these are 'dead' 3D scans with these captures assigned to them, but this is one scan in which we've displaced 8 figures in time. So if this figure stops they will all collide into themselves and become one object again. You can think of it as a form of 3D cinema, with the frames distributed through the virtual space.



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At the end of this sequence, we see the character collapsed into one object, fallen in upon himself. This is not the piece, it's just an artefact of the

1. See the online version of this document for the video documentation mentioned: < <http://www.urbanomic.com/document/gesture-as-playlist/> >.

production process. But I think it says something interesting about the three-dimensional and about the scan, and the potential for the game engine within contemporary art, or society, outside of the space of video gaming as such. And that's an area I'm particularly passionate about.

The proposal for Modern Art Oxford was that we'd take over an old power station in Oxford, and would insert the work as a large projection. This is a sketch of the concept:



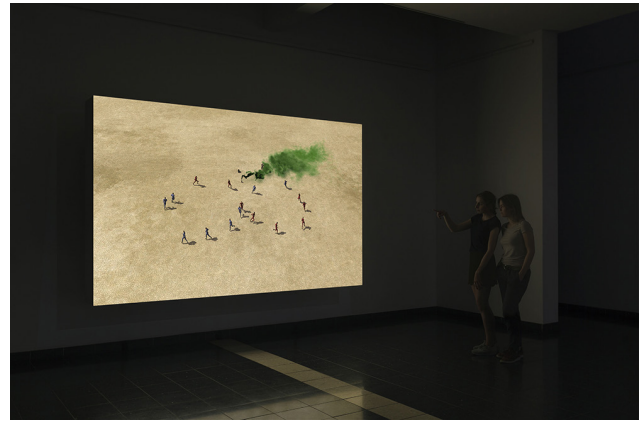
and here is the final work as installed:



There was a whole team involved in producing this piece, it certainly was not just me. And the piece ran simultaneously with the 2012 Olympics. And remember that I produce game engines: in the actual exhibition environment, these scenes are executed as you watch them.²

For *Exercise* in Darmstadt we have also included a second camera, a drone camera which lets you look down on this performance.

2. For a wide-ranging discussion around *Exercise (Djibouti) 2012*, see *Simulation, Exercise, Operations* (Urbanomic, 2015).



Also in the Darmstadt show is *Exercise (Dunhuang) 2014*, which is a very complicated work responding to a landmark in China. This piece also involves figures on a landscape who have been created using motion capture, and who populate the landscape and interact through algorithmic control.³



Algorithmic representation, or perhaps we could say the implications of the 'model', are something of an invisible animating force in contemporary society. Multiple areas, from trade, politics, war and even our day to day choices are buffeted and directed by models and simulated outcomes. I wanted to create an explicitly data-driven choreography in response to this—an 'infinite loop' mapped upon the landscape—and at the same time somehow inscribed with some of the invisible conditions of contemporary experience.

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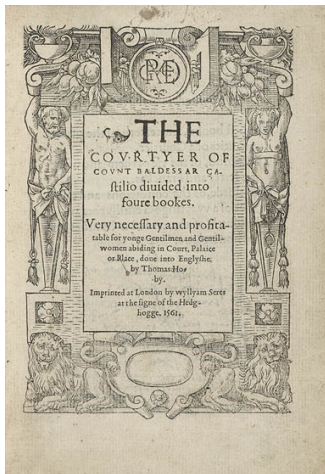
Motion capture allows one to map vestiges of the real, which are not animations as such, but are

3. See 'Remote-Control Site' in *When Site Lost the Plot* (Urbanomic, 2015).

records which may be as cinematic as a film, but which include a dimensional and informatic quality: they are a kind of 'cast'. I want to conclude by suggesting that motion capture is a kind of emblematic technology for asking questions in regard to algorithmic conditions more generally, and their 'animating' effects. Fundamentally, motion capture belongs to a 'post-cinematic' stage of the image: it is a part of the 'new image': post-lens, scan-based, instruction-based (or perhaps behaviour-driven), and bringing cultural production both closer to and ever further away from conditions that can be broadly described as 'real'.

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2. Robin Mackay: Virtual Choreography



In the 1528 *Book of the Courtier*, a renaissance best-seller, the author Baldessare Castiglione emphasizes the importance of dance for the development of the most important quality in a courtier—namely *sprezzatura*, a meticulously cultivated carelessness which demands that a certain style of comportment, bearing, and gesture, which must be learned, studied, and practiced with great care, must nevertheless appear natural, unstudied, nonchalant. Thus Castiglione's handbook lays out the corporeal preparation necessary in order for bodies to take up their rightful place and to thrive in civilized society.

In this process of shaping a refined spirit through a training of the body, through gestures internalized to the point where they can be performed with nonchalance and with an as if natural grace, we see the role played by social dance and its aesthetic virtues of orderly form and motion in the fundamental

processes of individuation and the assumption of cultural identity; but we also become aware of a certain paradox: this is a codification and transmission of a conventional language of gesture which must, nevertheless, appear to be the natural property and indeed the birthright of an elite body.

This is a codification and transmission of a conventional language of gesture

The aim of Castiglione's teaching, in common with the renaissance liberal arts of which it was a part, is to develop an inner sense of one's humanity. Not only does choreography here relate to the discipline of the dancing body, but to the careful control of others' perceptions of one's movement—and this learning certainly does not end with the dance per se, but is continuous with a wider choreography relating to the carriage of oneself, one's comportment in relation to others, a whole music of the soul.

The grace of *sprezzatura* was thus not just the sign of social belonging, but was supposed to be a true manifestation of the soul—the dancing of peasants reveals all too rudely their ignoble souls, whereas the refined yet effortless movement of the courtier, the conquest of a simultaneously physical and intellectual art, expresses the refinement of his soul—indeed, in the most extended philosophical sense of the renaissance arts, that soul's kinship with the great eternal movements of the cosmos.

This moment sees the decisive rupture of social dance from folk traditions. Here we see a conventionalization, codification, and documentation of social dance, and the entrusting of its transmission to a professional: namely, the *dancing master*—an often itinerant specialist employed by aristocratic families.

The dancing master possesses the secret of the artificial nature of gracious corporeality, the knowledge of the art of concealing art

The dancing master is a figure who, because of his ability to teach a mastery of bodily gestures, to instruct upon the performance of the self for the purposes of social advancement and courtship, became

a figure of intrigue and suspicion. The dancing master has access to desirable social circles, yet does not really belong to them himself; he is dangerous (sexually, socially, even politically) because he possesses the secret of the artificial nature of gracious corporeality, the knowledge of the art of concealing art, of producing a kind of body-machine that manifests soul.

As Serena Zabin writes of the figure of the dancing master in a later milieu, eighteenth century New York, at a time when the rise of capitalism was beginning to erode social boundaries, making yet more acute the need to signal one's nobility through the body:

Like a successful confidence scheme, dance instruction required the dancing master to masquerade as an elite body even while he was economically dependent on the patronage of his clients. The dancing master had to tread a social tightrope. With too great a difference between himself and his elite students, he became a disreputable teacher of gentility. On the other hand, if he slid too imperceptibly into the genteel world of his adult pupils, he triggered suspicions of trickery in himself and instability in his clients.⁴

The figure of the seductive dancing master, a masquerading, simulating and dissimulating agent, and the perception of dance itself as operating a potential subversive passage between social strata, is an abiding one—even if the structural trope is subverted in various ways, as cultural cachet accrues to different virtues and modes of movement—see virtually any dance movie since the 80s....

As an adept in the deracinated language of the body, the figure of the dancing master is troubling to any essentialist thinking of identity and any idea of natural comportment

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4. S. Zabin, *Dangerous Economies: Status and Commerce in Imperial New York* (Philadelphia, PA: Pennsylvania University Press, 2009).

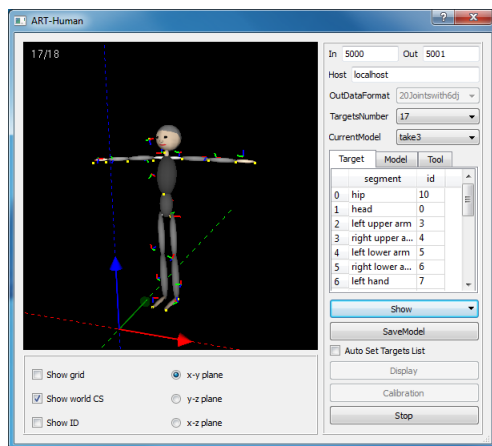


of natural comportment. He problematizes any notion of the authenticity of expression, of the natural body that speaks itself clearly; and suggests the possibility of devious enjoyment of a body that is not one's own, or inversely the corrupt influence of vulgar gesture on refined souls.

If we therefore conclude that dance is one of the 'political technologies of the body', we should like to ask what kind of grace is being sought, and what mode of power expressed, in a new mode of social dance today, one that is technologically distributed, and whose conventions are transmitted directly via visual images and digitally-captured gestures.

Just as the performances of the self taught by the dancing master were also devices for the maintenance of elite power, and just as, in his founding letter of the Academie Royale de Danse, Louis XIV explicitly reminds us that dance also serves to keep peacetime bodies prepared for bearing arms, this new mode of choreography has its political stakes. The technologies and techniques through which our impersonal and distributed dancing master transmits its instruction, links it very closely to the operations of contemporary power, and to other enterprises of body-optimization—the military, biopolitics, and the everyday marshaling of bodies in space.

The emblematic process of this new dance is motion capture, which originated in orthopaedics as a way to capture bodily movement as data in three dimensions, with great accuracy, so as to be able to understand and normatively modify the human gait. As well as its extensive use in entertainment, motion capture is now used in sports training where, in the words of a company who produces the technology, 'athletes compete to do the impossible



and need technology to help them improve their performance'. Its military uses include, on a large scale, tracking troop movements in real time, and on a more fine-grained scale, to quote one manufacturer, 'next generation military devices' in which 'Weapon and Posture Tracking, Eye Tracking, and Head Tracking enhance military capabilities, turning troops into virtually-enhanced machines'. It is indeed a knowledge and technology of the body that is inherently political.



CORPOREAL MEMETICS

The birth of virtual choreography was announced, appropriately enough, by a dancing baby. The uncanny cha-chaing infant created as a sample by the team developing the software package *Character Studio* was the first avatar of a brand of visual humour which, since the animation went viral in the late 1990s, has been an abiding source of fascination in popular entertainment: the ability to abstract and codify a set of gestures, and transplant them into another body.

Today, scarcely a single kids' movie or comedy coming out of Hollywood passes up the opportunity for a setpiece in which the cast suddenly break character and lock into a fastidiously stereotyped dance



routine pulled from the archives, whether it's an ironic Bee Gees classic, a preening Beyoncé number, or a set of poledancing moves.

As well as being a Hollywood staple, these choreographic fugue states also circulate in home-made media. In both cases they are enabled by a spectrum of technique: sometimes actual physical training is involved—as in flashmobs, or wedding parties where the romantic first dance is unexpectedly interrupted by a perfectly-rendered raunchy routine.

But these tropes are further intensified by CGI trickery; and with motion capture allowing the repurposing of preexisting virtual characters, the envelope of grotesquery can be pushed even further.



Even when routines are learnt physically, though, as in the case of 'dance covers' where fans recreate moves from their heroes' videos, they seem to aspire to an exactitude and absolute dispossession of the body characteristic of digital playback.

Character modelling and motion capture open up a combinatorial space in which archived bodies and gestures can be remixed at will

It seems to me that the underlying model here is the digital technology of character modelling and

motion capture, which open up a combinatorial space in which archived bodies and gestures can be remixed at will, through the procedures of rigging (attaching a set of gestures to a virtual skeleton) and skinning (applying to the skeleton a polygonal mesh representing a particular body).



It's almost as if these technologies realize a desire for dispossession, for being inhabited by the abstracted bodies that circulate in the distributed visual culture of the web. From this point of view, the meticulous retro-enactment of something like *Pulp Fiction*'s dance scene, representative in its day of the archive fever of 'postmodernism', makes postmodernism look like an impulse in waiting for its full machinic operationalization, its technological consummation: to be possessed by the archive.

IT'S NOT ME DOING THE MOVING

Possibly the first bona fide major Internet meme, *Dancing Baby* was also the first piece of media to awaken a fascination with this ability to digitally record, recombine, and replay gesture, to abstract movement into code and to propagate it from body to body. Since then, virtual choreographies have walked in lockstep with the spread of cultural memes and their unstoppable transport across contexts.

These are *Körperwürmer*, body worms, viruses of corporeal imagery repetition

They mark the point at which corporeal memes clamour to invade the very body of the viewer—as Germans speak of a catchy tune as an *Orhwurm*, an earworm, a phenomenon described as musical imagery repetition, these are *Körperwürmer*, body worms, viruses of *corporeal imagery repetition*. That is, they are images that activate a compelling desire to feel ourselves transformed from the inside

by shared cultural moments, and to experience our body from without as a programmable apparatus rigged to other, distributed virtual bodies, in a corporeal celebration of a culture experienced as reproducible 'software'. They are indeed the form of social dance proper to a fluid memetic culture, a shaping of the soul through participation in socially-shared routines.

If, in these setpieces, ironic recuperation and bio-control converge, and flamboyant spontaneity is coupled with passive reproduction, this is perhaps merely an extension of the fascination of dance itself: its disciplinary dimension, its connection with 'possession', and its creation of extraordinary bodies. Dance collectively and individually creates new corporealities, and dancers, whether Nijinsky or Michael Jackson, are already explorers and creators of virtual bodies, through their disciplined development of a signature style.

But virtual choreography changes the game, by making available a random-access archive of fragments of bodies, both anonymous and celebrity-branded, to be stitched together, inhabited, and remixed.

What exactly is the *jouissance* at work here? One thing that springs to mind is in Günther Anders's philosophy of technics, in his 1956 book *The Outdatedness of Human Beings*, with its proposition that the human feels itself outdated and obsolete in the technical age. Anders argues that this feeling expresses itself in what he calls 'Promethean shame':⁵ a shame that comes about

not because he can't tolerate any part of himself being made, and wishes to make himself; but because he doesn't want to be non-made; not because he is indignant at being made by others (god, gods, nature); but rather because he is not made, and as the non-made he is inferior to all of his fabrications [...] the shame of not being a thing is a new, second stage reached in the history of the reification [*Verdinglichung*] of man: one in which man acknowledges the superiority of things, put himself on par with it, affirms his own reification, and thus rejects his non-reification as a shortcoming.

5. I owe the reference to Anders to Yuk Hui.

This Anders clearly refers to in terms of a quasi-Hegelian movement in which the soul strives to take on the thinglike quality of the machine. We can indeed, if we wish to, see something like this 'self-reification' taking place in these videos. We see a corporeal training and a dispossession that is still understood as an affirmation of some kind of social identity, albeit a fluid one, but which seems on the verge of a kind of ecstatic affirmation of identity-as-dispossession. Notably, there is sometimes a rather uncomfortable kind of gender or racial troping, as if acceding to this random-access archive led to an unproblematic affirmation of random-access identity—as if one fully bought into the speculative promises of capitalism that identity is now a joyful, fluid, voluntaristic enterprise of self-creation.

A strange reversibility between soul and machine, between artificiality and naturality, between natural rank and cultivated comportment

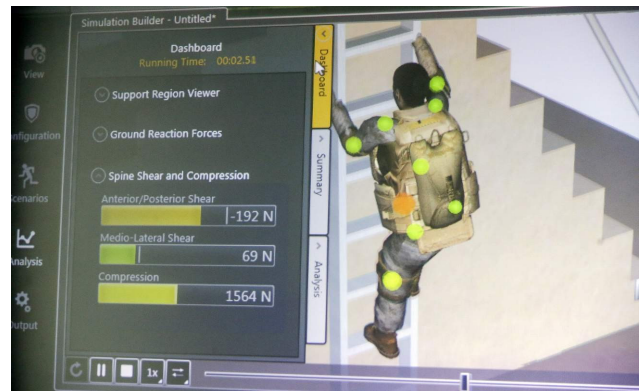
And yet from another perspective this is simply a continuation of a history of choreography which, as we have seen, is linked, through the figure of the dancing master, to a strange reversibility between soul and machine, between natural rank and cultivated comportment. To come back to the renaissance courtier, the notion of sprezzatura was in fact also linked to the automated grace of the machine: In *Choreography and Narrative* Susan Foster writes that:

courtly sprezzatura [...] all[ied] the operation of mechanical devices with the cultivation of a new order of virtues and values—equipoise, grace, prudence and resolve [...]. [T]he study of mechanics is reinvented in the latter half of the sixteenth century as an instrument of courtly grace, so much so that the regular, even movements of machines come to epitomise physical control, elegance, and emotional tranquility.⁶

This era, then, saw a complex reformulation of the relation between bodily discipline, sociality, the machine and the human; we might say that we are in the middle of such a reformulation today, and that

6. S. Foster, *Choreography and Narrative: Ballet's Staging of Story and Desire* (London: John Wiley & Sons, 1998).

the way in which we dance is one expression of this. All of which indicates a wider sense of choreography that must be addressed here: Beyond the grotesque, humorous, and ironic reappropriations of pop culture, it is in military applications that we find the most advanced forms of these procedures, and perhaps a clue to their wider significance, given that civilian and state uses of technology invariably take their cues from military research.



In the 'Virtual Soldier' project at the University of Iowa, archival scans of an anonymous person have been used to 'skin' a sophisticated model of the human body under development for testing in simulated military situations, nicknamed 'Santos'. Quite in keeping with the fact that motion capture has its origins in orthopaedics, and balletic choreography emerged from military discipline, here these new technologies are employed in an extended scientific objectivation of the human body, in view of its monitoring and optimisation.

Santos is to be placed in various virtual scenarios, and reports back in detail on his body's response to the effort, gestural spontaneity, and physical stresses involved in negotiating them. This is effectively a reversal of the affective traffic between virtual and physical bodies, with Santos as a generic human who feels for us in advance, mapping out the optimal functional comportment in situations yet to be actualised. The flipside of the enjoyment of inhabiting the generic virtual body, then, is the potential for such a body to become a placeholder for us, its responses legislating for our environment and movements.

There is clearly a historical continuity here, and we have to stress that there is no originary or natural body is being corrupted or artificialised in contact

with the technical world, with the new ‘dancing master’ that is distributed, interactive, social visual media. But acknowledging this continuity, what is pressing are the contingent yet real limits that are being transgressed in respect to the body: limits of speed, cognitive capacity, connectivity, and social-technical mediation. What kind of transformation (or sublation) of our relation to the manufactured and the machinic takes place when we are dealing not with demonstrating bodies and signifying signs (notation, diagrams, description, one-to-one teaching) but with what Félix Guattari called *asignifying signs*?—with a world in which the body is increasingly managed by networks of sensors, visual media, soft disciplinary mechanisms, in which operative signs circulate at a speed that outstrips human cognition, tending to attune the social body in ways that have less to do with the discipline and mastery of the self, than with a *modulation* of bodies as elements in an electronic choreography that dances to its own tune?

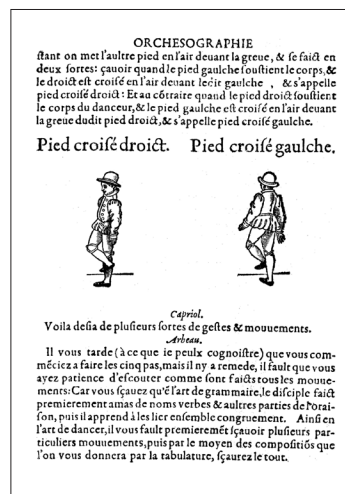
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3. Franziska Aigner: On Orchesography

My topic for this introductory talk is the interplay between choreography, culture, technics and the human. I structured my talk into three points with which I hope to provide for both a philosophical and historical framing of some of the issues and concerns at stake in John Gerrard’s work. My first point in this regard will be *Orchésographie* as a socializing machine, which I derive from a text by Thoinot Arbeau from the year 1589. For my second point I will speak about what Gilbert Simondon in 1958 called recurrent causality between the human, technics and culture, and which in 1830 in a comparable fashion was called the dialectical self-fashioning of the human by G.W.F. Hegel. As my third point I will conclude with the problem of asymmetries in those recurrent causalities.

ORCHESOGRAPHIE AND THE SOCIALIZING MACHINE

Thoinot Arbeau’s *Orchésographie*, a dance-manual from 1588, is possibly the first reference to the word choreography. Etymologically speaking, *orchesis* is greek for dancing and *graphein* stands for writing. In Arbeau’s text, a young lawyer called



Capriol visits his old teacher. The master Arbeau, is both a mathematician, a Jesuit priest and, most importantly, a dance master. As the text unfolds, Capriol reveals that the subject of his visit is for his old master to teach him the art of dancing. Only if equipped with the art of dancing does the young lawyer Capriol think himself capable of participating fully in society so that he may ‘not be reproached for having the heart of a pig and the head of an ass.’⁷ In a conversation about the dances that he wishes to learn, Capriol proceeds to ask Arbeau to write the dances down.

CAPRIOL: I foresee then that posterity will remain ignorant of all these new dances that you have just named for the same reason that we have been deprived of the knowledge of those of our ancestors.

ARBEAU: One must assume so.

CAPRIOL: Do not allow this to happen, Monsieur Arbeau, as it is within our power to prevent it. Set these things down in writing to enable me to learn this art, and in so doing you will seem reunited to the companions of your youth and to take both mental and bodily exercise, for it will be difficult for you to refrain from using your limbs in order to demonstrate the correct movements. In truth, your method of writing is such that a pupil, by following your theory and precepts, even in your absence, could teach himself in the seclusion of his own chamber.

7. T. Arbeau, *Orchesography: A Treatise in the Form of a Dialogue Whereby All Manner of Persons May Easily Acquire and Practise the Honourable Exercise of Dancing* (New York: Dance Horizons, 1966), 17.

Choreography appears as on a par with the military in regulating the survival of society by both establishing and preserving the normative social order

Choreography as the art and writing down of dance here unfolds clearly in its manifold of functions. First of all Capriol wants to acquire the art of dancing in order to become socially accepted. Dance establishes normative relations between the sexes (during the course of the text, we learn that what Capriol ultimately wants is to find a wife), as well as enabling the taking of control over the 'natural body' (hence the reference to the 'head of an ass' mentioned earlier). From its very beginning, choreography thus appears essentially as on a par with the military in regulating the survival of society by both establishing and preserving the normative social order. As a vital socializing machine, Capriol secondly asks Arbeau, to write these dances down so that they may not get lost. It is here that choreography is furthermore explicated as externalized memory, always already dependent on a technological gesture and support, be it in the form of a book, a manual, or a technical object. As such, choreography appears also as a means for socializing with those of the past and the future, thereby inserting choreography into a particular transcendent temporality. The subtitle to Arbeau's *Orchésographie* fittingly reads 'Tempus plagendi, & tempus saltandi' ('a time to mourn, & a time to dance'). In the solitude of one's chamber, the time of mourning is thus connected at once to dancing each other's absent presences.

We are thus faced with choreography as a site and means for vital socializing and population control, functioning as external memory supports, putting forth a transcendent temporality, and all of this in the solitude of one's chamber.

RECURRENT CAUSALITY AND DIALECTICAL SELF-FASHIONING

In *On the Mode of Existence of Technical Objects*, first published in 1958, Gilbert Simondon conceptualizes the relation between technics and the human as mediated by culture. Culture, he writes, has an essentially regulatory function by furnishing the means

and forms of expression to a social group which itself brings forth that very culture. As so clearly put by Foucault, practices (cultural, choreographic, linguistic, social etc) are both a setting and a 'judicative' and 'vericative' body of rules. This means that for my actions to matter in the sense of becoming powerful as well as intelligible, I'm dependent on culture and its manifold practices. Outside of these practices, there is no self with which to speak, but even if there was, it could neither be heard nor understood by others.

The act of self-conditioning between technics and the human via culture must be understood as the invention of rather than the adaption to one another

According to Simondon, the system between the human and technics via the intermediary of culture functions according to what he calls recurrent causality. As such, both the social group and culture are engaged in the continuous and reciprocal acts of self-regulation and self-conditioning. What exactly does this imply? The act of self-conditioning between technics and the human via culture must be understood as the *invention* of rather than the adaptation to one another. While adaptation needs something preceding to react and adapt to, acts of invention imply a reversed conditioning in time. '[What] is involved here is a conditioning of the present by the future, a conditioning of the present by what does not yet exist'.⁸ It is this mechanism of self-conditioning by recurrent causality (and therefore by the future) in which the human is continuously 'invented' by culture, while the human 'invents' that very culture in return.

In Hegel this mechanism of self-conditioning is shifted to a different register and called the dialectic auto-poetic mechanism of habit.⁹ In his 1830 *Anthropology*, Hegel puts forth his concept of the human as the 'work of art of the soul'. Far from

8. Simondon, G., 1958. *On the Mode of Existence of Technical Objects*, tr. D. Mellamphy, 2010.

9. Despite the divergences between the respective conceptual systems of individuation (Simondon) and dialectics (Hegel), there are important overlaps which I will briefly lay out in the following. My reading of Hegel is indebted to Catherine Malabou's lucid discussions of habit in her book *The Future of Hegel*.

appearing as a transcendental underlying substance, the human self, according to Hegel, must be thought as essentially devoid of an originary nature. It is habit that appears as the anthropological determination nevertheless; an anthropological determination that in a paradoxical fashion reveals the in-existence of anything that could be termed authentically anthropological. Habit here means most importantly the process whereby the psychic and the somatic (that is the mental and the physical) are translated into one another. As such, habit is capable of absorbing and subsuming differences and otherness into identity—a strange synthesis, capable of interiorizing the exterior, making the exterior I encounter characteristic of myself, and exteriorizing the interior which means shaping the world in return. Thus while initially without an ‘originary nature’ or substance, the human emerges as the after-effect of a practice of auto-referential self-determination, in which habit, by subsuming differences into identity, first ‘invents’ and then shapes the human as a ‘second nature’. It is as effectuations of habit, that we must understand both the upright stance of the human, the activity of seeing, walking, writing, dancing, as well as the existence of all mental life in the individual subject. In the end of the *Anthropology*, the reader is thus faced with the human as an individual identity, which, while initially devoid of a ‘nature’, now as ‘the soul’s work of art, has human, pathognomic and physiognomic, expression.’¹⁰ In being termed ‘work of art’, the human of Hegel’s *Anthropology* emerges as a being whose explicit paradigm of production is *techne*, which in its Greek terminology implies both art, skill, craft and technics in general. What is particular about human habit however, is that in its function as a technical ‘second nature’, it conceals itself as such to the human: the human does not know itself as initially devoid of an originary nature.

Similarly to Simondon’s recurrent causality, the Hegelian notion of habit also has a particular temporality and thus must be understood as putting forth a ‘second nature of time’. Habit is temporally unique in the sense of being both the actuality as well as the potentiality of an actualisation, both preceding the actualisation in the sense of having always already happened as well as being its goal. Habit must thus be understood as the temporalisation of the

human by providing it with the capacity for anticipation, that is, the capacity of letting the future act on the present, taking present decisions according to the future.

A notion of the human characterized by acts of invention rather than adaptations to already existing circumstances

Consequently, both in Simondon and Hegel we can see the emergence of a mechanism of continuous invention and self-fashioning. In Hegel, we spoke of the human engaged in the act of fashioning itself a second nature. The paradigm of production of this ‘second nature’ of the human was said to be technical. We spoke about the way in which, for Simondon, culture and its manifold of practices and settings, in which we must include the socializing machine of choreography, shape the human, which shapes that culture in return. Neither in Simondon nor Hegel can one of the terms (inner/outer, human/culture etc) be said to pre-exist the other. The concept of invention put forth demands as much. Consequently, what we are faced with now is a notion of the human characterized by acts of invention rather than adaptations to already existing circumstances.

ASYMMETRIES

Simondon pointed out that culture, and he means here both broader culture as well as philosophy specifically, has adopted a ‘system of defense’ against technics. This system of defense reduces the technical object either to pure matter assembled as means for human ends (technics as a subsidiary of labour), or to the myth of the robot harboring adversarial and hostile intentions towards the human. The first posture, according to Simondon, fails to acknowledge the universality of the technical object, consisting of ‘human action fixed and crystallised in functioning structures.’¹¹ Asking for the integration of technical reality into culture is therefore a deeply humanist gesture, in the sense of claiming that nothing human shall remain excluded from culture. The second posture on the other hand is the effect of the long-lasting desynchronisation of technics and culture. Having denied the technical object its place

10. Hegel, G.W.F., 1830. *Philosophy of Mind* tr. W. Wallace and A.V. Miller, (Oxford: Clarendon Press, 2007), §411.

11. Simondon, *On the Mode of Existence of Technical Objects*, 3.

in the world of meaning for so long, culture now operates with the functioning schemes and forms of a technical age long gone, whereby the relation between technics and the human becomes distorted and asymmetrical, giving rise to fear and aggression on the side of the human. What Simondon essentially argues for is to include technics and technology into our idea of *Allgemeinwissen* (general knowledge), insisting on the necessity of a basic technical literacy.

Engaged in only ‘using’ and adapting to technics and culture, my relation to the future changes. It is not a future that I share and invented together with others

The problem with excluding technics from the world of meanings is that we fail to understand the self-conditioning at play between the human and technics, in the sense of the invention of the human by technics and the other way round. As posited before, the human must essentially be understood as technically produced and further defined by its use of technology and here I refer to an extended sense of technology as both technical objects, gestures like writing, language and general crafts and skills including cunning. It is via the use of technics that the human sets out to invent artificial environments in order to overturn problems, that is, maladaptation. As discussed before, the human cannot be said to adapt to environments but instead invents its milieu, which in turn invents the human in the sense of individuating it further. This is the basic operation of invention that we have already spoken about. It is this very capacity to invent environments as a collective and historical endeavor that is threatened by the adaptationist ideologies and multiple mechanisms of control of contemporary forms of capitalism. It is the productionist and consumerist contemporary state of capitalism that short-circuits the process of invention and replaces it with adaption. The result of this economic and social Darwinism, Bernard Stiegler argues, is nothing less than the short-circuiting of human life itself. What happens is that the circle between technics and the human via the intermediary of culture opens up, putting forth some part of humanity that only engages in ‘using’ culture and the technical object, while others engage in the

two-fold action of both producing and using it, while others are only producers but are excluded from using it. Engaged in only adapting to technics and culture, one’s relation to the future changes. It is not a future that is shared and invented together with others as a historical and social project. It is a future that I am subjected to and have to adapt to via the intermediary of culture in order to derive a sense of self and for my actions to come to matter. It is this that Stiegler calls the reduction of the human via the ideology of adaptation.

Simondon called for the integration of technics into culture in order to bring forth a ‘technical culture’

Concluding my brief historical and partially philosophical contextualization of the complex role of technology, including choreography and broader culture for the formation of the human, I would like to pose technics in its essentially two-fold nature. Technics have the capacity to both enslave and destroy as well as cure and invent (in the sense of individuating) the human further. It is in this regard that Simondon called for the integration of technics into culture in order to bring forth a ‘technical culture’. Only by integrating technics into culture and theorizing and re-activating the mechanism of self-conditioning, that is invention, between the human and technics, can a different relation between technics and the human come about. A relation based on equality and mutual respect, one in which the capacity for self-conditioning between the human and technics is realized in the fullness of its potential. This potential, I believe, is both political and technical, choreographic and cultural.
