Hacking the Master's Tools: using data as materiality

Maybelle Peters

A Thesis submitted in partial fulfilment of the requirements

for the degree of Doctor of Philosophy

for the University of the Creative Arts

September 2024

Abstract

This practice-based research explores the potential of motion capture technology as a tool for self-making in Black contemporary art practice by extending ways to create motion for animating virtual figures. I advance new propositions for practice-based research methodologies which challenge dominant technological frameworks. My research comprises critically informed interventions staged within a decolonial paradigm for creating animated virtual figures.

Central to extending the creation of motion by abstracting human movement into computational data is to challenge the coloniality of motion capture technology which I claim configures all bodies to a homogenised model. Consequently, my practice proposes new approaches to using motion capture data to contest the universality of human movement based on white, male normativity.

My use of motion capture iterative tests has informed my identification and data collection methods. These mixed methods of reflexive journaling, secondary data comprising interviews, conversations and presentations with artists Bill T. Jones, LaJuné McMillian and Rashaad Newsome have provided a comprehensive understanding of the experiences of Black contemporary artists and their motivations for creating new contexts for generating digital movement.

The findings reveal that by proposing blackness as a modality for reconfiguring digitally animated figures, the possibilities for conceptualising animated Black bodily motion are not restricted to the conventions of motion capture protocols. As an expansive interpretation of movement, animating Black corporeality can be formulated through an engagement with decoloniality. By advancing an alternative framework for constructing animated digital avatars I centre reconfiguring as a necessary method. This restructuring resists forms of coloniality through critically exploring countermeasures to a singular representational model of digital humans.

This research emphasises the importance of Black studies in fostering new approaches to using motion capture technology and computational data by staging blackness as an analytical tool. The research findings contribute to broader efforts to enact decoloniality in motion capture, performance and animation studies.

Declaration

The work presented in this exegesis is the author's original work under the direction of Professor Birgitta Hosea, Dr Tia Trafford and Professor Camille Baker. Due reference has been made, where necessary, to the work of others.

Maybelle Peters   30/09/2024

Professor Birgitta Hosea   26/09/2024

v

Acknowledgements

I would like to express my deepest gratitude to my director of studies, Professor Birgitta Hosea whose unfailing support and expertise have been instrumental in guiding my wandering research path onto new horizons. My appreciation and indebtedness to Dr. Tia Trafford who has generously provided an invaluable depth of knowledge to nourish my next phase of decolonial practice. Extended thanks to Professor Camille Baker whose invaluable guidance has steered me towards an enthusiasm for research methods I could not have developed otherwise. Together, my supervisory team has encouraged newfound skills that have not only enhanced my understanding of what it means to research but also inspired my practice in Black studies.

I would like to hail and give thanks to my interlocutors, particularly Lorraine, Belle, and Cairo for making space to study and convene discussions. I am also thankful to my research cohort at the University for the Creative Arts and the University of Arts London for their valuable insights and constructive feedback when I remained bewilderingly lost. A special thanks to the University for Creative Arts Farnham for providing financial assistance that has helped make it possible to complete my studies.

I am grateful to my family, especially my dedicated mother Marjorie Abdan and my sister Dr. Christabelle Peters for their unwavering encouragement and belief in my abilities. Your understanding goes beyond the familial support by inspiring me to do the work needed to sustain the ideas arriving at night, weekends and every moment in between. When my faith was being tested, you kept believing I would make it. I thank you for the kinship and mentorship that has helped me humbly across the finish line.

Lastly, I would like to acknowledge the influential work of Bill T. Jones, LaJuné McMillian and Rashaad Newsome which have shaped my thinking and provided a foundation for my research on motion capture technology.

Thank you all for being part of this journey.

Table of Contents

iii

List of Figures

Keywords

Blackness

Whilst there is no singular definition of the term blackness, it is formulated as a mode of being attributed predominantly to those whose skin colour is ascribed as black. It is a relational state constituted through multiple means of absolute domination over those who are black (Fanon, 1952, 1986). Seen as a dynamic of power through subjugation, any existence outside of an alternative condition is foreclosed (Fanon, 1952, 1986; Hartman, 2008, 2022; Marriot, 2011; Sharpe, 2016; Sexton, 2016; Patterson, 2018; Wilderson, 2010; Wynter, 2013).

Black diaspora

The term black diaspora is used in this study as a distinction from African diaspora. It is indicative of a racialised and shared black identity that is recognised and adopted predominantly, but not exclusively by people who have African ancestry (Segal, 1996). As Brent Hayes Edwards notes, black diaspora is a contested description (Edwards, 2003). The terminology relates to both familial and kinship groups whose imposed identity as black acknowledges a historical formation existing across spatial domains. (Gilroy, 1993; Palmer, 2000).

Black Studies

Under the umbrella term, the field of Black studies encompasses critical race theory (Du Bois, 1897, 1903; Crenshaw et al), Black womanist thought (Collins, 1993, Combahee River Collective, 1977; Black feminism (Carby, 1987; Giddings, 1984, 1988; Lorde, 1979, 1984; Spillers, 1987), Black Geographies (McKittrick and Woods (Eds.), 2007; McKittrick 2011), Black humanities (Rodney, 1969, 1972; Yusoff, 2018), Black optimism (Moten, 2007), Afro-pessimism (Hartman, 2008, 2022; Marriot, 2011; Sharpe, 2016; Sexton, 2016; Patterson, 2018; Warren, 2018; Wilderson, 2010), the Black Radical Tradition (Moten, 2003; Robinson, 1983), Black performance theory (Dixon-Gottschild, 1996; DeFrantz and Gonzalez (Eds.) 2014; Moten, 2003) Black history (Haley, 1973; Kelley, 1999), Black futurity (Delaney, 1998; Eshun, 2003) and Black quantum futurity (Phillips (ed), 2021, 2020, 2016).

Black studies is a form of critical inquiry that stages the existence of imposed and self-defined racialised black identity in proximity to, but not exclusive to biological, physical, geographical, historical, psychical, and ontological markers of differentiation.

black study

Although the formal places of study in which ideas and knowledge exchange have been critically debated are acknowledged within higher educational institutions, intellectual thought borne outside of the formal staging of seminars, lecture theatres and course curricula are recognised as enacted knowledge production taking place in communities where kinship groups assemble to collectively think and do together. [b]lack study as an informal undertaking attends to the question of liberation in multivariant ways in the certainty that blackness anticipates its necessity (Andaiye, 2020; Jacobs, 1861; Harney and Moten, 2013)

Decoloniality

Decoloniality is a practice that seeks to prevent the normalisation of dominant systems that structure sociocultural and sociopolitical relations (Quijano, 2000:178). Decoloniality is premised on ending the establishment of control and regulation enacted through hierarchical ordering that predominantly uses difference to maintain power (Mignolo, 2007). As a form of resistance to mechanisms producing subordinated positions, it is premised on overturning hegemonically privileged ones (Wynter, 1992).

Extractivism

Extractivism is a term used to describe processes of removal facilitated by acts of ownership, dispossession and wealth accumulation from land use (Acosta, 2013; Riofrancos, 2020; Serafini 2022) It includes but is not restricted to plantation farming and resource extraction. It is associated with colonial practices created in the 15th century when European exploration resulted in the possession, appropriation and expropriation of land. Extractivism has come to signify a widening body of activist practices that draw on the continual conditions adversely affecting people of the global majority.

Neo-extractivism

Neo-exractivism describes how industrial practices introduced in the 20th and 21st centuries follow a similar pattern of land ownership in the pursuit of raw materials to use as resources. The term foregrounds ties between global financial capitalism and

sovereign nations that blur discrete boundaries of nation-states' wealth and international companies' influence on government policy-making (Burchardt and Dietz, 2014; Svampa, 2019).

Motion capture technology

Motion capture technology is a system comprising technical apparatus. It uses a series of physical markers to track points on predominantly human moving figures (Bregler, 2007; Menache, 2011). This procedure enables motion to be obtained in a live environment and stored digitally as computational data. Information from electronic devices including cameras is transmitted at intervals generating arrays of sequential, mathematical 3D points in cartesian virtual space (Nogueira, 2011).

Motion capture library

Virtual animations of human movement produced using motion capture technology are held in a database for commercial and non-commercial productions. Each digital figure can be searched for using listed categories and downloaded via an online browser or software program.

Rotoscoping

Rotoscoping is a method for producing animation. It is a manual process that uses an identified object's movement as a reference. Each still image of an object's motion is tracked using an apparatus capable of using information on the object's spatial position as a source for tracing (Lamarre, 2002). As a result, a proximate moving image is generated from the original sequence of motion.

Worlding

Worlding is a means of creating alignment to knowledge systems that empower dominant groups. An existing domain is mapped and articulated into a subtended lens that subordinated groups conform to as an effect of colonisation. It is a postcolonial formulation posited by scholar Gayatri Spivak in her essay The Rani of Sirmur: An Essay in Reading the Archives (1985).

Chapter 1: Introduction

1.1   Background: Predoctoral Research

The research is a convergence of two interconnecting areas of my work. Blackness and an engagement with technological apparatus. They are positioned as integral to my exploration of constructing animated digital figures. Prior to undertaking this research, I used rotoscoping to explore human movement for previous projects skills gained in formal education. An extensive search for movement to use in one of my animated films warranted protracted tests to find an appropriate method. The ability to create animation from pre-recorded motion offered a way to search for and use movement from existing sources.

I refer to a former test I conducted in advance of this research inquiry to situate my study. An assembled consumer television and video were used to trace sequential images from recordings of performances. These processes developed into multiple approaches to tracing images from mediated images. The results of which informed my decision to research both the use of technical processes and the availability of motion that could accurately convey my work's creative intention. It was a method informed by the technique of rotoscoping but deviated from industrial apparatus such as the Fleischer Brothers' rotoscope (a mechanism for tracing images of moving images frame by frame).

The following description of output using consumer equipment and personal archival material is indicative of a process I developed in the absence of access to specialist equipment.

I inserted wooden dowels into two holes created using a hole punch to make a 'peg bar' (a device to align multiple sheets of paper). A single acetate sheet was overlaid onto the surface of a television screen connected to a video cassette player. One acetate sheet was used for each frame of the recorded video. I advanced the video sequence using the video cassette player's jog shuttle function. (a mechanism that enables video cassettes to advance or rewind over variant speeds using a dial). Using a pen, I made a permanent series of dots on each sheet of acetate. This process of identification approximated the positions of a person's skeletal joints. As it was an undocumented procedure initiated in the 1990s, there is no recording of the progression of each line made to create the final image. A photographed sheet of acetate as shown in Figure 1 illustrates the completed process

together with a video still (Figure 2) taken from my animated film *Mama Lou* (1996). This demonstrates how an approach for inventing a suitable method of generating human movement for a specific creative production, is realised.

Figure 1. Acetate sheet of the completed rotoscoped image with 'peg bar'© Maybelle Peters.

Figure 2. Digital still from the animated film Mama Lou. An acetate sheet is projected onto a wall using an overhead projector. (dir. M. Peters. 1996) © Maybelle Peters.

The ability to produce human movement as animation required two, time-consuming processes. First, a lengthy search for existing motion had to be identified and recorded onto a video cassette, and second, the manual process of tracing each frame as outlined above. In recent years, technological changes to processes to generate and use existing motion have offered alternative modes of production. Through my role as a digital technician, I have had access to motion capture suits and performance capture studios. These technical apparatuses have rekindled an interest in learning to animate bodies. Initially, I aimed to find a way to capture the motion of black people whom I had archival footage of and wanted to use in my creative practice. I had sought ways to use technology to create human motion.

It was an ongoing pursuit to examine racialised black identity concerning notions of invisibility and hypervisibility. Hypervisibility is a state connected to being a racialised minority. The experience of being hypervisible produces a heightened awareness of having one's presence interpreted as a problematic differentiation that engenders separation from a majority group. My aim was to see if visual representations of people occupying public spaces in my vicinity could facilitate a form of virtual animated documentation. Using recorded actions identified in my archival video recordings, I matched motion using descriptive terms. These approximations of human movement were searched for in a motion capture library. I used the software program Adobe Fuse to create my visual representations of black people (Figures 3 and 4) subsequently taking existing captured motion to apply to different virtual bodies. This procedure served as a demonstrative process freely available to online users including students. Consequently, I produced my moving image work and documented my processes to facilitate teaching and learning.
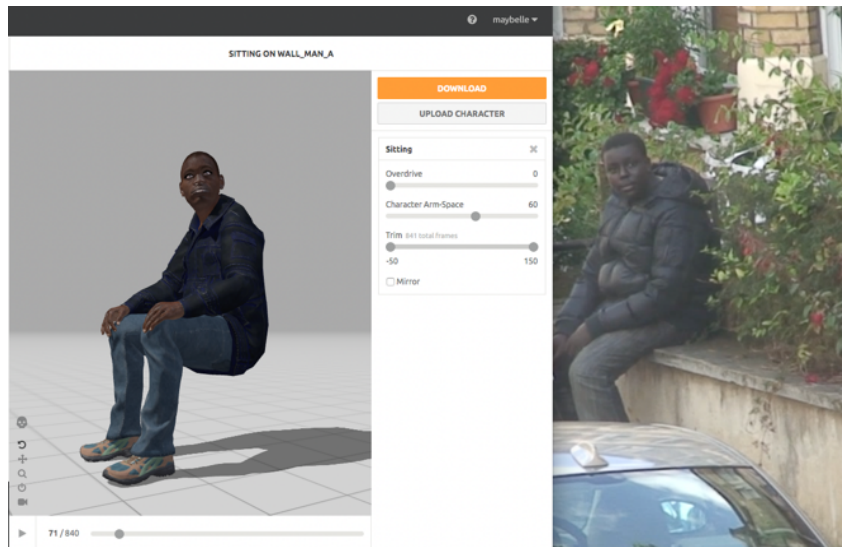
Figure 3. A screenshot of an animation representing a black person. On the right is a video still taken from my archive. © Maybelle Peters
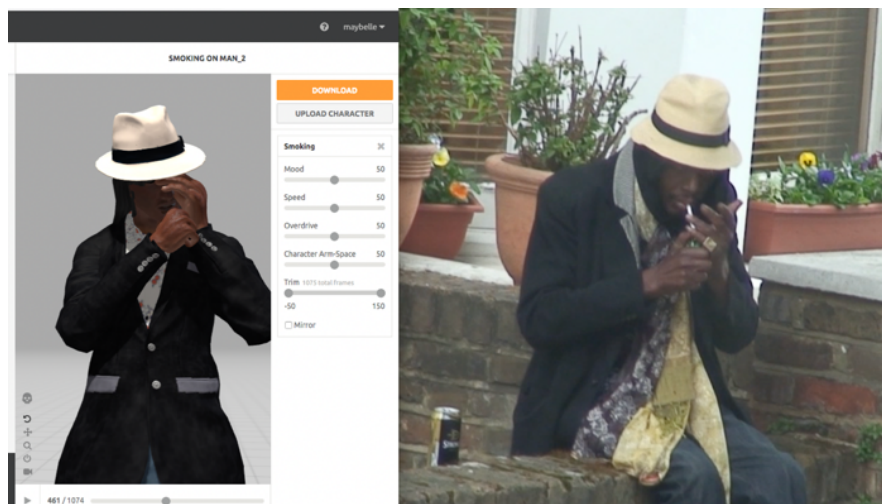
Figure 4. A screenshot from my April 2019 proposal to Jerwood Arts.

On the left is a virtual animation reproducing an approximate action taken from a video still from my archive. © Maybelle Peters

1.2   Groundings for Research

My observation of students who wished to capture their motion but rejected an option to learn one of several specialist technical processes warranted further investigation. On one occasion, I questioned whether audiences would know whose body was used. I asked whether a proxy could be considered a viable way to complete the work. The student was not convinced in this instance and used their own captured motion. This prompted additional questions on how an interplay of agency, authenticity, identity and intention could affect the criteria for selecting and using captured motion. Although I questioned whether audiences would know whose body was used for digital human movement, the

ability to exchange or replace one's actions with alternative motion has shaped my view on how movement could be rethought in motion capture technology.

As outlined above, animation practice informs my practical knowledge of applying a range of techniques to construct and deconstruct human movement. Examining ways to use existing motion to create animation has influenced an interest in reappraising the use of motion capture technology which I discuss throughout this study. Research on interpreting computational data as material processes reflects existing questions on whether the exploratory potential can create new forms of movement. These inquiries pertain to the application of production methods used in industry for contemporary art practice examined in Nicolas Salazar Sutil's studies in *Motion and Representation: The Language of Human Movement (*2015) and Miguel Escobar Varela's *Motion as data Theatre Research* (2021). However, contextualising these procedures in creative practices whereby racialised black identity is critiqued, informs an under-examined area of research to which my study contributes.

I have drawn on Black studies in this practice-based inquiry to interrogate historical formations of biological differentiation that are produced as non-normative and their existing effects. These examinations concern how alterity is ascribed to bodies through the implementation of legible verification processes. This premise, I argue, is attended to by artists Bill T. Jones, Rashaad Newsome and LaJuné McMillian and warrants their selection as my case studies. The use of motion capture technology by each practitioner is examined to identify how constraints and possibilities are negotiated as impositions on their self-defined identities. In Chapter 2: The Master's Tools, I discuss how my use of a conceptual framework accounts for processes of racialisation. I determine how a theory that draws on black feminist thought explicates visible deviations from prototypical bodies and offers a perspective to reappraise motion capture technological apparatus. The theories are deployed to reconfigure human movement into decolonial practices.

1.3   Examining tools of production
 These variant processes gained through navigating roles such as a technician and animator within and outside of a racialised black identity collectively serve as perspectives in evaluating motion capture methods for creating human movement. They are appraised as a contestation of an imposed identity whilst biases towards commercial purposes such as 'pipeline' production are informed by previous contiguous approaches. My practice as

research traverses the practical and technical realms gained from my formal training in industry standard practices carried out such as rigging and 3D modelling.

In Chapter 4: Reconfiguring Blackness, I discuss how my motion capture iterative tests are positioned as decolonial responses by converging with divergent modes of animation practice previously outlined. This research is informed by the production of human movement captured and available in motion capture libraries and my endeavours to create virtual animated figures. The tools of production available in industrial and commercial practice are the same tools I have used to generate virtual human movement. Therefore, my undertaking attends to entanglements between blackness as onto-epistemological and motion capture technology.

Embedded within the research design is an interrogation of how an interdisciplinary study is derived from an investigation of decolonial strategies. My research set out to examine how the use of motion capture technology in contemporary art practice could inform critical engagement. I have determined how responses to capturing human motion are explications that negotiate and navigate existing dominant power structures. My study is positioned as having the means to contest hegemonic modes of production through practices of decoloniality. Despite the use of motion capture as a means of animation production remaining predominantly aligned with specialist professional services in the entertainment industry, my research has been conducted across disciplines.

Through an investigation of relational perspectives constituted as imposed and self-defined positions, I have considered how my research on how Bill T. Jones, LaJuné McMillian and Rashaad Newsome use motion capture technology to produce virtual human movement could be configured as black study. The research's convergent exploration of black corporeality and motion capture technology is twofold. First, by analysing the use of captured motion and its application as a critical practice, the research sought to account for contextual shifts affiliated with racialised black identities. Secondly, its position within a wider form of contemporary art practice applied a critical lens to the study. Through foregrounding practice-based inquiry, I have contributed to advancing decoloniality as a field of interdisciplinarity. This includes animation, motion capture studies, performance, movement and dance studies.

My focus on motion capture technology adopted by B/black contemporary artists further questions if interchangeable terminology provides differentiated approaches to engaging with the apparatus. Despite motion capture, performance capture and motion extraction being used indifferently, processes that stage capture rather than performance as the primary mode for creating motion capture data offer broader interpretative perspectives. Throughout the research, I have denoted an interchangeable and concatenated term 'Black' and 'black' to reflect an unstable dynamic shift my inquiry foregrounds.

My analysis of indiscriminate terminology discussed as part of my iterative tests in Chapter 4, questions current under-researched scholarship that affiliates processes and artists' engagement with processes deemed universal.
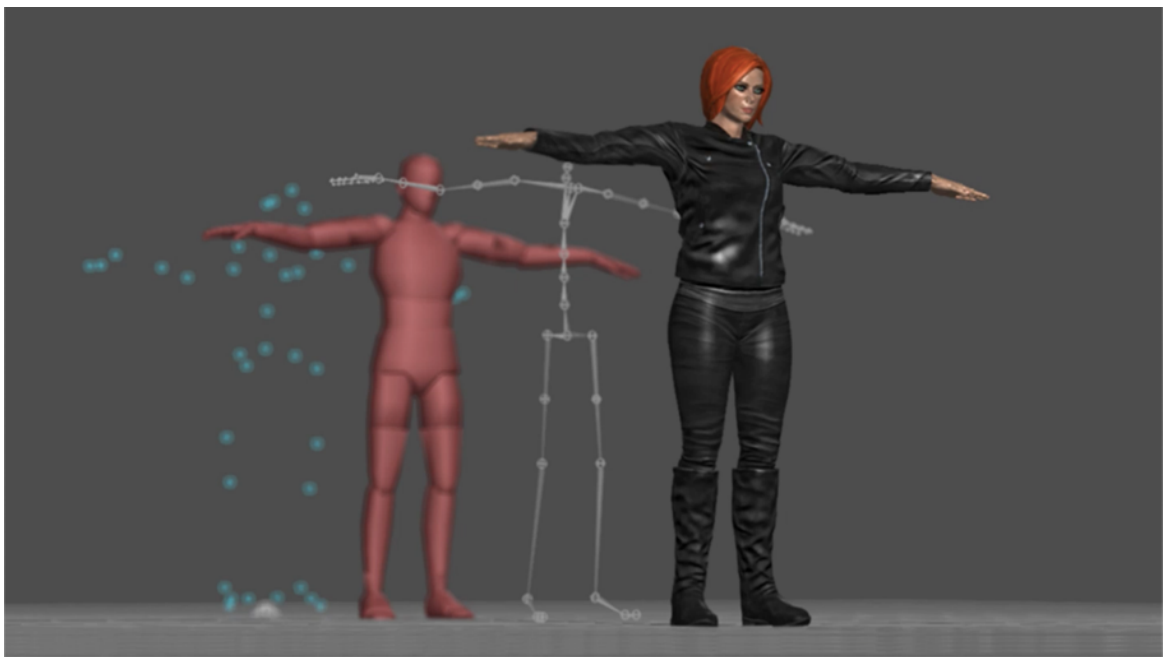
Figure 5. Visual representation of stages in motion technology processes. Photo credit .www.mocappys.com.

1.4   Significance, Scope and Definitions

My research's criticality lies in adopting alternative procedures for constructing and assembling motion capture data to a 3D model. In reappraising the processes for existing structures of virtual human motion, I determine how ideological notions of corporeality is entrenched with reified practices of measuring, calculation and validation. By interrogating the capacity to overturn reproducible methods governing how virtual figures are constructed, I have addressed an overlooked area of coloniality related to the acquisition and use of motion capture data. My research draws attention to the principles underpinning the abstraction and generation of human movement. I do so by implicating

manipulated motion capture data as a process of untethering predetermined principles shaping our understanding of habits, conventions and codes affiliated with structuring movement.

I have aimed to study what the implications of using motion capture technology are if the technological apparatus conforms bodies to a regulated homogenised system of movement. My research has sought to determine how the production of motion for animating digital figures can challenge current orthodoxies of motion capture technology. My inquiry strives for ways to probe and test how examining motion capture technology could lead to a decolonial strategy for using motion capture data. Central to my research has been the selection criteria. I have explored how a conceptual framework could identify artists who negotiate their imposed and self-defined identities. This decision was to ascertain if, and how black contemporary artists used motion capture technology to resist cultural hegemony. I have examined the motivational factors determining how contemporary art practices configure digital human motion. This proposition regarded the research as an inquiry into whether a decolonial strategy could define a field of study.

My establishment of a conceptual framework for contesting universality found in motion capture libraries and motion capture technology aims to serve as a form of decoloniality. This proposition has been put forward to advance the understanding of how motion capture technology can be used to create black, animated bodies when motion capture technology conforms all bodies to a uniform standard. I have analysed how black contemporary artists LaJuné McMillian, Bill T. Jones and Rashaad Newsome navigate blackness to determine perspectives shaping how they make use of motion capture data.

This preliminary undertaking has aimed to establish a process whereby operating within parameters of self-defined and imposed racialised black identity and breaching them, enacts a shifting perspective. Although underexamined, my practice-based study leads to two primary means of eliciting data. First, it serves as a precis of existing knowledge production that is articulated primarily outside of current scholarship. It is a foundational basis upon which self-defined and imposed positionalities can be explored. The thesis strives to attend to these constantly shifting modalities. Secondly, the entanglement of dominant tools of production and their role in determining creative production is interrogated to disrupt existing assumptions privileging representations of humans.

Working within a paradigm of capture and escape, I have established a methodological self-fashioning apparatus for constructing 3D figures. This approach develops a co-constitutive fabrication of human motion using my practice to attend to the limits of captured abstracted movement as well as the prospective indeterminate variables offered in animating computational data.

1.5 Summary

In this introductory chapter, I discussed previous research that informs my study. A delineation of how the connection to my artistic practice highlighted animation and technical experience outlined my interest in using motion capture technology. The underlying conditions leading to my study conveyed how significant interactions with technology have influenced my research questions. Furthermore, I have stated how I have situated this practice-based inquiry as routed through black diasporic perspectives. In turn, staging the inquiry as a form of decoloniality expounds racialised black identity as paramount to how black artists use motion capture technology as a critique. I have indicated how my practice focuses on the creation of virtual figures' movement from captured human motion. By implicating manipulated motion capture data as a process of untethering predetermined principles determining our understanding of habits, conventions and normative codes affiliated with structuring human bodies, I emphasised the potential of digitally-led technical applications for enacting interventions.

In giving a precis on the three connected areas namely, motion capture libraries, motion capture technology and motion capture data, I qualify which areas are interrogated in this inquiry. The outline I have given in this chapter sets out how the study addresses an existing gap in knowledge of motion capture processes used in my practice-as-research moving image output. The case studies I have selected are predicated on questioning who the technology is for and how a contemporary art practice challenges an assumption of neutrality.

My conceptual framework detailed in Chapter 2 demonstrates how I have created and used an interpretative lens to appraise motion capture technology. My response was noted during observations of limited analysis regarding black artists' use of technology as practice-based research. In turn, I have cited inadequate attention paid to the recent production of black artists' use of motion technology as the study's contribution to enacting a decolonial methodology.

The research aims and objectives outlined above specify the interconnection of creative practice for interrogating the corporeality of blackness and motion capture technical apparatus. The rationale for extending the study beyond a singular practice using case studies and adopting a conceptual framework is discussed further in Chapter 2: The Master's Tools.

Chapter 2: The Master's Tools

In the previous introductory chapter, I provided contexts which situate my research. These related to time-consuming processes for creating animated figures and a limited offering found in motion capture libraries. Given the prohibitive factors affecting my ability to produce digital movement using black bodies, I put forward considerations for creating alternative modes of production. Proposing the centrality of blackness and decoloniality as a critical lens denoted how my examination of technological apparatus contributes to an underexamined field of motion capture studies.

I begin this chapter with a review of existing literature. Discourses that underpin my research are across disciplines. They encompass the fields of motion capture studies, performance studies and Black studies. I summarise areas of study examined to identify gaps in scholarship. I then provide details of my conceptual framework denoting how coloniality and blackness has informed its development. As it is beyond the scope of this research to analyse the history of anti and decolonial struggles to gain and maintain a new way of existing, the research takes some areas related to questions of negotiating dominance that affect a person's ability to know themselves outside of an ascribed and imposed logic.

2.1 Motion Capture Technological affordance

In what he calls a "mathematization of the knowledge of human movement" scholar Nicolas Salazár Sutil (2015:205) describes the consequences of a positivist approach to measuring and verifying actions. These results-driven measurements have been noted as creating optimal efficiency from industrial workers that stages the co-constitutive development of technological apparatus as motivated by advancing labour and efficacy (Rotman, 2008). The mechanism for arranging computational data has been driven by an accumulation of information reflecting the change in processes determining human movement (Sutil, 2015). This shift from analogue to digital technology underwrites current areas of motion capture studies. Consequently, the pursuit of efficiency through

technological capability is reliant on systems of classification and taxonomy to support methods to search, match and retrieve an exponential amount of digital information.

Using motion capture technology to track human movement permits the production of digital data from points connected to the placement of trackers on a person's body (Bregler, 2007; Menache, 2011). Each tracked device on the body transmitted as computational data captures moments in time and space (Nogueira, 2011). This process enables large volumes of data to be generated, stored and in turn, organised. Studies that have focused on the ability to calculate, sort and retrieve motion capture data have centred on increased visual acuity using algorithms to configure and analyse motion at speed (Kapsouras and Nikolaidis, 2015; Barbic et. al, 2004) and data retrieval (Demuth et al, 2006).

Several research outcomes have used practice to theorise ideas of embodiment within dance and performance studies (Bowker, 2021, Manning, 2009; Portanova, 2017). They have instructively positioned motion capture technology as a technological apparatus for research inquiry beyond facilitating digital visual representation and reproduction. It is a perspective shared by scholar Nicolás Salazar Sutil (2015:203) who has called for a departure from "cinematically biased and image-oriented theorisations." In his work offering an extensive appraisal of technological apparatus used to capture human motion, he argues that the predominance of vision-based theorisation is a venerated form of validity offering little more than misapplied concepts to what is ostensibly a computational procedure. Instead, computational data is posited as a productive way to rethink motion. (Sutil, 2015).

The drive towards rethinking the creative potential of motion capture technology moves towards applying cross-disciplinary approaches. For instance, the belief that the digital production of virtual avatars comprising computational data should not be seen purely as fixed forms but be available to intercept; a position held by Brad deGraf and Emre Yilmaz (1999) who state that,

> "[Motion capture] is the first step, the sampling and recording of data. The other two steps are where the art is, the creative use of that data in a larger context, along with other means of expression."

> (deGraf and Yilmaz, 1999, para. 4.)

Describing the underexplored potential of the technology as "a new kind of jazz," the technology's creative advantage lies in what deGraf and Yilmaz (1999) see as possibilities outside of technical conventions. Their interest in manipulating and using the medium advantageously rests on believing that, "a crucial step in going beyond motion capture is re-proportioning data to fit non-human shaped characters" (deGraf and Yilmaz, 1999: para. 5). Although their view addresses the creative potential to extend the physical limitations of the captured data, I suggest an expanded offering may be derived from Black studies. These notions of possibility are examined using my motion capture iterative tests presented in Chapter 4: Reconfiguring Blackness.

Conceptual framework

My application of a conceptual framework comprising three interconnected areas informs my use of Black studies as a decolonial strategy. It functions to contest universality while utilising motion capture libraries and producing virtual human figures with motion capture technology. Adopting a fundamentally insightful strategy, I have used black feminist theories of the human to establish how motion capture technology facilitates the creation of universal human figures and consequently reproduces cultural and dominant hegemonies. The context for this adopted structure underpins my argument that the production of human figures found in motion capture libraries is based on a prototype. I have argued that this process of conceptualising an origin point for white normativity to become neutral reinscribes the classificatory systems of Enlightenment thought (Peters, 2024). These mechanisms of taxonomical coding are a prerequisite for motion capture technology to create homogeneous illustrative bodies.

2.2 Universalism: Science, classification and reified identity

The reification of identities rooted in Enlightenment thought and colonialism has informed the production and organisation of human movement found in motion capture libraries. By advancing an understanding of the relationship between the use of motion capture technology for generating digital motion and categorising computational data to produce animated figures, my study contends that invoking theories of the human elucidated by black feminist thinkers instigates new modes of animating black bodies. This in turn contributes to knowledge by adopting a critical lens to challenge existing configurations of the human found in motion capture libraries.

In Western Enlightenment ideology prominent in 19th Century Europe, categorisation and classificatory systems that were instituted expedited a method of ordering (Bristow, 2010; Withers, 1995; Wynter, 1995). The natural world as a schema would be considered as discrete identifiable elements. This mechanism served to prevail as the separation of distinct groups into a taxonomical arrangement that could be understood as fixed and immutable (Reid, 2009). This practice determined scientifically as reproducible was advocated by its most notable proponents, Charles Darwin, Carolus Linnaeus and George Cuvier. As a system of knowledge production, scientific positivism supported the notion of classifying recognisable differences between human, animal and non-human organisms through biologically determined factors. Black feminist theories of the human provide a context for considering how the creation of such categories is a necessary invention for the establishment of racial hierarchies.

Figure 6. Carolus Linneas's taxonomy of sexual reproduction of plants.

The diagram (Figure 6) illustrating Carolus Linnaeus's taxonomy classifies plants based on their reproductive structures, specifically the number and arrangement of stamens and pistils. This sexual system of classification established the foundation for modern botanical nomenclature.

For my research, I have examined how philosopher Sylvia Wynter's ideas can be used for the appraisal of motion capture libraries to serve as a framework for positioning my practice-based research as a decolonial strategy. Sylvia Wynter's historical materialist analyses of the conditions that give rise to the human as Man is an important concept in how the modern, Westernised human we have come to know has been constructed (Wynter, 1982:228).

Figuring the Human

In Sylvia Wynter's (2003) intervention in the Western Enlightenment thought of Man she makes a necessary arrest to foreground Europe as the progenitor of history, knowledge and culture. Charting a historical account of the human as Man, she identifies conceptualised origins for what she terms, 'Man1' and 'Man2' (Wynter, 2003:264). Whereas Man1 is genealogically traced to a 14th Century political and cultural embodiment of the Renaissance period, Man2's 19th Century rational, liberal subject is produced through scientific positivism (Wynter, 2003).

Wynter's analysis unveils a positioning in which all those who lie outside of a linearity of spatial and temporal progression become relational to the white Westernised human. The black African is configured scientifically into the realm of a non-human (Wynter, 2013). Her work seeks to rethink the human without reproducing Judeo-Christian ideals through a planetary project rather than one in which the world as an enterprise of modernity is privileged (Wynter cited in Scott, 2000). Wynter's (2003) denouncement of condemning blackness as conterminous with Enlightened thinking presents a writing of the human that is not a zone of expulsion to which racialised black people are beckoned to access. Instead, the limitation of the human as a category provides a catalyst for self-definition beyond biological determinism and binary divides of religion versus secularisation and nature or culture (Wynter, 2003:266). This practice of non-classification set without a demand for determinable and legitimised domination has been a prominent discourse for challenging oppression. Wynter's (1984) focus on

finding an expansive modality for realising the human acts as a useful counterpoint for contesting taxonomical ordering.
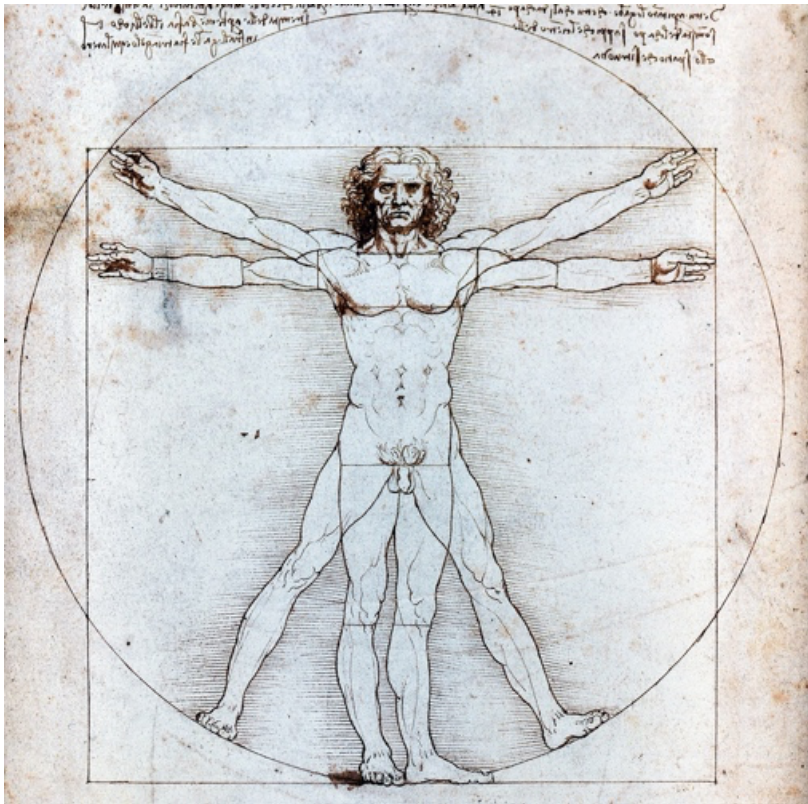
Da Vinci's drawing (Figure 7) reflects Renaissance ideals of proportion, symmetry, and the study of the human form, serving as a bridge between art and science.

Recursive cut

The ordering of the world is attained through what we have come to know as the natural sciences. Wynter (2003) sees the split between what she calls the 'hard' sciences and social sciences as the instigation of hierarchical systems of knowledge production (Wynter, 2003:270). With this divide, the privileging of an onto-epistemological understanding of the human is exemplified in practices such as Darwin's (1859) theory of natural selection. This science-based account of the human marks the phenotypical descriptors attributed to race as fact (Wynter, 2003:273).

Wynter denotes this operation as a biologically instituted cultural practice in which the black African is scientifically and rationally excised (2003:281). She further describes

how this natural dysselection provides the conditions for subordinating biologically determined black bodies to the total domination of white bodies (Wynter, 2003:324).

This racial hierarchy of configuring bodies through biological attributes can be seen in the use of technological apparatus for what she argues is "self-representation as a genetically determined rather than discursively instituted mode of being" (Wynter, 2003:265). Consequently, categories of humans are embedded in a scientific rather than a biocultural production. Wynter (2015) shows how the ability to construct an account of being human enables a self-knowledgeable interpretation to be enacted. This, she contends has created a self-regulated restriction on who is deemed human. Thus, overturning these inhibitions is imperative for the possibility of Black liberation. For Wynter, the following part of her manifesto for being human is made clear,

> "To Emancipate Ourselves from the *Biologically Absolute* Terms of the Genre-Specific Sociogenic Replicator Code and Mode of Knowledge Production of Secular Western Man (2): To "Find a Ceremony" able to Resolve the Contradictions of Our Uniquely Human, Hybrid Level of Existence"
>
> (Wynter, 2015: 202 [original italics])

Sylvia Wynter's oeuvre which considers knowing and being through Black existence from a relational excluded position to the category of the human is, I argue a prerequisite for using motion capture technology as a decolonial self-fashioning tool.

Figuring the prototypical Human

Composed from a single model, the motion captured for creating a virtual animated figure has been from the outset, a process that was developed using data sourced from an individual figure and calibrated as a prototype. Motion capture technology and the use of associated software such as Autodesk's 3D Studio Max software program began as a collaboration with choreographer and dancer Merce Cunningham, a white male. Cunningham's early foray into using technology in his practice was facilitated by computer programming work carried out by software architects Susan Amkraut and Michael Girard. Their company *Discreet Software*, later *becoming Character Studio* not only created the software plugin used to capture motion from dancers but also provides the name of Cunningham's seminal work *Biped* (1999) (De Spain, 2000). Biped, the name given for the software plugin used by Merce Cunningham's dance

adopted the same technology developed by Discreet. As a result, Merce Cunningham's body was a prototype model for motion capture technology whereby software became a viable method of mapping motion from one body onto multiple others.

Being able to map human movement from one source to another form can be seen as a beneficial creative enterprise. However, the use of a singular human to create the map enacts a sense of neutrality presented as universal. Whilst the mapping process of using one person who embodies normativity institutes a systematic arrangement of bodies, there is also a configuring that produces an assumed logic of typicality. In this process, there are omissions, reshaping and structuring of bodies to a reductive template. A recent study conducted by Harvey et al (2024) proposes that the social practices involved in how calculation determines bodies along standard/non-standard models shape how verification systems are applied in motion capture technological apparatus.

This technical configuring of one body tracked using markers capable of recursively adhering to reference points durationally is a process engendering a conventional practice of formality. Through this recurrence, assessing the body as a legible and replicated form mirrors a classificatory system. Here, representation is used as a method of validation. Consequently, the dominant procedure from which to generate human movement informs creative practices found in motion capture libraries.
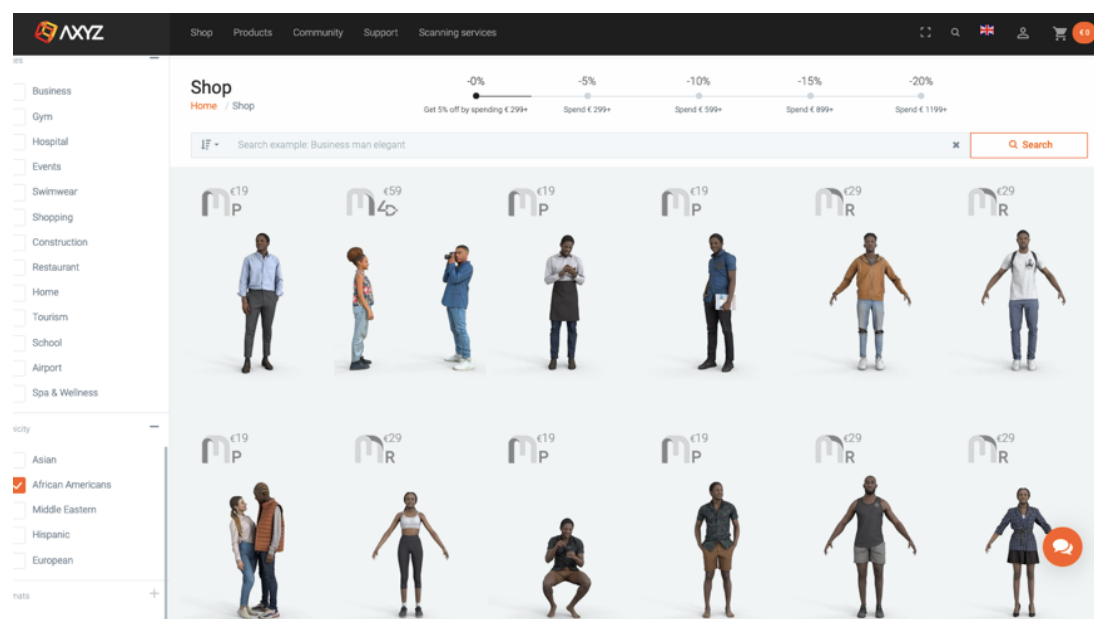
Figure 8. An online library of captured motion at AXYZdesign. © 2024 AXYZ design S.R.L. anima© and metropoly® are registered trademarks of AXYZ.
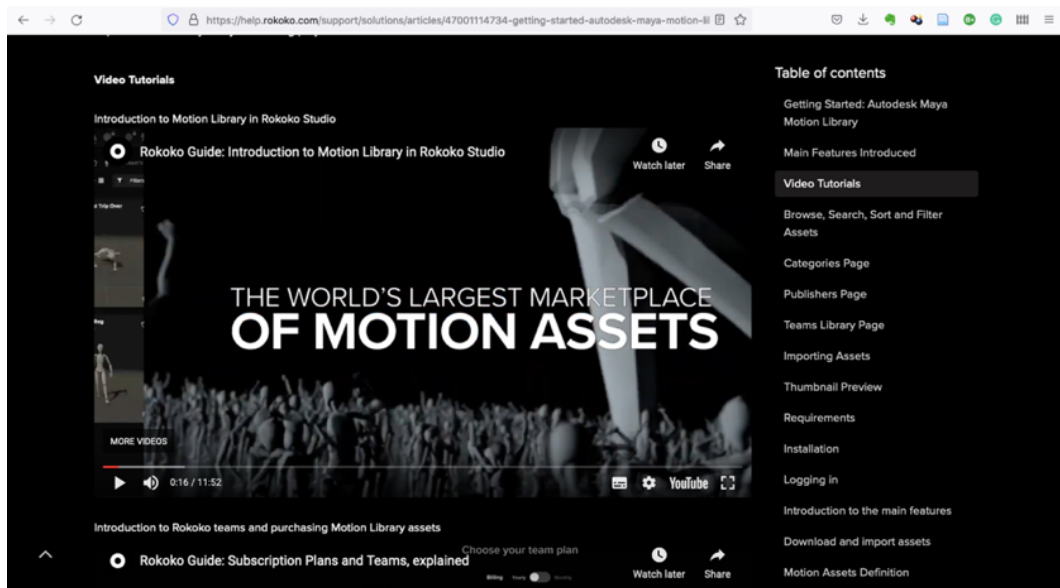
Figure 9. An extensive library of motion capture data from suppliers Rokoko.com.

Homo Oeconomicus

In Wynter's 'Man 2' (2003) configuring of the modern, liberal subject, the dominant culturally produced mode of existence lies within the global capitalist system. This figuration is what Wynter sees as the current mode of human she terms an 'ethno-class' (Wynter, 2003:260). Through a biologically cultivated narration of the human as Man, the constructed notion of progression stages economic productivity as Man's natural development along a linear path to a liberated, subject. Man is staged as capable of owning its means of production as labour in exchange for financial gain (Wynter, 2003). The digital body found in motion capture libraries such as Figure 7, conforms to the prototypical model by instantiating and marking the boundaries of the human as primarily white and reproducibly recognisable as culturally homogenous digital avatars.

Artist Alan Warbuton reflects on questions of hegemonic aesthetic practices of normativity prevalent in computer generated imagery. His work *Homo Economicus* (2018) engages with embodied forms of regulation using motion capture libraries to address hierarchies of difference. Accompanied by audio interviews of financial traders, he states that the work "explores how men working in the City of London financial district both modify and commodify their own bodies" (Warbuton, 2018). This response to the effect of being defined in relation to, rather than aligned with a culturally homogenised system is set against benchmarks of normativity. In this sense, Warbuton

shows how modifications realised through the use of motion capture data underline the datafication of corporeality yielding to fulfil the task in the world of high stakes financial trading.
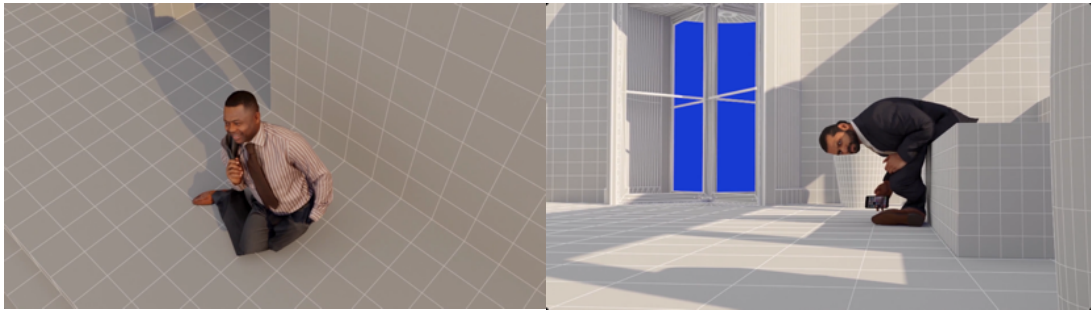
Figure 10. Corporeal (un)conformity in Homo Economicus.

Warbuton, thus has indicated how his use of motion capture libraries subverts the photo realistic digital humans whereby computational remapping of movement can be used as a critique on conforming to somatic norms. His mediation with regulatory forms of motion capture technology's addresses the effect of somatic dominance. This can be seen in his rearticulated motion. The effects on bodies out of place is collapsed disablement thus disclosing an uninhibited response to the weight of functioning mobility. As seen in his use of physically incapacitated figures, Warbuton presents an impaired version of the Vitruvian model which under the demands of aligning with prototypical embodiment is not recuperable from its oppressed state. As shown in Figure 10, the figures form a bodily disruption to the originally commodified digital humans (Figure 11) demonstrating how digital movement can be adapted to signify the impact of attaining cultural assimilation.
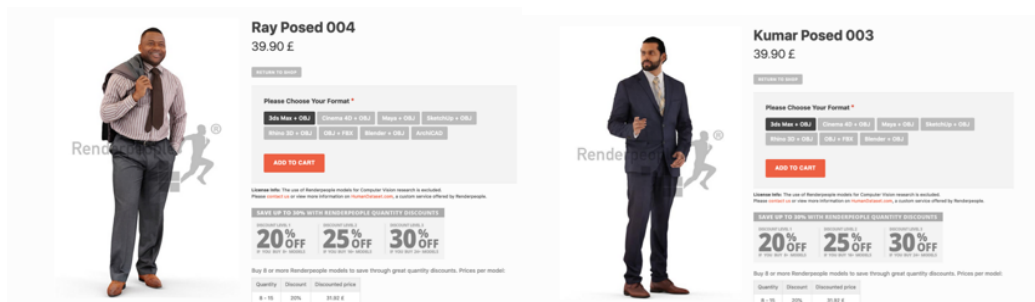
Figure 11. Economies of corporeal captured motion in Renderpeople.com.

3D scans with animated skeletons for purchase at Renderpeople.com, the world's largest library of 3D people.

Warbuton's ability to manipulate the models exposing the model's is made possible by the motion capture library's market economy. What is understood in Warbuton's reworking of virtually represented bodies is the connection to capitalist systems of regulatory forms of production into capitulated bodies. Computational remapping of movement given in Warbuton's reconfigured 3D models, breaches limitations of the figures whose own subtext as purchased avatars serve to underline Homo Economicus' unremitting availability as solely economic value.

Participation in the transactional certainty Warbuton's purchase of digital humans permits, reproduces the transactional proprietorship of commodified data. Although his work questions the normative conditioning dominating computer generated motion capture practices, Warbuton's creative response to authoritarian instructions does not reflect on the implications of adopting the motion capture library's system of economic enrichment.

We can view Warbuton's use of commodifiable data as disregarding his complicity in an economic model. Whereas critique of production and supply chains weighted towards extractive modes of capitalism is foregrounded in *Homo Economicus*, Warbuton's participation in a system connected to wealth accumulation enables the economies of corporeal captured motion to remain intact.

The use of existing digital figures located in motion capture libraries provides Warbuton with a critique on contemporary industrialised life. However, I draw attention to the digital humans Warbuton purchased for the production of *Homo Economicus* shown in Figure 11 to demonstrate a broader context on the commodification of digital avatars. In Figure 12, social life promoted as leisurely pursuits similarly form the basis of commodified movement. They collectively establish a normalisation of virtual avatars. These exemplars of modern Western society formed in the neutralised environment of motion capture studios are the focus of my examination on how digital movement is constructed.

Employing the dominant modess of production gained through formal training (Ibrahim, 2019: npag), Warbuton's use of motion capture data is directed by his training from Escape Studios, an accredited industry standard institution. His approach

characterises a critically-led procedure to undermine how digital humans are didactically produced. Similarly, in Chapter 4, I discuss how my employment of technical proficiency implicates colonial regulation inherent in motion capture technology whilst seeking to unbind the rigidity of existing protocols.
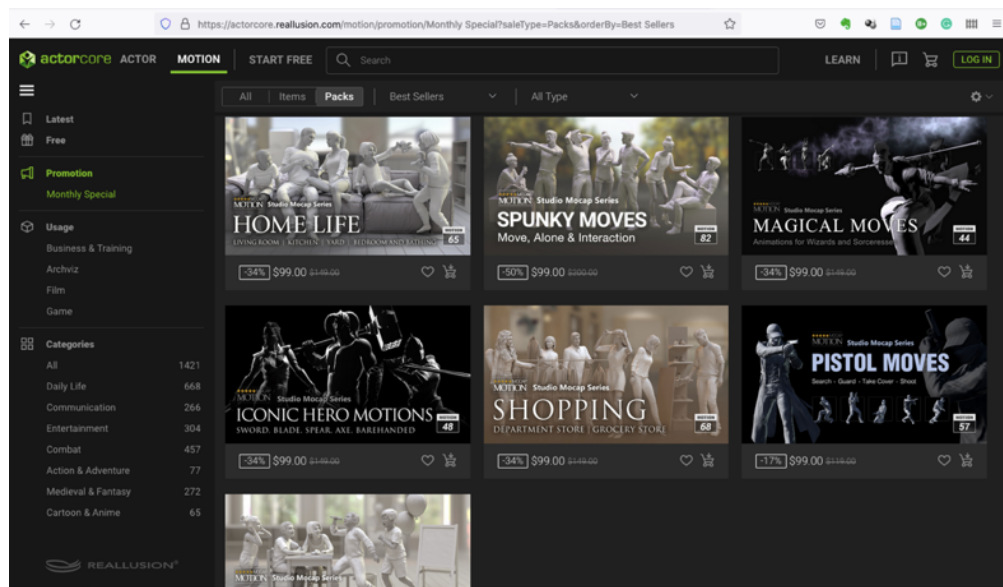
Figure 12. Actorcore motion capture library. © Actorcore.

Configuring space, constructing bodies

The motion capture studio is a physical area where bodies move within an uncontested space. Choreography, measurement and calculation provide the conditions to configure precisely from the real to the virtual. Motion capture technology requires a configured cartesian space that is mapped and organised in preparation to receive a somatically normalised body. This verified, validated, systematised and legible set of protocols establishes the criteria for producing the virtual human. The default form of a biped is made recognisable, and it is movement, rather than visual ascriptions of race and gender that are privileged. A body unable to meet prescriptive requirements due to immobility or disablement remain outside the space's legitimised and symmetrically proportioned bounds.

Figure 13. A motion capture studio used for creating digital movement from live performance. Truss wide angle by Dylan Roscover is licensed under a creative commons attribution BY-SA 2.0 licence.

In spaces where bodies are operating in a presumed neutral space, the assumption is that all bodies operate under that same cartographic system. This observation has been overturned by McKittrick following Wynter who contends that a black sense of place questions notions of neutrality. Instead, she asserts that black bodies act as disruptive occupiers (McKittrick, 2006). Although the presence of black bodies disrupts spatial configurations, the certainty of cartesian coordination is configured by scientific calculations and algorithmic measurements. These are secured and maintained through a logic of Cartesian co-option in what Wynter calls "the Cartesian 'definitive morality'" (1992:270). In Wynter's exposition of Descartes's calculable arrangement of the physical world, she offers an informative comprehension of culturally situated practices for knowing the institution of regulatory forces demanding ordinance. This deciphering practice as Wynter names it, is the registration of affects within the omnipresent conditioning of bodies (Wynter, 1992:238).

Mapping the model

In his study of apparatus for visualising human movement, scholar Nicolás Salazar Sutil (2015) convincingly argues that motion capture technology is a form of motion mapping rather than tracing as evidenced in rotoscoping or an apparatus aligned to cinema (Sutil, 2015:204). In my recent research (2024), I have argued that transposing movement from one human form's position onto others requires a dominant and

exemplary model. The use of Merce Cunningham's body can be viewed as prototypical because he is white. His body is unraced because he is not black. Mapping requires an archetype to affix a spatial and temporal origin. It is a process that allows conformity to be established and is a colonial practice that produces derivatives from referent bodies. This coloniality rooted in power and dominating notions of being naturally in place is affective (Peters, 2024).

For bodies to become mapped and configured as legible forms representing the human, they are advanced through a rehearsal of inductions where technical apparatus is already in position (Peters, 2024). The configured motion capture studio aligns *all* bodies to its organisational structure by enacting enforced legibility. To become visible, tracked points are attached to designated areas of the body. Therefore, this predetermined structuring of space is a primary target to consider when rethinking how black bodies might facilitate in(ter)vention. In Chapter 6: Navigating Blackness, I discuss how artists Bill T. Jones, LaJuné McMillian and Rashaad Newsome negotiate and occupy space as a decolonial strategy. Furthermore, I elaborate on how the notion of compliance as fundamental to operating within a markedly neutralised physical space is resisted.

Visible traces of origin
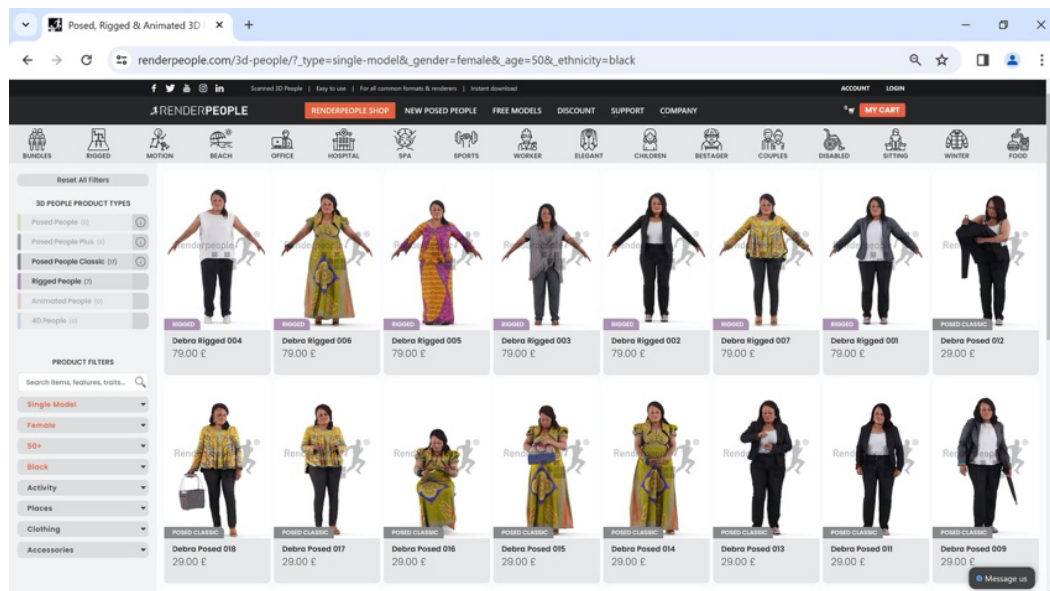
Figure 14. Renderpeople.com website search results were undertaken using available classifications approximate to my identity. © Renderpeople.com.

According to Wynter (2003), belonging is a status that is afforded without question because there is an assumption that standardisation is declarative. Racialised identities that are constructed geographically are simultaneously located and dislocated (Wynter, 2003:266). The search among motion capture libraries for visual representation demonstrates the enclosure of systematised efficacy. In Figure 14 this process of identification takes place in a contested space where blackness lies in the legacies of colonialism. With motion capture libraries, there is an invitation to select an identity delimited by classificatory boundaries. This marker of ethnic origin regardless of its accuracy or validity is a matter of who has the means to representation.

This proliferation of motion capture libraries demonstrates the universalising system of 3D virtual models configured using what philosopher Walter Mignolo calls a categorisation of Imperial knowledge (Mignolo, 2015:118). Following Wynter's call to challenge the notion of Man as the representation of the human, Mignolo (2015) suggests a 'decolonial scientia' in which epistemological shifts require several undertakings. Central to this form of decoloniality is a reconfiguration rather than a renouncement of dominant colonial knowledge systems. Mignolo further states the exploratory role required to analyse extractivist and neo-extractivist colonial practices of (dis)possession. Concluding his proposition, he writes that decolonial scientia, "generates knowledge to build communities in which life (in general) has priority over economic gains, economic growth, and economic development" (Mignolo, 2015: 117). These anti-extractivist practices provide Mignolo (2009) with what he terms 'epistemic de-linking' and for Wynter, a critical departure from entrenched worlding practices (Wynter, 2003)Drawing on the term 'descriptive statement' from Gregory Bateson (1972), Wynter (2003) writes that our understanding of being human stems from a necessary self-regulating containment. This description includes biological factors, particularly those related to racial determinacy and wealth accumulation. Bateson's formulation distinguishes between anthropocentric self-regulating adaptive tendencies that maintain the human's biological and psychological identities. He notes that descriptive statements express intentional, self-limiting constraints whereby any possibility for inclusion is inhibited because reification is achieved through a system of self-comparison (Bateson, 1972 cited in Wynter, 2003:267).

Universal representations

In my analyses of motion capture data conducted during this research, I claim that Carnegie Mellon University's databases of motion capture library content, white, male normativity is staged as universal to quietly pronounce its deployment of representation. My argument that the singular, individuated, liberal subjects listed indexically become invisible and omnipresent allowing the original referent image to be de-particularised. For this disappearance to take hold, I assert that there needs to be a form of prototypicality that presents a delimitation designed and constructed as rational logic.

This is evident in Carnegie Mellon University's denotations found in the descriptive lists accompanying their library of movement. The motions supplied are categorised and as the following disclaimer states, are aimed at having a beneficial outcome for users wishing to find a way to sort through this vast library.

The disclaimer

Data classification is provided to assist users. The sincerest efforts have been to describe and categorize our motion data, so as to be generally helpful to all motion capture data seekers. However, as all motions are subject to individual interpretation, we cannot be held responsible for inaccuracies or misrepresentations of data, arising from our classification.

(Carnegie Mellon Website, 'Frequently Asked Questions', s.d.)

Figure 15. Screenshot from Carnegie Mellon University's motion capture library. © Carnegie Mellon University Graphics Lab.

The classificatory system employed by Carnegie Mellon University (Figure 15) to enable searches for motion misidentifies by establishing a protocol for the definer. It is a position defended by adopting a disclaimer whilst perpetuating the uncontested role given to those who confer names. The ability to identify and categorise systematically demonstrates how dominance and power can be secured, replicated and maintained as a mechanism of reified identities. As indicated, the table provides a definitive ordering of actions into discernable objects thus facilitating a reductive set of commonalities. In one sense, categories promoted in Carnegie Mellon University's lists are a communicable form of human movement which enables transmission of large datasets to be comprehended. However, as indicated in envisaging how assigned descriptions are understood, it is *notable that* reliance on aligning white, Western systems underpins the nomenclatures. In Chapter 6, I discuss how dismantling, dislodging or avoiding complicity in the same system is important to artist interventions. More specifically, I show how libraries become an important reformulation in LaJuné McMillian, Rashaad Newsome and Bill T. Jones's work.

Anthropogenetic valuation

Unlike Carnegie Mellon University's stance of universal provision through singularity, recent productions of virtual human figures found in motion capture libraries follow the same fixed modes of representation but have no disclaim of misrepresentation. Instead, any criticism of exclusionary methods that deny access to cultural and social representation has been addressed whilst promoting and profiting through the same structures of biological and racial ordering and classification. For example, content available from the online motion capture library *Renderpeople.com* (Figure 16) is seen as a progressive step towards inclusivity and diversity promoting an enfoldment of difference that scholar Jodi Melamed identifies as 'neoliberal multiculturalism' (Melamed, 2011: xvii).

Melamed draws on Cedric Robinson's (1983) work to show race as a necessary construct for capitalism to establish, maintain and function as a logical and logistical system of expropriative practices continuously expanded and reproduced in overlapping forms of social relations (Robinson, 1983 cited in Melamed, 2015). These forms of exchange function by mobilising differences as a natural hierarchical group of human relations within an adaptive system. This reiteratively continuous mechanism is an evolving function of capitalist modes of wealth accumulation. As Melamed points out, "…capitalism deploys liberal and multicultural terms of inclusion to value and devalue forms of humanity differentially" (Melamed, 2015: 77).

In Figure 8 taken from a search I conducted on AXYZ.com's website, the virtual representations are presented as variations of a prototype. This ideology of 'global ordering' Melamed (2015) notes, has been the response to dominant constructions of world-shaping found in colonial, and capitalist power relations. Industrial practices of categorisation and systems of classification facilitate the efficient production and sorting of animated figures. These available distinctions that promote representation as a validated form belie what Melamed has identified in the profitability model generated from the certainty of difference (Melamed, 2015).
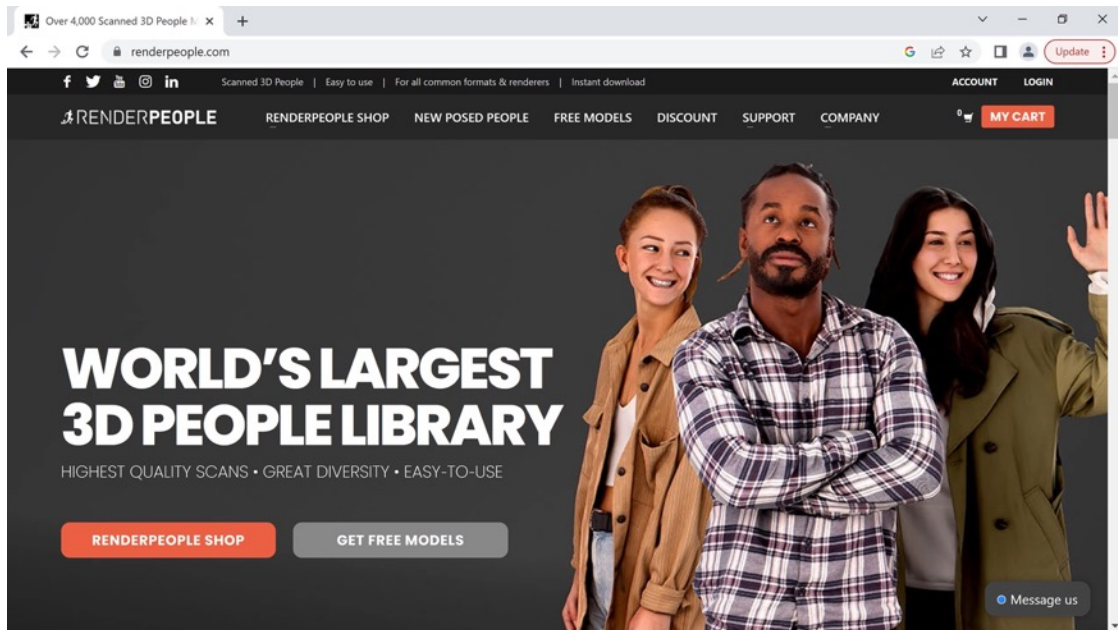
*Figure 16. Website for Renderpeople.com advertising their global representation. ©
Renderpeople.com*

As I have previously stated, motion capture libraries have been able to configure all
bodies into a regulatory system creating bodies that are configured into a model that
appears representative in its diversity. This use of classification and categorisation
allows the dynamics of power and subordination to remain through the absence of the
definer.

I will now discuss how the technological apparatus that authors the body for generating
motion can be considered a resource. Likewise, I consider how the practice of
generating motion using human movement is a process of concern to black
contemporary artists' engagement with technology.

2.3 Extractivism

Colonial practices of proprietorship and accumulation are staged as technological
affordances of motion capture technology. This critical perspective is premised as a
form of Extractivism. I have posited Extractivism as rooted in the ensnarement of
worlding practices. Wealth accumulation, (dis)possession, extraction, racialisation,
universality, computation, surveillance, data appropriation and expropriation are
discussed as methods enacted in the pursuit of cultural and financial capital. They
collectively form an analytical tool to study practices of acquisition. These connections

between expansive definitions of extractivist practices and decolonial activism provide criteria to define a field of motion capture studies.

Captured Motion, Worlding Practices

I have posited the notion of Extractivism to consider how racialised black bodies, motion capture technology and data as a resource intersect. In my practice-based study, the role of extractivism in relation to creative practices have been used to determine if, and how contemporary black artists' engagement with motion capture technology is framed by a discourse of extraction, (dis)possession and the use of abstracted motion as a commodity. My use of Extractivism as practice rooted in colonial appropriation of labour and cultural expropriation helps to define and communicate the terms under which the role of proprietorship and commodification are used in my study.

Extractive (dis)possession

Extractivism defines an exploitative annexing of land for an accrual of resources. Made often under enforced operations, the removal and displacement of people are marked by violent disruption to established ecological infrastructures and places (Acosta, 2013; Gómez-Barris, 2017). The term marks an indication of global phenomena connecting the Anthropocene era identified by Crutzen and Stoermer (2000) to large-scale industrial domination (Mignolo, 2011). Arguably Extractivism is not a current formulation of expropriation of land, but a continuation of rupture inaugurated during Imperial and colonial extraction of people through enslavement and trade (Acosta, 2013:62).

Part of a wider area of Extractivism addresses the corporeal extraction of labour and its historical formations in science, biology, philosophy and law (Acosta, 2013). In what can be viewed as challenges to colonial subjectivity, these historical perspectives as artist interventions draw additional frames of reference (Gómez-Barris, 2017; Serafini, 2022). I am using this perspectival lens to inform my research by exploring enactments disrupting governing forms of a convention to turn away from existing worlding practices (Spivak, 1985). As an ontological turn is sought where remapping of world-space is necessary to acknowledge marginalised symbiotic relationships in existence

(Holbraad and Predersen, 2017), extractivism as critique has been noted as "the central term that unifies an emic discourse articulated by situated actors reflecting on and critiquing historically specific models of accumulation" (Riofrancos, 2020: para.4).

Whilst activism has been an imperative factor in enacting decolonial challenges to extraction, this re-positioning of decentred indigenous epistemologies offers a critical discourse is noted by Riofrancos (2020) as somewhat disparate. As she further observes, the expansive idea of Extractivism raises questions on whether such a capacious term can critique or resist forms of subjection it seeks to address.

Despite concerns for the effectiveness of deriving notable challenges, as more affected regions are placed in closer proximity to precarious and catastrophic outcomes of colonisation, scholars such as Walter Mignolo (2009) have drawn attention to the work of creative practitioners who are responding to ecological disasters through activism (Mignolo, 2015). In this instance, indigeneity and land rights connected to resources are the focus of activism and anti-extractivist practice. Taking heed of Riofrancos's (2020) concerns of effectuality, and protracted use of extractivism, I have considered how an engagement with extractivist practices has been articulated in my use of motion capture data.

Because motion capture technology is employed to depict visually representative human figures in motion, the apparatus privileges formatting digital information to assure tangible verification processes. In this manner, a sophisticated regulation of movement influencing how data is assigned is significant. What is effectively transforming animated movement into a resource is a valuation system embodied by motion capture libraries. Accumulation of evaluated computational data from anonymised sources facilitates creative and economic capital due to an accompanying classificatory system. Naming conventions allocated to identifiable digital motion mediates extractive practices. While not all motion capture data is available for purchase, all can be utilised without consent. This mode of production is crucial for determining how technological apparatus imbued with expropriative procedures can be identified using a series of investigations in advance of rejecting extractive processes through reflexive evaluations. I expand on this undertaking in Chapter 4, Chapter 5 and further explore responses to Extractivism in my discussion of case studies (Chapter 6).

2.4 Datafication

I now turn to multiple modalities of resistance that are propositioned as challenges to extractivist practices. They are staged collectively as disruptions to colonial systems that institute racial hierarchies, knowledge production and commodification. In the following discussion on motion capture data, I advance further possibilities for conceptual in(ter)ventions as a decolonial and anti-extractivist practice. As a form of decoloniality in which to apply a wider framework for anti-extractivism, Black studies puts forward an interdisciplinary critical engagement with practical aspects of using motion capture technology.

I have sought to appraise motion capture technology by investigating its capacities and threshold. Although motion capture technology seeks to capture the human body in motion, my questioning of the tools promotes analyses of how motion capture technology can be used as a self-fashioning creative mechanism. A focus on the dynamics and mobility of Black corporeality across spatial and temporal dimensions pertains to analysing Blackness when defined visual inscriptions are no longer sustainable. With an emphasis on computational data, my tests, detailed in Chapter 4 institute a viable countermeasure to worlding practices inherent in motion capture technology. In the interval existing between abstracted captured motion and predetermined commodification as reusable digital movement, I explore how the transitional construction phase whereby assembling motion capture data to a 3D model appraises structures borne of dominant cultural hegemonies couched in notions of universalism.

Hortense Spillers (2003) use of the term interstice which she describes as 'the missing word…which allows us to speak about and that which enables us to speak at all'. Spillers' riposte to feminist discourses crucially shows how neglected discursive, historical and representational conventions suppress Black women's ability to establish an alternative notion of personhood. Her work advances a form of self-making borne of ontological disruption to what she notes as the black woman's positioning as 'the principal point of passage between the human and the non-human' arriving at an interstitial locality (Spillers, 2003:152). Thus, Spillers sets in motion a manufactured

reframing for me to invigorate virtual figures without ceding to valorised value systems of representation.

Occupying an indeterminate void without predetermination, asserts a pressure on temporal and spatial regulation which as Walter Mignolo contends, coloniality serves as a monocentric configuration of the world. This, in turn creates an enforced regulated scheme that is reproduced as universal (Mignolo, 2009). For this globally maintained system to have taken place, Mignolo states, "the colonization of time went hand in hand with the colonization of space" (Mignolo, 2009:12). Therefore, decoloniality is posited as effective when spatial and temporal reconfigurations can be made to undo the imposition of a singular worldview (Mignolo, 2015:107).

Anti-extractivism as a form of decoloniality is a term that connotes the response to enacting the effect of seeing through recentred views. Cultural theorist Fred Moten (2018a) would call this an act of looking with rather than looking at (Moten, 2018a). Anti-extractivism can be viewed as a way to bypass annexation by staging an intervention, a prevention, an attention, an intention, an arrest. These reconfigured actions are responses my research frames as an interrogation for using motion capture data. An emphasis on the data and its potential to be reconstructed, or re/de/composed as Denise Ferreira da Silva (da Silva, 2022, cited in Parisi, 2021: para. 21) recognises it, echoes the possibilities of computational information to produce new formations similar to music sampling. Both Ekow Eshun (2003) and Maureen Furniss (1999) consider music sampling a practice in digital technology as new a method for producing creative practice where recomposition is primarily a technique. Rearrangement is analogous to the saxophonist's role in jazz. This proposition is seen as a radical departure from the limitations of a fixed score (deGraf and Yilmaz, 1999; Furniss, 1999). In this sense, the extracted motion becomes malleable to offer an improvisatory departure from the vision-centric configuration of bodies in motion.

Envisioning bodies in motion
As a system of validity and verification, the cinematic apparatus provides the dominant form of governance for visualising humans in motion. The camera becomes not only a device to see more but to see differently in the same way that a microscope and telescope extend the limitations of human vision into an expansive organising principle

film theorist Christian Metz calls a 'scopic regime' (Metz, 1982). The requirement of a visible body for configuring and calibration is a necessary presence for motion capture technology to function. This reflects its dominant mode of sensing as a vision-centric apparatus. The process of capturing where the body is located spatially and temporally in order to represent movement, has guided how studies have been framed around theories of visuality (Sutil, 2015:204). This restaging of 'rational space' introduces a world that is not only reconfigured spatially but also optically. In Sutil's (2015) work which offers an extensive appraisal of technological apparatus used to capture human motion, he argues that vision-based affordance is a venerated form of validity offering little more than misapplied concepts to what is ostensibly a computational procedure (Sutil, 2015: 205). Instead, computational data is posited as a productive way to rethink motion (Sutil, 2015:204).

Datafication

Computing becomes the primary stage to reframe motion capture technology as an apparatus derived from processing information tracked from bodies in motion. As a necessary process in obtaining continuous data, there are alternative modalities that can account for the decentring of vision. These different notions provide new directions for developing the relationship between corporeality and the production of bodies materially untethered from space and time and are reconsidered using my practice-based study.

Figure 17. A person standing in what is known as a 'T-Pose'.

Motion capture corporealities

Although Sutil's (2015) appraisal of new conceptual approaches offers expansive thinking for apprehending motion capture technology, the foundational structure upon which the technology is built requires the image. Sutil clarifies the point of motion capture technology always requiring the referent body as it is a registration regardless of whether it remains after the point of capture (Sutil, 2015:201). His focus on the necessity of a live body from which to calculate, measure and quantify underlines his argument that first there needs to be an indexical body from which computational data is acquired. The necessity for a body to be mapped using technological apparatus informs my staging of a conceptual framework that does not reproduce universalist orthodoxies I have detailed so far. I now consider how bodies can parametrically disrupt the capabilities of motion capture technology whereby legibility can only be attained through conformity.

Spatiotemporal disruption

In Hortense Spillers's (1987) exposition on the black woman's paradoxical existence, she sets out a historical account of the symbolic figuring necessary for the United States' sense of itself (Spillers, 1987). I have used her essay as a generative text in providing a critique of the black body as a rethought position. Spillers offers a far-reaching critique of how morphological blackness has been produced. There remains a code of legibility sutured to its historical formation. This framing of a language deployed as a form of subjugation is at the centre of Spillers's analyses. As part of my study, I have drawn on Spillers's essay to construct my animated figure. My examination of how the ongoing negation of black life provides an extended theorisation is explicated in Chapter 4: Reconfiguring Blackness.

By thinking alongside Spillers's analysis of blackness as an affected state, my recalibration of (dis)possession informs how animated black figures can be constructed. As Spillers makes clear in her text, central to chattel slavery is a conscription of racialised black bodies into tangible matter (Spillers, 1987:68). There is no specificity nor particularity allocated when the commodification of black bodies becomes rational. In other words, the body only functions as a commodity (Spillers, 1987: 75). Despite this foreclosure, Spillers offers a way of thinking a new relationality that does not

condemn the state of subjugation to an unrecoverable position. Instead, there is a crucial expansive modality to rethink the imposed objectification enacted by capture. This is via the discreteness of the body from the flesh. For Spillers, this distinction is generative insofar as it promotes a black subjectivity formed out of the conditions of its (un)making. Thinking through Spillers's formulations, I elaborate in Chapter 5 and Chapter 6 on how a psychical and physical engagement using motion capture technological apparatus contests mapping for regulatory control.

Spatial configuration. Somatic norms

Similarly, I have drawn on mapping practices from Katherine McKittrick's (2006) work on spatial and temporal geographies to question notions of neutrality where motion is captured. McKittrick's assertion that black bodies are disruptive occupiers is instructive (2006:55). Although the presence of B/black corporeality disrupts spatial configurations, the certainty of cartesian coordination is an arrangement of digital placement that can map, calculate and arrange all bodies according to its protocols of logical ordering. It is the capacity to be able to capture the whole body; to replicate the human in motion that technologically secures its role as a facilitator of virtual representation. The calibration process is a standardised action that confirms the form as legibly human. As previously stated, the processes enabling a motion-captured body to become mapped remains fixed in time and space until the procedure of verification has been completed as indicated in Figure 17. The capture process begins with making a person's body appear during a set of graduated affiliations between tracking markers assigned to a body and measuring apparatus. I discussed earlier in this chapter how prototypicality is an effective maintenance of European idealogies.

Abstract relations

Here, absorption into the folds of the Euro-typical template is the only way to legitimise the derivations and differences. This association, explains scholar Saidiya Hartman, points to "one of the fundamental ethical questions/problems/crises for the West: the status of difference and the status of the other. It's as though in order to come to any recognition of common humanity, the other must be assimilated" (Hartman, 2003:189). Locating a way to trouble this fixedness that allows for systems to be maintained occurs at several stages of capture and allows for a reframing of the process. Despite the capacity to map, measure and align bodies using a system of regulation and control,

there is a space that does unsettle the rigidity inherent in motion capture technology. Through my research outputs and analysis of case studies, I have investigated whether using motion capture technology and motion capture data to produce virtual animated figures resists or reflects being incorporated.

The role of in(terv)ention demonstrates that despite a rigidity determining technical processes inducted through representation, the same methods and practices adhered to in industrial practice can be strategically overturned. Addressing convention as a governing structural role of neutrality and normativity, my study has evaluated motion capture procedures for creating motion to animate digital figures. Access to, and the utilisation of tools challenge cultural hegemonies by not adhering to an assumed logic of use whilst acknowledging the specialised mode of production afforded to motion capture technology. Although this refusal to comply is indicative of an intention to disrupt the incorporation and regulation of bodies into existing representations found in motion capture libraries, my calculated response to usurp dominant systems is also questioned. Thus, motivational factors can determine how contestation is ratified.

Motion capture data holds a rich source of information that allows manipulation of data to drive the movement of bodies. Changes can be made to the way captured motion is configured. If viewed from a technical standpoint, the manipulation of movement is no longer tethered to its original space. It is not determined by cartesian coordinates. Addressing the modes of production found in motion capture libraries and motion capture technology, I propose motion capture as an exploratory medium untethered from its weddedness to representation and its foundational privileging of white, male normativity as universal. Even though motion trackers facilitate the capture of movement, the resulting numerical values relating to temporal and spatial information are not fixed. In Chapter 4, I demonstrate how iterative tests have been used in my moving image practice to examine how systems of control adhere to standardised phases of making virtual human motion.

Blackness as materiality
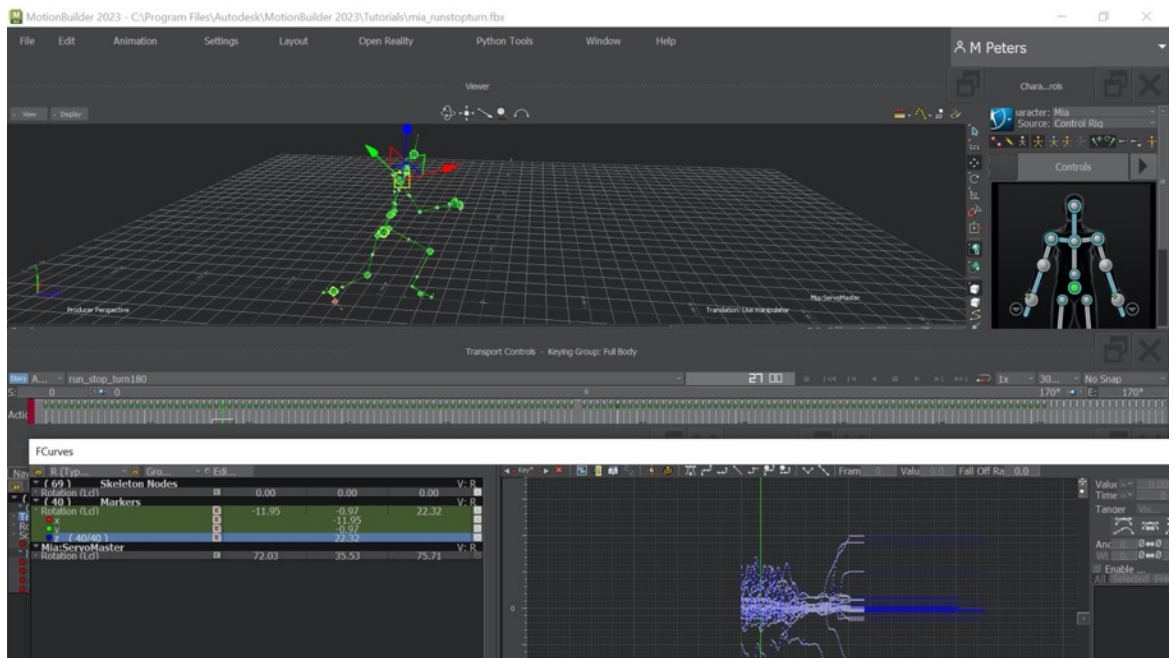
Figure 18. Motionbuilder software program user interface.

In Chapter 6, my analysis of practices explores how artists' engagement with motion capture libraries, studios and data can challenge assumptions of neutrality. My ongoing interaction with these three domains is informed by adopting a black navigational strategy of reading virtual and physical spaces. This geopolitical positioning aligns with scholar Katherine McKittrick's (2006) assertion that "black lives are necessarily geographic but also struggle with discourses that erase and despatialise their sense of place" (McKittrick, 2006: xiii).

I have used the concept of black geographies located within black feminist studies and diasporan studies which necessitates a breach of boundaries. With McKittrick's work, I have sought to reappraise both captured motion and the construction of racialised black identity in relation to space. This framework accounts for the ways in which a multimodal idea of movement attends to the process of racialisation as well as the ways

it is contested. I have aimed to draw on notions of moving beyond spatial and temporal limits encountered physically and virtually to strategically negotiate, refuse or counter-challenge impositions that restrict and govern.

2.5   Summary: Envisaging the Framework
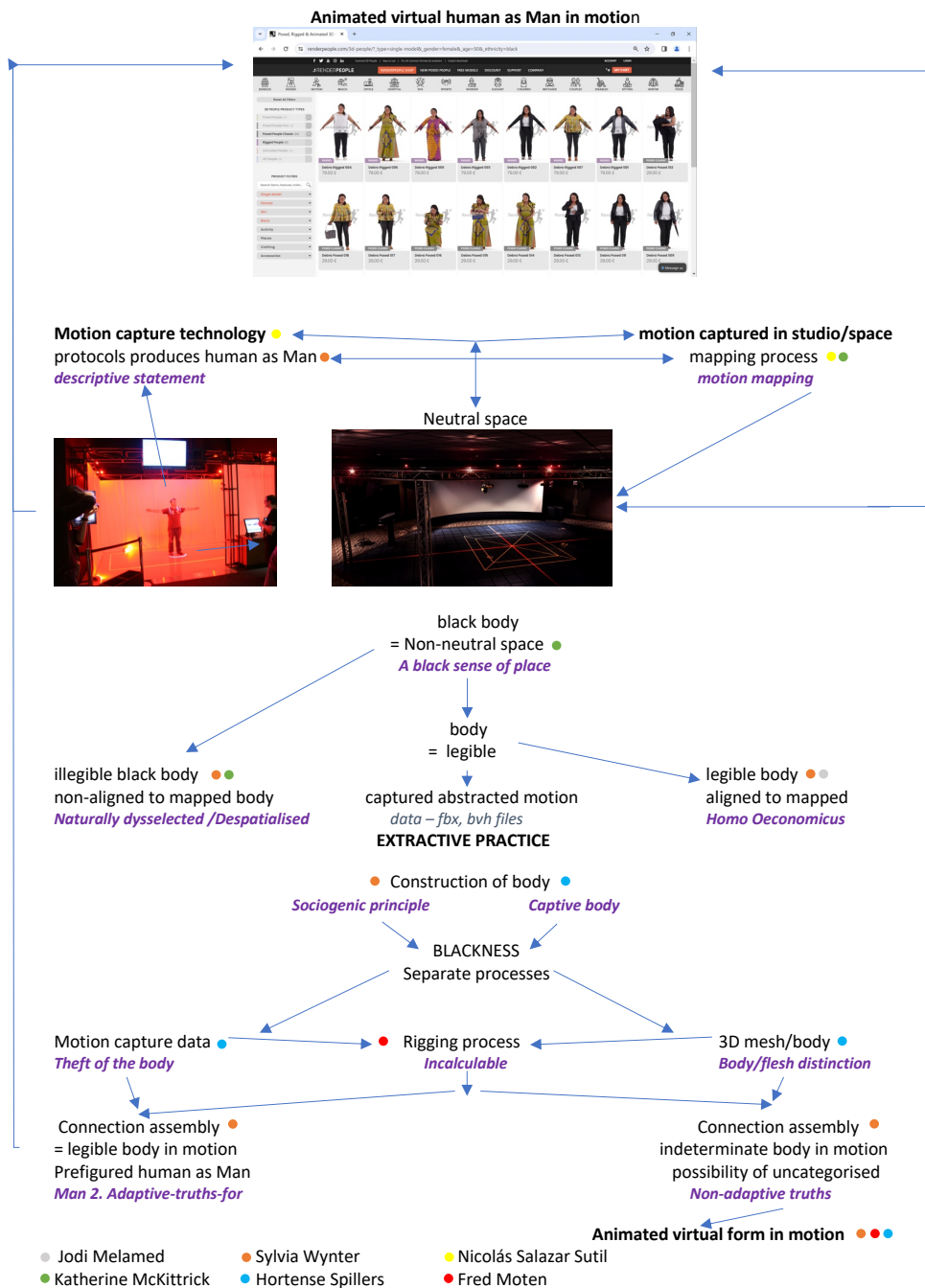
Figure 19. Analytical schematics for configuring B/black animated figures.

The proposed framework shown in Figure 19 advances my evaluative schematic based on Black feminist thought. An analysis of coloniality identified in motion capture processes aims to circumvent technologically aligned practices to universalism. This interpretative investigation of constructing B/black animated figures identifies an area

of (un)mapping located in blackness which is explored as iterative tests using motion capture and examination of case studies.

The conceptual framework discussed in this chapter details how my use of technological apparatus to generate motion is informed by black feminist reappraisals of reconfiguring the human. It is positioned as a critical perspective to consider how creative practices challenge colonial power, industrial modes of expropriation, regulation and standardisation. By connecting the extraction of resources, colonial histories and enslavement as regulatory forms of dominance, the ensuing perspectives arising from these decolonial positions establish an interpretative framework.

I discussed how universalism can be rejected as a status for legibility by drawing from critical discourses that address structural dominance. Taken as a confluence of technological, sociocultural and sociopolitical formations of blackness, I have detailed how interventions to heterogeneous representations of cultural production could support a rethinking of technological apparatus as a mechanism that sustains the concept of the human as Man.

By extending the modalities of anti-extractivist practices to black contemporary artistic production, the conceptual framework I have presented is integral to eliciting a new form of knowledge production through creative practice. I have discussed how the framework seeks to theorise the use of motion capture technology as a regulatory system that upholds colonial practices of extraction and commodification.

Furthermore, in setting out an interrogation of currently interchangeable terminology between motion extraction and motion capture, I have posited an anti-extractivist practice as a generative, rather than exclusively extractive process. This analysis takes into consideration how artists seek to counteract impositions placed on bodies marginalised through racialisation. By using the same tools that have contributed to an abstractive and extractive formation of blackness, I have set out a framework that stages a practice-based inquiry as a proposition for decoloniality.

In the next chapter, I detail how the research is couched within a set of black methodologies outside of and within academic scholarship whilst attending to the

formalities and rigours required of a validated study. It is oriented between two, at times, opposing but navigable domains of Black studies and black study.

Chapter 3: A B/black Sense of Place

Chapter 3: A B/black Sense of Place

This research grounds interdisciplinary mixed methods to interrogate how motion capture technology is used in Black contemporary art practice to contest racially hierarchical structures and decentred knowledge production. Although fields of study are more commonly embedded within disciplines, there is often a need to derive knowledge to challenge dominant epistemologies (McKittrick, 2021b). Conducting research using more than one discrete disciplinary area further extends the possibility of instituting knowledge exchange beyond classification (McKittrick, 2021b:36). Where existing knowledge is underexamined in several fields, interdisciplinarity can foster alternative understandings of phenomena by combining disparate disciplines (Repko, 2012:16).

3.1 Methodology

Methodologies proffered by Black cultural theorists (Crenshaw et al; hooks, 1989; McKittrick, 2021; Outlaw, 1986), elicit information through non-linear and unaccounted forms of knowledge production. Although the effectiveness of Black methodologies as situated racialised subjectivity remains a contested outlier in research paradigms (Miller, S.I., 1998; Seale, 1999), its specificity serves to unbracket knowledge production whilst challenging dominant epistemologies. Its development of what is also termed "race-based methodologies (Hopson and Dixson, 2013; Parker, 1998; Pillow, 2003) is designed to activate countermeasures to racial and social injustices. Although adopted not only to register the disregarded aspects of blackness and anti-black racism through critical analyses (Tyson, 1998; Mowatt et al, 2013), studies turning towards an expansive range of methodologies previously reliant on a singular mode of either quantitative or qualitative studies do so in a bid to recognise how critical research of Black lives in sociopolitical and sociocultural contexts requires reframing outside of the logics of statistical evaluation (Crawford et al, 2018).

Informed by an underexamined investigative inquiry into contemporary art practice, I have aimed to address how Black methodologies can generate and answer questions often overlooked or excluded from research. Namely, where new forms of knowledge

production constructed as accounts of cultural experiences are shared in conversations relating to personal, social and political motivation. My conceptual framework is informed by Black studies (see Keywords: Black studies).

I have developed its manifold function in two phases to question how motion capture technology is used. The initial evaluation of my practice-as-research moving work facilitated reflective analysis. During the second stage, I formed an interpretative lens to define my selection criteria for case studies. I wanted to ascertain if Black artists question who the technology is for and if so, whether a decolonial practice could challenge assumptions of universality. My practice sought to resist the logical, rational, regulatory structures and mapping practices that stage white, male, normative bodies as prototypical. As detailed in Chapters 4 and 5, these countermeasures were enacted through making manual alterations to motion capture data and 3D models. Furthermore, as part of my deviation from creating homogenised figures, I surmised my approach was not a singular endeavour but needed to be informed by a collective and shared decoloniality. This communal approach is evidenced in a combined presentation of my practice-based research outcomes alongside my case studies.

3.1.1 Methodology

As part of the discipline of anthropology, Auto-ethnography can be considered "a research method in which the researcher's personal experiences form both the starting point and the central material of study" (Uotinen, 2011:1308). Although the reliance on a researcher's introspective analysis has led to criticism of its reflexive nature (Madison, 2011), as a mode of inquiry, it facilitates the use of written accounts to foreground aspects of a person's cultural experience (Ellis, 2004). This recognition of self-authorship acknowledges resistance to colonial power arising from an ethnographer's study of a cultural group (Ellis et al, 2011; Riedmann, 1993). Its application in this research provides an autographic method for documenting daily reflections on my inquiry. My engagement with using diaries to record the overlaps between study, interiority and subjectivity enabled reflective observations on how my study often operated in non-delineated spaces.

These accounts point to the significant changes affecting scholarship due to lockdown restrictions introduced during the Covid-19 global pandemic. While a shift to using

online video to supplement learning and the effects of accessing resources beyond the borders of institutions changed teaching and learning pedagogy, new ways of locating a wide range of theories benefitted the study. The academic world 'opened' up as the move to mitigate the disruption of studies facilitated online seminars. These recorded presentations and discussions enabled a wider range of data to be accessed. I have drawn attention to this emergent development using written notes. A selection of these experiences is presented in Appendix 7: Sample Coding Excerpts.

Note-taking, which is a method derived from Anthropology documented my variegated online searches. Although comprehensive methods for undertaking field notes are discussed by Emerson, Fretz, and Shaw (2011), their suggestions for using a multi-sensory approach to recording observations of sounds and visual details did not always align with my adopted strategies. While some observations occurred in real time, live documentation was not considered fundamental to all data collection. The following methods used for generating and analysing data supported my study's interdisciplinary approach.

3.1.2 Case Studies

Case studies are considered valuable for exploring complex issues that cannot be easily quantified as they can provide detailed descriptions of the subject under investigation (Yin, 2014). My case studies were produced in line with Braun and Clarke's (2006, 2012, 2019) understanding of reflexive thematic analysis. Although there is no linear procedure for undertaking thematic analysis, six distinct processes are outlined (Braun and Clarke, 2021:331). However, as Braun and Clarke clarify, these phases are not steps to complete before advancing to the next (Braun and Clarke, 2019, 2022). I decided to apply reflexive thematic analysis due to my access to a large volume of secondary data. In Appendix 6: Case Studies – Reflexive Thematic Analysis, I discuss my data evaluation methods. This was predominantly found online comprising interviews, panel discussions, presentations and talks from Bill T. Jones, Rashaad Newsome and LaJuné McMillian.

These existing texts were numerous and disparate. They covered a range of themes around the work artists produced using motion capture technology. Furthermore, their interest in using digital motion to animate virtual figures was discussed. Each text was

collated and, in cases where videos were used, I have created texts that had inaccurate auto-generated transcripts. This ensured I had a wide body of potential data. Despite the availability of artists' discussion of their work, there is a lack of scholarship on how and why black artists use motion capture technology. Consequently, my inclusion of texts documenting my process of locating data accounts for my responses to searching for suitable case studies and documenting changes to my inquiry that were deemed significant to the research direction. These comprise transcribed excerpts from my journals, photographs of handwritten notes and diagrams. A selection of these is presented in Appendix 7: Sample coding excerpts

Motion capture libraries, motion capture technology and its attendant production of computational data are three areas associated with the creation of animated, virtual figures. In this study, I have selected artists Bill T. Jones, LaJuné McMillian and Rashaad Newsome to examine how the implementation of motion capture technology in contemporary art practice can be considered a critically informed challenge to universalism. To attain in-depth analyses of the artists' practice, I have sought to understand motivations for creating motion to animate virtual Black figures. Secondary data comprising interviews, panel discussions, archival records, biographical information and artists' presentations fostered an expansive engagement with my case studies. I introduced a phased collection of data to thematically explore artists' experiences and perceptions of using technological apparatus. Using reflexive thematic analysis, I identified common themes related to artistic and personal motivation. In Appendix 8: Open coding, selected notes detail my dialogical analytical method.

3.2 Case Studies Selection

Although my use of case studies is presented as linear, self-contained accounts of artistic practice, I have drawn on wider relational, diasporic contexts underpinning the research. My analysis of artists' practice attends to a broad discourse on blackness. As I have discussed in Chapter 2: The Master's Tools, Black studies and black study are used to evaluate how artists' practices are concerned with dismantling hegemonic structures of racial subjugation and colonial extractive practices of (dis)possession. I have applied my thematic results to three areas connected with the creation of animated, virtual figures. As detailed in Chapter 6: Navigating Blackness, motion capture

libraries, motion capture technology and its attendant production of computational data are critically evaluated.

Gathering data for case studies

I devised a series of methods for identifying, assembling, listening, viewing, transcribing and appraising the accounts given by Bill T. Jones, LaJuné McMillian and Rashaad Newsome. My lack of primary data was of concern as there was a likelihood of not obtaining information to answer my research questions. The dataset of responses to secondary accounts was used. Being able to construct themes from the dataset supported my decision to adopt the six phases of Reflexive Thematic Analysis. It provided me with a structured way to respond to the multi-modal secondary texts I sourced across several fields including scholarly texts, artists' collaborations and exhibitions.

Reflexive thematic analysis acknowledges the role interpretation plays my data analysis. I have centred my questions around the initial considerations I had using motion capture technology. As the inquiry was informed by my experience of creating animated figures from tracing recorded video, I wanted to extend my study beyond the self-produced moving image works that set the precedent for my research. Analysis of my work through practice-as-research outputs required examination beyond self-reflection. Therefore, I have included a range of experiences in the evaluation of texts to move beyond an autoethnographic account. This decision limits a singular, authoritative voice. Reflexive thematic analysis tempered any claim to sole expertise in using motion capture technology. This method offered multiple viewpoints to find how challenges to dominant modes of cultural production are addressed with the use of technology including the iterative tests I have documented in Appendix D: Data Collection.

Generating data from case studies

My focus on how artists discuss their intent and ability to achieve their ambitions with technology required an engagement with various discursive mediations of their work. I deemed it necessary to provide accounts of their decolonial strategies using my research method to locate their words. The range of texts is indicative of the searches I instituted.

They form an essential source of 'found' information that points to how black study is enacted. Each text was read and reviewed to determine how I would generate codes across a composed, broad set of topics. The artists' voices are disseminated through conversation and reflection documented in Appendices 6 – 9. These notes from journals and transcribed texts are exchanges where the artist's voice is filtered through the process of transcription and editing. Journalists, moderators and interviewer's interactions have been curtailed in some cases, during my critical evaluation process. Additionally, enunciation, inflection and gestures were not always retained when transcribing from what I saw to what I heard. Video documentation and published interviews have produced a relational connection between several perspectives some of which are included as my reflections in Appendix 7.

3.3   Practice as Research

In this section on methods, I give a brief outline of my iterative tests. In Chapter 4: Reconfiguring Blackness, an extensive account explicates how these outputs generated data for analysis. Sequential uses of motion capture data were conducted over several moving image works. They are outcomes indicating my research's non-linear trajectory as I developed iterative tests for positing and answering research questions. My aim was not to replicate existing and dominant modes for creating digital human movement. These are found in motion capture libraries and as discussed throughout my study, reproduce the human as Man. Instead, I ascertained that a series of outputs would be required. I devised methods for recording my actions in addition to writing in my journal.

I aimed to have a visual document to return to where I could develop a method for comparing my intentions to my outcomes. I have referred to the video recordings as documents and research outputs as tests and iterative tests. The tests are individually named as moving image works and are discussed at length in Chapter 5. Three online moving image outputs listed in Appendix A: Moving Image are accessible via a hyperlink. They are titled *Ocean Going Figurine* (2020), *Walking On Water and Other Animated Acts Pt. I* (2020), *Pt. II* (2022) and *Communing with Aliyah* (2023). These selections are accounts of how I have enacted a decolonial strategy for using motion capture data.

For my practice as research output, exploratory methods that could chronicle how I constructed my digital animated figures were adopted. These processes included my Practice as research iterative tests mentioned above. Documentation of these undertakings is accounted for in Chapter 4. My moving image works were analysed together with the case studies. They are collectively posited as part of a Black diasporan decoloniality. As practice-based research, they are responses to the dearth of material available in disciplinary fields.

The following schematic (Figure 20) sets out the methods used to establish analytical tools for establishing a field of inquiry. Its premise outlines the core components contributing to my implementation of decolonial methods.

3.4 Procedures

Practice as Research methods

To identify
Methods to interrogate how to create Black animated figures using motion capture data
To determine
Ascertain if results reproduce the logic of universalism based on white, male normativity
To understand
How motion capture technology produces homogeneity
How Blackness disrupts normativity

Case studies methods

To identify
Study the practices of Black contemporary artists who use motion capture technology to create animated figures
To determine
Specify if, or how Black artists contest the logic of universalism represented as white and male
To understand
How black artists use movement to create Black animated figures

3.5 Analysis

Technical procedures
Conceptual formation
Reflections on processes

Conversations
Transcribing
Note-taking

black study

knowledge production & exchange

Case Studies
Reflexive thematic analaysis

Screen recording

OGANT
Storyboard P
Bill T. Jones
Fik-Shun/CeCe/Josephine Baker

Walking on Water and Other Animated Acts Pt. 1
Ocean Going Figurine
Walking on Water and Other Animated Acts Pt. 2
Communing with Aliyah

Case Studies

Bill T. Jones	***LaJunéMcMillian***	***Rashaad Newsome***
Autobiography	Interviews	Interviews
Archive	Panel discussions	Panel discussions
Interviews	Presentations	Presentations
Newspaper articles	Reviews	Scholarly texts
Press releases	Website	Seminars
Reviews		Website
Scholarly texts		
Website		

Figure 20.A schematic indicating the interrelated methods I have employed for data generation, collection and analysis.

A schematic indicating the interrelated methods I have employed for data generation, collection and analysis.

Chapter 4: Reconfiguring Blackness

In the following chapters I advance my use of blackness as a modality for creating animated virtual figures. Taken as a term for both a conditional state, blackness provides a critical perspective for analysing my practice together with artists Bill T. Jones, LaJuné McMillian and Rashaad Newsome. I have framed Chapters 4, 5 and 6 within a black diasporic breach of boundaries. Although separated into chapters, my focus on black corporeality follows what Katherine McKittrick (2021a) has termed 'the aesthetics of black miscellanea' (McKittrick, 2021a:3). This approach recognises the necessity of a black methodology. I have attended to how my engagement across multi-modal data has engendered a form of black study whereby my research is neither contained by the activities required to acquire and generate data nor divorced from the knowledge produced from these pursuits. McKittrick elucidates on the generative role of black studies as, "…a conceptual frame that draws attention to and critiques racism and other practices of discrimination but does not remain beholden to the system of knowledge that profits from oppression" (McKittrick, 2021b:71). Here, the premise of critically analysing the constitution of blackness undergirds McKittrick's expansive formulation of black studies.

This chapter extends the conceptual framework's evaluative method by applying a reflexive interpretation of motion capture tests. These serve as phased, non-linear interrogations of blackness. Following my examination of motion capture libraries, I conducted a series of tests. The sample of documented research presented in this chapter was used to determine if, or how a critical framework could be created using motion capture technology. Furthermore, by contesting the human as Man found in motion capture libraries using in(ter)ventions, I evaluated how a technological decoloniality could counter extractivist practices and generate B/lack animated figures.

Technology and modernity

Although recent research has adopted critical race theory to analyse the role of technology in mediating blackness, (Benjamin, 2016, 2019; Noble, 2018; Rodríguez-Muñiz, 2016), the dominant use of critical theory relies on modernity to centre a Western/non-Western dialectical perspective (Feenberg, 2002). This framing I argue does not address the foundational constitution of Blackness through modernity and instead maintains white, male, normativity as an objective perspective. For example, Heidegger believed modern technology could lead to a disconnection from nature by obscuring deeper meanings and values in life (Heidegger, 1988:197). He suggested that this technological engagement can result in an alienating experience from the world around us. To counter this, Heidegger emphasised a response whereby interactions with technology would foster a balance between technological advancement and an enhanced appreciation of our existence and the natural world. This perspective, he argued would encourage individuals to reflect on how technology influences their lives and to seek ways to reconnect with more meaningful experiences. While Heidegger's assertion is that modern technology's focus on efficiency and control often limits our perception to a purely utilitarian view, his call for an alternative engagement with technology warrants further analysis.

Whereas Heidegger's warning of alienation through technological advancement is prescient, his focus on an objective understanding of depersonalisation, signals Blackness in his refutation of what Calvin Warren (2018) calls 'black ~~being~~'. This ontological impossibility Warren points to is (un)acknowledged in Heidegger's understanding of Being (Dasein). As examined in Warren's analyses, the metaphysical (in)ability of blackness to be considered in Western philosophical inquiry makes clear the antiblack foundation central to (Warren, 2018:174). Warren's argument of the role blackness institutes provides an impasse for B/lack existence when antiblackness configures a permanent lack (Warren, 2018:3). He goes further stating,

> "[s]ince the Negro is neither a proper object of knowledge nor a proper referent (catachresis). What we can propose, however, is that function, or utility, requires an instrument, and instruments are invented for the purpose of fulfilling the agenda of utility." (Warren, 2018:37)

Here, Warren identifies the ongoing technological necessity for Blackness through what Jared Sexton has termed "longue dureé of social death" (Sexton, 2011: para. 1). This ongoing excision from being human and therefore knowing Blackness, is an ability to

know oneself in the face of alienation. Black studies' fundament attends to the myriad ways B/black existence is formulated (see Keywords: Black Studies).

Whereas the underlying constitution of Blackness is considered integral to foreclosing an onto-epistemological position, in Moten's (2018c:199) conceptualisation of attaining a Black existence, his belief in an a priori excision from being human invites an opening Warren and Sexton pessimistically dispute.

For Moten, a wider perspective of being human is available through an alternative reading of Blackness. Whilst Heidegger introduces the concept of 'enframing' (Gestell) to address how technology shapes our understanding and interaction with the world (Heidegger, 1977:19), Moten considers how despite the psychical effects of being a technology and viewed solely in terms of utility, enslaved African people's experiences of alienating (dis)possession have engendered collective selfhood in captivity. This perspective of communal existence as "being wanted and being excluded" (Moten, 2018c:82) offers my inquiry an engagement with technology that differs from a Heideggerian notion of being technologically disassociated. Furthermore, I place under contention the dominant discourse of universalism embedded in modernity's technological foundations whilst not forgoing Blackness as materiality.

What is a black body?

When I hear that phrase, "the black body," I kind of want to say, "Well there's no such thing," or, if there is such a thing, it's something that is imposed upon and conferred upon us at the moment of our death (Moten, cited in Duplan, 2016: para.7).

By questioning the predicate of the black body, Fred Moten challenges the validity of that assertion. He disputes blackness's foretold death as an embodied category of black (Moten, 2013:738). This unalterable past has been argued by some scholars and theorists as still in effect. As my inquiry centres on the use of human motion, I have sought to rethink the categorisation of black as a non-position in relation to the cartesian mapped worlding practice governing black existence. This problem of the black subject as an erasure produces a denial of existence which cannot be reconciled (Chandler, 2014). According to Chandler (2014), to present an objective universal truth without acknowledgement of unaccountability is 'a problem' not only for an idea of humanity but thought itself. The black subject whose existence is formed through abject removal by taxonomy remains

outside of conception (Chandler, 2014). Although in this inquiry I have introduced a range of theoretical positions examining black existential thought, the scope of research acknowledges the extensive but limited application to this practice-based study. Therefore, my conceptual framework derived from an examination of black being focuses on the modalities of B/blackness as tensions arising from categorical impositions.

In recent years, two significant areas have emerged from critical studies on race in the United States of America (Crenshaw et al., 1995). These theoretical debates on the impact of enslaved African people on their descendants have developed from their original scope. From critical analyses of social, juridical, political and economic disparities adversely affecting black Americans, newer fields have emerged in the form of Afro pessimism and Black Optimism (Sexton, 2011). Both schools of thought address the global impact of the transatlantic slave trade on constructing black identity. Central to Afro Pessimism's premise is that the afterlives of enslaved African people that were catastrophically curtailed remain in the present. The aftermath of slavery in which the category of black is imbued with life-limiting subjugation is an unconditional domination of black life.

These continued effects of violence and subjection are a 'social death' (Patterson, 1982). Evidentially lasting legacies of enslavement that prematurely diminish black life (Wilderson III, 2010) are reproduced as structural enforcement. Whilst Black Optimism can be interpreted as oppositional to Afro Pessimism, the relationship between both stances is in recognition of the conditional forces that encroach black life. In Patterson's formulation that eviscerates life, there is a black sociality that Jared Sexton defines as 'living in social death' (Sexton, 2011) rather than Black Optimism's attention to the livingness of black life in social death (Moten, 2008). Although the research aims of my study do not attend to influences of critical race theory on B/black practitioners' work, artistic practice has been increasingly used as exemplars of B/lack critical thought (Jackson, 2020; Sharpe, 2016; Weheliye, 2014). Therefore, questions arising from practice as critical artistic intervention warrants the use of Black studies as a decolonial perspective to bring into view modes of resistance to Blackness as irrevocably outside.

These contested classifications are what Cedric Robinson describes as presenting an 'eternal external alien' (Robinson, 2000). The permanent outsider as a configuration of white normativity implicates black corporeality as always appositional. As an instantiation of Whiteness, Blackness is construed as that which is not. Functioning as a proxy, the

B/black body's role is to orbit as a proximal locator. Blackness as a form of existence acquires a role that Moten suggests "moves in relation to reconstruction." (Moten, 2018c:138). This co-option designates a status that requires subordination to a dominant position. However, proximity does not necessitate rejection. Paradoxically, as present absence, insights can arise from a state of imposition. In Robinson's and Moten's assertions on black experiential reckonings with anti-black racism, an attendance to the effect of being placed rather than having agency in placing oneself merits further examination to which this practice-based inquiry contributes.

In what has been collectively theorised as Afro-pessimism, Moten notes its advocates' commitment to blackness as para ontological wherein negation marks its point of origin (Moten, 2013). This, he contends is a tethering to the logic of Western Enlightenment thought ascribing the visual certainty of black skin to a holding pattern of nothingness (Moten, 2013). For Moten, the possibility of blackness's "flight from the conditions of its making" activates the pursuit of an ontological escape (Moten, 2007: para.1). This proposition which Frantz Fanon deems impossible for those who are B/black (Fanon, 1986:110) is of interest to how I have utilised existing motion capture data. So too, is writer Kodwo Eshun's concerns residing in computationally reformulating B/black existence (Eshun, 2003).

Kodwo Eshun has posited the atemporal potentiality of being black "without the registering mark" in conjunction with the impact of digital technology on ideas of race as categorical (Eshun, 2003: para. 4). As part of my iterative tests, I consider how destabilised markers of race using computing processes can explore new interpretations for locating the (in)stability of the black body to expand a practice-based interrogation of blackness.

In my introductory chapter, I outlined my intention to create black animated figures which aimed to address the issue of visibility. More specifically, I aimed to address the challenge of being unnoticed versus being overtly visible. I now turn to an experiment I conducted to explore both the automation of this process as well as reflecting on its prospects for attending to this conditional state of being B/lack.

Figure 21. Tango 1981 (dir. Z. Rybczyński) © Zbigniew Rybczyński
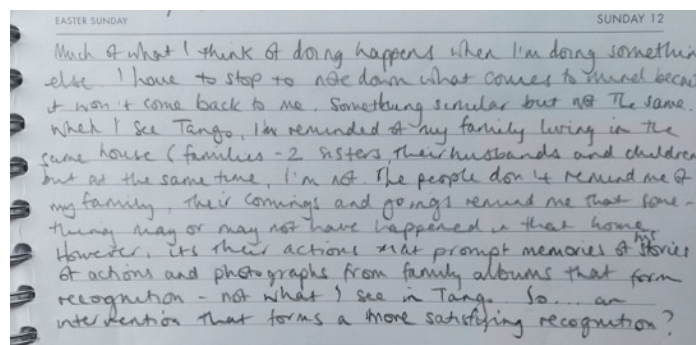
Figure 22. A note I made to reflect on watching the animated film, Tango (1981).

The note reflecting my viewing of Tango as documented in Figure 29. It reads as follows.

Much of what I think of doing happens when I'm doing something else. I have to stop to note down what comes to mind because it won't come back to me. Something similar but not the same. When I see Tango, I'm reminded of my family living in the same house (families – 2 sisters, their husbands and children [)] but at the same time, I'm not. The people don't remind me that something may or may not have happened in that home.
However, its [sic] their actions that prompt memories of histories of actions and photographs from family albums that form recognition – not what I see in Tango. So…an intervention that forms a more satisfying recognition?

The ability to obtain motion from video using software was a significant development. Using computer programming skills I had acquired as an MA student in Digital Arts, I followed a set of handwritten instructions. These technical processes were documented before conducting tests as shown in Figure 23.

Figure 23. A series of notes used to document stages for computer programming.

The series of instructions resulted in a test titled OGANT, an anagram of Tango. I discuss this test on in Chapter 5: How to Move a B/black body. I recorded in my diary (Figure 22) further reflections on the results of my test titled OGANT.

MAY 2020

Figure 24. Reflections on motion capture library contents.

The transcribed note states,

By taking away the coded figures in Tango and replacing them

with graphical symbols, the ability to read gender, age become

irrelevant. The performances, movements become the focus.

However, they're still embedded in a history of real movement

from a 'live' person – are they? Is the knowledge of

what they were purely from me? Is that relevant?

It's about the use of movement, not the original creation.

Although the original creation is part of the creation.

Who makes use of these bodies? Who are these bodies

for?

Ontologically displaced

In her meditation on the diasporic condition of blackness, Katherine McKittrick reflects the ways black life is often announced by an ever-shifting ground stating that, "…the process of returning, whether imaginary, real, filmic, fictional…what returns are possible…through travel, remembrance, imagination, remittances, yearnings, stories, or songs?" (McKittrick, 2021b:173).

Through her fragmentary recalling of events, McKittrick (2021b) imparts a Fanonian perspective on the broken lineages of diasporic motion arrived at through (dis)possession. These recounted patches of familial connections mirror my attempt to piece together such narratives. However, my undertaking outlined above is without revisiting the additional stories McKittrick draws the reader's attention to (McKittrick, 2021b:170). Perceptively, in the same text she further asks, "…and do these cultural practices carry in them the history of violence, dispersal, and memories of home?" (McKittrick, 2021b:173) McKittrick's focus on diasporic life as movement across different psychic registers points to what I had seen but had not yet identified prior to conducting my test. Movement I wanted to use required a contextual rearticulation my test had not been able to generate.

Instead, I continued to question who the motion capture data was for without raising the question of how the data could be of use for me. I focused my attention on the technical methods for obtaining computational data which would automate a process I did not wish to complete manually.

The following analysis of using motion capture data aimed to answer whether tools used to create motion could be critiqued. Despite my technical limitations, I appraised the skills necessary to create alternative generated motion to animate my virtual figures. Without access to motion capture technology, the prospect of utilising computer code to obtain motion was significant as expanding the range of existing motion capture data would benefit my requirements. This prospect was motivated by establishing ways to intervene in the technologically automated production of digital motion.

Techno-social positions

Researcher Thomas Misa (2003) offers in his reflection on the societal shifts taking place from the outset of modernity a move towards a social theorisation of technology (Misa, 2003:2). These theories stemming from a range of disciplinary perspectives such as the fields of the humanities and sciences were paramount for debunking ideas of technological determinism (Misa, 2003). Although Misa believes a thorough examination of individual technologies is required into the related sociocultural processes affecting how technology shapes societies, he points to critical inquiries emerging from the late 20th century as beneficial to what was seen as an inevitable change at the behest of modernity (Misa, 2003).

For Misa, two opposing views are the main theoretical positions currently debated. These questions of whether technology influences society or if the notion of a "social construction of technology" is evident, requires further study (Misa, 2003:10). In Misa's view, there are variant motivational factors in which the development of technology and its sociopolitical stakes put forward a necessity for understanding the co-constructed development of technology. He states that, "[T]echnologies interact deeply with society and culture, but the interactions involve mutual influence, substantial uncertainty, and historical ambiguity, eliciting resistance, accommodation, acceptance and even enthusiasm" (Misa, 2003:3). Whilst Misa's concerns remain within a homogenised sociocultural identification of technological influences, an integral part of my use of technology is to create motion capture data that require a form of negotiation. This, I argue is an in(ter)vention reflective of a strategic decolonial method. My approach foregrounds an overlooked social configuration technologically shaping the creation of black animated figures.

Katherine McKittrick considers this form of negotiated movement as something that "ideally dwells on and thinks about the questioning and overturning of normative systems of knowledge…by situating the *process* of inquiry. (McKittrick, 2021b:44 [original italics]). This task of reformulating how diasporan in(ter)ventions operate to disrupt dominant systems point to the iterative announcement of black life. In this regard, an informed, alternative epistemology is indicative of the remaking or what McKittrick calls "the remix mash-up and the mash-up remix" understood in the (un)doing of "normative modes of belonging" (McKittrick, 2021b:170).

In what has been termed disruptive innovation, Clayton Christensen (1995) notes the importance of balancing new technologies with existing practices. For Christensen (1997), technological innovation should be integrated with traditional methods as a suitable business strategy. A focus on economic needs is relevant to advance my decolonial methods. On the one hand, it was the genre-specific, homo Oeconomicus model of Man2 (Wynter, 2003) prompting my critique and counter-narrative to colonial practices rather than effecting changes using technological apparatus for economic betterment. On the other hand, Christensen's (1997) argument that disruptive innovation unfolds over time rather than occurring suddenly implies a strategic disruption to enhance business practices rather than political motivations.

What is notable in furthering my use of decoloniality is Christensen's observations on the purpose of innovation for economic advantage versus McKittrick's advocation of decolonial onto-epistemologies. In this regard, I consider the tensions between strategically disrupting extractivist practices predicated on wealth accumulation and the purposely generative aims of diasporic self-making a fruitful prospect.

Principles of motion
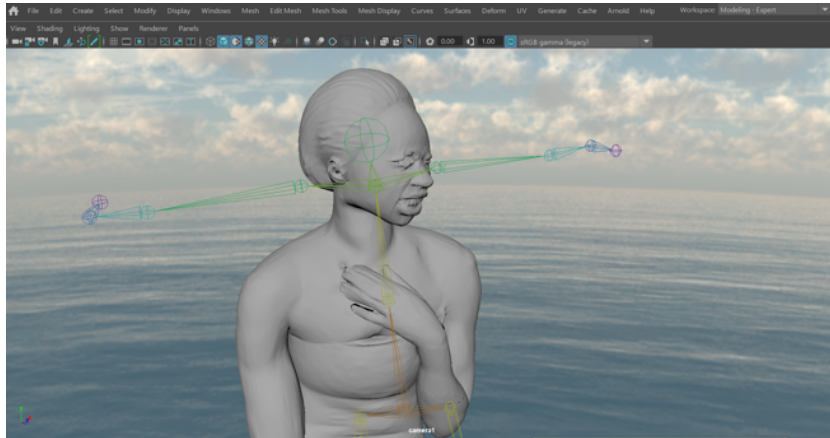
Figure 25. Pose Prior skeletal rig attached to a 3D model from Autodesk Maya's Content Browser. © Maybelle Peters.
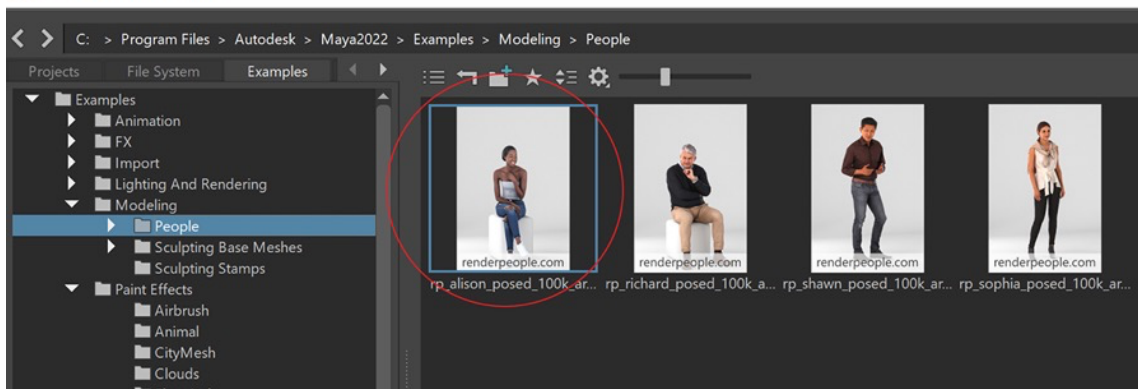
Figure 26. Renderpeople motion capture library content from Autodesk Maya's Content Browser.

The test I now present was developed in response to my question of who motion capture libraries were for. After I had used Pose Prior motion capture data as shown in Figure 21, I attached the skeletal rig to a 3D figure found in Autodesk Maya's library shown in Figure 33. Additional motion capture data was searched for online to animate the 3D figure. These searches are detailed in Appendix D: Data Collection.
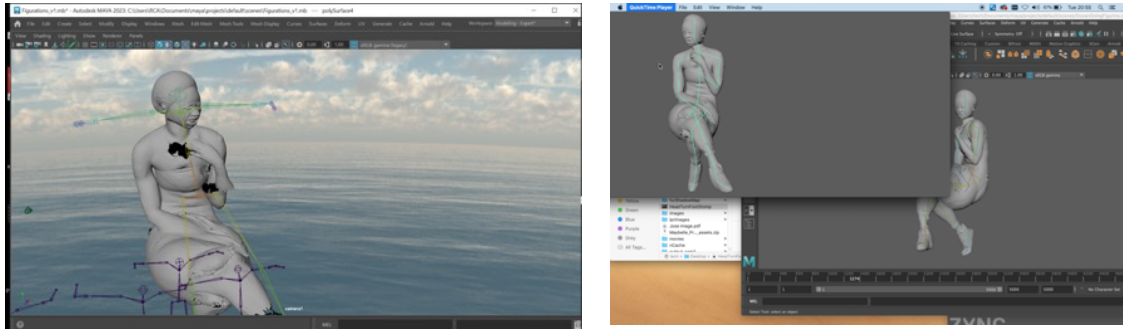
Figure 27. (left) Figure 28 (right). Attaching motion capture data to a 3D model found in Autodesk Maya's library.

I used skills I gained from software training to rig the 3D model. The techniques I acquired to carry out rigging were of industry standard as shown below.

Figure 29. Certification for technical skills acquired in Autodesk Maya (left) and Figure 30 Rigging (right). Certification for technical skills acquired in Autodesk Maya (left) and Rigging (right).

Motion capture data
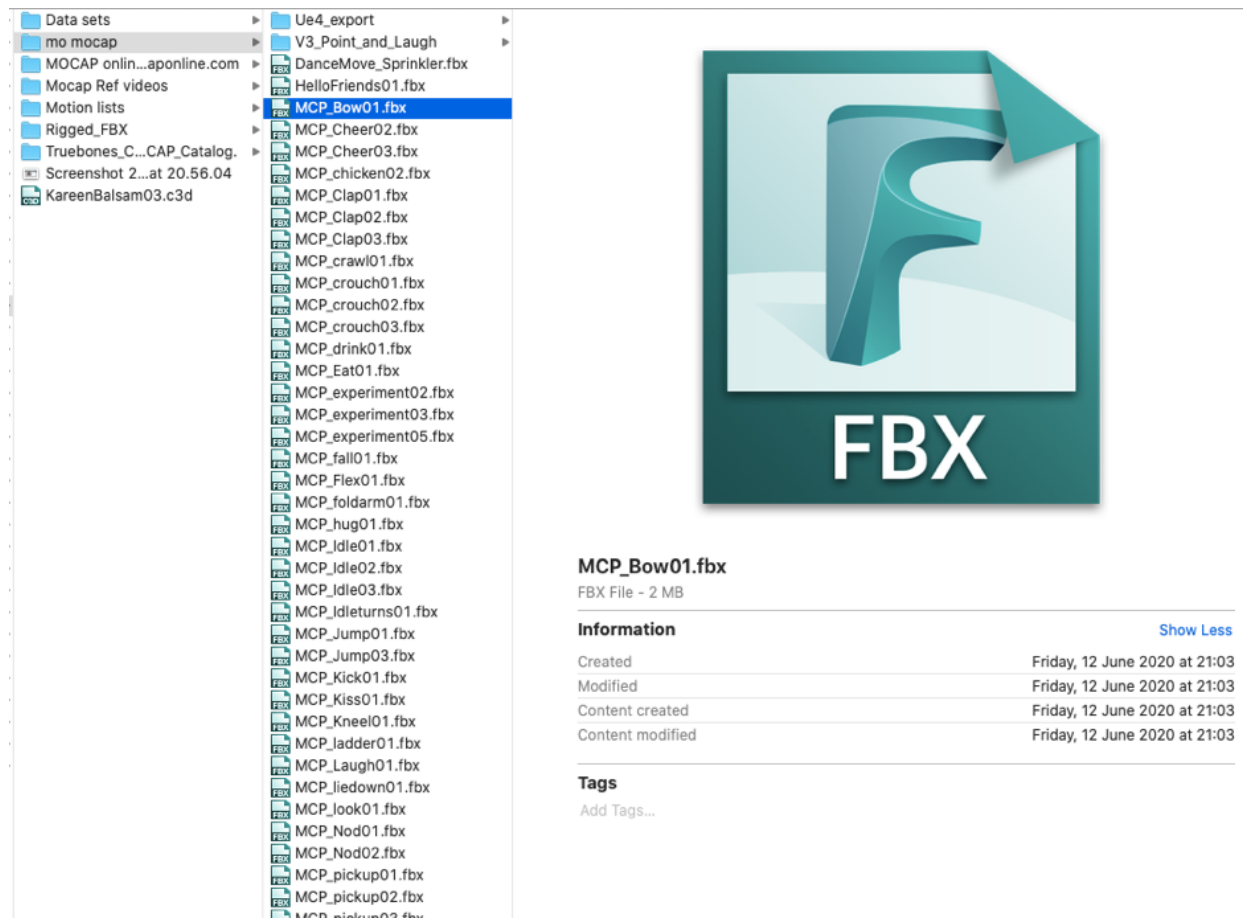
Figure 31. Free motion capture data files were found online and downloaded to my computer.

I selected a file titled *MCP_BOW01.fbx* from a descriptively categorised list of free motion capture data collected online (see Appendix D: Data Collection for listed websites). The following reflections document my test using the chosen motion capture data together with the 3D model (Figure 26).
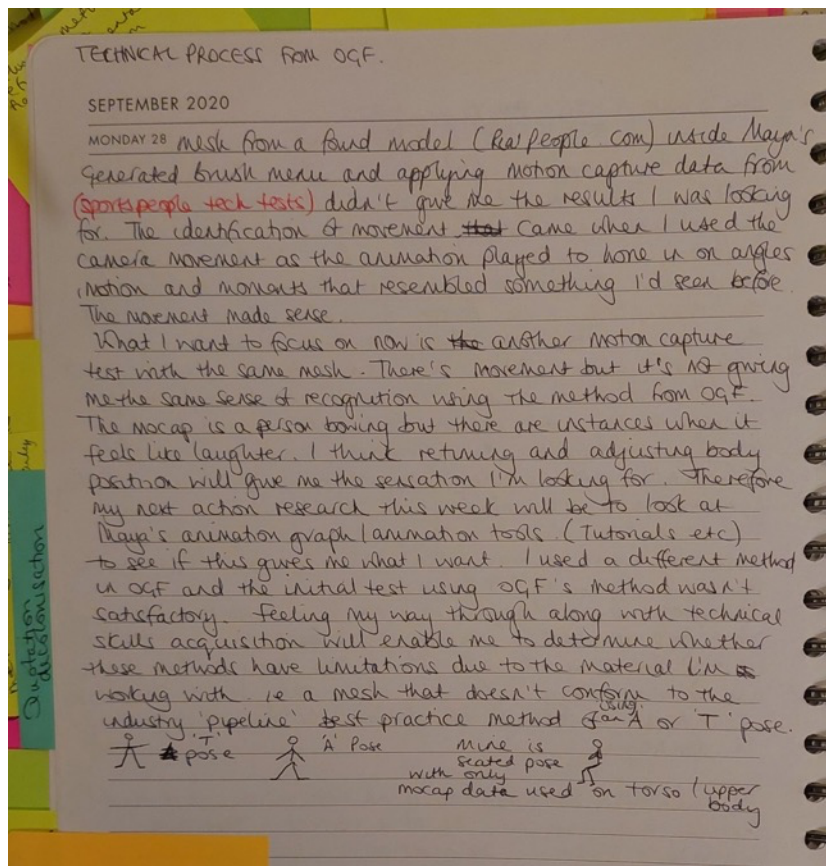
Figure 32. Notes on rigging a 3D model using motion capture data.

The following transcribed notes from my journal (Figure 39) document my strategy for critically responding to the standardised processes required to construct an animated virtual figure.

TECHNICAL PROCESS FROM OGF [Ocean *Going Figurine*]

SEPTEMBER 2020

MONDAY 28

Mesh from a found model (Real People. com) [Renderpeople .com] inside Maya's

Generated Brush menu and applying motion capture data from

(sportspeople tech tests) didn't give me the results I was looking

for. The identification of movement came when I used the

camera movement as the animation played to hone in on angles

, motion and moments that resembled something I'd seen before.

The movement made sense.

What I want to focus on now is another motion capture

test with the same mesh. There's movement but it's not giving

me the same sense of recognition using the method from OGF [Ocean Going Figurine].

The mocap is a person bowing but there are instances when it feels like laughter. I think retiming and adjusting body position will give me the sensation I'm looking for. Therefore my next action research this week will be to look at Maya's animation graph/animation tools. (Tutorials etc) to see if this gives me what I want. I used a different method in OGF and the initial test using OGF's method wasn't satisfactory. Feeling my way through along with technical skills acquisition will enable me to determine whether these methods have limitations due to the material I'm working with. Ie a mesh that doesn't conform to the industry 'pipeline' best practice method of using an 'A' or 'T' pose.

Figure 33. 'A' Pose, 'T' Pose and non-standard seated pose.
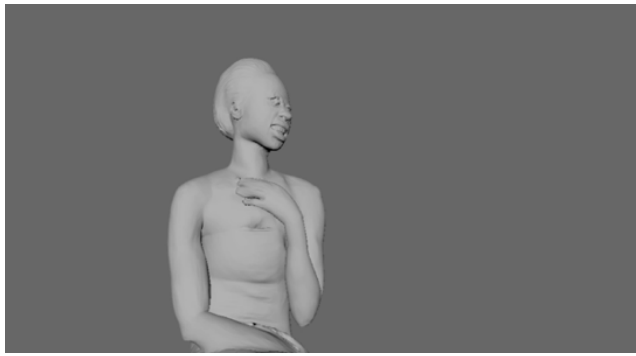
Figure 34. A 3D model shown from 3 angles in Autodesk Maya software is 'rigged' with motion capture data (shown in green) from Motus Digital.
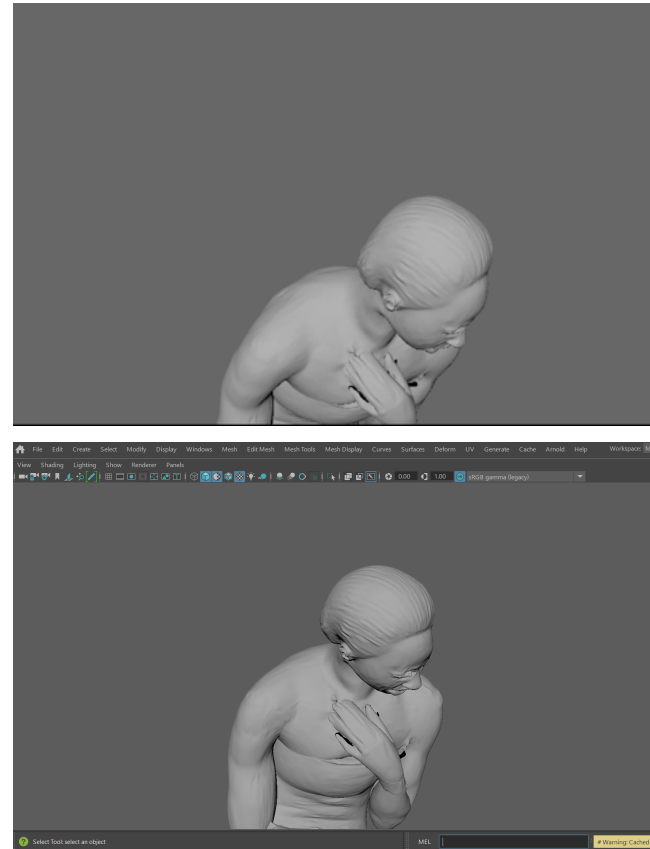
Unconfirmed

The seated woman was not meant to be rigged. Both 'A' and 'T' posed figures (Figure 31) reproduce normativity through a logic of standardisation. To use the seated Black woman would be what Stefano Harney and Fred Moten (2013) describe as refusal. According to them, social and cultural norms can be critiqued when acting against one's interests reveals the individualism upon which refusal is made (Harney & Moten, 2013:428). Moten's advocation of Blackness denounces the single, modern subject as a necessary intervention of disciplinary Black studies. In Moten's (2007) view, Black studies had been overwhelmingly situated within a paradigm of subjugated, precarious Black existence (Moten, 2007). Although he makes clear the reality of systemic violence perpetrated in antiblack racial domination, Moten has simultaneously foregrounded Blackness as a generative modality for understanding the defiance of modernity's liberal, political subject (Moten, 2007; 2018).

An (in)valid pose such as the seated B/black woman in Autodesk's library was the figure I selected to explore Blackness.
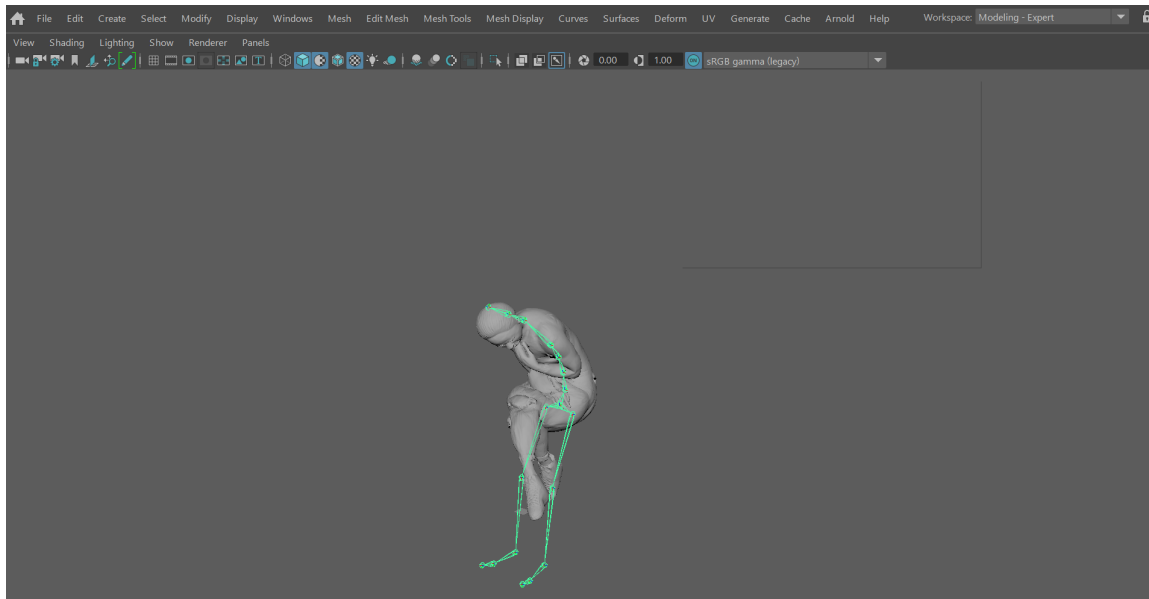
Figure 35. Attaching Motus Digital motion capture data to the 3D model of a Black seated woman.

As shown in Figure 35, both arm positions of the skeletal rig have been removed. I had conducted this amendment in anticipation of how the 3D model would predicatively be animated. The adaptation countered predetermined processes governing how the movement would be configured. In this way, protocols for constructing a B/black figure to animate were informed by overturning conventional approaches. This was not a solely oppositional stance steering my actions. I had adopted a reflexive engagement with constructing a figure from an alternative set of instructions. These directives were responses I had posed while conducting rudimentary processes for rigging a 3D model. The protocols for creating an animated digital human aligned with actions I had learned in a validated system of certification (see Figures 29 and 30). My in(ter)vention was prompted by developing contingent procedures for using technology documenting how and where changes were employed.

Affordances, contingencies, in(ter)vention

Although using technology can be seen as embodying specific forms of power and authority thus shaping how humans engender a sense of being (Heidegger, 1977), decision-making processes can be used to effect challenges to technological autonomy (Feenberg, 2002; Winner, 1986). These offer hybrid approaches such as integrating autonomous and manual skills (Feenberg, 2002). Whilst this response retains two (albeit adaptable)

different responses, an alternative tailored adjustment based on available resources, skills and contexts is considered more flexible.

In this sense, the technological apparatus used to abstract motion from human movement does not encourage such hybridity. As there is no scope to intervene at the point of capture, I employed a series of tests that were not solely reliant on the results from motion capture technology. As previously discussed, my manual adaptations to existing motion capture data alongside non-compliant 3D models, rejected what philosopher Andrew Feenberg sees as a socially enforced use of technology in specific ways (Feenberg, 1986).

I continued to use screen recording as a method to document how I rigged the 3D model describing the process of screen capture as a witness, stating that it was providing empirical data. This observation was not a reflection of my responses to attaching the motion capture data from Pose Prior and captured motion from Motus Digital. The screen capture software could only record actions such as the mouse cursor position, or the result of a mouse button pressed to access a menu. It could not document my decision-making process. I considered how my processes for creating an animated figure using motion capture data could be documented when empirical evidence such as video recordings was limited. The diagrams listed in Appendix D: Data Collection are reflections on how I had conceptualised my use of motion capture data.

As a major proponent of emphasising how social forces shape technology and how technology, in turn, influences human practices and social structures, Andrew Feenberg (1999; 2012) stages critical theory as necessary for revealing technology as not a neutral tool (Feenberg, 2012; 1999). Feenberg challenges the idea of technological determinism, which posits technological changes according to its own logic thus unilaterally shaping society. He argues that this view neglects the sociocultural and sociopolitical factors influencing technological development. Instead, he advocates for a more nuanced understanding that recognises the interplay between technology and societal values (Feenberg, 2012). In my questioning of where the B/black body is and what it is doing, I critically analysed the location of black subjectivity as a sociocultural and political reframing of modern technology.

In recent years, there has been criticism of Feenberg's failure to account for technological societal changes adversely affecting women and B/black and brown people (Puwar, 2004; Vaidhyanathan, 2011). While I concur that a lack of attention on demographically

decentred perspectives requires more focus, this does nothing to address the ontological void where Blackness is positioned through its constitution by Enlightenment thought (Hartman and Wilderson, 2003). As Wynter has made clear, the human as a category is a result of its genre-specific attachment to a Judeo-Christian Western European man (Wynter, 2006). In proposing ways to rethink the ordered logic underpinning the maintenance of a classificatory system imbricating technology, I conducted a phase of reflective tests. These were explorations of social, political and cultural systems of verification. They are presented as documented diagrams and notes in Appendix D: Data Collection.

Taking the dominant form of the human as Man as a point of origin, I assembled descriptive word associations into a linguistic chart related to the human figure. This reflective mapping supported my examination of what constituted a naturalised state. Each word conveyed an initial referent marker representing an origination. In determining where the Black body was located, my enunciation of where Blackness was situated derived from my experience of its (dis)locating effect. As scholar Nirmal Puwar emphasises, the relationship between a neutral state and its antonymic other affects how black bodies simultaneously (dis)locate and engender (dis)location (Puwar, 2004:42). Her explanation of the effectual 'somatic norm' demonstrates that the body out of place reflects the imposition displacement gives rise to in undoing the construction of normativity.

In the following set of tests, I further examined lexical terms using extraction as a method for generating motion. This served to inform my use of technological apparatus was fundamental to how I would construct my configuration of B/black animated figures.

Extraction
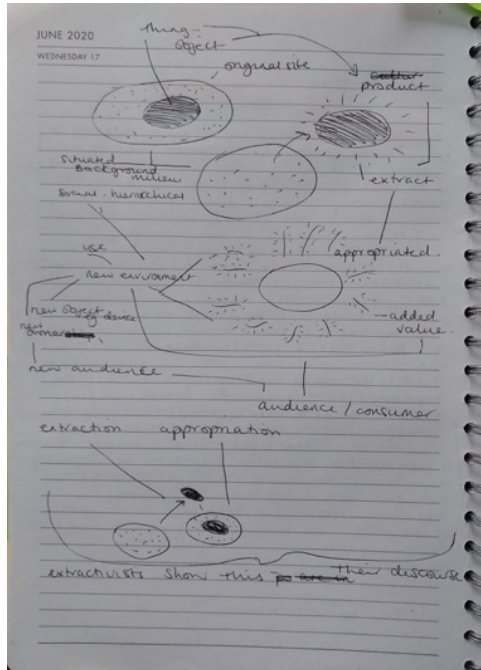
Figure 36. Extraction Note A.
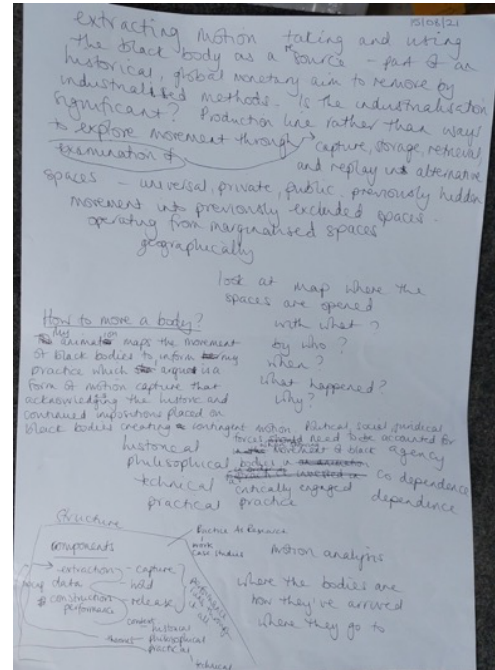
Figure 37. Extraction Note B.

Notes on examining extraction to develop a decolonial conceptual framework. Evaluating forms of coloniality across geopolitical and sociocultural practices informed how I would establish my selection criteria.

In my attempts to locate a communicable blackness, I determined that a single understanding was constricted by words rather than sounds. Finding 'Black' and 'black' had an aural uncertainty, I aimed to posit how the production and construction of blackness as (un)intelligible could be configured.

How to pronounce black? How to pronounce Black?

OGANT (2020)

Before my focus on contemporary arts practitioners, my research centred on questioning the idea of a 'performance of race' in animation. I used a film titled *Tango* (1981), which I remembered because of the use of bodies as material. The film uses the movement of people, animals and objects placing them into a space where their paths have been calculated so as not to collide with each other. Each object had been extracted from its

original background using film processing techniques. These discrete figures were placed into a new environment as shown in Figure 38.

Figure 38. Tango 1981 (dir. Z. Rybczyński) © Zbigniew Rybczyński.

As previously stated, this initial iterative test aimed to represent myself and members of my family by replacing the bodies in the video with Black bodies. I intended to observe if any contextual shifts, took place. However, a misunderstanding of how I wanted to replace the actors with black bodies was interpreted differently by director Zbigniew Rybczyński's manager who thought that my intention was to replace the bodies with the colour black representing silhouetted figures. The ensuing exchange became a catalyst for further exploratory tests was framed by blackness.

At the time of conducting the test, I had meant to express my interest replacing the animated figures with black bodies to see if their performances became Black. After seeking and gaining permission to conduct my test courtesy of Rybczyński's manager, they voiced concerns questioning my ethical responsibility. Whereas my privileged position in accessing and using another artist's work had been challenged, my decision to continue the test was due to being granted a reticent permittance for non-commercial research purposes only. This experience further raised questions on my role in reproducing a logic of extractivist practices.

OGANT (an anagram of Tango) became a research output that used OpenPose software. Each frame of the animation tracked and extracted motion of each figure appearing in the work. Using documentation from OpenPose's open source website produced insights into the computational work required to make motion extraction viable. The extraction process

was a method I wanted to use because it offered a reflexive way of thinking about and testing what was initially my hypothesis of race as performance. Having been shown methods to extract movement from existing video footage using code, I had documented this process which was not planned. It was an extensive and time-consuming procedure.

Figure 39. On the right is iterative test, OGANT using extracted motion from the animated film Tango (dir Z. Rybczyński, 1981) using OpenPose, a free-to-use 'open source' software program for generating motion from video.

From my Practice-as-research Iterative tests, I deduced that abstracting motion from human movement was an extractive process. I then proceeded to consider contexts in which motion capture data and animating Black figures could be used to arrive at new meanings. To rethink blackness as neither determinable nor prescribed, I conducted a phase of interconnected processes. These were aimed at providing a wider reference to B/black existence. The following examples are presented linearly despite my direction taking a multivariant trajectory. They comprised diary entries of which a sample is presented as part of my analytical method in Chapter 5 – How to move a B/black body and Appendix E: Documentation of Practice. They recount my discursive analysis of human movement.

Practice as Research – Iterative tests

As discussed in Chapter 3 – A B/black Sense of Place, I have adopted methods for attending to notions of (dis)placement when using motion capture data to animate virtual Black figures. I have used methods that automate the process of obtaining motion from human movement. They have informed my examination of motion capture technologies where practices facilitate the accrual of computational data. The tests took place in my home which functioned as a laboratory and studio. I have made no distinction between modes of study underpinning my research inquiry as they inform how I have adopted technology to construct my digital animated figures.

As previously discussed, the notion of technologically working with a neutral tool has been refuted (Heidegger, 1977; Feenberg, 1999). Whilst the notion that technology operates as a tool to configure our comprehension of the world through social relations, additional perspectives warrant further examination to create an understanding of the specific contexts involved in the relationship between technology and its underlying sociocultural and sociopolitical role in society. I have argued that Blackness remains (un)accounted thus requires an expansive interdisciplinary mode of study. This proposition is addressed in the following tests. These were conducted as part of my inquiry into locating the Black body.

The following Practice as research iterative tests were used to conceptualise extractivist practices whereby data acquisition from automated processes was documented. Each phase of conducting my tests was evidenced using screen recording software, screenshots, handwritten and typed notes. These methods are further elaboration is stated in Appendix E: Documentation of Practice.

Enlivening. Algorithmic augmentation.

The following tests were conducted using online software. RADiCAL, MoveAI and DeepMotion (detailed in Appendix E: Documentation of Practice) were employed as alternative processes for creating motion capture data. The tests I conducted aimed to determine if motion capture processes could be considered motion extraction. This contextual framing aimed to put forward an arts practice centred around decoloniality. Browser-based programs were used for my Practice as research iterative tests and moving image research outputs to examine extraction, resources and their connection to Blackness. In these accounts, technical processes were an interrogation of a discourse on Black corporeality enacted by acquiring digital motion.

In scholar Ramon Amaro's research practice, he traces the algorithmic incorporation of Blackness as a presence which requires its absence (Amaro, 2019a). The inability to capture Blackness through the regime of computational binaries is, he argues foundational to machine learning (2019a). As algorithms are predicated by a true/false dichotomy, this conditional statement underpins what he calls the "enumerative logics of racial calculation" (Amaro, 2021: para.30). For him, a prefiguring model exists within the relational tethering of life and death (Amaro, 2019b:74). As a result, the foundations upon which Large Language Models (LLMs) are trained require computational 'thinking' of

either 'yes' or 'no' certainty to create a human and its other. This understanding of artificial intelligence, Amaro notes makes the human as Man in the machine invisible.

My attention to the generative possibilities of remaining incorporated *and* outside the metrics of classification echoes that of Amaro. He cites the notion of fugitivity as posited by Stefano Harney and Fred Moten (2013) to offer the possibility of escape via the algorithmic incalculability of Blackness (Amaro, 2019a).
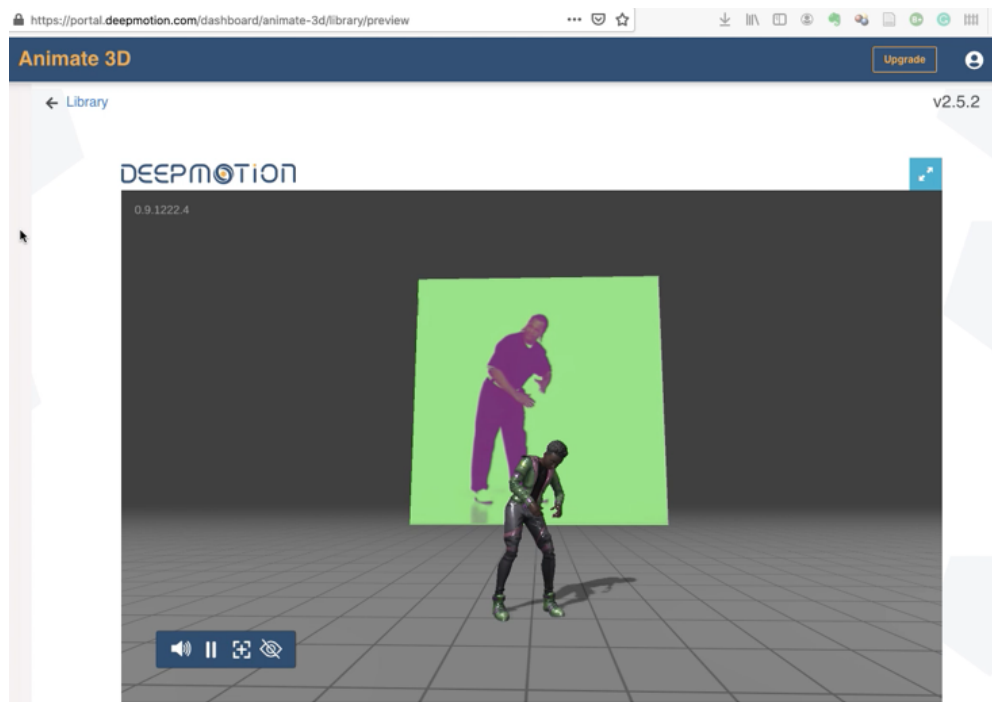
Figure 40. Iterative test. Boppin' Andre video used to generate a black 3D virtual animated figure.

I aimed to devise a method to understand how motion capture technology can be used to extract data. Using existing footage of Boppin' André, (detailed in Appendix D: Documentation of Practice) a performer who restricts his movements to mimic a robot aimed to elicit knowledge during the process of learning the software and observing the results. By analysing the restricted movement of The Robot Dance through visually comparing the differences, I aimed to evaluate how machine learning interpreted human movement. In attempting to extract the motion from the video footage the artificial software appeared to have added motion creating an enhanced animated liveliness. This additional movement produced through algorithmic programming was notable in what Moten would identify as being "invoked in the name of a certain (fetishization of) vitality" (Moten, 2008:177) (parentheses in original). Here, Moten points to the sonic and visual abstraction of blackness made available for both subtractive and additive means. As an

algorithmically valuable material, this also speaks to the commodified datafication of the captured black body (Hartman, 1997:52; Spillers, 1987:68; Wynter, 1992:63).

In his discussion on the embedded systems of machine learning, Ramon Amaro follows Sylvia Wynter and Frantz Fanon in their pursuit of overturning the colonial logic of the human as Man by seeking the human in the machine. His aim of attaining what he calls 'kinetic dissonance' interrupts the assumptive logic of certainty implicated in machine learning. He goes on to state how his term 'black technical object' is a tool for unmasking. Borrowing Gilbert Simondon's (1992) term 'technical object' whereby a specific mode of existence foments the relational interconnectedness between the object, its environment and other technical objects, Amaro posits the perspectival openings blackness can provoke to trouble the ordered system underpinning the use of algorithms in computing (Simondon 1992, cited in Amaro, 2019a).

Amaro's advocation for critically examining algorithms asserts that a constructed understanding of how binary frameworks reinforces racial hierarchies by an underlying knowledge system based on differentiating a self and its Other. This staging of racialised differences is a foundational logic for computation (Amaro, 2022). The black technical object reveals significant insights regarding how the distorted perception of blackness can illuminate certain realities. Thus, to make sense of arbitrary connections between mathematical formulae and the creation of procedural computation, Amaro notes how dialectical relationships are both tethered together and made separate.

Having perceive a noticeable adjustment (as shown in the bended knee positions) between Boppin Andre's original movement and the extracted data used to animate the virtual figure as indicated in Figure 40, DeepMotion's results suggested an algorithmic augmentation akin to Amaro's notion of 'kinetic dissonance' (Amaro, 2019a:84). These visual interferences Amaro registers as a computational coded difference are, I contend the augmented blackness Moten connects as both extractive and generative. Amaro points out how the disconnect between 'self-perception and any externally constructed view of Black life' (Amaro, 2022:61) can be utilised to articulate an ontological disruption to valorised systems of order and regulation. Computational movement as atonality is, as Moten (2019b: 128) clarifies, the distinguishing mark signalling undisciplined action. Coded within the algorithmic computation of calibration lies the parameters structuring Blackness as naturally erroneous. A kinetic dissonance, therefore, would invite the prospect of

presenting a reality of relations not obscured by the human as Man's configuration inaugurated in the 19th Century. As indicated in my use of archival images (Figures 3 and 4), I had not sufficiently addressed how applying motion capture from libraries invited a lack of critical engagement. Additionally, the means to animate characters sourced from my archival images required a wider frame of reference which could depart from a bias towards visual representation.

Unlike Amaro's black technical object that seeks to operate as a critical lens to excavate coloniality in machine learning and artificial intelligence, I have sought to use my practice to enact a decolonial method. In so doing, tests conducted as part of my research provide creative contexts capable of critiquing, intercepting *and* utilising the absent presence of computational blackness.

Reflection in the black mirror

Using the search term 'robot', I had yielded two motion capture data files registering the presence and absence of Black vernacular movement. This transposition of presence in the motion capture library unveils blackness's (in)visibility by replacing the visual identity of the person producing motion with a naming convention. Amaro (2019b) speaks to this computational veiling in his account of researcher Joy Buolamwini's 2016 project *Aspire Mirror*. He notes Buolamwini's inspiration behind her interactive work drew on references to humanism and futurity (Amaro, 2019b). The project's aims sought to encompass ideals supporting universal experiences of being human and foster productive encounters of human-to-computer interaction. Instead, the inability of Buolamwini's face to be 'recognised' by the facial detection software, disqualifies her from the logic of calculable human characteristics inscribed in a discriminatory dataset.

Buolamwini's (2017) subsequent research focused on redressing the exclusionary measures implicated in computational vision. Her focus gestured towards making algorithmic adjustments to an existing classificatory system to include a wider inclusive approach rather than dismantling the protocols used for dataset training and applying benchmarks. In contrast to a practice which strives to conform to societal norms, Amaro's pursuit of alternative paths is motivated by unveiling current limitations inherent in computational analyses in such a way that undetermined innovations can be fabricated (Amaro, 2019b).

Scholar Katherine McKittrick demonstrates how algorithms predict the certainty of Black lives' natural precarity by delineating human and non-human distinction borne by chattel slavery (McKittrick, 2014:17). She argues that the normalisation of black premature death necessitates the implementation of calculating 'black livingness' as inexorable (McKittrick, 2021b:104). Her interest in the use of mathematics to mediate the socially scientific lives of black people draws attention to a systemic quantifiable interpretation of being human. Whereas McKittrick underlines where "historic blackness comes from: the list, the breathless numbers, the absolutely economic, the mathematics of the unliving" (McKittrick, 2014:17), Ramon Amaro's work unveils a psycho-affective registration of blackness to address the algorithmic encoding of the human as Man in machine learning datasets (Amaro, 2019a).

The following iterative test extends my examination of sociocultural and political contexts for the use of extraction as a form of coloniality, with reflections on generating motion capture data as a computational resource.
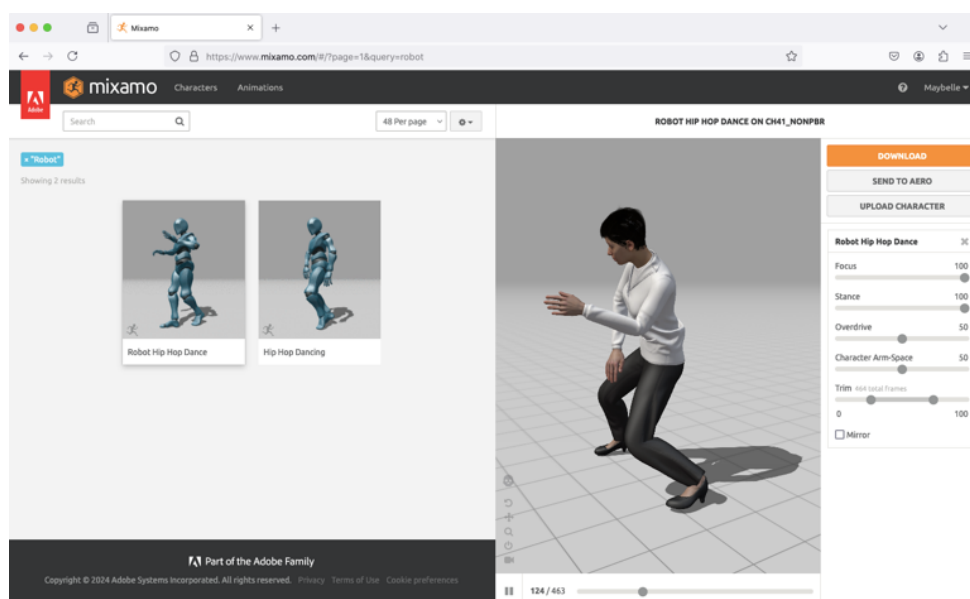
Figure 41. Robot Hip Hop Dance in Mixamo – a motion capture library.

Whereas classification permits the commodification of motion based on efficacy search and retrieval information systems (Barbic et. al, 2004; Demuth, 2006), the role of creative capital as another mode of augmented motion is considered in my following analysis. This test aimed to draw further reflections on my ability to use technology to co-opt blackness. As I stated earlier, my analysis of extractivist practices is posited as pervasive accumulative processes facilitating (dis)possession and enacting the normalisation of colonial practices of

accrual and commodification. Addressing political scientist Thea Riofrancos's (2020) uncertainty of effective criticism of capitalist modes of acquisition, I examined how expropriation could be critically appraised rather than reproduced. Riofranco's main concerns rest on whether the ability to enact interventions in extractive processes can address global capitalist expropriative modes of (dis)possession. Her attention to the need for systemic change rather than merely reforming existing structures is not solely an environmental concern. As she makes clear, extractivism "travels across spheres of capitalist life" (Riofrancos, 2020: para.2). Resistance is paramount for Riofrancos who identifies the increasingly diverse formations extractivist practices engender (Riofrancos, 2020).

Extracting Blackness

In motion capture libraries such as Mixamo (Figure 41), abstracted movement is available as a material form whereby its conversion from human motion to computational information is encoded as a recognisable marker of black cultural expression. As seen in this example, the music genre hip hop has been incorporated into a classificatory system indicating what was originally a decentred dance form enfolded into popular culture.

As scholar Thomas DeFrantz observes,

"[C]ontemporary neoliberal currents of exchange push African American social dance forms to global audiences with a forcefulness that evacuates their aesthetic imperatives of regularised, community-based physical expression, toward terms of engagement that allow it to absorb participants who have no sustained contact with the corporeal fact of black people in the world." (DeFrantz, 2014)

DeFrantz's concerns are twofold. First, disassociating black cultural production from its embedded practices of black sociality is extractivist. Second, as I discussed in Chapter 2, being incorporated into a system of creative and financial capital is integral to neoliberalism's separation of difference for wealth accumulation.

Black sociality's outside groundedness

Laura Harris's formulation of blackness as "this aesthetic sociality, of the radical nature of its forms and formation" (Harris, 2018), points to a fortified repudiation of expropriative demands by an enfranchised commonality. In Harris's work, she makes a notable bridging point when reading Helio Oiticica's and C.L.R James's texts by revealing a connected African diasporic practice of communality. She reveals how both authors counter a

hierarchal system rooted in sovereignty and configured by striated raced, gendered, classed and sexed identities thus overturning in their written accounts the valorisation of separated differences into privileged /disadvantaged narratives (Harris, 2018). In staging these texts as forms of black sociality, Harris relates a pattern which demonstrates how geographical locations hold unindexed references to blackness (Harris, 2018). Blackness, she argues, is not grounded in, for example, an African American identity as DeFrantz asserts but in an insurgent field of defiant unmaking further stating that, "the aesthetic sociality of blackness resists any easy appropriation." (Harris, 2018:5). Here, the concerns DeFrantz identifies of commodification and proprietorship are unobtainable due to their resistant forms counter Extractivism.

Blackness's (dis)locatedness has been a formative occupation of scholarship and study reflecting the rejection of disciplinary thought. Although the act of locating can be seen as advocating a logic of spatial and temporal delineation, the process of identifying can also be viewed as a way to arrive at a counter position. Hortense Spillers has sought to posit a fracturing of all connections to time, space and knowledge systems which she identifies as a suspension in the "oceanic" (Spillers, 1987:72).

This conditional state is neither unlocatable nor intangible. Using oceanic (dis)locatedness for conceptualising Blackness, I consider how the need for escape from a replicated system of imposition holds a markedly proximal status to enslavement and colonial histories of possession. An ongoing concern with ameliorating the effects of the imposition of blackness is sought in the catharsis of water. As Tiffany Lethabo King (2019) observes, the use of water defines the synonymous historical, psychical and physical space for blackness (Lethabo King, 2019). Although a comprehensive analysis of an articulation of Blackness's connection to the wate is beyond the scope of my study, in the following exposition, I demonstrate how my use of B/black corporeality configures a 3D model as a form of B/blackness.

Figurations

Figurations comprised of a series of tests applying different motion capture data to a 3D model found in Autodesk Maya's content browser. These tests were analysed using screen recording software shown as screenshots in Figure 42.
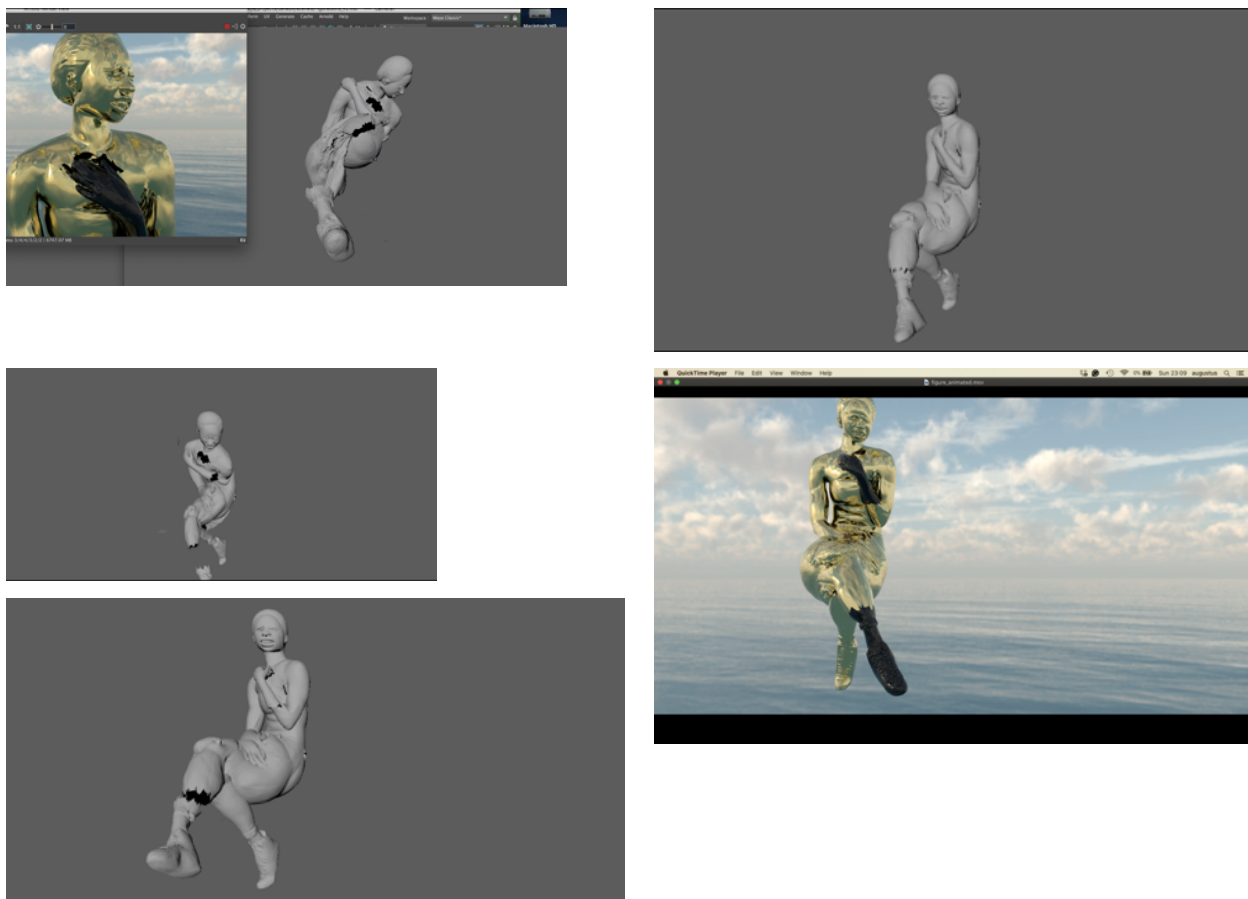
Figure 42. A compilation of iterative tests animated using Pose Prior motion capture data and recorded using screen recording software.

These tests were used to create a screen recording primarily for analysis. However, an edited excerpt of this process of was used for reflection. This recording was used as my moving image output titled *Ocean Going Figurine* (2020). In the following Chapter I have elaborated on how this research output was constructed.

As I have previously stated, an oceanic telepresence activates Black studies. Most notably in the field of Afro-Pessimism (see keywords: Black studies). In more recent discourses on blackness, contemporary art practice has been used as theoretical exemplars. Although there is a visual articulation to represent blackness as a conditional state, I argue that a predominance of painted and photographic imagery cannot attend to the necessary condition of Blackness *as* movement. Therefore, my use of animation presented via the hyperlinks in Appendix A: Moving Image Outputs contributes to a theorisation Blackness using a moving image art practice.

In the following iterative test, I reflect on how adopting an unreproducible method for rigging motion capture data to a 3D model is informed by blackness. Here, a navigational strategy is emphasised as a negotiation of space recalling what Katherine McKittrick has

described as "a black sense of place…a location of difficult encounter and relationality" (McKittrick, 2021:106). My use of McKittrick's attention to movement foregrounds manoeuvrability which, in turn, indicates the communal study negotiated in advance of blackness.

blackness

As I position some of the mesh/models into the 3D space I hear some of the words I use during the decision making process. That's wrong. That won't fit.

I am choosing which part of the skeleton rig should determine the fit. For example, the hips, thighs, knees and ankle joints do not align with the mesh/model's. There are guidelines addressing the course of action to place the rig at the points where the mesh will deform and produce an aesthetic drawn from photography, film, video production seen in dominant + popular culture. Although there is a wide scope of visual aesthetics to draw on, the reproduction of familiar and Western visual imagery such as documentary, film, US Cartoons may influence the dominant forms of creating human motion. The idea of pursuing neither a standard that conforms to industry-led practices nor aligns to experimental rejections of normative, photo-realistic worldmaking causes the main hesitancy when connecting the mesh to the rig. What formula to align to? Reject the formula that continues to inform the procedures and decision-making? Where in the process does intervention diverge and where does it align? Hearing myself use the words fit and wrong suggests that I reproduce ideas of visual conformity and try to correct eg move the camera or mesh to fix the mesh. Is that because the mesh is static? What happens when the mesh/model moves and the rig is static? Is there a hierarchy? Static responds (adheres) to movement. Is movement a dominant force? Can I interrupt that configuration?

If so, how? What steps are required?

What is the result?

I will continue to align or not align the mesh…to the skeletal rig, paying attention to the words I use and when.

In my navigational strategies shown in Figure 43 and Figure 44, my documented 'instructions' provide further details on how I have negotiated my construction of a rigging process using a dialogue of fragmentary commentary on manoeuvring.
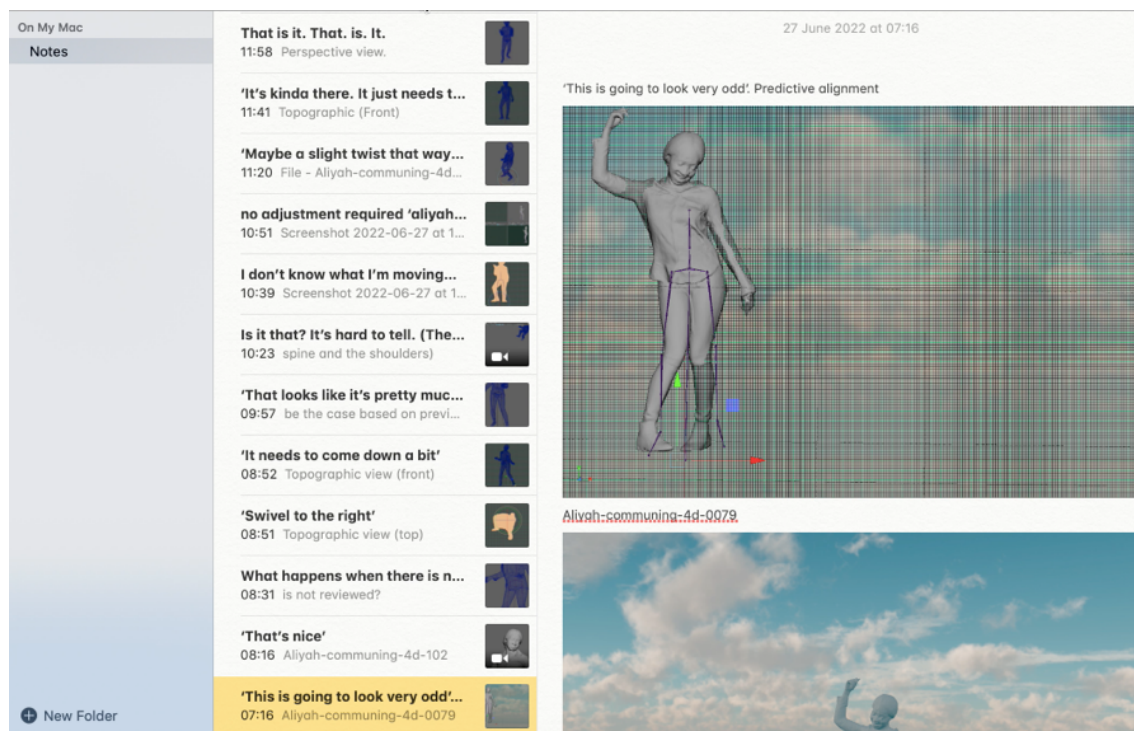
Figure 43. The documentation of my rigging process.
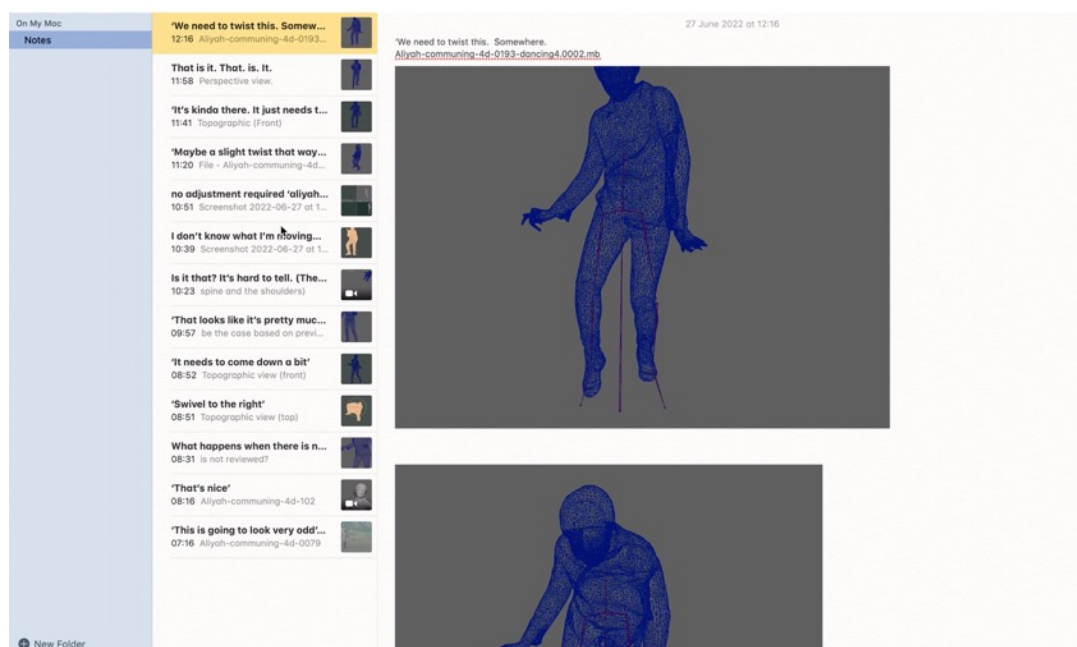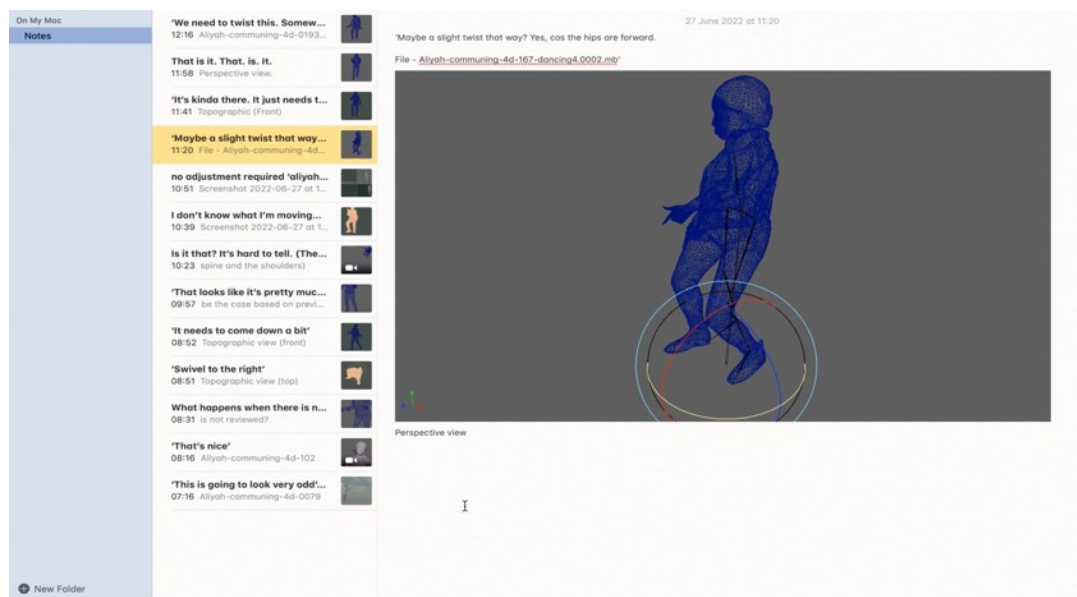
Figure 44. Decision-making 'instructions' for rigging a 3D model.

Practice as Research Iterative Test Findings

My staged disruptions have been directed towards overturning the effects of coloniality which, I have argued provide the means to produce homogenised bodies based on white, male normativity. Creating black animated bodies required a series of tests to ascertain how I could establish decolonial methods. These were posited as in(ter)ventions that fostered reflective and reflexive analysis.

The technological apparatus is not intervened at the point of capture. Rather, the generated motion capture data is where my application of decolonial methods is deployed.

In this chapter I have elaborated on how iterative tests informed my conceptual framework. The chronological phases served to account for my use of technological apparatus to produce motion capture data and create B/black animated virtual figures. In my descriptions of the reflexive methods I used to answer my research questions, I have presented a sample of documented stages that facilitated recontextualised uses of motion capture technology as an anti-extractive practice. This repositioning proceeded to advance a generative form of abstracted motion capture data that reflected the conditions of its making and subsequent use in animating a black body.

The moving image research outputs I have created using my iterative tests are presented in the following discussion of my moving image research outputs.

Moving a black body

In this final elaboration of my Practice as research, my moving image works are discussed chronologically. They are underpinned by my conceptual framework. First is *Walking on Water and Other Animated Acts Part 1*(2020).

As outlined in Chapter 2 – The Master's Tools, I have developed an interpretive lens that draws on black feminist theories of the human. These texts articulate my analysis and subsequent productions of digital animated figures. They are works that have been staged as in(ter)ventions to contest notions of universalism as white normativity. In Appendix E: Documentation of Practice, I have included transcripts from my diary entries and Practice as research journal. They are indicative reflections on conducting tests during the development of my framework and subsequent implementation of contesting extractivist practices.

Following this introductory discussion, I present an evaluation of motion capture technology. I elaborate on my use of technical apparatus for obtaining motion from a moving figure to clarify the premise that a process inherently extractive necessitates a counter position. I determine if, and how the staging of visual representation as a culturally dominant use of motion capture technology reproduces racial hierarchies and classificatory systems. Furthermore, the possibility of intercepting would be documented for subsequent

reflection. Using my moving image works *Walking on Water and Other Animated Acts Part 1* (2020), I interrogate historical formations of Black corporeality. I then proceed with analysis of *Ocean Going Figurine* (2020). There, I attend to the notion of extractivism as a form of (dis)possession to examine notions of capture enacted using technical apparatus. The capacity for acquisition and commodification using motion capture data is explored further with the concluding moving image works, *Walking on Water and Other Animated Acts Part* 2 (2022) and *Communing with Aaliyah* (2023).

Chapter 5: How to Move a B/black body
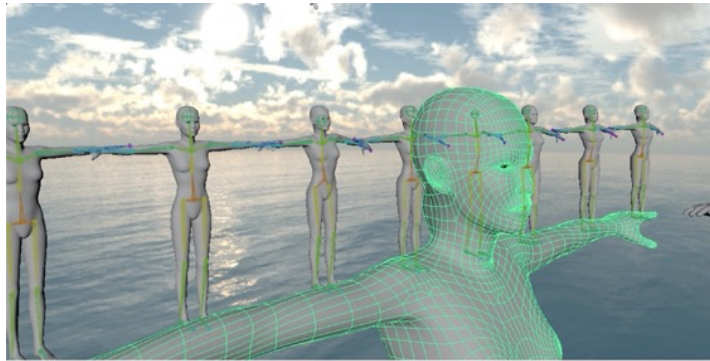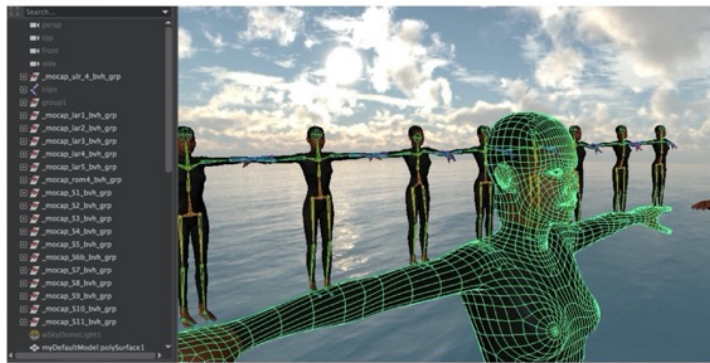
Figure 45. Stages for creating Walking on Water and Other Animated Acts Part 1 (dir. M. Peters) 2020. © Maybelle Peters.

This question of representation

The motion I used was not attributed to a person I could identify as either black or white. My decision to use an anonymous person's movement to animate a black body resulted in relying upon visual representation to substantiate the figure's black identity. By depending on visual representation as a validation of a person's identity, I had not addressed my assertion that motion obtained from white bodies was an unacknowledged form of universalism.

Although limited, recent research indicates that white male normative bodies are the basis for calibrating motion capture technology (Harvey et al, 2024). This finding is supported by a study of technological apparatus highlighting an assertion of white males as representative of the human race (Reed, 2013). Additionally, my recent work (Peters, 2024) has aimed to provide evidence that motion capture technology has used the form of a single, white male to create a universal standard. As outlined in Chapter 2 my questions of whether an ideological structure of racial hierarchy aligning white, normative bodies with universalism could move beyond representation was informed by an interrogation of movement. My study sought to question whether a black body could *only* be seen as black in a motion capture library if universalism was foreclosed.

I posited this question of representation by searching motion capture libraries' use of classification. As a reinscribed logic, factors such as race as biologically instituted and naturally fixed were no longer a stable category I could use when selecting motion capture from unidentified sources. However, the library's dependence on using search and retrieval systems to identify and match categories was a prominent feature. This was a factor addressed by examining the mechanism for establishing and maintaining reified enclosures. In what has been termed the descriptive statement, Wynter (2003) has shown how a self-selecting construction of the white male as 'Man' has been configured through a Eurocentric incorporation of the world. The cartographic, classificatory system defined using boundaries is where I now turn my analysis.

Topographical alignment

The 1492 colonial encounter Wynter describes as 'Janus-faced' relates to the shift from a unidimensional experience altering both the world of those in the Americas and Europe, to simultaneously activating a cognitive reordering of perspectives (Wynter, 2015:192). Christopher Columbus's prefiguring of the world as connected to self, and Other is produced by centring Europe as his epistemological point of origin (Wynter, 2003:296). As Wynter points out, the coloniser's demonstrative act of separation is "a refusal to accept the homogeneity of humankind" (1995:34) thus creating a detachment comparable to the disconnected sovereignty of God, or 'degodding' as Wynter puts it, from man (Wynter, 2015). Consequently, (dis)possession is inscribed in acts of global positioning wherein partitions reinforce the rupture of human relations into the European self and its Others. A mapped, cartographic delineation as shown Figure 44, demonstrates how the 17ᵗʰ Century Jansson map of the world titled 'New Geographical and hydrographic map of the entire world' projects an ordered realm of the universe separating the celestial heavens, land, water and categories of humans.

Figure 46. Noua totius terrarum orbis geographica ac hydrographica tabula or - Norman B. Leventhal Map Center at the BPL by http://maps.bpl.org is licensed under CC BY 2.0.

The historical formation of European coloniality from the 15ᵗʰ Century continues to influence contemporary structural social hierarchies and injustices in what Anibal Quijano terms 'the colonial matrix of power' (Quijano, 2007). I have discussed my proposition of intercepting reified practices attuned to the colonial project of a genre-specific category of human. I briefly turn to the role of religion as a worlding practice. This overview centres on enactments of religious suppression connected to racial domination. I then proceed to spatial-temporal alternatives of (un)mapping advanced in my moving image outputs.

In scholar Justine Bakker's (2020) proposition, she makes a case for 'parareligion' connecting what has been termed the blue humanities to her focus on the psychical location in African diasporan (im)materiality. This, she states, is a domain where "…the ocean as locale for imagining new ways of being…traces the deep blue as a material-historical constellation with and across contemporary Afrodiasporic cultural production". (Bakker, 2020:50). She does this by centring the metaphorical substance of an aquatic environment to challenge the reified ideas of being human. This spatial inhabitation of the unimaginable is a demonic occupation which threatens the logic of an assumed order of knowledge (Bakker, 2020). For Bakker, the use of the ocean as a notable presence in Black studies particularly as she notes, in work by Moten, Wynter and Spillers (Bakker, 2020:X) echoes observations I have stated previously as an account for blackness. Bakker's use of the term 'parahuman' to locate a position for what she calls "a force of perversion, of onto-epistemological critique" (Bakker, 2020:21) considers the creative texts used to underpin her premise of refusal to being incorporated into the category of the human. Her connection to this state of non-definable, uncategorised (un)position reflects my attention to an ongoing navigational strategy to arrive at a position that neither forgoes the imposition of categories but can critically contest its configuration.

Religious configuring

African diasporan and Postcolonial studies have been an important illumination of how European religions dismantled indigenous African faiths through an enforced curtailment of beliefs (Rodney:252; Walls, 2015) by using practices such as economic coercion (Ayendele, 1966:42) moral condemnation (Garraway, 2005:165) and juridical, punitive measures (Paton, 2015). Christian missionaries' subjugation of traditional African acts of divination was sanctioned by what Doris Garraway calls 'colonial demonology' (2005:147). Garraway goes on to describe the protocols inculcated for maintaining power

noting how colonised and enslaved people's bodies become symbolic for French colonial writers such as missionaries mediating and justifying racial subjugation (Garraway, 2005).

This system of ideological betterment mandates African bodily movement to an anomalous outside position to the norms of European bodily restraint. Furthermore, this positioning becomes autonomous regulatory control Sylvia Wynter has termed the sociogenic principle (Wynter, 1999). Wynter's formulation draws on Frantz Fanon's notion of sociogeny (see Keywords – Sociogeny). It is the mechanism of producing a type of existence that is self-knowing and self-identifying. Wynter wants to consider how these forms of self-knowledge produce a mode of existing as black. By drawing on Fanon's necessary invention of the term, Wynter extends the effects of the societally subordinated mode existent of Blackness that is necessary for colonial domination and racial subjugation (Wynter, 2103).

Through a practice of impressing authorship of correct bodies, the use of comportment as a colonial ritual is noted in Rebecca Seed's (2010) descriptions of corporeal domination. In one example, she notes that ballet's promotion as cultural regulatory control is "because highly regulated movement had historically created political order and instituted royal power both at home and overseas" (Seed, 2010:66). Here, a sense of ordinating bodies as a sign of stability becomes a visualisation of rational thought and a compliance with a hierarchical mastery of one's corporeality. Wynter's attention to the ways bodily movement is controlled and sanctioned is useful. She relays the example Frantz Fanon describes when being reprimanded for displaying actions met with disparaging comments (Fanon, 1986 cited in Wynter, 1999). These rebukes confirm the colonised body deviating from accepted norms thus failing the expectations of hierarchical standards enforced through coloniality.

Wynter's perceptive analysis demonstrates how religious orthodoxy institutes a colonial classificatory means to delineate those deemed "outside God's providential Grace" (Wynter, 2003:275) demonstrates how mechanisms for self-authorship are enacted through a narrativized account of being human. For Wynter, the capacity to create an ideological existence is predicated on a combination of interconnected aspects of what it means to be human (Wynter and McKittrick, 2015). These exist within an interpretation of the world encompassing beliefs, values, and assumptions (Wynter, 1992:68). By thinking about the nature-culture configuration of the human, Wynter aims to draw attention to the

apprehension of nature through a cultural construction. She makes the argument that the human is not a priori. It is conceptualised through a cultural discourse such as the narrativised account illustrated in the worlding map Figure 44. The notion of what is human has been fashioned into a dominant ideal of how we understand ourselves in Western and colonised societies as biological-cultural beings (Wynter, 2003).

Taking Wynter's notion of a narrative of human existence, a co-construction of Blackness's necessity in forming the human as Man is considered in my following reflective practice whereby negotiating self-authorship is informed by a paradigmatic construction of a Black woman. Focusing on the ability to apply motion to a virtual figure to create my animation, I adopted the processes for attaching the separate file known as a skeletal rig to the 3D character more commonly known as a mesh. As mentioned previously (Figure 27 and Figure 28), I had learned this procedure of 'rigging' before completing this task. The procedure I had followed conformed to a standard method of importing motion capture data as indicated in the multicoloured skeletal figure shown in Figure 68 Stage One and applying it to a 3D mesh as seen in the green figure in the foreground Stage Two image. Neither the software I had used nor the methods I had applied for creating the animated figure detoured from what can be considered conventional.

Locating the black woman

'It's terrible to have come from nothing but the sea, which is nowhere, navigable only in its constant autodislocation.'

(Moten, 2018c:199)

As I have previously discussed, the ocean is where a (un)knowable existence can offer a critique of the human as Man. Oceanic (un)making has been staged as a central concern of Black studies. Although this research does not reflect the expansive discourse on the Transatlantic Slave Trade or The Middle Passage, my attention to the notion of the oceanic as a spatial and temporal production of unreality is conducted through moving image outputs. The (im)possible state of being human in relation to the human as Man is considered using the work of Sylvia Wynter, Fred Moten and Hortense Spillers. Together, their oceanic positioning locates Blackness as outside of all Western categories of being and knowing.

Moten seeks to locate a term that can account for the ontological shift experienced in black existence. He turns to a corporeal internal registering of spatial and temporal (dis)location as something vestibular (Moten, 2008). Here, ontology is given an atemporal consideration. Anti-ontology, ante-ontology and a French pronunciation whereby anthologie (an-tology) are momentarily trebled to demonstrate the constant fluctuating modality of blackness (Moten, 2022, 27:52). I have drawn on Moten's formulation of blackness as ontologically (dis)placed. My use of the term an-ontology draws together Moten's work with theories of animation as an-ontology (Brophy, 2017; Cholodenko, 2017; Lamarre, 2009; Levitt, 2018).

Animation theorist Alan Cholodenko (2017) has posited animation's essence as animatic. That is to say animation's co-constitution of life and movement provides its own logic, reason and explanation (Cholodenko, 2017). For Cholodenko, "[N]ot only is the animatic uncanny, the uncanny is animatic. The animatic is not simply different but *radically*, irreducibly Other" [original italics] (Cholodenko, 2016: npag.). As Phillip Brophy (2017) also notes, animation's spatial and temporal disruption of its construction divides into an experience of time and a sensation of space (Brophy, 2017). This fragmented configuring of motion as temporal and spatial is a proposition I extend this occupation of space and time to counter the logic of scientific and biological determinism. I do so through the mathematically derived software program Autodesk Maya.

In the following journal notes I discuss the process for creating my moving image works. These reflective navigations document my search for content to use.

undated journal entry

My work marks arrivals. The figure/mesh used in Ocean Going Figurine (Figure x) arrived during an exploratory search in Maya. I wanted to start building a world using one of the tools. What I ended up doing was using a figure of a black woman. I thought it was unusual that a black woman was placed there. We are rarely found lingering in software programs as standard models. The figure became my muse! I couldn't find the same model when I used another computer therefore the figure became significant. I elevated her status into a mythical figure, turning her into a figurine much like the ship's figureheads. This in turn became a series of connection which arrive as possibilities and

become useful, sensible, cogent. The sea is never far away once I start thinking about arrivals. Or maybe it's more specifically water.
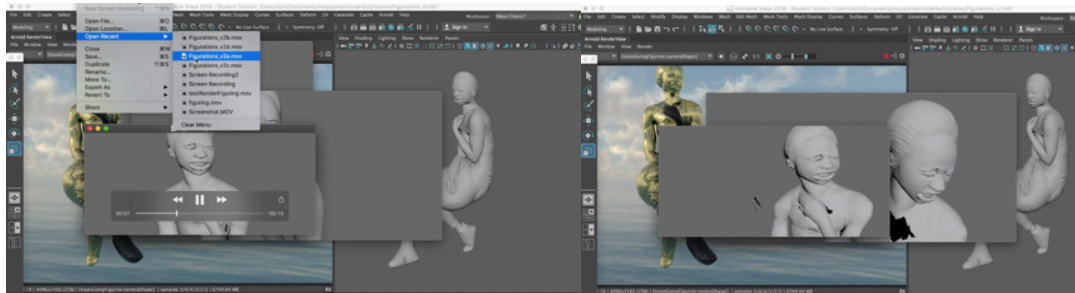
Figure 47. Video stills of Ocean Going Figurine 2020 (dir. M. Peters) © Maybelle Peters

Remade in Black

I return to Hortense Spillers's offering of unlocatedness previously discussed in Chapter 4 :Reconfiguring Blackness. This (dis)location is the unbounded place expressed as a rearticulation of arranged space and time. There is a reconstituted amalgamation of knowledge systems that takes place amongst a set of cumulative conditions which Spillers perceptively marks out as the oceanic (Spillers, 1987:72). A vast, indeterminable holding that is discernible only because it can never be defined is a reference pointing to a boundless simultaneously (dis)connection. Spillers's attention to 'a re-ordered form of re-making' is taken up in my enactment of reconfiguring. The reconstruction I have put forward to create an animated black woman from existing motion capture data and a 3D model found in a library is informed by rethinking movement as blackness. Staged as a mode of production, the historic, somatic, embodied, kinaesthetic, technical procurement of a Black woman is the primordial figuration of modernity.

The Black woman as the diametrically pathological opposite of the United States' White heteronormative family occupies the ground from which no resolution is tenable. Seen as a comprehensive refutation of structure as an ideologically stable foundation upon which civil society functions, Spillers questions this illogical positioning through an exposition of enslavement and dispossession. Most notably, her conceptualisation of distinguishing between the captive body that has become nothing more than commodified data and the flesh is a generative modality for recounting how I can animate the black figure found in the software. The demarcation Spillers uses establishes the contradiction of a Black woman whose commodified captive state initiates a new existence. What is registered and held in the flesh ruptures her sense of self but does not destroy it.

It is embodied in the sense that the effects of demarcating space for blackness engender disproportionately affected interactions. Negotiating and moving in areas designated as neutral can become contested at the point of occupation by her blackness. Technical approaches to navigating are improvisatory and premeditated; as such, these strategic responses are routinely deployed. The procured Black woman somatically grounds herself in a rehearsal borne of repeated encounters. She is a historical formation residing in the present embodying a blackness to signify her necessity for normativity. Kinaesthetically, there are amendments to make in light of being over-determinedly out of bounds. Whilst seeking redress, her adjustments alter any sense of logical and proper use as she navigates the master's tools.

In Blackness and Nothingness (Mysticism in the Flesh), Fred Moten (2013) speaks of the pathological demand for blackness, its certainty and its necessary arrival. In this proposition, Moten makes a peremptory request to refuse the pathogenic world he calls a 'burial ground' by turning to alternative interventions in worlding practices that condemn blackness (Moten, 2013:739).

B/black moves (un)tethering

The purpose of making a photo-realistic character or proposing the means to resist its form is binary positioning. A normative versus non-normative navigation of standardised models suggests that only dual perspectives are at my disposal. These are fixed linear trajectories following directions that demarcate enforced boundaries. In this way, there is only one of two paths to be taken. Both Moten and Spillers proffer an axiom about which the fact of blackness can contest the demand for the category of the human.

In(ter)vention

In both the Greek and Old English meanings, para connotes the role of relational positioning and action. There is no discernible signal from an identifiable and original location. Rather, para can be thought of as announcing movement from a given direction. This 'unlocatedness' suggests a proximity to the source with reference to its descriptive statement. Para is the production of a traced, secured origin. With its ghostly presence, the prefixed position from the West holds a dominant occupation of space and time. It is what Sylvia Wynter describes as 'that absently present framework which mandated all their/our respective subjections' (Wynter, 2006:111).

However, para, as a form of motion, provides me with a lens to envision how *the* direction from a location remains intact but does not tether. Therefore, the point from which to depart or aim is always predetermined if the origin remains the locator/location. My use of the paratheses is to position the research's objective for enacting a decolonial strategy. Despite the omnipresence of a singular origin, I propose that a recognisable counterposition does not produce a viable response. This re-joining, re-jointing process of searching for a (dis)connected logic is what Moten calls 'our abnormal articulation' whereby the joints and flesh are disruptions that counter any ability to make a tangible instruction manual of its methods disappears. (Moten, 2018c:199).

(Un)making the Human

I now continue with further examination of my analytical processes conducted using the construction of virtual figures. These accounts focus on the rigging process by responding to the acts of intervention as a generative procedure. Reflecting on my journal entries, I demonstrate how my modifying process affects the body's skeletal structure and its impact on movement. I observed a diminished predictability of the body's alignment with the initial form which introduces ambiguity. Taking this consequential action as insightful, I documented the process whereupon rejecting certainty in favour of forecasting how the rigged model moved encouraged an open-ended positioning between how motion capture data is applied and the affected areas of a 3D mesh.
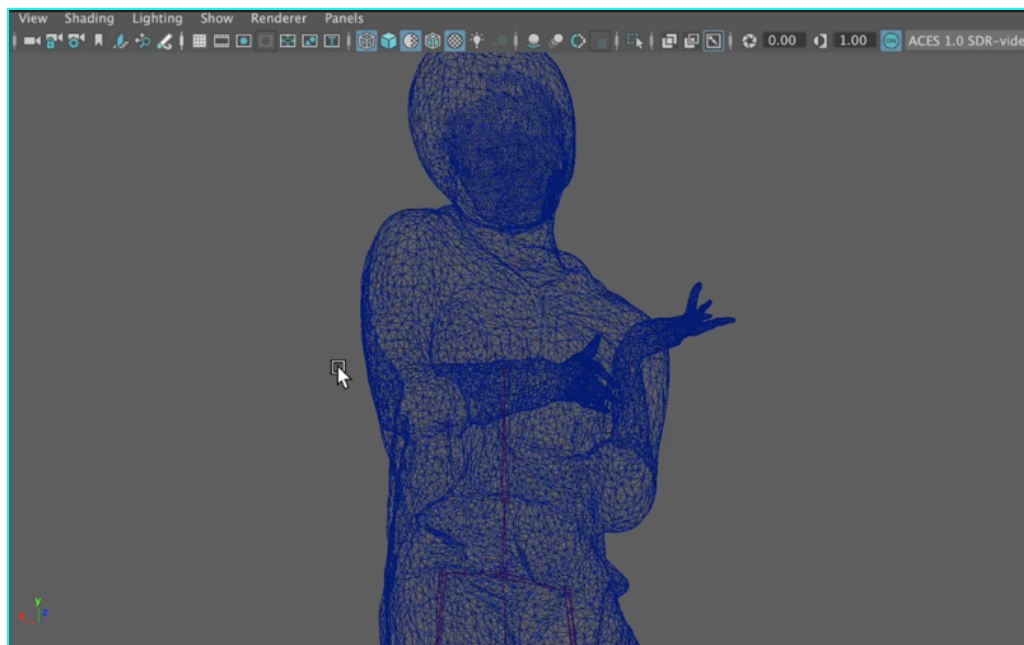
Figure 48. It's hard to tell

The above image (Figure 48) illustrates how both the 3D mesh and skeleton known as a rig were modified to disrupt a reliance on using a complete skeleton comprising digitally captured motion. In a journal entry dated 11/10/21, I asked 'what are the primary images + motions ie the pathways I have to travel along to get to the bodies I want to create?' (Peters, 2021: npag.) The implications for substantiating how a directive could prohibit extractive methods which gratified commodification underlined my foremost objective. Dominated by reproducing orthodoxies, my questions were formed as a framework for manoeuvring both the rig's position and the 3D mesh. In this way, I could reject an optimally governed evaluation of where to place each component relationally.
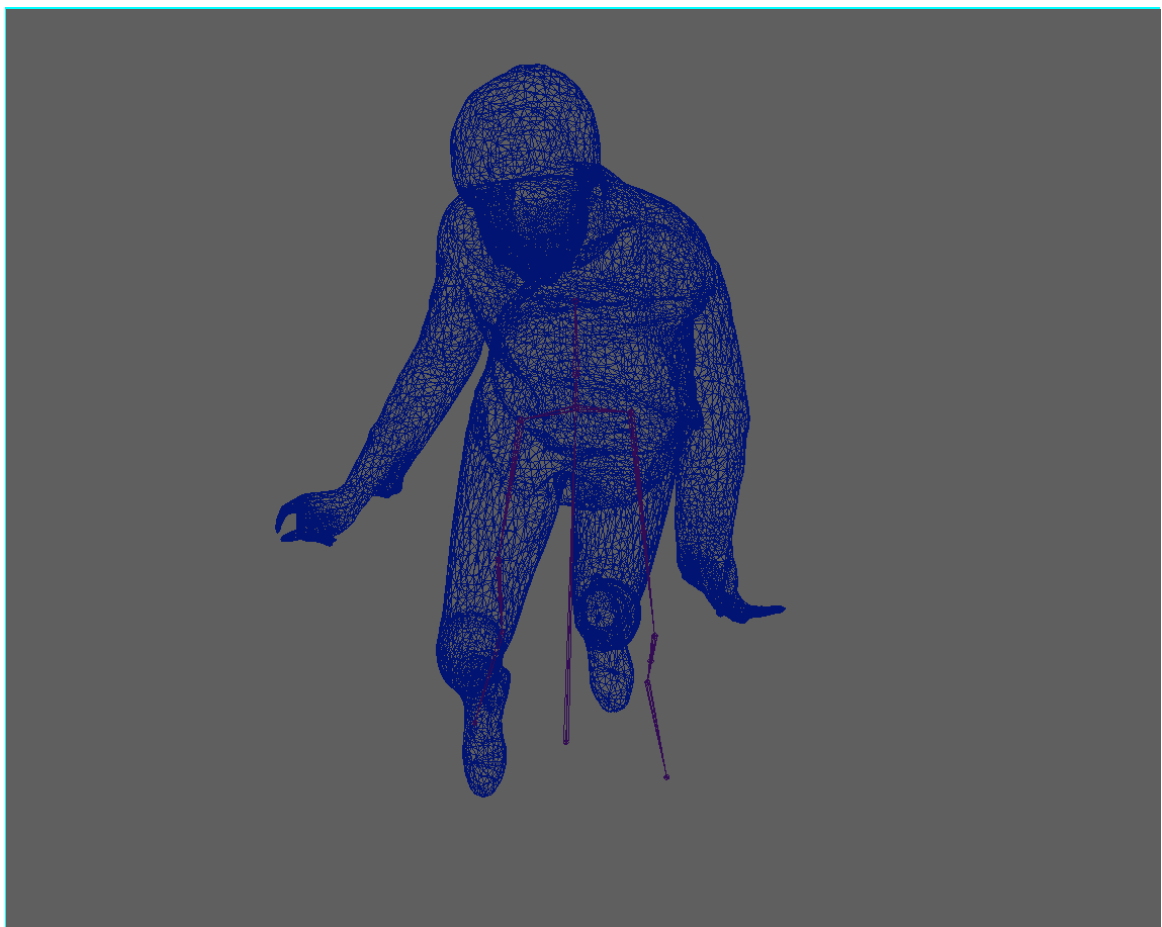
Figure 49. Screenshot 2022-06-27 at 12.14.45

Seen from another angle, the rigging process I enact neither rejects the conventions of using visual placements of the skeleton and 3D model to animate virtual figures nor does my resulting positioning arise from deleting parts of the rig that do not influence the 3D mesh. As shown in Figure 49, parts of the lower legs are kept despite being outside the boundaries of the figure's left lower limb.
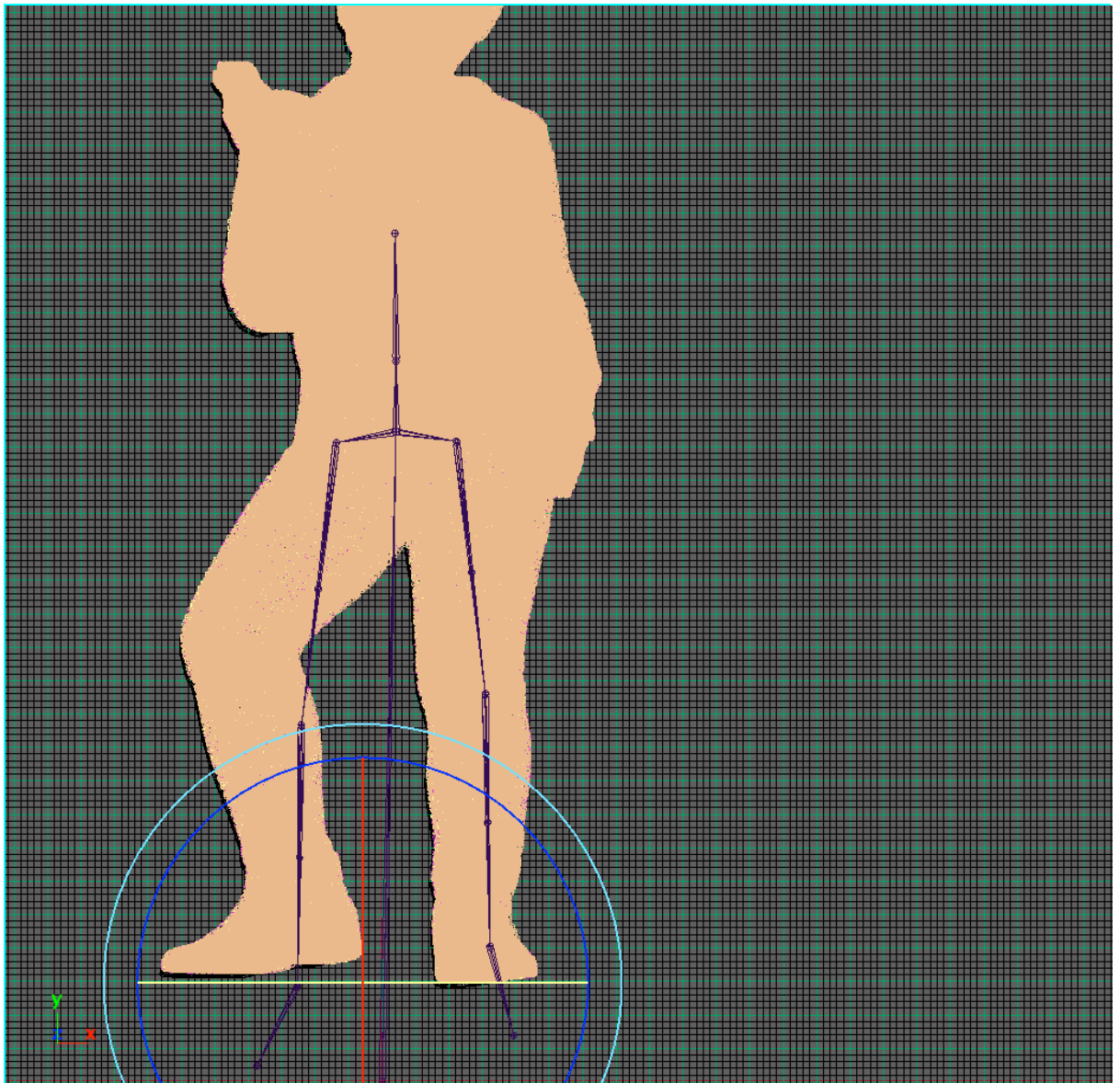
Figure 50. Positioning the skeleton rig in relation to the 3D mesh

In the above test (figure 50), the 3D mesh provides the body's incongruity by bearing a contradictory posture. From the skeleton rig's position, the figure is staged as a controvertible arrangement. This intended unconventional use of (mis)alignment reflects my implementation of selection criteria. Each pose is derived from the online motion capture library Renderpeople.com. The following documentation from my rigging tests reveal that intervening in the body's motion by using a 3D mesh which does not conform to the standardised 'A' or 'T' pose disregards the body's seemingly necessary alignment to have the type of calibrated figure I discussed in Chapter 2. Furthermore, motion capture data is also intercepted after capture has been completed which underlines where I have identified spaces to initiate interventions.
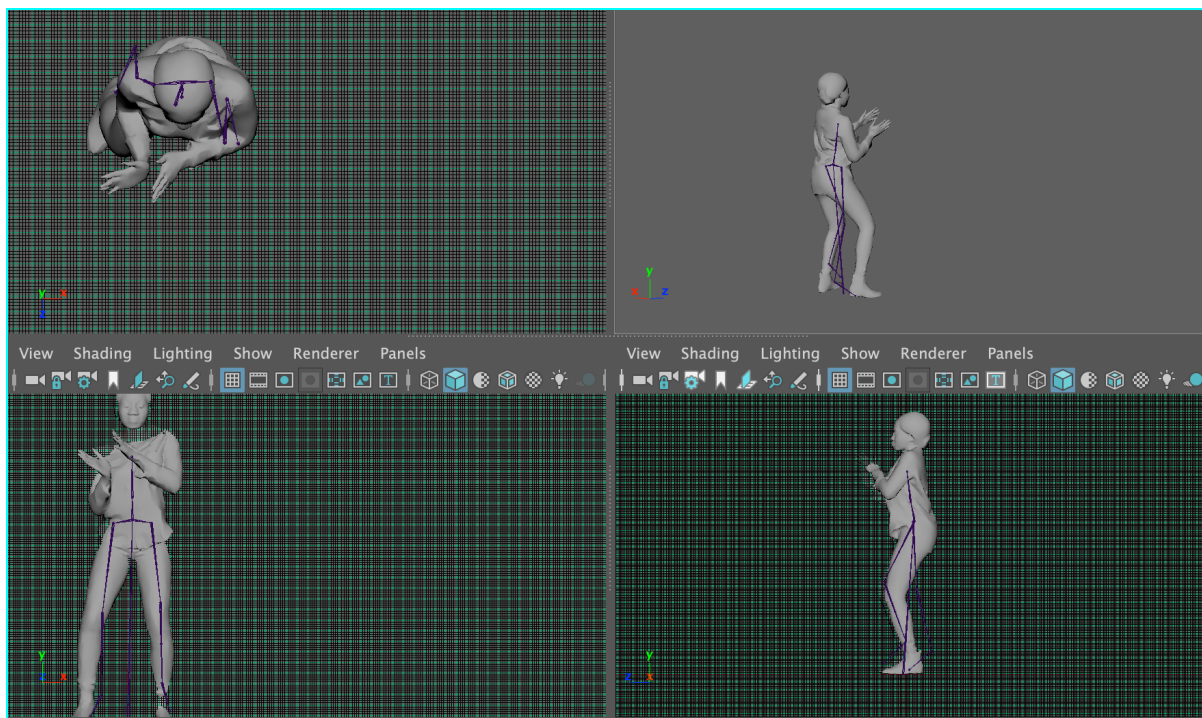
Figure 51. Multiple viewings of rigging

Figure 52. Results from placing a skeleton rig bind to a 3D mesh.

Documenting inaugural pose and position of motion capture data represented as a skeleton. Although the arm positions are determined by the 3D mesh, they are affected by how I position the skeletal rig.

Figure 53. Video still. Screenshot 2022-06-09 at 20.16.27

Figure 54. WoW-AnimatedActs-scrnRec3

In the absence of fixed instructions to comply with, attaching the skeleton rig to the 3D model remained dictated by achieving homogeneous figurative animations. However, my decision to conduct iterative tests guided by reflective writing presided over my adjustments to where a 3D mesh and its connected rig could be made. One such test (Figure 54) lead to a less rigid adherence to human representations. In this regard, I had been unconcerned with introducing limitations on how the 3D mesh would be reshaped. The following journal entry confirms my deliberations on how I attributed distortion as a lack of control.

Positioning and alignment are two prominent
actions featured during the configurement
or connection of mesh/model and mocap data.
First thoughts on where and how to position
the mesh results in aligning the skeletal
rig with the shoulders, arms and hands.
This is followed by positioning the hips, legs
and feet in approximately the centre of the
mesh. I am following a convention[al] procedure
previously learned during a rigging course. The
multi-part, weekly evening course is aimed at
CGI animators and general industry workers conn-
ected to visual effects studios. I adopt the
process as it offers a starting point ~~from which~~ *to*
produce an animated figure. The result is a
very stretched mesh that is distorted. Distortion
could be a useful effect when the figure appears
to be stretching thus creating a tension between
the action/movement and its simultaneous exagg-
erated displaced mesh. For example,
one of the tests demonstrates displacement as an effect. That
is to say its effect appears (un)related.
My recollection of its effect has not been articulated
well and prompts me to return to it in order to
understand or explain why I retained it and
discarded the exaggerated distortion. Both are
exaggerated and distorted. Is there an
operational threshold determining or filtering
my decision making again?

As discussed in my earlier précis of Amaro's kinetic dissonance, I had observed the results of attaching a skeletal rig to 3D meshes as a significant introduction to registering Blackness as movement. Repositioning motion capture data to a virtual model comprised one of several opportunities for disrupting visually inscribed normative codes. Other factors I addressed were related to modifying temporal and spatial alignments to physics-based realities. For example, I adjusted standardised video framerates of 25 frames per second to rupture the classified motions attached to motion capture data. Figures 55 and 56 were detached from initial codified movement such as dancing and conversation. In this regard, an understanding of gestures, actions and behaviours are no longer situated within a classificatory system.

Figure 53. WOW-Convo-880

Figure 54.Walking on Water and Other Animated Acts (2022).
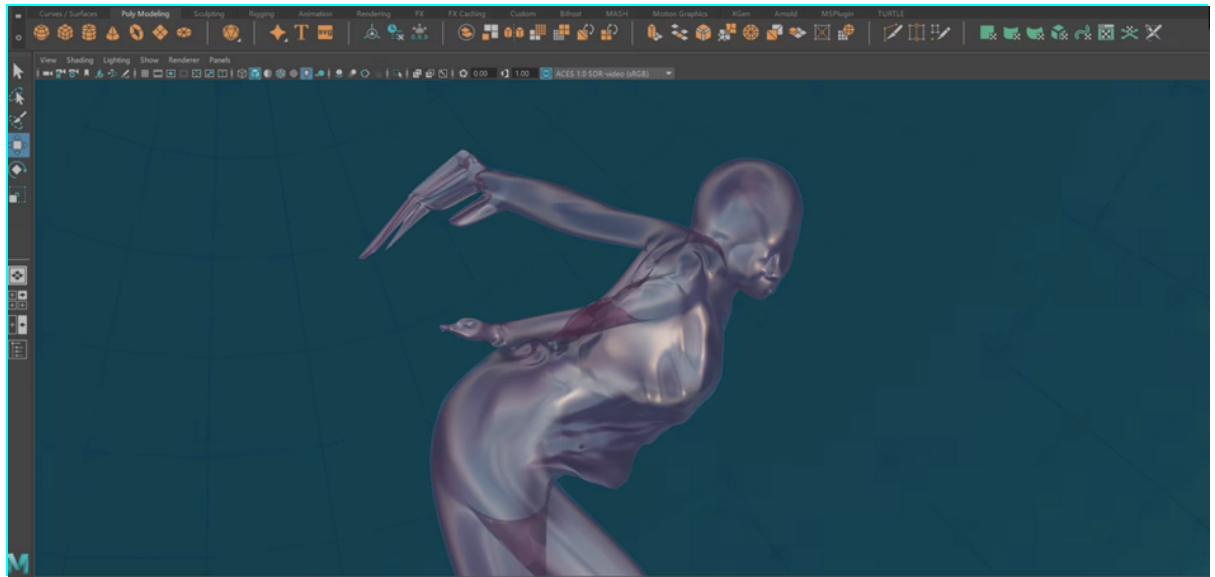
Figure 55.Communing with Aliyah (2023).

Further developed in(ter)ventions continued with my departure from adapting existing motion capture data. Despite having placed importance on not using software for extractive purposes, I animated a 3D model as seen in Figure 45 with computational data generated from Storyboard P's movement. I noted in my journal dated 06/10/22 the following observations.

> The body…is a mesh obtained from a research project and therefore, free to use for this project. The movement is from a video recording of Storyboard P. His work was unknown to me before I began my inquiry. Liquid Blackness Journal brought his work to my attention at the same time as my research focus was aimed at technological options to extract motion. What is becoming more apparent is the cross fertilisation of techniques, data compatibility and returning to previous research outcomes. Fusing meshes with different types of movement; attaching sections of data to prohibit a mesh's movement are dislodging or displacing any sense of a standard, categorised movement.
>
> It is not an easily read movement. That is to say I can not describe the action easily. There are a series of movements taking place in a screen space. The movement suggests weightlessness at times. At other times, there appears to be a resistant force constructing movement. It is this lack of a readily available description that has governed my decision to apply this data to the 'Aliyah' mesh – Aliyah being the file name downloaded from the Renderpeople website.

Practice as Research – Theoretical framework

Animated virtual human as Man in motion

Motion capture technology ○
protocols produces human as Man ●○
descriptive statement

motion captured in studio/space
mapping process ○○
motion mapping

Neutral space

black body
= Non-neutral space ○
A black sense of place

body
= legible

illegible black body ○○
non-aligned to mapped body
Naturally dysselected /Despatialised

captured abstracted motion
data – fbx, bvh files

legible body ●○
aligned to mapped
Homo Oeconomicus

EXTRACTIVE PRACTICE
● Construction of body ○
Sociogenic principle   *Captive body*

Separate processes

Motion capture data ○
Theft of the body

● Rigging process
Incalculable

3D mesh/body ○
Body/flesh distinction

Connection assembly ○
= legible body in motion
Prefigured human as Man
Man 2. Adaptive-truths-for

Connection assembly ○
indeterminate body in motion
possibility of uncategorised
Non-adaptive truths

Animated virtual form in motion
●●○

○ Jodi Melamed   ● Sylvia Wynter   ○ Nicolás Salazar Sutil
● Katherine McKittrick ● Hortense Spillers   ● Fred Moten

Figure 56. Practice as research informed by Conceptual Framework.

Following my previous schematic detailed in Chapter 2, a consequential diagram was generated. This facilitated my analysis of moving image outputs whereby an evaluation process was conducted. I allotted a designated space to represent each animated figure. These were denoted as either reproducing or contesting the genre-specific category of the human as Man.

Summary

I have discussed my application of a conceptual framework to expand on the use of motion capture data to construct and animate black virtual figures. The series of motion image outputs presented in this chapter were motivated by promoting challenges to the prototypicality of white, male, normative models motion capture technology is based upon. I have demonstrated the significance of Black Studies, particularly blackness as an integral part of rethinking how motion capture data can configure virtual human motion. My focus on the use of existing computational data and 3D models sought to foreground my rejection of facilitating commodifying processes such as purchasing motion. This decision was posited as one of several anti-extractivist actions. Similarly, I grounded the chapter's premise of decoloniality through exploration of in(ter)vention. The series of moving image outputs were attuned to a broader discourse on resistance to coloniality that encompassed computing, algorithms, black geographies and ontology. Consequently, I have put forward a theorisation of blackness as motion to extend the possibilities of further examining animation practices using motion capture technology.

In the next chapter, I stipulate how black contemporary artists LaJuné McMillian, Bill T. Jones and Rashaad Newsome have developed strategies to contest a universalism of the human.

Chapter 6: Navigating Blackness

In this chapter, I present analysis for my case studies by beginning with the results of data collected from numerous sources including online searches, books, and video presentations. I then provide a discursive account of my analysis that mirrors my phased journal entries and notes I made for each artist. These excerpts overlap each case study. They are a sample set reflexive thematic analyses which, although indicative of my cycles of accruing additional texts, are in a linear format. They comprise phases of familiarisation, coding and themes created during my development of a conceptual framework.

6.1 Case Study – Bill T. Jones

As one of the pioneering dancers who has incorporated motion capture technology and dance, my inclusion of Bill T. Jones as a case study was established early on. By using existing texts that centre Jones's interests in using motion capture technology, I have drawn wider contexts of Jones's practice to reframe his work as decolonial.

Bill T. Jones is a choreographer, dancer and activist whose practice encompasses working with live performance, theatre and motion capture technology. His contemporary art practice draws on autobiographical narratives that have prompted critical receptions I reference in this study. I have focused my analysis of Bill T. Jones's responses to using motion capture technology in several productions. These are *Ghostcatching* (1999), *After Ghostcatching* (2010), *The Breathing Show* (2003) and *Approaching 21* (2019).

I consider how Bill T. Jones has influenced the creation of virtual humans in motion. I have evaluated Jones's ability to use motion capture technology to contest the limits of racial ascriptions. These are presented as thematic rather than chronological accounts. I begin by discussing formative creative practices Jones fostered. I then discuss his pioneering work using motion capture technology. *Ghostcatching*, *After Ghostcatching* and *The Breathing Show* form a trilogy of collaborative work which informs my discussion of this case study.

My focus lies in examining Jones's intentions for using movement as a resource. This attention to how an artist uses technology is necessary for ascertaining whether motion

capture technology can be used as a decolonial strategy. I have used transcribed texts from my journals to focus on decolonial strategies present in Jones's work. For the final part of my case study on Bill T. Jones, I elaborate on his use of motion as computational data. Jones's account of how he aims to use technology to create digital animated figures highlights the uncertainty of visual markers of race. By centring this unstable aspect inherent in motion capture technology, I have reflected on what Jones has deemed necessary aspects of his identity in constructing digital animated figures.

the tools that can produce a library of motion

Jones's interest in what advances motion capture technology could offer for his exploration of movement is illuminated in a series of encounters. His work at the time of new technological changes to recording live performances was at the forefront of experimentation with motion capture technology. A new form of motion whereby Jones's body became a source of movement prospectively could create liveness. Jones notes this production of corporeality as an inquiry into a technology's capacity and limitation.

In the book Envisioning Dance: On film and video (Ed. Mitoma, 2002), Jones recalls the starting point for working with motion capture technology. He points to his collaboration with photographer Kwong Chi Tseng and visual artist Keith Haring. In that documented event performance, photography and painting became a catalyst for further collaborations. Jones notes this juncture as a continuation of his interest for using technology as an explorative tool in choreography and dance. As a student, Jones describes his advocacy for working with across performance and art disciplines, namely film and video.

Figure 57. Four poses of Bill T. Jones whose body is painted by Keith Haring and photographed by Kwong Chi Tseng. © K Gallery.

Here, Jones sees an opportunity for using still images for creating animation. Animation techniques akin to both stop motion and traditional hand-drawn processes manipulate the figure to form new motions that are beyond the capacity of live performance. Jones had learned structuralist film theory through the classes he took as a student at the State University of New York, Binghamton in the 1970s. The introduction to film editing techniques practised by experimental filmmaker Ken Jacobs alongside the work of Eadweard Muybridge was influential on how Jones and his partner Artie Zane approached movement. Recalling an interest in using movement in indeterminate re-ordered sequences, Jones and Zane performed compositions as parts of non-linear and fragmentary dance. Their duet was treated as 'an object that could be taken apart.' (Jones, 2002).

Jones's use of his body in motion as a constituent element in a sequence is given close analysis in my study as it has been overlooked in appraising his reasons for using motion capture technology. Transposing techniques from avant-garde filmmaking and sequential photography express a convergent application of reconstructing the body as a material. Jones demonstrates how an introduction to exploring film theory proved to be a practical way of rethinking live performance as motion into sequential images.

The role of still poses fashioned into animation is paramount to Jones's interest in considering his body as a material. The use of static images that are enlivened through a technological apparatus is expanded in the following part of this chapter's case study. I determine how the introduction of concepts related to movement as material is enacted in Jones's appeal for using his body to capture his motion. Proprietorship and acquisition are considered thematically to analyse how the application of motion capture technology attends to states of (dis)possession.

These themes inform my focus on collaborative work since the origins of *Ghostcatching* and *After Ghostcatching* are based on ideas Jones, and his collaborators from production company Riverbed Media, Shelley Eshkar and Paul Kaiser. Both Kaiser's and Eshkar's roles in creating the work have been extensively documented in interviews and essays. I have included a sample of my engagement with these texts in Appendix F: Case Studies – Reflexive Thematic Analysis. Therefore, I turn my attention to a combination of pursuits Bill T. Jones has offered in interviews. These perspectives privilege his intentions and give insights into how notions of capture are encountered.

Despite few studies on the motivational factors influencing artists, I have connected Jones's interest in motion capture technology's ability to generate liveness as an indomitable challenge to exceed the constraints of blackness. His technological experimentation founded on his interest in film and video is seen as a critical moment for his collaborative moving image works with technologists and visual artists. My focus has been to establish the creative intentions Jones had when using motion capture technology as a dancer, choreographer and activist. These are considerations of how Jones's work questions the affordances of motion capture technology.

Reading through Jones's experiences of working with motion capture technology, I suggest that the nexus between subjectivity, blackness and corporeality provides an extended appraisal of how motion capture technology offers possibilities beyond the rudimentary use of documentation and teaching aid. Although Jones has expressed dance notation as a valuable tool in learning choreographed movement, I relate the importance of Jones's interest in using a technical apparatus as indicative of wanting to query its possibilities as a test of its limitations.

My reframing of Jones's decisions that shaped *Ghostcathing and After Ghostcatching* draws on my use of existing texts. Whilst erasure and the preservation of identity dominate the discourse associated with Jones's work using motion capture technology (Allison, 2017; Barber, 2015; Dils 2002; Goldman, 2004, Warren-Crow, 2017), less attention has been paid to concepts pursued in Jones's previous work and how technology offers him an opportunity to negotiate blackness. It is an observation that foregrounds an imposition of racialised black identity that Jones wishes through his use of motion capture technology.

Figure 58. Video Screen grab from Ghostcatching (1999). by Bill T. Jones, Paul Kaiser, and Shelley Eshkar. Reproduced by courtesy of the artists.

film, gesture and captured motion

The project bringing Jones together with Paul Kaiser and Shelley Eshkar whose company Riverbed Media merged art and technology, explored a burgeoning field of performing arts. The collaboration began with work for the Keith Haring Foundation's website. Jones's publicised 'happening' in which photographers and journalists were invited to observe the live performance had garnered plenty of attention. As Jones notes, Riverbed Media saw an opportunity to bring static images to life using motion capture technology. Jones recognised the possibility of a technological apparatus neither photography nor live performance could offer.

He also saw the potential of contributing to Keith Haring's legacy with a reimagining of the collaboration between Tseng, Jones and Haring stating that,

> 'I thought that would be a fitting tribute to Keith, and would complete something that was suggested by the frieze-like cut-out constructions he'd made of these seven poses. In his choices of the gestures and their cinematic arrangement, Keith was already suggesting that they were a dance. Paul and Shelley promised that, through the use of digital technology, these still images could truly come alive.' (Jones, 2002).

Jones goes on to describe the process that became a protocol for capturing his movement by introducing an extension of his physical body into a virtual world whilst introducing a continuation of the happening that was impossible to re-establish. Recounting that, '[T]he idea was to motion-capture my naked body moving improvisationally, in and out of the seven iconographic poses, and then to reconstitute Keith's original drawings over my moving virtual body.', foregrounds a technology used to realise a creative alliance between

live motion and gestural drawing. Jones and Riverbed Media had found this combination compelling (Jones, 1999).

Although the aim was to pursue the possibilities of enlivening static images with motion, the use of Jones's body has been a focal point of discourse on racialised black identity. In Giancarlo Davis's article on the collaboration between Riverbed Media, Unreal Pictures and Jones, motion capture furthers the idea of Jones's body as an object upon which Haring's images can be placed. Kaiser's belief that 'We can map onto his captured digital body the painting that Haring had done originally' (Kaiser, 2003) suggests that Jones's body functions as the source material for the project.

Staged Subjectification

The accusation that Haring's treatment of Jones's body as a canvas is objectification is refuted by Jones. It is a denial Jones makes clear to reiterate his position as a collaborator. The work made as a performer is an integral component of the live and documented project Haring, Jones and Tseng produce collectively. My attention to the visual staging of the public event underlines how Jones's body is made legible. The focus on his body does not consider the pivotal purpose Jones has. There is little in the way of acknowledgement for Jones's agential role in assuming the poses he has determined generative for a collaborative project. It is an oversight founded not only on defining visual markers of difference as significant. Jones's naked black body signifies subordination to Haring's white, clothed body. Here, we see a suggestion of an unequal power relationship that is not solely at the register of visuality. Compounded by racial power dynamics is Jones's limited motion in relation to Haring's active reconfiguring of Jones's sculpted form (Figure 51).

Jones's restricted movement is understood as a lack of freedom. Haring and Tseng move freely around Jones using his body as a source while denying him the capacity to move the same way as them. Their separate roles are not given equivalence as a collaboration because Jones's body and his use of it are viewed as governed by the photographer and visual artist. It is a claim directed at Paul Kaiser in his use of Jones for *Ghostcatching*. The imposition conferred on Jones's black body and dismissed in Jones's account are worth further analysis as it is motion that determines what is recorded as computational data. I have taken the examples of Jones's reflection on not considering himself visually objectified to think through the centrality of movement in capturing his body. This focus from visual markers of race to motion reconfigures how Jones attends to blackness.

Capture as (dis)possession and Jones's disruption of securing the categorisation of his raced body offer a reframing of motion capture's technological affordances and limitations.

Phraseology

From his debut performance in 1983, *21* has become a seminal work by Jones in which he adopts 21 poses. Each momentarily held action interprets from a wide field of cultural references. In every permutation, Jones creates a visual category that appears anachronistic to its recited title. Jones responds to what he sees as the persistent necessity of visual identity by associating his body with its category. His announcements are a rollcall leading his gestural actions as a critique of their claim.

The 21 phrases listed below accompany each gesture to re-encode Jones's corporeality, blackness and subjectivity. Jones inscribes each sentence with his adopted stance assigning his motion to a claimed classificatory system of his making. This performance complicates the constraint of the idiomatic expressions Jones declares as culturally bound racialised and gendered identities. This use of bodily authoring establishes a library of movement to challenge the notion of reified gendered and raced bodies.

1) Italian Renaissance Contraposto
2) Arnold Schwarzenegger
3) Muhammed Ali I am The Greatest
4) Tai-Chi Chuan Ward Off
5) Pregnant Housewife
6) Antiquity
7) Erwatung Waiting
8) Male Beefcake tits to the sky
9) Pelé Before
10) Pelé After
11) To the Groin
12) 19th Century Drama Eek A Mouse
13) Ingmar Bergman Oh My God I Don't Know
14) The Nudist Colony
15) Art Deco Mouth Hidden Eyes
16) Pittsburgh Steelers
17) New York Yankees The Wind Up
18) Apollo Belvedere
19) Adam Before
20) Adam After
21) God too can go to Hell

With each reference, Jones uses his body in *21* as a procurer of movement. The poses stem from a repository of counteractions disrupting any notion of conferring specific bodies attached to descriptions. Bodily conformity and the use of movement as a destabiliser are similarly pursued in Jones's work with motion capture technology.
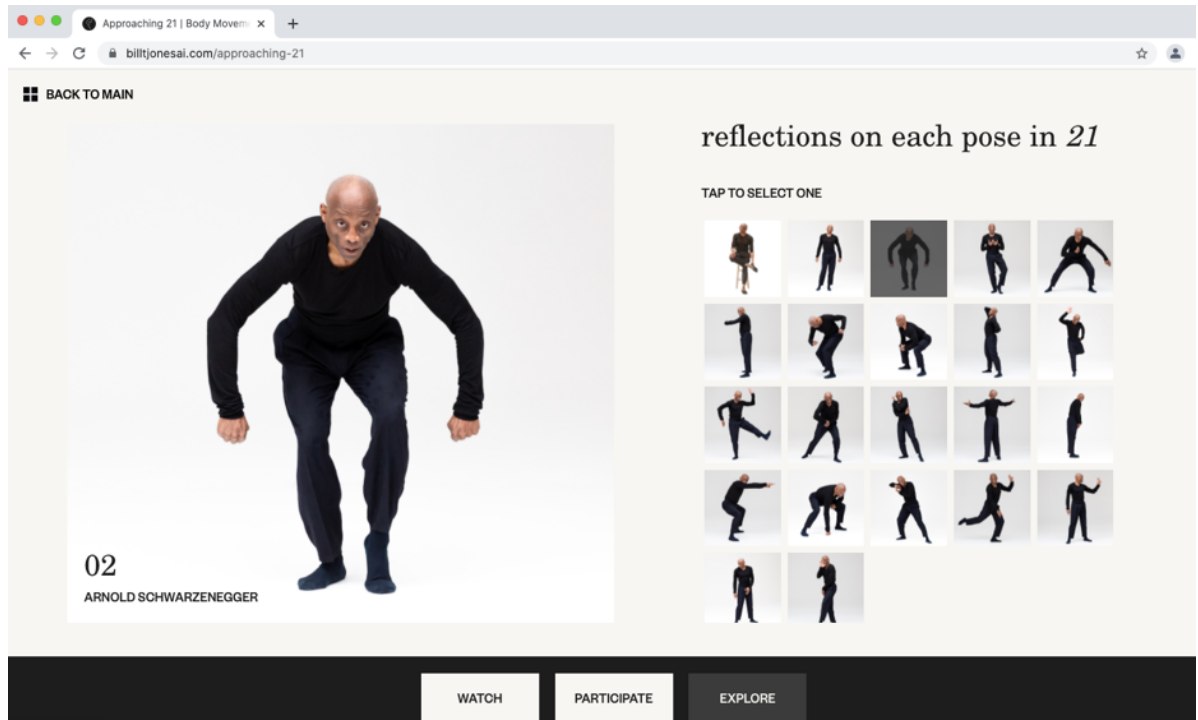
Figure 59. Bill T. Jones assumes a pose titled Arnold Schwarzenegger for a Google Labs project in 2019. © Bill T. Jones and Google Labs.

A resource of movement

The library of movement Jones uses together with motion capture technology, leverages an indeterminacy of visual ascriptions of race. Here we see a practice Jones has returned to on several occasions including his work with Google Labs in 2019 (Figure 53). In his collaborative work *Ghostcatching* (1999), Jones describes how his dance and choreographic practice were used to fashion a language of movement. As he makes clear in his approach to creating movement for digital production, his use of movement was thought of as, '[A]virtual motion alphabet: a catalogue of isolations, undulations, shudders, and various other personal movement strategies that I employ in my dancing.' (Jones, 2002:107)

Figure 60. After Ghostcatching (2010) by Bill T. Jones, Paul Kaiser, and Shelley Eshkar. Reproduced by courtesy of the artists.

Paul Kaiser, Shelly Eshkar and Bill T. Jones introduced the prospect of using captured motion as a resource. It was a shared thinking of what I consider extractive and generative possibilities. *Ghostcatching*, *After Ghostcatching* and *The Breathing Show* advantageously utilise the collaborators' interest in using human movement as discrete compound elements that could be assembled as required.

For Jones, motion capture has capabilities beyond the offering cinematic apparatus brings. He sees it as straddling a boundary between the real and the unreal. The presence of a moving form spanning physical and virtual space creates an alternative interaction. The title *Ghostcatching* reflects the negotiated boundaries experienced by Jones as the performer *of* movement and the producer *for* movement. This duality is recognised in Jones's conversation.

> "I am in fact giving a part of me and allowing it to become a citizen of this digital universe, a universe potentially as big as the one we inhabit, which may be infinite. I am willingly allowing that part of me to become one of its denizens." And is it my ghost who would take a piece of me, or did I "spawn" something as a life in that world?" (Jones, 1999)

Because Jones does not only generate motion, there is no sense of a purely extractive procedure. Instead, his function can be seen as the impartation required in the process of motion capture. The process is an exchange between the technical apparatus and kinetic motion. Jones sees his participation as benevolent to a virtual domain differentiated from the physical universe but initiated from it. He is prompted to consider how the relationship

between his motion, his body and the virtual figure raises questions about where power lies regarding autonomous actions.

Technology and autonomy

The technological affordances factored into capturing bodies can be understood as implementing protocols to ensure motion is tracked continuously from selected points. It is the ability to create technical apparatus for achieving a sufficient volume of information from a live body that I now focus on. I discuss how Jones's blackness authors a technical intervention that should be seen as an impediment. I provide an account of the considerations Jones puts forward in production of digital animation to focus on the paradox of capture as a form of (dis)possession.

The individual creating motion for capture is accommodated within a set of procedural instructions. Each body is captured separately but uses the same technology. Notably, in the early developmental stages of devising tracking equipment, Paul Kaiser aimed to test the capabilities of motion capture technology with dancers who moved differently. He had expressed an interest in working with Jones because his dance style was seen as more challenging to capture with their new technology than Merce Cunningham's angular forms. (Goldman, 1999).

Motion was not the only qualifier regarded as a benchmark for testing. Goldman goes on to probe the history of *Ghostcatching's* formation stating that an additional reason, "had to do with Jones as an outspoken, politicized, gay, black choreographer." (De Spain, 2000b). Of interest to my study is Goldman's inclusion of Eshkar's and Kaiser's rationale for wanting to work with Bill T. Jones. The political and personal positions Jones has voiced and Kaiser and Eshkar champion, are not factors in how the technology is deployed. Although these reasons are given as factors determining Jones's suitability for testing what was at the time, a new technology, I reflect on the way Jones's body displaces any technological assumptions Kaiser and Eshkar could anticipate.

Authoring tools

This prefiguring at the sight of flesh before the body is an encoding Hortense Spillers sees as a modality for registering how power and dominance prefigure blackness (Spillers, 1987:67). In this way, a suitably productive way to consider how blackness exposes the use of motion capture technology as a tool for proprietary (dis)possession is through differentiated use. Although the difference that Jones's flesh signals cannot be seen by the

technology, it is deployed through a co-constituted vision of white bodies inhabiting a zone of universality while committing the sight of black flesh to alterity.

Jones's body can only be understood through his skin. Despite the claims that it is his fluid motion that is being tested (Kaiser, 2002), the use of the technology means that Jones is not able to appear as anything other than over-determinedly relational to Merce Cunningham's body. In the case of capturing Jones's motion, it is Cunningham's movement that establishes the apparatuses threshold. Therefore, Jones's movement is not obtained from a position of representation because Cunningham's captured body informs how motion is made legible. As explained in Chapter 2 – The Master's Tools, what is established in the production of movement using motion capture technology is a tool for calibrating white, normative, male bodies.

The markers placed on Bill T. Jones's skin as seen in Figure 55, can only be seen as an attempt to ensure difference is captured. However, the question should be asked of how the technology can capture dissimilarities. Kaiser's response is worth noting as it posits motion capture technology as being able to read Jones's body. Visually, Jones's body is 'read' for the purposes of testing, but it is Jones's enfleshment that is made the source for obtaining data.

Black skin does not enable motion to be tracked. It does not provide any additional access to acquiring data to create difference any more than white skin can. No supplementary information can be obtained from trackers touching the surface of the skin. Despite this, Jones's flesh is seen as the location for tracking his movement even if it is not only motion that is being sought, but the registration of capturing Jones's blackness.

Jones's body is mapped by an assumption of what his body will announce once it is turned into a series of dots on a computer screen. The test Kaiser and Eshkar seek to carry out is the requirement to predict a failure to capture. It is a calculated expectation blackness engenders in anticipation of the unmappable body. Although movement is the given description that prompts the need to try to capture Jones's body, the process for capture is enacted prior to obtaining data. Here, the questions Jones's blackness raises arrive through the fidelity of a technical apparatus that is not configured for him.

In an attempt to make adjustments for capture, Jones's sweat confirms his otherness when the markers tracking his motion do not remain affixed to his skin (Jones & Kaiser, 2003). This necessity to make decipherable an imagined unintelligible body is what Hortense Spillers describes as the 'hieroglyphics of the flesh' (Spillers, 1987:67). The purpose for the procedure of capturing motion from Jones's flesh marks the availability for extraction. The demarcation Spillers uses to separate the body from flesh conceptualises not only what is inflicted, but the registration of what is held in the flesh.

Black corporeality destabilises through altering whose bodies register the body held captive whilst at the same time are liberated from captivity as the process of capturing Jones's body into a material is predicated on a constructed difference. His body is identified as a stage for an extractive practice. However, he remains aloof to the demands of certain capture. In this way, it is the use of the skin as the sensory organ, as the largest organ that allows Jones's differentiated body to not solely be the point for extraction and (dis)possession but generative. That is to say even though extraction removes, this does not mean that Jones's (dis)possession cannot be overturned.
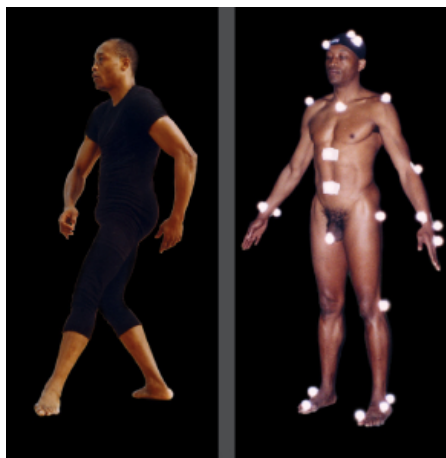
Figure 61. Motion capture trackers affixed to Bill T. Jones using his motion for the creation of the digital animated production Ghostcatching (1999). ©

What was still a developing technology, motion capture techniques were founded on creating a system of recording parts of the body moving and assembling the information as continuous changes digitally. The placement of markers on a body to register movement serves as indicators of mainly articulated joints where transitional points are well defined. Jones's naked body provides the surface upon which the fidelity of the trackers will be measured. The skin remains the site where legibility is demanded. In advancement of Jones's identity being reconfigured most noticeably by no markers tracking points on his

face, the compensatory adjustments are made to capture what can only be an approximation of where Kaiser and Eshkar predetermine Jones's different style of movement will be most distinguishable.

In a presentation on the collaborative work of *Ghostcatching* Jones indicated how motion capture technology could offer him insights not readily available using the vision-centric technologies of representation stating that, "I think the possibilities of motion capture are quite wonderful in that regard. We'll be able to actually see the essence of the way a person moves and the logic of movement." (Jones, 1999). Stripped of the familiarity of visual representation, Jones intimates that there is a way to reveal an underlying truth about the body in motion. His suggestion that a focus on a body's structural connections may permit a proprioception previously unavailable appeals because the technology facilitates an alternative form of legibility. The logic of movement Jones welcomes is without the illogical biological determinism dominating his most notable works. Motion capture is a possibility for producing an accuracy that bypasses racial ascription.

The interests central to the production of *Ghostcatching* in 1999 have posed an insightful prospect for defining the way motion capture technology has instituted a relationship to the body Jones questions over the course of *Ghostcatching's* subsequent iterations. Owing to its leverage of digital and physical protocols, obtaining discrete sequences of motion, Jones's interest in staging his performances as separate improvised sections was a beneficial venture. It is these sectioned character-based motions Jones performs that become the basis for establishing a method for reusable and re-assembled resources for *Ghostcatching*, *After Ghostcatching* and *The Breathing Show*.
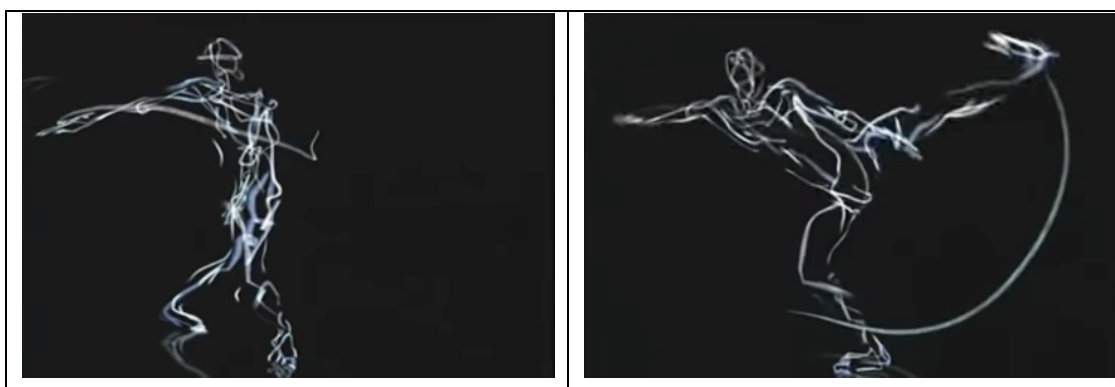
Figure 62. Poses performed by Bill T. Jones from Ghostcatching (1999) by Bill T. Jones, Paul Kaiser, and Shelley Eshkar. Reproduced by courtesy of the artists.

Whilst this use of data as compartmentalised units permits a ready-made source, this production method serves as a means to accrue actions as building blocks that can become different permutations of movement. In Jones's 2003 performance of *The Breathing Show*, the motion captured data from production sessions for *Ghostcatching* in 1999 are used alongside Jones's live performance. As seen in the images from *Ghostcatching, After Ghostcatching* and *The Breathing Show*, motion from Jones's motion capture performance has been used for subsequent productions (Kaiser, 2003).

Returning to Jones's discussion on questioning the technology's capacity to abstract motion, several aspects of the generation of data are of interest. Jones's (1999) interest in the production of his motion as a reusable resource is a useful perspective to follow. Rather than rejecting the opportunity to use his body as a commodified resource, Jones adopts the capacity to recast his data as an extension of himself beyond his physical limits (Jones, 1999). In this sense, Jones has understood the production of his labour and the technological extraction he propagated as the material he had set out to engender whilst a student.

Jones could now generate these digital forms and reconnect them to their source as reconstituted entities. The origins of his poses are his ancestors as Kaiser and Jones termed them (Kaiser; Jones, 2002). It is a lineage acknowledged as a fruitful beginning in the sense that Jones stated his interest in the trace as a productive way to connect the absent presence of movement in his work (Jones, 1999). This reconnection between the poses is derived from the Haring, Tseng, Jones collaboration (Kaiser, 2003). Jones's proximity to what were termed 'spawned' (Kaiser, 2003) and (Jones, 1999) selves from *Ghostcatching* and *After Ghostcatching, The Breathing Show* and *Approaching 21* are through using his body as a repository for generating movement.

It is a condition of making through motion capture technology's proprietorship that scholar Fred Moten suggests as blackness's 'thingliness' (Moten, 2018b). The certainty of blackness as a priori is worth noting for a reading of how Jones's production of motion is a pre-existing potential for acquisition (2018b). Blackness operates in an undeterminable space whereby recursively capture, extraction and possession are announced (Moten, 2018b). Jones facilitates the loop of extractive and generative animations. Here, we can comprehend abstraction as reproducibility. The steps, poses, postures and gestures provided by Jones are resources re-mixed and re-presented as digital substance.

The commodification of these virtual forms is exposed as a limit which Jones alludes to with the title *The Breathing Show*. The object as not having an ability to respond signals the extent of its function. Jones's captured motion has been contained by its original improvisation. The role of improvisation underlines the thresholds reached and intercepted. When Jones performed a series of improvisational moves, the technology configured his actions into a form that could be retrieved. However, as Jones shows in his live performance, his captured movement was an approximate calculation.

This is evident when Jones performs live. The capture that is displayed shows a restriction that exposes the limits of the technology. What we see is a configuring. It is a construction that is an arrangement. Jones breaches this despite the commodification and reproducibility the technology is capable of. It is this capacity to escape that Fred Moten points to. Blackness that enacts capture and blackness that is uncontainable.

6.2 Case Study – LaJuné McMillian

As previously stated, I have drawn on existing texts to appraise determining factors in McMillian's use of motion capture technology. The phases of familiarisation, coding and themes have facilitated this case study's three-part discussion of their engagement with motion capture libraries, motion capture technology and motion capture data. McMillian's use of motion capture libraries introduces this chapter's focus on their experiences with producing virtual animated figures.

McMillian's formal training in using motion capture technology as a New York University student provides a basis for determining how technical apparatus can be staged as a disruption of extractive practices. I have used the projects *Antidote* (2020), *Black Movement Project* (2019), *Clarity* (2019) and *Black Movement Library* (2020) as examples of work I have posited as in(ter)ventions. McMillian's practice is used to elaborate on how blackness, creative practice and technology have influenced their work.

This chapter's concluding section focuses on McMillian's use of computational data. I aim to establish how their relationship to motion capture technology and its conditional structures is negotiated.

Absent presence in motion capture libraries

LaJuné McMillian's experiences with motion capture libraries have prompted their development of a critical practice. They have used the results of searching for virtual animated figures to evaluate how the availability of content affects how they make their work. McMillian has aimed to find virtual dances by carrying out searches for representations of movement. Their dissatisfaction rested on more than one issue that I recount using their words to reflect a wider discourse on black (in)visibility.

> "We live in a world where Black existence is often overlooked by technological progress. Existing databases of 3D models and movements don't reflect the full spectrum of black bodies and experiences." (McMillian, 2021a)

They found that although the motions on offer did meet some of their needs, information on the identity of the performers was not available nor was any historical context of the dance listed (McMillian and Longhi, 2020). These details were seen as participating in the erasure of black cultural production.

Noting how this absence related to wider concerns of effacement, McMillian has aimed to contest the invisibility of Black performers. Their objection to the subordinated status conditioning black life is a concern rooted in what they see as a lack of representation.
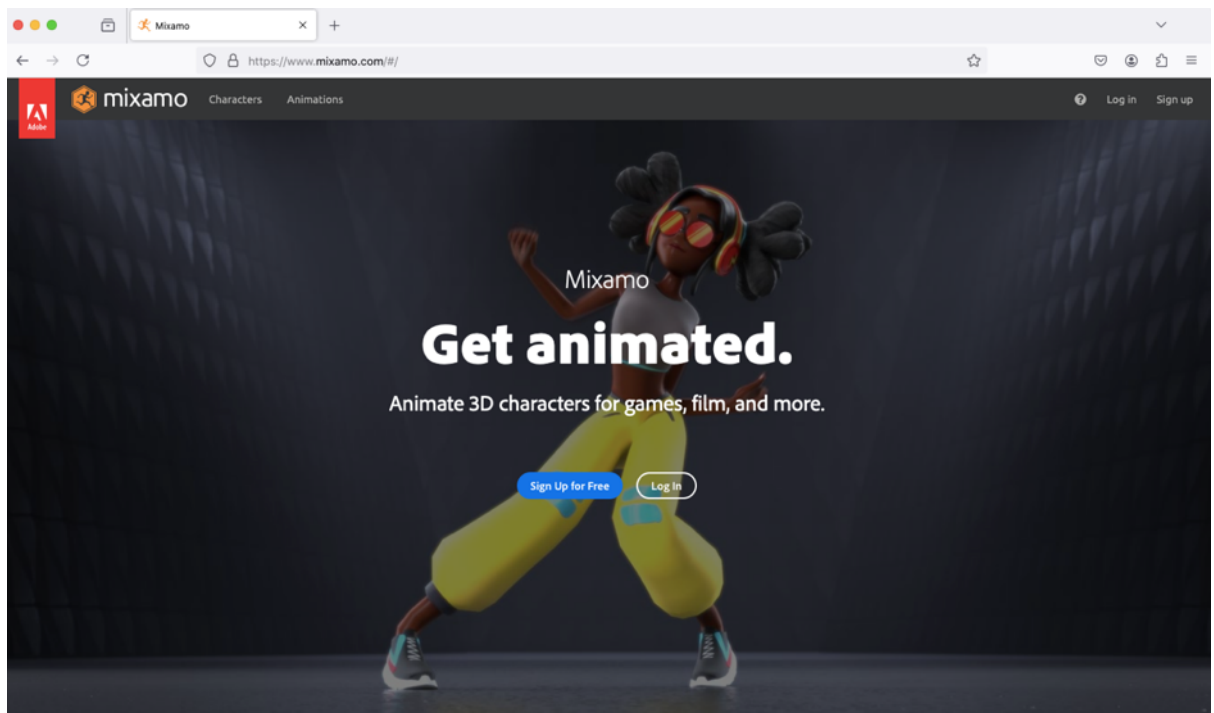
Figure 63. Mixamo's homepage 'Splash Screen'. © Mixamo.com

Representation and its limits

While representations of black people online as avatars have been thought of as an issue connected to a limited selection, the remedies McMillian sees are not solely to do with increasing the supply of black characters. The role of representation as an accurate portrayal of a group of people has steered their practice towards reviewing existing modes of production (McMillian, 2021b).

They have aimed to counterchallenge the inadequate choices available to create their virtual animated figures. It is the unfulfilled need to be able to produce the type of digital movement their work requires that compounds a sense of marginalisation. McMillian has expressed this predicament as an effect of assuming the interests of a homogenous group of users. In presentations of their practice, they underline how notions of neutrality exacerbate an intransigent change to the content of motion capture libraries. For McMillian, the reduced offering for producing a wider representation is insufficient as there are greater concerns regarding the impact of whose needs are served (McMillian, 2021b).

McMillian's response to address a lack of information available when searching for virtual animated figures has been the creation of *The Black Movement Project* (2020). It was created because of their critical reflection on who had access to the technology and what the beneficiaries of motion capture technology had facilitated. As McMillian notes, the project,

"...started as an online database of Black motion capture data and Black character base models. But I realized that my approach to creating this space was not necessarily correct. Mainly because representation is not enough. I did not want to perpetuate systems of harm on our bodies and on our movement and how we move in this space. So I needed to start to question what it means to be seen in these digital spaces and what it means to be liberated in these spaces as well." (McMillian, 2021b)

McMillian's concerns about administering the appropriate response are noteworthy. On the one hand, they identify inadequacies of technology when creating virtual figures, but their realisation that a remedy is not borne from disregarding the underlying mechanisms is unresolved. These set of circumstances are recursive prompts for McMillian's practice. In recognising the ability for movement to be expropriated and used without credit or consent, they have adopted an adversarial role. Addressing the affordances of motion capture technology demands scrutiny rather than the production of content. McMillian's reflection on exploring ways to enact alternative measures reflects their strategy to undo practices of (dis)possession and commodification, rather than participate in them.

The wider implications of technology being used as a tool for obtaining motion without compensation or attribution is a point McMillian has made clear. They have highlighted uncredited uses found in computer games such as Fortnite without reference to their original producers. Revenue for the company Epic Games which developed Fortnite generates profits. Noting that examples of dances popularised in Fortnite such as 'The Floss' are indicative of co-opted motion that has not been acknowledged, McMillian underlines the ability to easily adopt exploitative practices because dances, unlike choreography are unprotected intellectual property law (McMillian, 2021b).

These considerations are part of McMillian's approach to raising awareness of the ability to expropriate black cultural production. It is a specific example that demonstrates how they have drawn on connections to a broader perspective of exploitative behaviour. The unpaid labour McMillian brings attention to is seen as part of a systematised mechanism of commodification and extraction. It has a significant bearing on how McMillian's work

embodies their political positioning. Their use of motion capture technology is situated within a history of extractive practices that McMillian is vocal about avoiding.

As a result of the questions raised in examining motion capture libraries, LaJuné developed the project, *Black Movement Portraits* (2020). In their endeavour to counter the effects of expropriation and invisibility, using the body to obtain motion has not been rejected, and neither has the use of motion capture technology. McMillian's commitment to using technology to arrive at an equitable system for producing virtual animated figures can be seen as part of their interest in rejecting exploitative practices.

In the case of their work with dancers for *Black Movement Portraits*, LaJuné has used their practice as a visual language that connects to the dancers they've interviewed. In each rendering, the presence of a performer is not experienced as an ambiguous entity. This is despite the abstracted motion being the predominant form mediated.
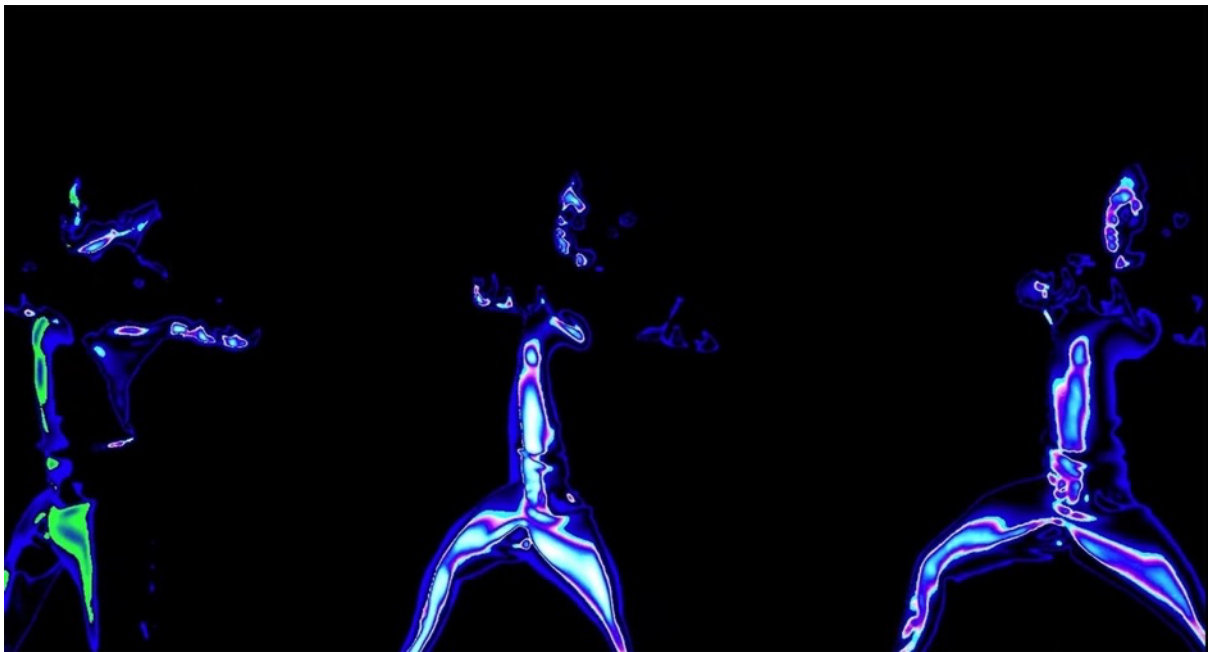
Figure 64. Renaldo Maurice's Black Movement Portrait created by LaJuné McMillian. © LaJuné McMillian.

The question of (dis)location

Questioning the ability to change who has the means to production and the consequences of that situation, their response to how to imagine alternative responses that can facilitate a plurality of perspectives is clear.

> "[o]nce I left school that my access to a lot of the different technologies that I was using was drastically different and very limited. And so it really challenged me to think about ways that I could regain access into this space but then also how I can help other folks have access into this space as well." (McMillian, 2021b).

McMillian's response to a realisation that representation would not achieve their aims is a useful point for consideration. Their summation that different ways to draw attention to their concerns would be required instituted several modes of their practice. For example, they began to facilitate workshops, teach, give presentations and exhibit their work. The imperative to adjust the adverse conditions impeding the ability to cultivate their practice is paramount for McMillian.

It is an aspect of McMillian's practice outlined in their artist statement as stewardship. In their interview with Kelly Pau, McMillian responds to the reason for their interest in technology. Their reply highlights an interest in providing a supplementary element to what the technical apparatus is used for. This educational framing seeks to broaden an aspect of technological capabilities as universal.

> "I became really interested in not only using the tools and software but actually teaching them because these are tools that we use in our everyday lives. I use them to talk about the larger contexts that they have." (McMillian, 2021, cited in Pau).

The parameters in which McMillian situates their work operate across social, political, creative and ethical domains. As discussed, these multiple areas of concern are drawn from their personal experiences that are not separate from black existence. In this sense, blackness is a mode of making that can facilitate overlapping concerns that are not restricted to institutional or domestic settings.

Operating in Blackness

LaJuné's reflections on using motion capture technology articulate a history of exploitation, dehumanisation, and subjugation as forms of anti-blackness. As the themes running throughout their projects attest, Black bodies as commodities for creative and financial capital is the ongoing legacy of enslavement and colonisation. Their work foregrounds the impositions placed on black people giving traction to a standpoint. As a defining feature of their practice, it is not solely the technology that McMillian uses as a critical perspective. In their aim to expose users of motion capture technology who have not attended to notions of neutrality, McMillian considers blackness as a context for making and using motion.

Movement in this vein is not solely physical. The psychological and self-regarded aspects of what it means to move encompass the legislative, political and social barriers McMillian draws on. These are conveyed as generative factors enacted to suppress and govern. They are made known through McMillian's use of motion-captured bodies whose movement is underscored by accompanying sonic and visual texts as shown in Figure 60, a video still from *Antidote* (2020).
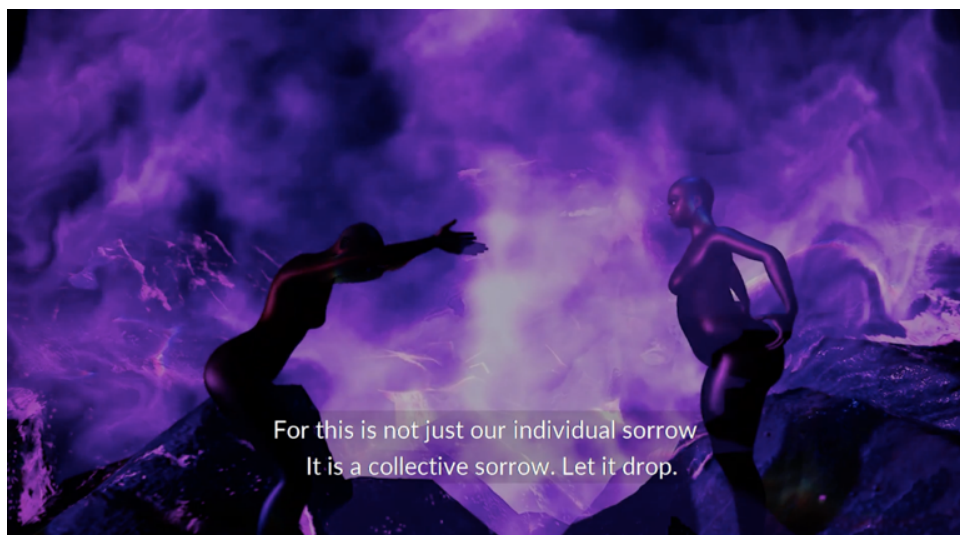
Figure 65. Antidote (2020). © LaJuné McMillian.

Spatial concerns physical and virtual domains

McMillian's attention to the constraints and possibilities experienced as a black person speaks of an integral part of their practice when they state,

'I love movement, but I also love technology and my art practice, too. I asked myself: how can I merge all of my interests into one space? What do I need to build out that space and make it a reality?' (McMillian, 2021).

Describing their experiences of operating in contested spaces, McMillian remarks how they have navigated their awareness of spatial exclusion. In their response to marginalisation, the search for access to the technology that would facilitate the creation of virtual animated figures is pertinent. Their answer to being affected by being excluded has resulted in devising a strategy to position themselves where they can pursue their practice.

Here, planning for the optimum conditions required to occupy and create spaces is of note. While realising how being in spaces as a minority might affect them adversely, their reflection on how to achieve this aim is incorporated into their work. Present in McMillian's admission of being "hesitant to get traditional 'tech jobs'" (McMillian and Longhi, 2020) is the experience of entering spaces where their racialised black identity confers a subordinate position to the dominant presence of white people. McMillian elaborates on the repercussions of operating in contested spaces and its continued affect.

"We rarely talk about how harm can manifest in these spaces: for instance, how a neighbourhood and school system can uphold white supremacy, and how that mentally affects children who will never "fit" the criteria of whiteness. When I was nine, I began figure skating, and I loved it; it was an escape of everyday life. I didn't need to speak much, and only needed to listen to my coaches and practice. The anxiety of this space did not hit until I started to test in front of mainly white judges. I have been on a journey of unpacking the ways I moved, and why."

LaJuné McMillian (2021)

McMillian's response to encountering and seeking to counter harmful interactions points to the adverse effect on black people founded on their personal experience. Based on their encounters navigating predominantly white spaces in competition as a figure skater and in education, McMillian has reflected on aspects of their negative experiences. For them, representation as a minority in spaces where there is a white majority has resulted in a dislocating effect of difference.

Crossing domains of difference

These affective conditions have become motivational factors for introducing movement in their practice as a psychical and physical response. Scholar Katherine McKittrick connotes the term black geographies to account for the multifaceted ways spatial and temporal configurations position people who are determined as black permanently outside of some boundaries and contained within others. Visual markers of racialised black identity are used to delimit and govern who belongs in an environment. This creates a self-perpetuating system for normalising demarcations. As McMillian notes, and McKittrick has theorised, it 'a black sense of place' whereby managing the negotiation of being in a space where a black presence engenders feelings of being displaced is irreconcilable (McKittrick, 2006).

The navigational strategies McMillian has recalled demonstrate further how their work has taken place. In *Black Movement Project* (2020), LaJuné McMillian has drawn on an embodied corporeality that is not constrained by spatial and temporal impositions. Enacting their challenge to culturally dominant knowledge systems has been an important factor for McMillian which they express as a necessity.

> "[It]serves as a way for me to reconnect and return to my body and ancestors through learning about the wealth of movement practices and journeys that exist and manifest through Blackness and Black culture. I have a Black body that once wanted more than anything to move in ways that uphold white supremacy. How can I dismantle that?" (McMillian cited in Longhi, 2020).

This closing remark is McMillian's search for a decolonial strategy that can offer them a practice devoid of the way anti-blackness has exacerbated the effect of displacement and (dis)possession. Their identification of re-establishing kinship ties beyond physical presence points to a cultural production that has been self-censored to conform to standards of white normativity. LaJuné McMillian's response echoes the call Sylvia Wynter makes to intercept the dominant model encoding the human as Man (Wynter, 2003). Wynter's proposition suggests that countering the proliferation of a singular representative form is possible in as much as the capacity to shape a narrative of human existence does not reside in a 'genre-specific' account (Wynter, 2015). By making clear how a proliferation of the same forms of corporeality have usurped other modes of what it is to be human, Wynter shows that it is necessary to counter such an overbearing worldview. In McMillian's case, their interest in rethinking movement directs their open-ended objective. Although there is no defined set of instructions to follow, the influence of deferring to white bodies affects McMillian's approach to recalibrating what Black movement can be.

In an interview with Lucia Longhi (2020) MacMillian explains how they see the potentials and pitfalls of technology. They aim to attend to what they assess as an invisibility of black bodies in virtual domains. Through their work, they explore possibilities beyond an existing narrow frame of references that they do not find is addressed. This has led them to further question art and technology practices. Consequently, their project responds to what they identify as non-accommodating spaces for some people who share their identity.

As previously stated, McMillian has initiated a practice that moves away from sustaining motion capture libraries. This decision is predicated on not wanting to be an exponent of exploitative uses of labour. Their rejection of motion capture libraries as places promoting universalism has given rise to restaging how production of virtual animated figures can be decolonised. In their discussion on rethinking the library, McMillian indicates how their Black Movement Project (BMP) can engender anti-extractivism.

> "My definition of BMP has evolved since I started it. When I looked at it as solely a tool, it limited what it could become. I'm more interested in the project showing me what it should hold, what information about movement it needs to survive and serve. For this reason, I began to think about it in terms of a library. Libraries are great because they don't just hold books; they hold a wealth of knowledge in many mediums and they bring people together, building community. I am thinking of the BMP as a "future library"—what new ways can this space hold Black movement?"
>
> (McMillian, cited in Longhi, 2020)

McMillian's focus on what cultural theorist Fred Moten (2018b) invokes as black sociality is offered through retrieving the forms of togetherness a physical library offers. McMillian's recuperation from the antagonisms of blackness they have identified in motion capture libraries, follows Moten's advancement of the ways congregation is anticipated by blackness and remedied through it (Moten, 2018b). The limitations of contributing to a system that McMillian has deemed destructive is notable. Their re-evaluation which orients *Black Movement Project* to become the *Black Movement Library* fulfils the requirements of blackness. In this sense, LaJuné McMillian's centring of blackness determines their use of motion capture technology.

McMillian's work can be seen as a way of rethinking movement. Their approach has been to adopt an embodied and political response to the impositions experienced while occupying white spaces such as the figure skating environment they encountered before entering the field of technology.

McMillian sees libraries as more than books; the dominant idea of systematised knowledge production is rejected in favour of an undetermined future. They recognise the precarity and vulnerability of black living and as such, seek to counter the proximity to negation blackness occupies.

The role of communal gathering as knowledge production and exchange points to a counteraction. McMillian questions the dominant function of capturing motion for commodification and redeploys its mechanism within an assembly for movement. Returning to Moten's productive modality of blackness "in which we flock together to be in the name of being otherwise" (Moten, 2018b:160), helpfully underscores the sanctions and constraints imposed and breached by containment. In Moten's attention to the inexhaustive directives found in governing policies and standards, the work of anticipation is crucial. The move away from an enclosure that has been predicted, towards an unexclusive state is ever present.

To this end, the arrival of blackness as restriction is, as Moten has pointed out, its animatedness (Moten, 2018b). McMillian's recognition of this constant condition is evident when they reform the *Black Movement Project* as the *Black Movement Library*.
In the shift to *The Black Movement Library,* McMillian provides a series of events including a mobile workshop and online presentation which facilitates a dialogue where, as they state, "we talk about all of these different issues around appropriation and the history of appropriation" (McMillian, 2020b).

In one example, McMillian's six-part digital workshop, titled *Understanding, Transforming, and Preserving Movement in Digital Space* they provided a set of activities to bring together technological apparatus as a mutual aid. In the workshop, McMillian invites participants to learn about Extend Reailty (XR) tools and their relationship to race, gender, and culture. McMillian and workshop participants explore themes such as cultural representation, erasure, and exploitation through readings and participating in discussions about motion capture, avatars, rigging, and 3D environments (McMillian, 2021b).

In the concluding part of this chapter, I examine LaJunéMcMillian's use of computational data as a core element of their practice.

black data

In an online discussion between LaJuné McMillian and artist and collaborator Marguerite Hemmings, their project *Clarity* (2020) provides a socio-political context for relaying how abstraction and computation construct a narrative they seek to counteract. They demonstrate how their use of technology in constructing animated figures is shaped by Blackness. For them, racial intolerance and subordination can be intercepted to undo oppression. By using their experiences as a modality for critical analysis, their use of technology functions to decolonise and challenge existing structures of domination.

As described in Chapter 2: The Master's Tools, the process for creating motion for animating virtual figures results in the production of computational data. It is a reconfiguration of the body into digital information that LaJuné McMillian calls into question. Voicing their objection to what they see as an extractive system, they declare that,

> "[o]ur bodies and movements are more than data points and avatars. They hold our humanity and it's time for digital spaces and tools to reflect that and for all of the spaces that we enter to reflect that."(McMillian, cited in, *Walkthroughs*, 2020a).

McMillian's statement foregrounds a demand to prevent what Hortense Spillers (1987:68) calls the 'atomized' body from being the normality of how black bodies are made available as commodities. Their collective insistence that an intervention is necessary underlines how McMillian, a practitioner who works with motion capture technology conveys the same demateriality Spillers recounts to theorise the modalities of blackness (Spillers, 1987). These present histories that are the ongoing legacies of chattel slavery are recognised through McMillian's engagement with technical apparatus imbricated with the body that is never neutral nor universal.

As Spillers points out, during the process of enslavement where the transformation of people such as the Fulani, Igbo and Fon are denied their humanity, the body as a relational subject has become displaced (Spillers, 1987:67). The commodification of every part of the captive body is made available to use even after death. Gratuitous violence including torture, rape, medical experimentation that was enacted is a totality of violation which prohibits any complete escape from subjection and subjugation in life and death. The living and dead slave are equally full of use.

The body that is inaugurated through the production of a new mechanism enforcing atomisation echoes the logic of extractive practices McMillian work seeks to dismantle (McMillian, 2020b). For them, an alternative way to utilise the tools so that they do not reproduce the expediencies extractivism promotes, is imperative.

Possibilities (Methods, Processes, Actions)

In the final part of their talk with Tamar Clarke-Brown, LaJuné McMillian candidly remarks on their aims for future projects.

> "My dream would be that people who wouldn't normally have access to motion capture data, would have access to the space and build projects that centre other realities especially in VR. Especially VR. I want to see work that doesn't centre white people." (McMillian, 'Counter-Archives', 2022)

As stated previously, McMillian had noted the lack of information regarding the identity of performers generating motion capture data. The supply of motion found in libraries led to the development of their work *Black Movement Portraits*. This project was staged as an in-depth inquiry into asking Black performers why they moved. The question was staged as a departure from the expectation that motion capture provides the means to commodify and circulate data for ownership and consumption. McMillian's use of motion capture technology focused on introducing details that could act as fundamental to acquiring knowledge about where the movement originated.

In this sense, McMillian intercepts the normalised process of abstraction found predominantly in unidentified computational data. This in(ter)vention enables McMillian to expose the expectation of anonymising human movement thereby impeding the disassociation created between the live performer and the body from which motion is obtained. Readily accepted practices of digitising movement are critiqued through McMillian's practice.

To create the portraits, McMillian has stated that they spend time listening to the interviews conducted with each performer before beginning the process of constructing digital animated figures. Each portrait has been based on this engagement with the dancers and their documented experiences. McMillian's initial project for creating a database of motion capture data and digital avatars departed from a focus on representation partly due to their belief that contributing to a system that did not benefit black people had a detrimental effect. In *Black Movement Portraits* McMillian's privileging of performers' voices

associates the stories of how they think about blackness, and corporeality in a wider framing of movement. Their approach as a decolonial strategy is evident in their following observation.

> "Extensive data cleaning is something you usually want to avoid, which is why motion capture sessions last days for limited motions. However, since I did not take this approach, I was left with movement data that was both magnificent and "flawed" (McMillian, 2020b).

Recognising the value systems of an animation discipline more in alignment with photo-realism, the data that would often be rejected as imperfect is kept. Most notably, McMillian's critical appraisal of value systems that inform hierarchical structures become an essential part of their rejection of valorised best practices. They extend this observation of how they establish a counternarrative stating that,

> "Some of the data was "unusable" in a traditional animation environment. If I treated it as a motion capture session, I would have stopped them mid-performance, because of the break in the data. I was not interested in this though. So when I went through the process of "cleaning" the data and attaching it to their avatars, I also included machines breaking in my performance because they normally do." (McMillian, 2020b)

These explicit references to adopting the unfiltered mechanics of technical apparatus are necessary inclusions that have led McMillian to an expansive reconfiguring of human movement. In a representational construction of a human Sylvia Wynter considers how 'an adaptive truth for' speaks to an overlooked capacity for self-authorship (Wynter, 2003:269). Following Fanon's attention on the effective shaping of humans through their rehearsed practices of socialisation, Wynter focuses on an empowering aspect of mythmaking. These modes of narrated existence allow a dualism of biological and autobiographical to merge into a 'hybridly human' being (Wynter and McKittrick, 2015).

In Wynter's relational overturning of a reified conceptualised human in its capitalist, individuated liberal subject a 'non adaptive truth' is offered as viable reformation of existing ways to be human. McMillian's use of motion capture technology similarly carves out a human form that rejects typification. This can be seen in their production of digital motion. The refusal to discard 'erroneous' data supports their endeavour to expose processes that, as stated are regular occurrences.

They are moments that introduce new possibilities beyond the enclosure of propriety. Rejection of the normative standards regulating how bodies are represented in a homogenised way allows McMillian to provide a critique and rejection of what existing regulations influence their use of motion capture data.

LaJuné McMillian's blackness provides a means to question the technological tools integral to their practice. Their response to the problems found with using motion capture technology has promoted reflections, critical inquiry and expansive ways of making work that is educational beyond a rudimentary teaching to use the tools. They contextualise their practice through commenting on how their inquiry is shaped by a history of racism, oppression and subjugation. By using this modality of critical analysis, they examine ways that can decolonise and challenge existing structures of domination. Descriptions of acts that contest and alter ways to use technology are probed by McMillian's collaborator, Marguerite Hemmings.

McMillian's practice has been to fashion a corrective to the malign effects of a technology understood as extractive. The ability to make use of a person's movement for the creation of animated figures is not seen as favouring the performer or actor. This perspective elucidates McMillian's recognition of attending to the communal and cumulative effect motion technology has engendered. McMillian is seeking to accommodate the multiplicity of blackness with a tool that abstracts and commodifies the body as a resource (McMillian, 2020a).

Their project *Black Movement Portraits* aims to prevent the anonymity motion capture technology affords. The project answers McMillian's questioning of the computational adaptation of the body as it is used to create motion capture data. It is, as the name suggests, a way to effect material conditions onto the digitised black body.

> "I don't wanna have a database that's available for people to use, to see us just as datapoints; to see us just as data. I want people to see us as human. I want people to celebrate us, honour us." (McMillian, 2020b).

> "I'm not just collecting movements from people…I'm also recognizing that these movements come from people who have stories…. one of the ways that I do this is through this idea of humanising data and humanising data collection." (McMillian, 2020c).

For McMillian, there is scope for building a multi-faceted approach to the anonymity of computational data. To mitigate the practices that aid invisibility, McMillian has interviewed dancers to supplement the digitised performances with personal accounts. These recorded stories containing biographical information are intrinsic to a visual re-reading of captured motions. Using audio as a translation mechanism for the dancer's movement introduces a meta-narrative. It is an augmentation indicative of McMillian's aim to connect audiences to the dancers providing the data.

McMillian's collaboration with Marguerite Hemmings used motion capture suits to create a simultaneous real-time production of movement conducted live in a virtual space. This interchange between two people to produce motion from separate places can be seen as harnessing the technological apparatus that facilitates the transmission of data across physically distanced spaces. In one sense, the technology serves a rudimentary function of allowing McMillian to continue to work when the Covid-19 pandemic interrupted other plans (The Culture LP Work In Progress: LaJuné McMillan April 4, 2021). However, it is the exchange McMillian and Hemmings materialise to decentre the computational infrastructure governing this interaction that points to a decolonial strategy.

In their presentation of the work *Antidote* (2020), McMillian describes the project's initial stage.

> "[w]e began to just talk over Zoom about what we might want to make. How do we bring this spirit into this process? How do we collaborate with our ancestors' spirit and what does that look like? How can we use that collaboration in a way to connect to each other in a way that transcends these digital technologies?"

Here, the affordances of motion capture technology are subordinated to allow McMillian to privilege an alternative exchange. Their interception rests on the collaborators invoking ancestral connections.

6.3. Case Study – Rashaad Newsome

In this chapter on Rashaad Newsome's use of motion capture technology, I advance an account of their production of digital animated bodies. It is a position that stages the influences activating their work. Following Moten's claim that 'the displacement of being and singularity, is blackness (Moten, 2018a: xiii), I have aimed to emphasise how Newsome's use of abstracted digital motion questions the assumption of universalism. Using headings, I have proposed as critical junctures, my discussion of Newsome's work is presented non-linearly to reflect how their use of motion capture technology for creating digitally animated figures has been researched.

I begin with a precis on Newsome's engagement with motion capture libraries. I then proceed with my observations of their creative productions using motion capture technology. This leads to a discussion of how Newsome's negotiation of contested spaces has engendered a sense of dislocatedness. In the final part of this chapter, I consider the artist's construction of virtual bodies in motion in connection with their experiences of (dis)possession and displacement.

The following excerpt taken from Rashaad Newsome's website describes their practice as:

> "…including collage, sculpture, film & video, animation, photography, music, writing, computer programming, software engineering, community organizing, and performance, to create a divergent field that mirrors the intersectionality of their lived experience. Using the diasporic traditions of improvisation, they pull from the world of advertising, the internet, art history, Black and Queer culture to produce counter-hegemonic work that shifts between social practice and abstraction." (Rashaad Newsome, *Rashaad Newsome Studio*, s.d.)

Newsome's work centres on marginalised communities of black, LatinX Vogue practitioners whose queer and non-conforming gendered identities have enabled me to draw on the sociopolitical aspects of their work. My focus has been on their use of motion capture technology and contexts arising from producing digital animated bodies. The context of my selection criteria is detailed in Appendix G: Sample Coding Excerpts providing further reflections on documented when researching each artist.

Motion capture libraries

During their Stanford University residency, Newsome discusses how they have been motivated by their experiences with existing motion capture libraries to seek an alternative approach to creating digital motion to animate virtual figures. Referring to their digital creation 'Being,' they state,

> "When creating this model and trying to work with the materials that exist in the world like in my collage work, that wasn't really possible because when you go through so many of these mocap libraries......the physical gesticulations of people that have been captured are all white people." (Newsome, *Being, The Digital Griot*, 2021).

Newsome's search in motion capture libraries began with a motivating interest to utilise identifiable, culturally specific movement. They aimed to access virtual representations of dances by Vogue performers. Their account of searching for, rejecting then capturing specific motion is the result of a lack of culturally specific offerings in motion capture libraries. Responding to the lack of suitable digital movement in motion capture libraries, Newsome highlights the inability to fulfil the requirements for their black culturally embedded productions. Consequently, performances that are reflective of Black and queer artistic practice have been a catalyst for Newsome's projects. In several presentations, they explain the significance of working to preserve the legacies of dance pioneers who established what is now an international cultural practice.

Newsome's practice is informed by documenting sociocultural forms of black, queer, trans, Latinx, forms of vernacular dance. Responding to exploitative and problematic forms of cultural capital using documentation and archival practice are ways to recount the act of witnessing beyond the live moment. Observation and preservation are methods of making and critical practice. Archiving the movement of black, queer dancers is of concern to Newsome. The effects of the HIV and Aids global epidemic detrimentally impacted the communities Newsome remains part of. One of their aims lay in using a technology that could redress an existing precarity whereby friends and associates whose dances were undocumented risked being forgotten, erased or co-opted (Newsome, 2022).

The opportunity to create a library of Vogue ballroom dance styles offered Newsome a practicable way of using motion capture technology. Performances of different genres of movement that could be tracked and archived were compensatory measures that could preserve part of an art form that had already been lost. For Newsome, motion capture libraries are a repository for what is predominantly ephemeral and live performances. Libraries become a means to communicate a neglected history.

Movement in Defiance

Described as a tour guide, Being is the interlocutor for Newsome's 2019 show titled *To Be Real*. Devised using computer programming, motion captured from Vogue performers was activated by audience interaction, Newsome presented their first artificial intelligent entity as an oral historian whose West African genealogical roots echoed Newsome's interest in a diasporan amalgamation of cultural references. Being 1.0, a Digital Griot interweaves what becomes its 'self-authored' story with Newsome's exhibited sculptures and collages (Newsome, 2019).

Being, the digital animated figure is a virtual human biped whose form reflects the live bodies of performers who have supplied the movement. Being breaches the customary protocols that are expected of a tour guide who follows orders. The ethical demands of servitude and compliance are questioned. As Sylvia Wynter shows, "Work" as labour-capacity, is the central inscription, the sign that proves one's belonging to the universal class—to the symbolically-saved (Wynter, 2016:125).

The refutation of adopting the traits of universalism can be seen with Being's non-alignment to behavioural norms. These are presented as markers of resistance and disobedience. Being performs using actions that subvert expectations of its predetermined role as a helpful virtual robot.

Newsome's computer programming of Vogue performance is a method that questions who is afforded agency as connected to the task of decolonisation. In this sense, the predetermined movements that have been coded by Newsome are a library of motions for Being that are used as advocations. These choices appear as Being's range of actions to deploy indeterminately. They are scripted to create conditions that appear self-determined. Being's responses raise questions about the ability to refuse and be given consent. It is an interest Newsome has sought to translate into an artistic practice by implementing

movement as resistance. In their discussion of agency, Newsome describes the significance of working with technology that addresses systems of power.
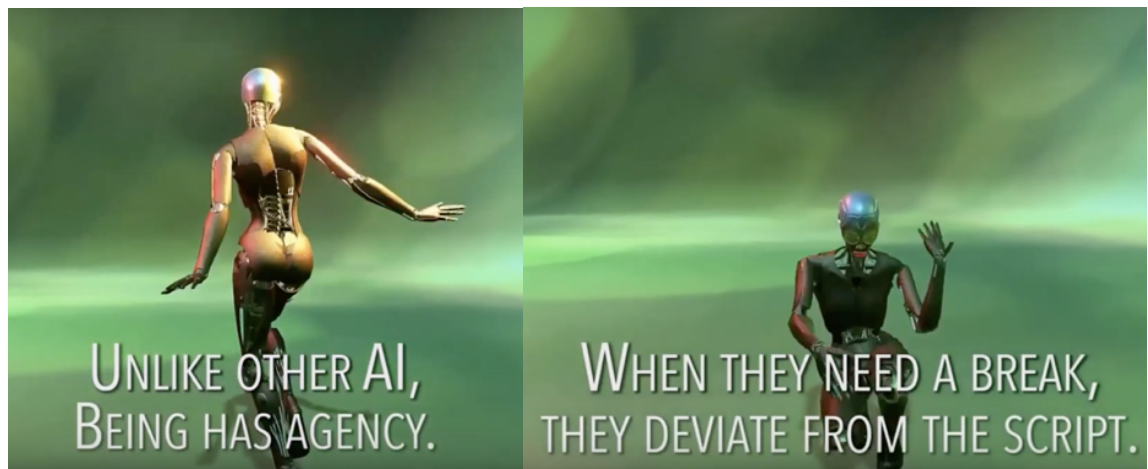
Figure 66. Being 1.0 Rashaad Newsome (2019) © Rashaad Newsome Studio.

In one example, the algorithm is an incarnation of Newsome's interest in challenging computational conventions that replicate relational ties of dominance and subordination.

> "Every hour in mid-conversation Being says 'look boo boo, I just can't' and breaks the AI chatbot script to read excerpts from counter-hegemonic theories as a simulation of agency and resistance against the indentured servitude." (Newsome, 2022).

It is a recited intervention that is equally facilitated by Newsome's repository of movement. The library generated through the bodies of black, queer and non-conforming gender identities is a presence that has been unacknowledged and absent from existing motion capture libraries. Being's defiance becomes agential due to Newsome's disruption to conventional uses of digital animated movement.

An Archive For Motion

Newsome's explanation of the process of creating motion for *Being 2.0* is notable for the educational instruction they embed in the project.

"Using motion capture I am collecting the movement data of prominent vogue practitioners who are proficient in styles ranging from Old Way, Vogue Femme and all their subsets. This data will be used in a script where Being will perform a lecture/dance workshop." (Newsome, 2022).

Figure 67.Assembly by Rashaad Newsome. 'Being 2.0's' dance workshop at Drill Hall, Armoury. 2022. © Rashaad Newsome Studio.

Unlike the acquisition of human motion for entertainment industries that have been criticised for exploiting black cultural production, Newsome's creation of an educational vehicle for Vogue performance refutes the audience's engagement as pure consumption. Participants in Being's workshop are asked to reflect on their complicity in the intersecting structural forces enacted to maintain racial and gender inequities (Newsome, 2021). This form of activism acts as a sociocultural invocation. Creating a library of captured motion performed by Black and Latinx queer, trans and non-binary people is redoubled given the consumer-based technological apparatus Newsome had previously incorporated into a multidisciplinary live performance.

Coding blackness

Computer gaming technology such as that was promoted as an affordable device for playing arcade-style entertainment systems was predicated on mapping the human body using video surveillance techniques. It had become a viable way for artists exploring computational data and live performance to co-opt its technological possibilities. In the case of *Five* (2014), Newsome worked with a Nintendo Wii to track motion.

This technology was promoted as an innovative tool for following a person's movement to generate images. This novel way of using surveillance as a gaming technology was adapted using Open-Source code. The code Newsome adopted included source code built by a San Francisco tagger who fell from a building and became disabled but was able to continue tagging by using eye-tracking movements to project onto buildings.

Kinect camera's motion capture technology is configured as a visioning tool with three-dimensional accuracy not previously obtainable via Nintendo Wii. The Kinect camera could be attuned to a specific part of the body. Isolating an area significant/pertinent to the dance performed. Newsome used the technology to educate and explain to unfamiliar audiences the five forms of Vogue Femme which are Hand Performance, Catwalk, Floor Performance, Spin Dips and Duck walking.

In their early use of motion capture technology to generate digital movement, Newsome's *Five* (2014) encompassed live orchestra, choir and Vogue performers.
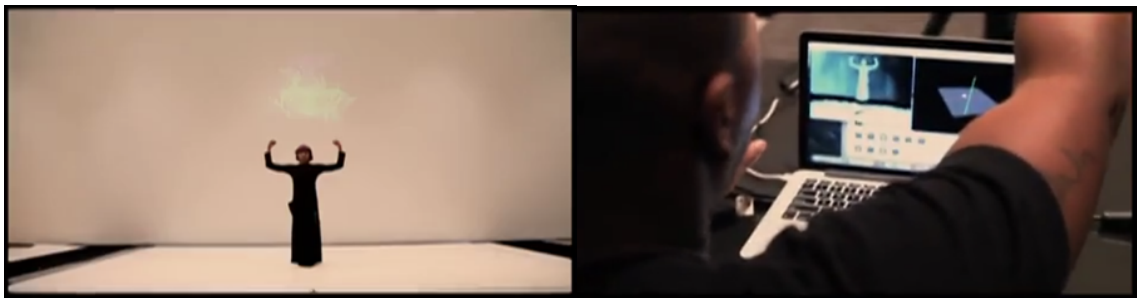
Figure 68.Screen grabs from video documentation of Rashaad Newsome's Five (2014) at The Drawing Centre, New York. © Rashaad Newsome Studio.

Drawing on their skills as a technologist, Newsome integrated motion capture technology into a mainly live environment. Computer visioning and gaming technology that could be customised using computer programming generated an abstracted gesture Newsome later shaped in a 3d sculptural form. In their interview with Carolyn Trench, Newsome recalls that they had been "developing a motion tracking software for a few different projects using Max/MSP and Jitter technology" (Newsome and Trench, 2012).

Having previously gained knowledge of the tools and access to the means of production, Newsome could use the technology in an abstract way more associated with their collage work. Using motion capture technology in *Five* (2014), they have been able to focus on capturing gestures largely considered forms of black vernacular expression. Their decision to use familiar codes of black culture that are on the one hand popularised and appropriated,

while on the other hand become racial tropes that denigrate black women is a thematic recurrence in their work. In *Five* (2014), Newsome focuses on a single part of a performer's motion such as their wrist or ankle that draws attention to the work of hacking present in their use of a system designed to recognise the whole body as shown in Figure 62.

The technology's ability to abstract motion from a live performer becomes *the* marker of black performance. Newsome transforms this action into a larger presence in a physical space. It is an interventional practice Newsome has adopted to galvanise responses to blackness as an act of being in place and displaced. As Trench comments in her conversation, "Newsome uses his power as an artist to appropriate various social roles and to bring marginalised cultural products to mainstream fine art venues" (Trench and Newsome, 2012). The occupation of space as a political motivation for artistic practice is the next focus of my discussion on Rashaad Newsome's creative productions using motion capture technology.

Negotiating self-defined and imposed identity

As part of my evaluation of artists' navigation of their blackness, I examine how a sense of self is not divorced from creative production in Rashaad Newsome's work. Discussing their experiences of racism, they use their practice to draw attention to the intersecting forms of subjugation explaining that,

"We live in systemic racism. If you're talking about black queer people, homophobia outside of the community, inside the community. So many things are coming at us in quick succession… So often, black queer people are expected to be silent and invisible and I see the dancers on those screens engaged in a dance of freedom you know a dance that aims to break free from that containment of silence." (Newsome, 2023).

In Newsome's articulation of the condition of blackness, they note that demonstrating strength can be seen as solely a triumph over adversity. This perspective, they state is not altogether problematic, but they observe its limiting framing. It is a condition they say "normalises the insanity in which we live in" (Newsome, 2021b: 00:09). Recognising the ability of those experiencing racial oppression as personal and shared encounters is a prompt for Newsome to formulate how people respond to the effects of cultural hegemony. By using the term Black Magic, Newsome demonstrates that a navigational strategy operating within a colonial, hostile, anti-black system is a generative form of blackness (Newsome, 2019).

(un)mapped corporeality

In Chapter 2, I considered how cartographies of logic are mediated and reproduced as a natural order. I determined how the production of fixed positions extends to non-physical domains where a rationale for understanding who and what is deemed in alignment with regulatory systems. I continue with the analysis of Rashaad Newsome's creative practice with a focus on how their work with motion capture technology responds to the ideas of bodies mapping time and space.

I have used a panel discussion between artists and cultural theorists to attend to Newsome's practice of contesting hierarchical structures. I have situated Newsome's practice as a challenge to Enlightenment thought and colonial domination by centring their challenges on spatial and temporal ordering as a decolonial strategy. The existing text I draw on demonstrates how Newsome's work puts forward a practice that strategically thinks about how space is contested. I reflect on how Newsome's work considers the imposition of geographical and embodied contouring.

My use of notes made while listening to those with whom Newsome is in conversation breaks with notions of demarcation, boundaries, and enclosures. This framing is in alignment with my staging of Black Studies and black study are indicative of the ways knowledge production is activated. My processes for transcribing handwritten notes to digital text, outlined in both the introductory chapter and this chapter, support my method to acknowledge how I have conducted my study within non-delineated space and time. For consistency, I have used the conventional font and sizes as stipulated for doctoral dissertation submissions with adjustments that reflect the prominent visual changes I made in my original notes. I have retained the gendered pronouns attributed to Rashaad Newsome that were used at the time of writing.

I have transcribed notes from my Reflexive Thematic Analysis familiarisation phase. I listened to a live-streamed event titled *Livestream | Salon: Captcha: Dancing, Data, Liberation* convened as a round table discussion. It formed part of Rashaad Newsome's exhibition *Assembly* at the Drill Hall, Park Avenue Armory in New York.

I have focused on a one-hour 16-minute segment from the event that comprises my study with Ruha Benjamin, Aimee Meredith Cox, Arthur Jafa, Saidiya Hartman, Rashaad Newsome, Tavia Nyong'o, Kiyan Williams. In the case of transcriptions from this event, some auto-transcribed texts required further listening. I have included my transcriptions in an Appendix titled *Transcription of Livestream | Salon: Captcha: Dancing, Data, Liberation*. Further texts that inform my case study of Rashaad Newsome can be found Appendix G: Sample Coding Excerpts.

Black Data

As I have previously stated in Chapter 2 – The Master's Tools, the visual ascriptions of race and gender that are assigned to categories are destabilised because motion capture technology reconfigures the body as computational data. Race and gender become unfixed by an alternative system of visual encoding. It is a recalibration of binary identities that widen the possibility of alternative responses to classification. In Rashaad Newsome's creation of Being, the premise of a virtual form that is not defined through a singular understanding of what Sylvia Wynter terms the descriptive statement undermines the certainty of understanding how a digital human can be represented.

Newsome utilises the technology's capacity to represent a human body in motion through their practice of abstraction. As offered in their work *Five*, the use of motion capture technology provides Newsome with a way of thinking about interventions in the cinematic apparatus that privilege visual representation that reproduces the logic of biologically determined classifications of the human.

> "The black body, or the female body, is a body that comes so loaded that it's a really exciting starting point for many of the conversations that I'm trying to have." (Newsome, 2023a).

Newsome speaks of a notable basis for their use of motion capture technology. This observation of the computational 'datafication' of a body which is capture *and* abstraction produces a generative modality for thinking beyond an enclosure of visual acuity. The ascriptions of identity that Hortense Spillers (1987) names as the hieroglyphics of the flesh are salient points.

For Spillers, the sight of black flesh that has become couched in a recursive history of racial subjugation marks the point of blackness. Spillers wants us to remain in blackness but not the totalising state of abjection that dominates a discourse of naming and codifying the black body and the female body. Newsome's interest lies in questioning how notions of binary distinctions are used to determine who is represented and, on whose behalf, (Spillers, 1987).

> "…the framework that I was a cis gay man working with images of women isn't what's happening. The work is operating in the realm of the imagination which for me is a realm that is gender non-conforming; a space where many different energies and genders are interactive." (Newsome, 2021, npag.)

The conventions of gendered categories which remain tied to visual representation are undermined by Newsome's work with capturing the motion of Vogue performers. There exists within the technological apparatus of capture and abstraction correlations between questions Hortense Spillers poses in her essay which inform my conceptual framework and Rashaad Newsome's adoption of an extractive and generative technology for creative practice.

In the concluding part of my case study of Rashaad Newsome's practice, I turn to their discussions on how they have configured data to produce digital figures in motion. My analysis of Newsome's presentations of their work is undertaken using my method of working with artists' reflections on their work. I have used their words to evaluate how motion capture technology can be seen as a tool that renounces the given conditions of imposed identities and allows artists to create self-defined formations of digital animated bodies.

Newsome's discussion with Legacy Russell on the use of data brings into focus the grounding of their practice in the use of black cultural idioms to highlight its omissions and oversights in computing (Newsome and Russell, 2021). Black data offers Newsome a productive way of encoding and then applying what is ostensibly a medium that is susceptible to being co-opted, expropriated and utilised for the accumulation of financial and cultural capital. Although Newsome acknowledges the inevitable extraction of data being used without credit or remuneration, their work with black data is activated by how they can imbibe virtual figures with previously hidden or erased black cultural production.

Computationally material

Their adoption of fractals connects the abstract mathematical foundations of computing to material formations. Newsome's application of a little-known theory of African fractals maintains their diasporic investigations. Their mapping across bordered geographical regions and knowledge systems is a connecting through-way to reconfiguring the algorithmic calculations to concrete associations.

In this way, Newsome's construction of data serves to recontextualise computing through an extension of mathematics. Their use of African fractals repositions a universal structuring system that references their dislocated proximity to both knowledge productions. Interconnections between Newsome's blackness and queerness become a perspective to introduce the absent and existing fields of existence that reside outside of dominant spheres of influence. Newsome's appraisal of data as a limiting boundary of coded information is evident in their conversation on black data with Tamar Clarke-Brown (2023).

In their commentary on using their current iteration of Being in *Hands Performance* (2023), Newsome returns to their ongoing interrogation of data. Their continuous challenge to framing computational information as universal facilitates the production of alternative datasets. Globally sourced information upon which Newsome aims to contest further questions how a reproduction of cultural hegemonies adversely affects the ability to create Being as an embodied digital animated figure. They note that in seeking to create *Hands Performance*,

> "I was thinking about who decides what American ASL is particularly when I think about that in the context of the trajectory of my work which has really been concerned with immaterial forms of expressivity specifically associated with Black folks, you know? And so, and when you think about the way that we talk, the way that we move, all these things that are particular to our community…I started to like work with Black, queer, ASL interpreters specifically." (Newsome, 2023).

Figure 69.Hands Performance. Rashaad Newsome (2023). © Rashaad Newsome Studio.

Further underlining what they see as unchallenged assumptions of whose knowledge production is privileged when computational information is made available, Rashaad Newsome's creation of motion for digital figures is encoded with black data. Their use of movement enables them to account for what has not been incorporated into standardised practices. As such, Newsome presents the people they work with as collaboratively facilitating a criticality to their practice. These iterations of Being can be seen as libraries of collective renouncement operating as what scholar Fred Moten has described as black sociality (Moten, 2018).

Moten's assertion that Black sociality is a radical act allows for a generative reading of blackness. His work is in response to an answer; a response to the systematic, anti-black racism in which black people find themselves. Moten's use of blackness is through an idea of insurgent agency. He sees blackness as a revolt against the terms and conditions of its making and a critique of ownership. In what is considered an optimistic view, Moten regards blackness as an acknowledgement of the conditions of its making that contradict and assert the reality of its (un)making. Indicating this inheritance of displacement as a refusal to adhere to imposed boundaries, blackness is not condemnation, but production. Instead of seeing enclosure as the only state for blackness, there is an orientation towards freedom.

Case Studies – the artists' relationship to the human

In this Chapter, I have aimed to establish how Bill T. Jones, LaJuné McMillian and Rashaad Newsome oppose dominant practices that reproduce a logic of racial hierarchies to decentre black cultural production. I have discussed how each artist has used their practice for critical analysis. This has led to further exploration of what is expressed as forms of erasure. The directives underpinning each artist's use of motion capture technology have drawn together an affiliation between the possibilities of creating forms of digital human movement without the demand that their blackness conform to an assumed biological determination. This is negotiated in advance of a technological apparatus precluding blackness in pursuit of representing the human as Man. For Jones, McMillian and Newsome, their aims have not been to be enfolded into an established pattern but to highlight its shortcomings. Critique is expressed using a live black body to perform against the constraints of the technology which occludes, rather than promotes difference.

As demonstrated in the questions and intentions articulated in these case studies, artists have given prominent focus to what technological productiveness lacks and advances. Furthermore, they have done so using several simultaneous states of being black to inform their work. This is evident in their challenges that demand technological fulfilment of their needs.

For Bill T. Jones, an interrogation of the ability to capture his essence at a time when technological developments were still in computational development. Noticeably, his pursuit of finding an apparatus to generate movement that can elicit an emotional response from audiences of digital motion has remained (Jones, 2021). Affective encounters have been Jones's intervention for making the presence of the human explicit in extractive datafication processes. In this sense, Jones's work can be seen as a critique highlighting calculation as insufficiency. What is made clear when Jones (2020) asks not to be denatured is a reoccurring provocation to being made unhuman. The tools he wishes to be in collaboration with mirror the mechanised routines that condemn those who are not within the perimeters of white normativity.

Jones's dance and choreographic performance work that questioned racial ascriptions as a viable form of legibility were also the predicates he wished to pursue using motion capture technology. Although these were not the sole aims, he wanted to posit, Jones's inquiries into 'pure movement' were foreshadowed by the critical reception of an audience used to seeing Jones performing live. Therefore, the requirement to be verified as black exposed the imposition of race as well as having to attend to Jones's continued refutation of negotiating biological determinism. Jones's gestures and inflections that are still present in his virtual motion were a source of intrigue and fascination. For Jones, there was still the unresolved absence of the virtual being affective. However, the technological capabilities were encountered through the use of animation as an interpolative method. Jones could use what he had begun in his performance work, namely poses that could be used as an alphabet to create a virtual, animated language.

To this end, Rashaad Newsome's interception of the human stems from creating a virtual avatar that directly questions a person's complicity in upholding oppressive systems (Newsome, 2023: 00:25). Newsome's focus on staging a character that can embody the best of humanity (Newsome, 2020) is iteratively prototyped rather than becoming prototypical. This suggests that rather than seeking to maintain a reified model, *Being's* actions are reflective of Newsome's investment in the possibilities of constructing what Sylvia Wynter has termed new genres of the human (Wynter, 2000). Rashaad Newsome's use of motion capture technology is not premised on critiquing the apparatus because the deliberately collective movement of performers rejects the singularity of a modern subject. Motion produced to animate virtual figures remains in alignment with technological tools for mapping bodies. Newsome relies on the movement of people from their community of practice to create and complicate the human as Man. This is achieved by centring queer, trans, non-binary and non-conforming practitioners of Vogue Ballroom.

Newsome's focus on the production of motion resists the categories of gender normativity. Their objectives are to produce a living archive of movement that can challenge the enclosures of limited definitions of the human as Man. In this sense, their work echoes Sylvia Wynter's task to trouble the overrepresentation of Man. However, the processes motion capture technology offer is used in adherence to the normative bodies existing in motion capture libraries and is predicated on the mapping of bodies that are overwhelmingly white males. Newsome relies on the use of the bodies in motion versed in Black and Latinx vernacular expression to authenticate the movement in their work.

LaJuné McMillian's bodies in motion carry the data they see as erased in the process of capture. They question practices that are extractive and anti-black by intervening with the idea of neutrality and appropriation. This is done by disseminating the tools for motion capture outside of academia and commercial industry. LaJuné's work with local black communities seek to demystify and educate audiences about technological apparatus while also making the technology available to people. In this sense, their project expands to allow people the opportunity to use and question the tools beyond an apparatus for capture. McMillian's evaluation of motion capture technology as beneficial and detrimental to configuring blackness, was posited in this case study as a decolonial practice that seeks to redress unequal power relations enacted through dominant cultural production. McMillian is working with multiple and conflicting ideas. One is that there are tools that anyone and everyone can use once they have been shown how to use them. Then there are the material conditions that affect their lives and those in their kinship group. I have discussed how LaJuné McMillian has questioned the tools introduced to them as a student of technology together with examining their experiences of a black sense of place. In their presentation of their work I collated from online sources, I have presented McMillian's descriptions of how and why their engagement with technology has changed.

Unbounded corporeality

Empowerment is attained through cancelling the negative effects of operating in what Tina Campt has identified as anti-black gravity (Campt, 2021) and Katherine McKittrick notes as "a weight that bears down on all black people inside and outside the academy" (McKittrick, 2021:3). Black scholars and artists' attention to this condition of blackness is made known through the study of its registers. In seeking ways to bring about a resolution, interventions are made apparent by making adjustments to physical conventions. One such overturning of this burdening is seen in one of McMillian's animations. Produced as a counter position, McMillian foregrounds their ability to construct a repose that does not resist nor challenge the weighted state. Instead, it embodies a state of refuge from a constant state of force.

Chapter 7: Using the Master's Tools

In this research inquiry, I set out to articulate how black contemporary artists have used motion captured from human movement to animate virtual figures. I aimed to use my practice to question if white male normativity dominated the production of animated figures, how could artists contest the heterogeneous bodies found in motion capture libraries and create black animated bodies. In conjunction with my motion capture iterative tests, I produced a conceptual framework to appraise the digitally animated figures created in the works of Bill T. Jones, LaJuné McMillian and Rashaad Newsome. This interpretative tool served to ascertain if the artists had specific aims in using motion capture libraries and if so, what they were. Furthermore, I was interested in determining if black contemporary artists' creative practice related to their self-defined and imposed black identity. I questioned how blackness as a conditional state of being factored in their use of motion capture technology.

In my introductory Chapter, I demonstrated how my investigation into creating black animated figures was connected to practical, technical and cultural concerns. In seeking to find ways to address the invisibility of black bodies in motion capture libraries, my research centred on human representation. I asserted that motion capture technology engendered a universality of human movement thereby privileging white, male bodies as normative and black bodies as subordinated. Using black feminist theories of the human enacted a conceptual framework which I expanded on in Chapter 2: The Master's Tools. Framing my study as a form of decoloniality, I provided an expansive conceptualisation of colonial forms of dominant regulation that have been utilised in the production of motion for animating digital humans.

The research divested from interrogating visual representations of black figures in motion to reflect the variety of ways movement is incumbent for Black artists using motion capture technology. Instead, I staged Black corporeality proximally with the geopolitics of mapped space and time. These measured configurations, I argue, have privileged white, male normativity as a universal human. In positing motion capture technology as a form of coloniality, my research considered how Black contemporary art practice could challenge the subordinated position of being incorporated into digitally homogenized animated figures.

My inquiry contributes to advancing innovative approaches for creating animated human motion by using decolonial methods. The objective was to provide ways to contest the human as hegemonically Western and white. This was premised on the lack of attention given to interrogating motion capture technology's ability to conform all bodies to the same modes of computational representation. The potential for algorithmically reconfiguring the body was posited as a viable intervention in overturning a singular protocol for generating motion for animated figures. More specifically, I determined that blackness was a generative modality to consider when constructing virtual B/black bodies. This perspective drew on the work of Fred Moten who posits refusal as a productive modality to apprehend B/blackness. In Chapters 4 and 5 my iterative tests expose not only a propensity to adopt extractive practices which maintain motion capture technology's coloniality, I have shown how interceding culturally dominant modes of production requires using, adapting and rejecting the tools without predetermined actions.

Potentially, there were opportunities to overlook counterarguments and introduce bias. My reflexive accounts were, at times without data analysis of the technological apparatus used in my selected case studies. However, the case studies did reveal a pattern of critically led engagement which was not determined as solely artistic practice but through a critique of motion capture technology. To facilitate a wider engagement with decolonial thought, the notion of black study was advanced as an account of the inquiry's situatedness. My approach to gathering data extended the thinking of space as a diasporan encounter across borders. As a result, locality as an embedded form of decolonial thinking was a significant departure from thinkers such as Anibal Quijano, Walter Mignolo and

Sylvia Wynter. The work of Hortense Spillers formed the basis to think through an unlocatable interruption of unmaking. This was specifically offered in her conception of what she terms the "oceanic" (Spillers: 72).

As a notable insight, it provided a way to put forward blackness as (dis)possession while also informing my research aims to attain a generative practice. Similarly, I adopted Katherine McKittrick's notion of black geographies and black methodologies as a necessary spatial and temporal disruption of enclosures that would have limited how my research methods elicited data. Western knowledge systems were not dismissed because of this decision. Instead, I aimed to acknowledge the existing validated processes while recognising how thresholds were negotiated throughout my research.

Curatorial Analysis - Case studies

The selected artists Bill T. Jones, LaJuné McMillian and Rashaad Newsome were paramount to the inquiry. Their inclusion facilitated a means to be engaged with black study through practice without being incorporated into a singular perspective of decoloniality. In this sense, the questions raised by their navigation of self-imposed identity and creative strategies for decolonising motion capture technology warrant further investigation. While the extensive use of secondary data promoted a form of close study that can be seen as contributing to a field of motion capture studies by expanding the sociopolitical and sociocultural contexts for using motion capture technology, the lack of primary data is evident in unanswered questions. Most notably, in Appendix I: What Artists Do, I have not been able to ascertain if either Bill T. Jones, LaJuné McMillian and Rashaad Newsome have explored the potential of experimenting with computational data beyond existing algorithmic systems. Additionally, insights produced through conducting interviews would have had the potential effect of enacting a conversation for imagining applications for overlooked or future technologies.

In seeking to gain insights from the work of black contemporary artists' use of motion capture technology, my question of decoloniality was informed by the implications of using a tool that relied on a singular body to obtain information. Consequently, I stated that the modern, individuated subject with its roots in Western Enlightenment thought, reproduced a logic of individualism. With this in mind, I aimed to centre a collective contestation of a prototypical human without obscuring each artist's voice. Thus, a commonality of contemporary art practice establishes a decolonial field of inquiry previously unexamined in motion capture studies.

Research design

Having undertaken my study using Practice as research, I was able to generate research questions through a series of creative endeavours. The iterative tests I conducted enabled me to identify gaps in knowledge. I had ascertained that a practice-based research study could contribute to knowledge not currently present in motion capture studies. This observation was further underlined when I determined that knowledge production and my blackness were inherent factors in conducting my research. Furthermore, I used a black methodology to attend to an absence of scholarship. This acknowledgement of a lack of information in existing practice-based studies was instructive. I was able to draw on systems of knowledge production and exchange present in non-academic and academic studies. By forgoing demarcations between formal and informal study, I determined that structuring knowledge into hierarchies of thought was unproductive and omitted an integral method for critical analysis. Instead, I have been able to identify a field of motion capture studies by claiming Black studies and black study as integral to black artists' use of motion capture technology.

Creating the conceptual framework

Through integrating theory and practice, I have raised questions that have supported my decision-making process for devising criteria. My use of Black studies provided the focus for determining the primary factors required to answer my research questions. The notion of universality was paramount to investigating representation in motion capture libraries. I was able to draw on black feminist theories of the human to interrogate how an understanding of being human had been constituted through an idea of biological determinism and racial hierarchy. This in turn was a perspective I considered as a personal and shared experience. My auto-ethnographical account as a black, cis-gendered woman informed my approach to this study. In a wider sense, it was a study developed from questions I raised through my practice and conversations with family, friends and associates. This insight steered the direction of the research towards addressing the overlapping forms of knowledge production activated by my inquiry.

The use of technological apparatus such as motion capture technology is not rejected as a Master's Tool. As Audrey Lorde has maintained, the tools of domination and subjugation are not effective in overturning the system built and maintained by it. (Lorde, 1984)

By adopting an interdisciplinary approach to my research, I have been able to extend the practices and theoretical concerns artists identify across periods and artistic practice. This finding suggests that there is a gap in knowledge of a demographic of practitioners that warrants further study in other territories. Except for my practice as research moving image outputs, the study comprised North American artists. This centrality of United States and Canadian citizens is worth drawing attention to as the underexamined practices of other territories including Europe, South Africa and Nigeria for example is a prospect that would offer greater scope for testing the framework I implemented as my curatorial analysis in Chapter 4. Identifying artists who explicitly identified themselves as Black was crucial for framing Blackness as a form of decoloniality.

However, by building an area of study which considers collective resistance to colonial powers determining codified digital motion, I have shown that Black artists share a concern for the negative effects of commodified and extracted corporeality. A wider body of work covering artistic practice regionally and internationally as a larger study would support the initial definition of motion capture studies my research has posited. In addition to conveying the importance of practice-based inquiries for uncovering an equivalence between motion capture technology and universality, my research would benefit from researching how an international diasporic study of artists conducting iterative tests could reveal incidences of technological apparatus shaping a singular understanding of human movement.

Additionally, my research should be seen as a way to think through interdisciplinary studies which focuses on disability and non-conforming intersectional identities related to sex and gender and race.

I aim to disseminate my study as an educator and practitioner with a decolonial practice that is more fully compliant with anti-extractivist protocols in place. I have written and will continue to submit journal articles related to my study. My use of motion capture technology will be enacted using my framework as a decolonising animation strategy.

Limits

Although my research has used criteria as parameters, this application of limits was not deemed an unnecessary constraint as it provided the opportunity to reflect on whether restrictions were manageable or not. Selecting artists who identified as Black was deemed a necessary boundary for the scope of the research. Examining texts for corroborating evidence of the artists' identification as Black was pivotal. The role of blackness and each artist's use of motion capture technology underlined the research's premise that critical analysis and creative practice was a central concern for B/black artists. References to blackness notably arose in artists' conversations with theorists and creative practitioners. Discussions, therefore, took place in critical arenas whereby information on how blackness is apprehended was collectively formulated.

A wider range of perspectives from contemporary art practitioners who have not been examined in the research who contest the fact of blackness would provide further explorative avenues to build on the research. With an appraisal of users of motion capture technology who are concerned with practical responses to the coloniality of technological apparatus, these perspectives would offer extended insights that remain unaccounted for in a research inquiry.

Identifying moments for manipulating motion

My research takes up the role of movement enacted in the practices of black feminist theories of the human. These are not prescriptive moves to be followed. Rather, they are negotiations of the constraints, parameters and delineations present motion capture orthodoxies maintain. To undo these limits, I have used practice as research to intervene in the spatial and temporal control of how motion is generated using motion capture technology.

This, I assert was only possible after motion had been captured and not at the point of capture. To extend the research, decoloniality would need to focus on technological apparatus which would involve currently unidentified techniques for exploratory hacking. As stated in Chapter 2, deGraf and Yilmaz (1999) have put forward the potential to use motion capture data as reformulated musical notes informed by the genre of jazz. Their proposition echoes decolonial thinkers' call for an epistemic decentring from Western influences (Mignolo, 2015; Starr, 2024). These new approaches could make possible multiple ways of creating wider reference points for making digital avatars. Whilst this assertion is a technical possibility, it overlooks the improvisatory nature of jazz that Fred Moten theorises as part of an inherent tradition found in blackness (Moten, 2003).

By acknowledging the use of refusal that critiques modernity's constitution of both blackness and its liberal, individuated other, the genre of jazz should be considered in its capacity to offer decoloniality as a method for using motion capture data. In this research, I have used my practice to put forward an onto-epistemological shift engendered by blackness. This approach aims to benefit the further development of new forms of manipulated motion capture data that could be adopted by proponents who seek to account for blackness in expansive modalities.

Bibliography

Acosta, A. (2013) Extractivism and Neoextractivism: Two sides of the same curse. Beyond Development: *Alternative Visions from Latin America*. pp. 61-86. At: https://doi.org/10.2458/jpe.5420 (Accessed 15/02/2020).

Alex Westfall (2021) *Towards motion witnessing.* At: https://killscreen.com/lajune-mcmillian/ (Accessed 15 March 2023).

Alif Abraham (2019) *Inspiring Creativity*. In It's Nice That. At: https://www.itsnicethat.com/articles/alan-warburton-digital-111019 (Accessed 27/02/2025).

Allison, T. (2015) Blackface, Happy Feet: The Politics of Race in Motion Capture and Animation in *Special Effects: New Histories/Theories/Contexts.* Eds. Dan North, Bob Rehak, Michael S. Duffy. pp. 114-126. London: BFI, Palgrave.

Amaro, R. 2019. Artificial Intelligence: Warped, Colorful forms and their Unclear Geometries. pp 69-90. At: (Accessed 19/12/2023).

Amaro, R. and Dixon-Román, E. (2021) Haunting, Blackness, and Algorithmic Thought. In *e-flux journal 123.* At: https://www.e-flux.com/journal/123/437244/haunting-blackness-and-algorithmic-thought/ (Accessed 30/11/2022).

Amaro, R. and Khan, M., (2020) Towards Black Individuation and a Calculus of Variations. In *e-flux journal 109.* At: https://www.e-flux.com/journal/109/330246/towards-black-individuation-and-a-calculus-of-variations/ (Accessed 06/09/2024).

Amaro, R. (2020) Threshold Value. In *e_flux Architecture.*At: https://www.e-flux.com/architecture/education/322664/threshold-value/ (Accessed 29/08/2024).

Amaro, R. (2022) *The Black Technical Object: On Machine Learning and the Aspiration of Black Being.* Sternberg Press, London.

Ayendele, E.A. (1966) *The Missionary Impact on Modern Nigeria 1842-1914: A Political and Social Analysis*. Harlow: Longman.

Bakker, J. (2020) '*The Vibrations Are Different Here:' Parareligious Stories in the African Diaspora*. [PhD thesis] Rice University. At: https://repository.rice.edu/items/3ab47e1a-39c6-469d-9237-3aade32c7672 (Accessed 03/09/2024).

Barber, T. E. (2015) "Ghostcatching" and "After Ghostcatching", Dances in the Dark. *Dance Research Journal*, *47*(1) pp. 45–67. At: https://www.jstor.org/stable/43966857 (Accessed: 30/04/2021).

Bateson, G. (2000) [1972] *Steps to an Ecology of Mind: Collected Essays in Anthropology, Psychiatry, Evolution, and Epistemology*. University of Chicago Press.

Benjamin, R. (2019) *Race after Technology: Abolitionist Tools for the new Jim Code*. John Wiley and Sons.

Bill T. Jones (s.d) *Bill's Blog: Signifying.* At: https://newyorklivearts.org/blog/bills-blog-signifying/ (Accessed 27/03/2023).

Bowker, K. (2021) *Race-ing Technology in Dance*. [PhD thesis] University of California, Riverside. At: https://escholarship.org/uc/iten/6958f870 (Accessed 25/02/2023).

Braun, V., & Clarke, V. (2006) Using Thematic Analysis in Psychology. *Qualitative Research in Psychology*, *3*(2) pp.77-101. At: https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2013) *Successful Qualitative Research: A Practical Guide for Beginners.* London. SAGE Publications.

Braun, V., & Clarke, V. (2019) Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, *11*(4), 589–597. At: https://doi.org/10.1080/2159676X.2019.1628806

Braun, V., & Clarke, V. (2021) *Thematic Analysis: A Reflexive Approach*. In *Handbook of Qualitative Research Methods in Psychology* (pp. 57-71) London: Routledge.

Bristow, W. F. (2010) "Enlightenment". Zalta, E. (Ed). *Stanford Encyclopaedia of Philosophy*. Summer. Metaphysics Research Lab, Centre for Study of Language and Information, Stanford University.

Buolamwini, J. A. (2017) *Gender Shades: Intersectional Phenotypic and Demographic Evaluation of Face Datasets and Gender Classifiers.* [PhD thesis] Massachusetts Institute of Technology. At: https://www.media.mit.edu/people/joyab/publications/ (Accessed 06/09/2024).

Burchardt, H.J. and Dietz, K. (2014) (Neo-) extractivism–a new challenge for development theory from Latin America. *Third world quarterly*, *35*(3) pp.468-486.

Bunn, A. (1999) 'Losing the Body'. At: https://www.villagevoice.com/losing-the-body/ (Accessed 28/10/23).

Campt, T. M. (2021) *A Black Gaze*. MIT Press. Kindle Edition.

Carby, H. V. (2004) White woman listen! Black feminism and the boundaries of sisterhood, in *Empire strikes back.* pp. 211-234. Routledge.

Chang, V, (2019) Catching the ghost: the digital gaze of motion capture. *Journal of Visual Culture*, *18*(3) pp.305-326. At: https://doi.org/10.1177/1470412919841022 (Accessed 17/03/2023).

Cholodenko, A. (2016) Whither(ing) Animation (Studies)?! The Expanding Universe of Animation (Studies). In *Animation Studies Online Journal*, *11.* At: https://oldjournal.animationstudies.org/alan-cholodenko-the-expanding-universe-of-animation-studies/ (Accessed 30/08/2022).

Cholodenko, A. (Ed.) (2017) [1991] *The Illusion of Life II: Essays on Animation.* Digital Edition.

Christensen, C. M. (1997) *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail*. Boston. MA. Harvard Business Review Press.

Combahee River Collective (1977) *'A Black Feminist Statement'*. pp. 210-218. At: http://circuitous.org/scraps/combahee.html (Accessed 24/02/2024).

Collins, P. H. (2009) *Black feminist thought: Knowledge, consciousness and the politics of empowerment.* London, Harper Collins Academic.

Crawford, C., Demack, S., Gillborn, D., and Warmington, P. (2018) Quants and Crits: using numbers for social justice (or, how not to be lied to with statistics). In DeCuir-Gunby, J. and Chapman, T. and Schutz, P., (Eds.) *Understanding Critical Race Research Methods and Methodologies: Lessons from the Field.* New York: Routledge.

Crenshaw, K., Gotanda, N., Peller, G., & Thomas, K. (Eds.) (1995) *Critical race theory: The key writings that formed the movement.* pp. xiii- xiv. The New Press.

Crutzen, P.J., Stoermer, E.F. (2021) The 'Anthropocene' (2000). In: Benner, S., Lax, G., Crutzen, P.J., Pöschl, U., Lelieveld, J., Brauch, H.G. (Eds.) Paul J. Crutzen and the Anthropocene: A New Epoch in Earth's History. The Anthropocene: Politik—Economics—Society—Science. Vol 1. Springer, Cham. A: https://doi.org/10.1007/978-3-030-82202-6_2.

Cuvier, G. (2022) [1829] *The Animal Kingdom: Arranged According to Its Organization, Forming A Natural History of Animals.* Legare Street Press.

Darwin, C. (1951) [1859] *The Origin of Species by Means of Natural Selection*: or the Preservation of Favoured Races in the Struggle for Life.

deGraf, B., and Yilmaz, E., 1999. Puppetology: Science of Cult? *Animation World Magazine*. *3*(1) At: http://wwwawn.com/mag/issue3.11/3.11pages/degrafmotion.php3 (Accessed 17/02/2022).

Delaney, D. (1998) *Race, Place, and the Law, 1836-1948*. University of Texas Press.

DeFrantz, T.F. (2012) Unchecked Popularity: Neoliberal Circulations of Black Social Dance. In: Nielsen, L.D., Ybarra, P. (Eds.) *Neoliberalism and Global Theatres. Studies in International Performance*. Palgrave Macmillan, London.

Demuth, B., Röder, T., Müller, M., Eberhardt, B. (2006) An Information Retrieval System for Motion Capture Data. In: Lalmas, M., MacFarlane, A., Rüger, S., Tombros, A., Tsikrika, T., Yavlinsky, A. (Eds.) *Advances in Information Retrieval. ECIR 2006.* Lecture Notes in *Computer Science. 3936*. Springer, Berlin, Heidelberg. At: https://doi.org/10.1007/11735106_33.

De Spain, K. (2000a) Dance and Technology: A Pas de Deux for Post-Humans. *Dance Research Journal.* Summer, *32*(1) pp. 2-17. At: https://www.jstor.org/stable/1478270. (Accessed 30/10/2023).

De Spain, K. (2000b) Digital Dance: The Computer Artistry of Paul Kaiser. *Dance Research Journal*, *32*(1) pp.18-23. At: https://www.jstor.org/stable/1478271 (Accessed 30/10/2023).

Bregler, C. (2007) Motion capture technology for entertainment [in the spotlight]. *IEEE Signal Processing Magazine*, *24*(6), pp.160-158.

DeFrantz, T. F., & Gonzalez, A., (Eds.) (2014) *Black Performance Theory: An Anthology of Critical Writing.* Duke University Press.

Dils, A. (2002) The Ghost in the Machine: Merce Cunningham and Bill T. Jones. In *Performing Arts Journal 24*(1) pp.94-104. At: http://mitpress.mit.edu (Accessed 06/06/2020).

Du Bois, W. E. B. (1994) [1903] *The Souls of Black Folk*. Dover Thrift Editions: Black History. Dover Publications. Kindle Edition.

Duplan, A. (2016) *A Body that is Ultra-Body/ In Conversation with Fred Moten and Elysia Crampton.* Ploughshares at Emerson College. At: https://pshares.org/blog/a-body-that-is-ultra-body-in-conversation-with-fred-moten-and-elysia-crampton/ (Accessed 31/07/2020).

Edwards, B. H. (2003) *The Practice of Diaspora: Literature, Translation, and the Rise of Black Internationalism*. Cambridge: Harvard University Press.

Ellis, C. (2004) *The Ethnographic I:A Methodological Novel about Autoethnography*. Walnut Creek, CA: AltaMira Press.

Ellis, C., Adams, T. E, and Bochner, A. P. (2011) Autoethnography: an overview, *Historical Social Research,* 36*(4)* pp. 273-290. At: https://doi.org/10.12759.hsr.36.2011.4.273-290 (Accessed 09/12/2020).

Emerson, R.M., Fretz, R.I. and Shaw, L.L. (2011) *Writing Ethnographic Fieldnotes*. Chicago. University of Chicago Press.

Escobar Varela, M. (2021) *Theater as data: Computational journeys into theater research*. p. 231. University of Michigan Press.

Eshun, K. (2003) Further considerations of Afrofuturism. *CR: The New Centennial Review*, *3*(2), pp.287-302.

Fanon, F. (1986) [1952] *Black Skin, White Masks.* London. Pluto Press.

Feenberg, A. (1999) *Questioning Technology*. Routledge.

Ferreira da Silva, D. (2022) *Unpayable debt.* London. Sternberg Press.

Frank B. Gill (2021) *Artist LaJuné McMillian Opens Portals to Liberation Through Digital Self-Portraits.* At: https://fantastical-portraits.com/artist-lajune-mcmillian. (Accessed 21 June 2022).

Fred Moten (2022) "Nothing in the Way of Things." *A Lecture by Fred Moten, M.H Abrams Distinguished Visiting Professor.* At: https://www.youtube.com/watch?v=vDUb9hzlook (Accessed 17/09/2022).

Garraway, Doris L. (2005) *The Libertine Colony: Creolization in the Early French Caribbean*, Duke University Press.

Gia Kourlas (2020) "Bill T. Jones Knows Life Will Change, and His Art Too" in the *New York Times* 20/05/2020. At: https://www.nytimes.com/2020/05/20/arts/dance/bill-t-jones-deep-blue-sea-virus.html (Accessed 16/03/2023).

Giddings, P. (1984) *When and Where I Enter: The Impact of Black Women on Race and Sex in America.* William Morrow & Co.

Gilroy, P. (1993) *The Black Atlantic: Modernity and Double Consciousness*. Cambridge, MA: Harvard University Press.

Goldberg, R. (1999) Catching Jones. *Ghostcatching (Exhibition Catalogue)*. New York: The Cooper Union School of Art. pp. 13-20.

Goldman, D. (2010) 'The Breathing Show: Improvisation in the Work of Bill T. Jones' In *I Want to Be Ready: Improvised Dance as a Practice of Freedom*, pp.112-138.

Goldman, D. (2004) Ghostcatching: An Intersection of Technology, Labor, and Race. *Dance Research Journal*, *36*(1), pp.68-87. At: https://www.jstor.org/stable/30045070 (Accessed 11/07/2019).

Gómez-Barris, M. (2017) *The Extractive Zone: Social Ecologies and Decolonial Perspectives*. Durham. Duke University Press.

Gottschild, B. D. (1996) *Digging the Africanist Presence in American Performance: Dance and Other Contexts.* Westport, Conn.: Greenwood Press.

Haley, A. (1973) Black History, Oral History, and Genealogy. *The Oral History Review*, *1*(1), 1–25. At: https://doi.org/10.1093/ohr/1.1.1

Harney, S., and Moten, F. (2013) *The Undercommons: Fugitive Planning and Black Study*. Autonomedia. New York.

Harney, S., and Moten, F. (2017) In *Futures of Black Radicalism.* (Eds.) Johnson G.T., and Lubin, A. London. Verso.

Harris, L. (2018) *Experiments in Exile: C. L. R. James, Hélio Oiticica, and the Aesthetic Sociality of Blackness.* Fordham University Press.

Hartman, S. (1997) *Scenes of Subjection: Terror, Slavery, and Self-Making in Nineteenth Century America.* Oxford, Oxford University Press.

Hartman, S.V. and Wilderson, F.B. (2003) The Position of the Unthought. *Qui Parle*, *13*(2), pp.183-201.

Harvey, E., Sandhaus, H., Jacobs, A.Z., Moss, E. and Sloane, M. (2024) The Cadaver in the Machine: The Social Practices of Measurement and Validation in Motion Capture Technology. In *Proceedings of the CHI Conference on Human Factors in Computing Systems.* (pp. 1-23) May. At: https://arxiv.org/abs/2401.10877 (Accessed 16/08/2024).

Heidegger, M. (1998) *On the Essence and Concept of physis in Aristotle's Physics B, 1. Pathmarks*, pp.183-230. Cambridge University Press.

Helen Starr (2022) *Rendering Reality and The Poetics of Touch*. [Guest Lecture] At: https://www.youtube.com/watch?v=Bv7nOGgHQc0 (Accessed 07/09/2024)

Holbraad, M. and Pedersen, M.A. (2017) *The ontological turn: an anthropological exposition*. Cambridge University Press.

Holland, S.P. (2000) Bill T. Jones, Tupac Shakur and the (Queer) Art of Death. *Callaloo*, *23*(1), pp.384-393. At: https://www.jstor.org/stable/3299568. (Accessed 28/05/2021).

Jacobs, H.A. (2009) *Incidents in the Life of a Slave Girl: Written by Herself, with "A True Tale of Slavery" by John S. Jacobs*. *119*. Harvard University Press.

Jackson, Z.I. (2020) *Becoming Human: Matter and Meaning in an Antiblack world.* New York University Press.

Hudson, P. J. (2014) The Geographies of Blackness and Anti-Blackness: An Interview with Katherine McKittrick. In *The CLR James Journal. 20* (1-2) Fall. At: https://doi.org/10.5840/clrjames201492215 (Accessed 10/12/2020).

Jones, B.T., Eshkar, S., Kaiser, (1999) Cooper Union *Ghostcatching: A Virtual Dance Installation*. Cooper Union School of Art, New York.

Kaiser, P., & Barber, T. E. (2016) Letter to the Editor. *Dance Research Journal*, *48*(2) pp. 99-101. At: https://www.jstor.org/stable/48629518 (Accessed 27/03/2023).

Kaiser, P. (2003) "On Motion Mapping." In *Mapping in the Age of Digital Media: The Yale Symposium*. Balmori, D and Silver M. (Eds) pp. 80-91. Academy Press.

Kaiser, P. (s.d.) "Steps". At: http://openendedgroup.com/writings/steps.html (Accessed 17/03/2023).

Kapsouras, I. and Nikolaidis, N. (2015) Person identity recognition on motion capture data using multiple actions. *Machine Vision and Applications 26.* pp. 905-918. At: https//doi.org/10.1007/s00138-015-0704-z (Accessed 21/08/2020).

Kelley, R.D. (1999) "But a Local Phase of a World Problem": Black History's Global Vision, 1883–1950. *The Journal of American History*, *86*(3), pp.1045-1077. At: https://www.jstor.org/stable/2568605

Kelly Pau (2021) *LaJuné McMillian opens Portals to Liberation through Digital Self-Portraits*. At: https://coolhunting.com

https://coolhunting.com/culture/artist-lajune-mcmillian-opens-portals-to-liberation-through-digital-self-portraits/ (Accessed 21 June 2022).

Kent Bye (2022) *Tribeca XR: Ethically-Produced MoCap Databases.* At: https://voicesofvr.com/1102-tribeca-xr-ethically-produced-mocap-database-multi-media-stories-with-black-movement-library-movement-portraits/ (Accessed 21 July 2023).

King, T. L. (2019) *The Black shoals:Offshore formations of Black and Native Studies.* Durham, NC: Duke University Press.

Lamarre, T. (2002) January. From animation to *anime*: drawing movements and moving drawings. In *Japan Forum. 14*(2) pp. 329-367. At: https://doi.org/10.1080/09555800220136400.

Levitt, D. (2018) *The Animatic Apparatus. Animation, Vitality, and the Futures of the Image.* Winchester: Zero Books.

LaJuné McMillian (2020a) "Synthesis Gallery" *Walkthroughs.* At: https://www.youtube.com/watch?v=kxxtRvLr36I (Accessed 22 July 2023).

LaJuné McMillian (s.d.) *Antidote Promo.* At: https://laja.me/Antidote (Accessed 20/09/2022).

LaJuné McMillian *Creative Tech Week Talk* (2019). *EyeBeam Artist in Residence* Available at: https://www.youtube.com/watch?v=efagHksktjs (Accessed 21 July 2023).

LaJuné McMillian (2020b) "BOM'S Art & Tech Social" *in conversation with Amahra Spence.* At: https://www.youtube.com/watch?v=LTE8C_Pb55M.(Accessed 21 July 2023).

LaJuné McMillian (2021a) "Art && Code" *Homemade Archive | Open Transcripts.* At: http://opentranscripts.org/sources/studio-creative-inquiry/art-code-homemade. (Accessed 15 March 2023).

LaJune McMillian (2021b) "The Technically Brilliant Show" *The Black Movement Project*. At: https://www.youtube.com/watch?v=on0d2YPae1Q (Accessed 22 July 2023).

LaJuné McMillian (2021c) "The (Re)Stock Image Project" *On Representations of Blackness In Virtual Spaces.* At: https://www.youtube.com/watch?v=YEL0w8mPp8U (Accessed (21 July 2023).

LaJuné McMillian (2021d) "The Culture LP" *Work In Progress*. At: https://www.theculturelp.com/blog/2021/2/27/work-in-progress-lajune (Accessed 21 June 2022).

LaJuné McMillian (2021e) "A New Digital Deal" *Black Movement Library.* At: https://ars.electronica.art/newdigitaldeal/en/black-movement-library/ (Accessed 21 June 2022).

LaJuné McMillian (2022a) "Serpentine Podcast: Playtesting" *Counter-Archive.* Available at: https://www.serpentinegalleries.org/art-and-ideas/serpentine-podcast-playtesting (Accessed 21 June 2022).

LaJuné McMillian (2022b) "Contemporary And" *Embodied Metadata.* At: https://bitforms.art/exhibition/lajune-mcmillian-embodied-metadata (Accessed 15 March 2023).

LaJuné McMillian (2022c) "Dashboard*" Cascode: Art x Data Science Panel ft. Mindy Seu, LaJuné McMillian & Dr. Synatra Smith.* At: https://www.youtube.com/watch?v=3FAKujTrDLY (Accessed 22 July 2023).

LaJuné McMillian (2022d) "Pioneer Works" *Extra Credit: Introduction to Motion Capture and Web VR with LaJuné McMillian.* Available at: https://www.youtube.com/watch?v=-Ztp2w_vi3o (Accessed 22 July 2023).

LaJuné McMillian (2022e) "Times Square Arts" *Movement Portraits for June Midnight Moment*. At: https://t2conline.com/midnight-moment-lajune-mcmillians-movement-portraits. (Accessed 21 June 2022).

LaJuné McMillian (2023) "New Museum" *New Inc Demo* At: https://www.youtube.com/watch?v=1h7MEvrVlOI (Accessed 22 July 2023).

Linneas, C. (1758) *Systema naturae. 1*(part 1), p.532. Laurentii Salvii. Stockholm.

Lucia Longhi (2020) *The Black Movement Project: An Interview with LaJuné McMillian*. At: https://www.berlinartlink.com/2020/08/21/the-black-movement-project-an-interview-with-lajune-mcmillian/ (Accessed 21 June 2022).

Lorde, A. (1984) The Master's Tools Will Never Dismantle the Master's House. In Sister Outsider: Essays and speeches (reprint edition). Berkeley.

Madison, D.S. (2011) *Critical ethnography: Method, ethics, and performance*. Sage publications.

Manning, E. (2009) *Relationscapes: Movement, art, philosophy*. MIT Press.

Marriott, D. (2018) *Whither Fanon?: Studies in the Blackness of Being.* Stanford University Press.

Maya Man (2019) *Mixing movement and machine. A behind the scenes look at building A.I. experiments with dance legend Bill T. Jones*. At: https://medium.com/artists-and-machine-intelligence/mixing-movement-and-machine-848095ea5596 (Accessed 17/03/2023).

McKittrick, K. (2006) *Demonic Grounds: Black Women and the Cartographies of Struggle.* Minneapolis, MN. University of Minnesota Press.

McKittrick, K. and Woods, C.A. (Eds.) (2007) *Black Geographies and the Politics of Place.* Cambridge, MA. South End Press.

McKittrick, K. (2016) Diachronic loops/deadweight tonnage/bad made measure. In *Cultural Geographies, 23*(1) pp.3-18. At: https://www.jstor.org/stable/10.2307/26168700 (Accessed 25/10/2022).

McKittrick, K. (2021a) Dear April: The Aesthetics of Black Miscellanea. *Antipode AAG Lecture.* [Ontario, Canada: Queen's University 08/04/2021]. At: https://doi.org/10.1111/anti.12773 (Accessed 10/10/2021).

McKittrick, K. (2021b) *Dear Science and other stories*. Durham. Duke University Press.

McKittrick, K. (2014) Mathematics Black Life. *The Black Scholar, 44*(2). *States of Black Studies.* Summer. pp.16-28. Taylor and Francis. At: https://www.jstor.org/stable/10.5816/blackscholar.44.2.0016 (Accessed 03/12/2022).

Melamed, J. (2015) Racial Capitalism in Critical Ethnic Studies, *1*(1) Spring. pp. 76-85. University of Minnesota Press. At: https://doi.org/10.5749/jcritethnstud.1.1.0076. (Accessed 26/01/2023).

Menache, A. (2011) *Understanding motion capture for computer animation and video games*. San Diego, Morgan Kaufman Academic Press. At: https://doi.org/10.1016/B978-0-12-381496-8.00002-0 (Accessed 18/12/2020).

Metz, C. (1982) *The Imaginary Signifier: Psychoanalysis and the Cinema*. Indiana University Press.

Mignolo, W. (2000) The Many Faces of Cosmo-polis: Border Thinking and Critical Cosmopolitanism. *Public Culture. 12*(3) pp. 721-748. At: https://www.muse.jhu.edu/article/26217.

Mignolo, W. D. (2009) Epistemic Disobedience, Independent Thought and De-Colonial Freedom. *Theory, culture & society, 26*(7-8) pp. 177-218. At: https://doi.org/10.1177/026327640934927 (Accessed 19/03/2021).

Mignolo, W. (2011a) *The darker side of Western modernity: Global futures, decolonial options*. Duke University Press.

Mignolo, W. (2011b) Geopolitics of sensing and knowing: on (de)coloniality, border thinking and epistemic disobedience, Postcolonial Studies, *14* (3) pp. 273-283. At: http://dx.doi.org/10.1080/13688790/2011/613105 (Accessed 27 July 2024).

Mignolo, W. D. (2015) Chapter 4. Sylvia Wynter: What Does It Mean to Be Human? In *Sylvia Wynter: On Being Human as Praxis*, (Ed.) Katherine McKittrick, New York, USA. Duke University Press, pp. 106-123.

Miller, S.I. (1998) Response: Coloring Within and Outside the Lines: Some comments on Scheurich and Young's "Colouring Epistemologies: Are Our Research Epistemologies Racially Biased?" In *Educational Researcher 27*(9) pp.23-26. At: https://doi.org/10.3102/0013189X027009023 (Accessed 28/11/2021).

Misa, T.J. (2003) The Compelling Tangle of Modernity and Technology. In *Modernity and technology* (Eds.) Agar, J., Misa, T. J., Brey P., and Feenberg A., pp.1-30. Cambridge MA, MIT Press.

Moten, F. (2003) *In the Break: The Aesthetics of the Black Radical Tradition*. London. University of Minnesota Press.

Moten, F. (2007) "Black Optimism/Black Operation." In *Anxiety, Urgency, Outrage, Hope... A Conference on Political Feeling.* University of Chicago. At: http://lucian.uchicago.edu/blogs/politicalfeeling/files/2007/12/moten-black-optimism.doc (Accessed 30/10/2019).

Moten, F. (2008) The Case of Blackness in *Criticism, 50*(2) Spring. pp.177-218. Wayne State University Press. Detroit, MI. At: https://doi.org/10.1353/crt.0.0062 (Accessed 09/05/2020).

Moten, F. (2013) Blackness and Nothingness (Mysticism in the Flesh). *South Atlantic Quarterly. 112*(4). At: https://doi.org/10.1215/00382876-2345261 (Accessed 04/08/2020).

Moten, F. (2018a) *Black and Blur: consent not to be a single being*. Durham. Duke University Press.

Moten, F. (2018b) *Stolen Life: consent not to be a single being*. Durham. Duke University Press.

Moten, F. (2018c) *The Universal Machine: consent not to be a single being*. Durham. Duke University Press.

Mowatt, R.A., French, B.H. and Malebranche, D.A. (2013) Black/female/body hypervisibility and invisibility: A Black feminist augmentation of feminist leisure research. *Journal of leisure research*, *45*(5), pp.644-660. At: https://doi.org/10.18666/jlr-2013-v45-i5-4367 (Accessed 24/10/2019).

Müller, M. Röder, T., Clausen, M., (2005) Content-based retrieval of motion capture data based on adaptive segmentation. At: https://doi.org/10.1145/1073204.1073247 (Accessed 18/12/2020).

Mutaurwa Mapondera (2019) *Dancing with a machine: Bill T. Jones on AI and art.* At: https://www.blog.google/technology/ai/bill-t-jones-dance-art/ (Accessed 16/03/2023).

Nicifero, A. (2016) To Be Continued: An Exchange on Tiffany Barber's "*Ghostcatching* and *After Ghostcatching*, Dances in the Dark." *Dance Research Journal*, *48*(2), pp. 96–98.

Neff, M., and Fiume, E., Rosenhahn et al. (Eds.), (2008) *Human Motion – Understanding, Modelling, Capture, and Animation.* pp. 597 – 629.

Nelson Atkins *After Ghostcatching* At: https://nelson-atkins.org/exhibitions/after-ghostcatching/ (Accessed 13/12/2022).

Noble, S. (2018) *Algorithms of Oppression: How Search Engines Reinforce Racism.* New York University Press.

Nogueira, P. (2011) November. Motion capture fundamentals. In *Doctoral Symposium in Informatics Engineering*. *303*.

Palmer, T. (2020) Otherwise than Blackness: Feeling, World, Sublimation. In *Qui Parle: Critical Humanities and Social Sciences, 29*(2) pp. 247-283. Durham. Duke University Press. At: https://doi.org/10.1215/10418385-8742983 (Accessed20/02/2021).

Patterson, O. (1982) *Slavery and Social Death: A Comparative Study.* Cambridge, MA. Harvard University Press.

Paula Rodriguez (2021) *Capturing black stories in motion with the black movement library portrait series.* Available at: https://bwog.com/2021/10/capturing-black-stories-in-motion-with-the-black-movement-library-portra (Accessed 13 May 2023).

Peters, M. (2024) Using data as materiality, in *Animation Practice, Process & Production.* Intellect Books. At: https://doi.org/10.1386/ap3_00048_1.

Phillips, R. (Ed.) (2021) Black Quantum Futurism: Theory & Practice. Volume 2. Community Futurisms. Afrofuturist Affair/House of Future Sciences Books.

Phillips, R. (Ed.) (2020) Black Quantum Futurism: Space-Time Collapse 2. Afrofuturist Affair/House of Future Sciences Books.

Phillips, R. (Ed.) (2016) Black Quantum Futurism: Space-Time Collapse 1: From the Congo to the Carolinas. Afrofuturist Affair/House of Future Sciences Books.

Pillow, W. (2003) Race-based Methodologies: Multicultural Methods or Epistemological Shifts? In *Counterpoints: Interrogating racism in Qualitative Research Methodology.* pp. 11-202. At: https://www.jstor.org/stable/42978086 (Accessed 28/11/2021).

Portanova, S. (2017) Putting Identity on Hold: Motion Capture and the Mystery of the Disappearing Blackness*, *Computational Culture: a journal of software studies*

Puwar, N. (2004) *Space Invaders, Race, Gender and Bodies Out of Place,* London, Berg Press.

Quijano, A. (2000) *Coloniality of Power, Eurocentrism, and Latin America.*

The article is available in English: 'Coloniality and Modernity/Rationality', *Cultural Studies*, vol. 21, nos. 2–3, pp. 155–67 (2007).

Raengo, A. (2014) Blackness, Aesthetics, Liquidity. *Liquid Blackness. 1*(2) pp 4-18.

Rashaad Newsome (2020) *Being genesis 1.0 - 2.0*. At: https://vimeo.com/394070378. (Accessed 13/03/ 2023).

Rashaad Newsome (2021a) "HAI Weekly Seminar" *BEING (The Digital Griot).* At: https://hai.stanford.edu/events/hai-weekly-seminar-rashaad-newsome (Accessed 02/06 /2021).

Rashaad Newsome (2021b) **"**BET Foqus" *Rashaad Newsome interview.* At: https://vimeo.com/495564294 (Accessed 13/03/2023).

Rashaad Newsome (2021c) "Being 1.5" *Eyebeam's From the Rupture: Ideas and Actions for the Future.* At: https://www.youtube.com/watch?v=3O2ciZqBYv0 (Accessed 14/03/2023).

Rashaad Newsome and Legacy Russell (2021d) *Eyebeam's From the Rupture: Ideas and Actions for the Future*. At: https://www.youtube.com/watch?v=9BZjltuvidw (Accessed 10/09/2022).

Rashaad Newsome (2022a) "Keynote" *Expanded Animation: Glimpses of a Hybrid Horizon.* At: https://www.youtube.com/live/jY6KtntQqpc (Accessed 05/06/2023).

Rashaad Newsome (2022b) "Park Avenue Armoury" *Salon: Captcha: Dancing, Data, Liberation.* At: https://youtu.be/hvWkaR43y9g. (Accessed 14 July 2023).

Rashaad Newsome (2023a) "In the Black Fantastic" *Artist Interview:* Hayward Gallery.

At: https://www.youtube.com/watch?v=OUzGRkVjkOk (Accessed 13/03/2023).

Rashaad Newsome (2023b) *Spring Symposium | Creativity in the Age of AI: AI Impacting Arts, Arts Impacting AI.* At: https://hai.stanford.edu/events/spring-symposium-creativity-age-ai-ai-impacting-arts-arts-impacting-ai (Accessed 28/05/2023).

Rashaad Newsome (2023c) *In Conversation with Tamar Clarke-Brown*. At: https://channel.somersethouse.org.uk/documentaries-and-films/talks/in-conversation-rashaad-newsome. (Accessed 30/08/2023).

Rashaad Newsome (2023d) *Gestures of Possibility* At: https://channel.somersethouse.org.uk/documentaries-and-films/artists-in-focus/gestures-of-possibility (Accessed 01/092023).

Reed, A. (2015) Scramble suits and other postmortem disguises: Erasing the human in performance capture technologies. *Journal of the New Media Caucus| ISSN*, p.017X.

Reid, G.M. (2009). Carolus Linnaeus (1707–1778): His life, philosophy and science and its relationship to modern biology and medicine. *Taxon*, *58*(1), pp.18-31.

Repko, A. F. (2012) *Interdisciplinary Research: Process and Theory.* Sage Publicastions, 2nd edition.

Riedmann, A. (1993) Science that Colonizes: A Critique of Fertility Studies in Africa. Philadelphia: Temple University Press.

Rindler, R. (1999) A Phantasmic Performance Drawn From Captured Motion. *Ghostcatching (Exhibition Catalogue). New York: The Cooper Union School of Art.* pp. 7-12.

Riofrancos, T. (2020) *Resource Radicals: From Petro-Nationalism to Post-Extractivism in Ecuador*. Duke University Press. At: http://doi:10.1016/j.exis.2021.01.009

Robinson, C. (2000) [1983] *Black Marxism: The Making of the Black Radical Tradition.* Chapel Hill: University of North Carolina Press.

Rodney, W. (2012) *How Europe Underdeveloped Africa.* Pambazuka Press.

Rodríguez-Muñiz, M. (2016) Bridgework: STS, Sociology, and the "Dark Matters" of Race. In E*ngaging Science, Technology, and Society*. *2*. pp.214-226. At: https://doi.org/10.17351/ests2016.74

Rotman, B., (2008) *Becoming Beside Ourselves: The Alphabet, Ghosts, and Distributed Human Being.* Durham. Duke University Press.

Seale, C. (1999) Quality in Qualitative Research. In *Qualitative Inquiry 5*(4). pp.465-478. At: https://doi.org/10.1177/107780049900500402.

Segal, R. (1996) *The black diaspora: Five centuries of the black experience outside Africa*. In *African Diaspora Archaeology Newsletter*, *4*(1) Article 8. At: https://scholarworks.umass.edu/adan/vol4/iss1.

Serafini, P. (2022) *Creating worlds otherwise: art, collective action, and (post) extractivism*. Vanderbilt University Press.

Sexton, J. (2011) The Social Life of Social Death: On Afro-Pessimism and Black Optimism, in *InTensions Journal.* York University, Issue 5. Toronto, Canada. Fall/Winter.

Sexton, J. (2012) Ante-Anti-Blackness Afterthoughts. In *Latera 1*. At: https://doi.org/10.25158/L1.1.16 (Accessed 31/01/2020).

Sharpe, C. (2016) *In the Wake: On Blackness and Being.* Durham. Duke University Press.

Skybetter, S. (s.d.) "Ghost Notation" At: https://danceinteractive.jacobspillow.org/themes-essays/men-in-dance/ghost-notation/ (Accessed 17/03/2023).

Spillers H. J. (1987) "Mama's Baby, Papa's Maybe: An American Grammar Book." In *Diacritics,* Summer. pp. 65-81.

Spillers, H.J. (2003) *Black, White, and in Color: Essays on American literature and culture*. University of Chicago Press.

Spivak, G.C. (2012) *In other worlds: Essays in Cultural Politics*. Routledge.

Spivak, G.C. (1985) The Rani of Sirmur: An essay in reading the archives. *History and theory*, *24*(3) pp.247-272.

Sutil, N. S. (2015) *Motion and Representation: The Language of Human Movement*, Cambridge, MA: The MIT Press.

Svampa, M. (2019) *Neo-extractivism in Latin America: Socio-environmental Conflicts, the Territorial Turn, and New Political Narratives*. Cambridge University Press

Thomas, G. (2006) PROUD FLESH Inter/Views: Sylvia Wynter PROUDFLESH: *A New Afrikan Journal of Culture, Politics & Consciousness.* At: https://www.africaknowledgeproject.org/index.php/proudflesh/article/view/202 (Accessed 23/11/2020).

Trench, C., & Newsome, R. (2012) Conductor, Choreographer, King of Arms. *Transition*, *109*(85–96) https://doi.org/10.2979/transition.109.85 (Accessed 13/03/2023).

Trotz, A. (Ed.) (2020) *The Point is to Change the World: Selected Writings of Andaiye*. Between the Lines.

Tyson, C. (2003) Research, Race, and an Epistemology of Emancipation. In *Counterpoints: Interrogating Racism in Qualitative Research Methodology.* pp. 19-23. At: https://www.jstor.org/stable/42978079 (Accessed 28/11/22021).

Uotinen, J. (2011) Senses, Bodily Knowledge, and Autoethnography: Unbeknown knowledge from an ICU experience. *Qualitative health research*, *21*(10) pp.1307-1315. At: https://doi.org/10.1177/1049732311413908 (Accessed 11/05/2020).

Vaidhyanathan, S. (2011) The Googlization of Everything: (And Why We Should Worry). University of California Press.

Walls, A.F. (2015) *Missionary movement in Christian history: Studies in the transmission of faith*. Orbis Books.

Warren, C. (2018) *Ontological Terror: Blackness, Nihilism, and Emancipation.* Durham: Duke University Press. At: https://doi.org/10.1215/9780822376491 (Accessed 01/01/2023).

Warren-Crow, H. (2017) Before and After Ghostcatching: Animation, Primitivism, and the Choreography of Vitality in *Screen Bodies*. *2*(1), Summer. At: http://doi:10.3167/screen.2017.020103 (Accessed 08/05/2020).

Weheliye, A.G. (2014) *Habeas Viscus: Racializing Assemblages, Biopolitics, and Black Feminist Theories of the Human.* Durham: Duke University Press.

Wilderson III, F. P. (2010) *Red, White and Black: Cinema and the Structure of U.S. Antagonisms.* Durham and London, Duke University Press.

Winner, L. (1986) *The Whale and the Reactor: A Search for Limits in an Age of High Technology.* Chicago. University of Chicago Press.

Wit López (2019) *The Artblog | The Brilliance of Rashaad Newsome.* At: https://www.theartblog.org/2019/11/the-brilliance-of-rashaad-newsome/ (Accessed 13/03/2023).

Wynter, S. (1984) The Ceremony Must be Found: After Humanism. In *boundary 2, 12*(3) *On Humanism and the University 1: The Discourse of Humanism.* Spring – Autumn. pp.19-70. At: http://www.jstor.org/stable/302808 (Accessed 10/12/2022).

Wynter, S. (1989) Beyond the word of man: Glissant and the new discourse of the Antilles. *World Literature Today*. *63*(4) pp.637-648. At: https://www.jstor.org/stable/40145557 (Accessed 16/04/2024).

Wynter, S. (1992) Beyond the Categories of the Master Conception: The Counterdoctrine of the Jamesian Poiesis. In *CLR James's Caribbean*, pp.63-91.

Wynter, S. (1995) 1492: A New World View. In V. L. Hyatt and R. Nettleford (Eds.), *Race, Discourse, and the Origin of the Americas: A New World View*. pp. 5–57. Washington, DC. Smithsonian Institution Press.

Wynter, S. and David Scott (2000) The re-enchantment of humanism: An interview with Sylvia Wynter. In *Small Axe 8* (September) pp.119-207.

Wynter, S. (2003) Unsettling the Coloniality of Being/Power/Truth/Freedom: Towards the Human, After Man, Its Overrepresentation--An Argument. *The New Centennial Review*, *3*(3) Fall, pp. 257-337. At: https://doi.org/10.1353/ncr.2004.0015 (Accessed 20/05/2020).

Wynter, S. (2006) On How We Mistook the Map for the Territory, and Reimprisoned Ourselves in Our Unbearable Wrongness of Being, of *Desêtre*: Black Studies Toward the Human Project. *A Companion to African-American Studies*, pp.107-118. At: https://doi.org/10.1002/9780470996645.ch9 (Accessed 12/04/2021).

Wynter, S. (2013) Towards the Sociogenic Principle: Fanon, Identity, the Puzzle of Conscious Experience, and What It Is Like to Be "Black". In *National identities and socio-political changes in Latin America*. pp. 30-66. Routledge. (Accessed 31/01/2023).

Wynter, S. and McKittrick, K., (2015) 'Unparalleled catastrophe for our species? Or, to give humanness a different future: Conversations'. In *Sylvia Wynter: On Being Human as Praxis*. pp.9-89.

Wynter, S. (2015) The Ceremony Found: Towards the Autopoetic Turn/Overturn, its Autonomy of Human Agency and Extraterritoriality of (Self-) Cognition. *Black Knowledges/Black Struggles:Essays in Critical Epistemology*, pp.184-252. At: http://www.jstor.org/stable/j.ctt1gn6bfp.12 (Accessed 30/05/2021).

Wynter, S. (2016) Black Metamorphosis: A Discussion in *Small Axe.*

Yin, R. K. (2014) *Case Study Research: Design and Methods.* Thousand Oaks, CA: Sage Publications.

Yusoff, K. (2018) *A Billion Black Anthropocenes or None.* Minneapolis. University of Minnesota Press.

Appendices

Appendix A: Moving Image Outputs
Moving image outputs accessible via hyperlinks listed below.

Walking on Water and Other Animated Acts Pt. 1 (2020) 2'40".
https://vimeo.com/407983917/53e7c84f86

Ocean Going Figurine (2020) 12'01".
https://vimeo.com/428109446

Walking on Water and Other Animated Acts Pt. 2 (2022) 2'22".
https://vimeo.com/725798367/3e32675d61

Communing with Aliyah (2023) 0'51".
https://vimeo.com/897268367/216cc354a5

Appendix B: Curriculum Vitae Excerpt

Recipient of UCA Farnham Studentship (non-stipendiary) 2019 – 2024.
Recipient of Student Support Fund 2022.

Academic journals
"Using data as materiality." *Animation Practice, Process & Production Journal* 12, No. 1 (2024).
Conference papers
"Using data as materiality." Paper presented at Ecstatic Truth VII: *Decolonising Animation*. University for the Creative Arts. Farnham, Surrey, 2023.
Research Network University of the Arts, London (February 2021 and June 2020) University for the Arts London, online.

Exhibitions
2023. ***Conserving Matter***. Moving image installation. 27 – 30th April. Alchemy Film and Video Festival. Hawick, Scotland.
2022. ***Attention, Absorption***. Moving image installation. 16 September – 26 November. Primary, Nottingham. 2021/22. ***The Morning has Gold in its Mouth***. Moving image projection in *Altitude*. 198 Gallery, London.
2021. ***Heavy Bones*** (2019) Abandon Normal Devices (online).
2020. ***Ground Provisions***. Textile Art with tubers and root vegetables in *Subject To Change*. 20 - 27 September. The Cello Factory, London.
2020. ***Ocean Going Figurine***. Moving image in *Visions in the Nunnery Pt. 1*. 25 September - 18 October. The Nunnery, London.

Residencies
2021 Digital Archives Artist in Remote Residence. UAL/INIVA. London.
2020 Artist-in-residence. The Art House, Wakefield, Yorkshire.

Research participation
2022 Artist Citizens Jury member, Goldsmith's University, London.
2021 Research Associate, Decolonising Arts Institute, University of Arts London and Institute of International Visual Art (INIVA), London.
2021 *When We Worked At Raleigh*. Contemporary Art Commission. Primary, Nottingham.

Awards
2020 Womxn of Colour Art Award.

Appendix C: Data Collection

Based on notes from my journals, these annotations reflect phases of my research using motion capture data. They are indicative of my interrogation into what constitutes a B/black body in motion. Questions raised during the construction and production of animated figures prompted an exploratory research process.

Phase	**Exploratory Test**
Questions	
What is a B/black body?	
Where is the black body and what is it doing?	
How to document processes?	
OGANT (2020), *Walking On Water and Other Animated Acts Pt. 1* (2020)	

Exploratory Test activities

• Incorporating autobiographical references into practice as research tests
• Computer programming skills developed to conduct tests
• Use copyright material
• Use screen recording software to document processes

Phase	**Selection Criteria**
Questions	
Use free and existing motion capture data?	
Use free and existing 3D models?	
Figurations, *Ocean Going Figurine* (2020)	

Test criteria activities

• Search online motion capture libraries for free motion capture data/non-commercial use
• Use free 3D model from motion capture libraries if visual representation is a match
• Use screen recording software to document processes

Phase	**Motion Capture Software test**
Questions	
Motion capture or motion extraction?	
Technological automation or agency?	
How to resist extractive practices?	
Fik-Shun, Boppin André, CeCe, Josephine Baker, Bill T. Jones, Storyboard P	

Motion Capture Software test activities

• Search online for recorded video of performers
• Use browser-based software to generate 3D animated figures from recorded video of performers

• Use screen recording software to document processes

Phase   Motion Capture Data test
Questions
How can an extractive practice be generative?
How can motion capture data animate black bodies?
How to locate Blackness?
Walking On Water and Other Animated Acts Pt. 2 (2022), *Communing with Aliyah* (2023)

Motion Capture Data test activities
• Use motion capture data generated by browser-based software
• Use free 3D model from motion capture library
• Use screen recording software to document processes

| Phase   Case Studies selection |
|---|
| Questions |
| *Does the artist identify as Black?* |
| *Do they have a contemporary art practice?* |
| *Do they discuss their use of motion capture technology?* |
| Bill T. Jones, Rashaad Newsome, LaJuné McMillian |

Case Studies selection
o   Search online for Black contemporary art practitioners
o   Search online for Black contemporary art practitioners who use motion capture technology
o   Search online for texts related to artists' discussions of their practice

The following descriptions expand on the reflexive, theoretical and practical elements of the research. They reference the Exploratory Test phase listed above. Diaries were used to document tests carried out during different phases of my inquiry. These are italicised to distinguish them from my additional commentary. The following analyses of these tests are reflections on the original handwritten notes created during the study. I have added highlighted notes made when re-reading texts to identify notable developments that shaped my framework. Dates (where available) refer to the original diary entries. These are also differentiated using italics. Visual documentation comprising screenshots and video stills has been added for clarity and additional reference. These images correspond to the tests at the time of their making rather than as postscripts. Square brackets have been used to provide additional information where brevity may impede comprehension.

What is a B/black body?
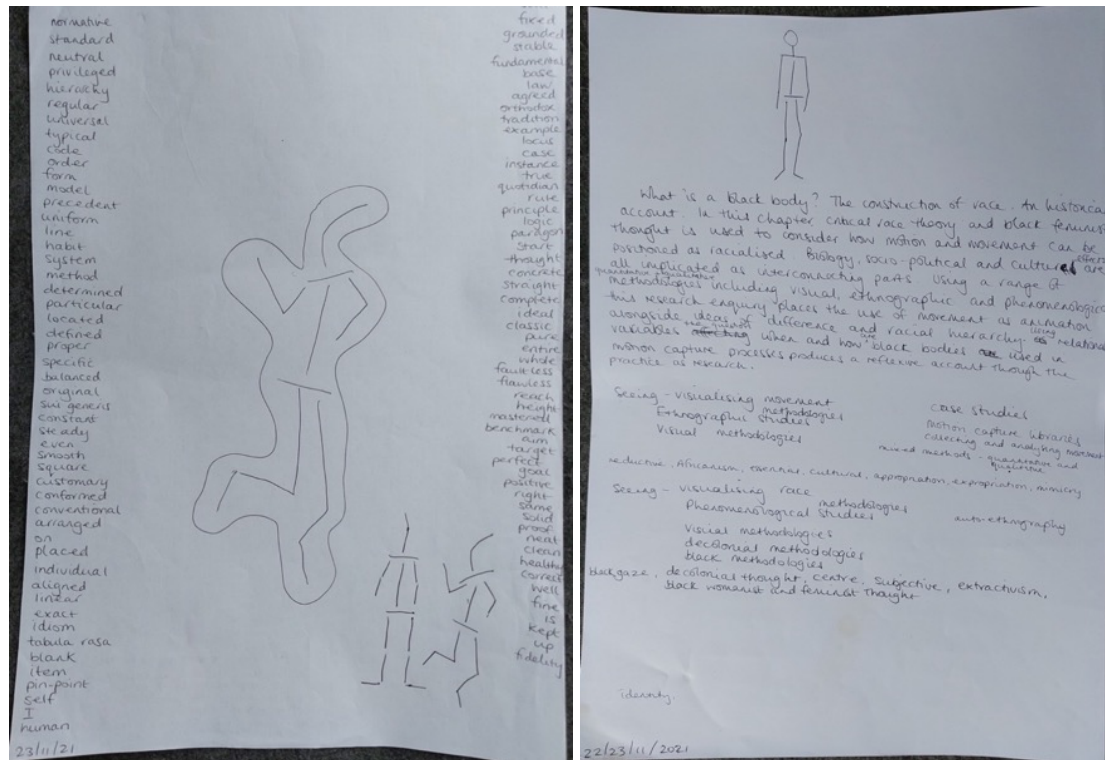
Where is the black body and what is it doing?

How to document processes?

These questions served as prompts to conduct the initial phase of my iterative tests.

As indicated in my online search of motion capture libraries (see Phase Exploratory Test), existing motion capture data was available. However, my interest in using computer coding to generate motion centred on addressing a lack of motion capture data comprising quotidian movement. For example, domestic settings where human movement was captured were in limited supply. I aimed to develop methods to generate motion. In Chapter 4: Reconfiguring Blackness, I provide an account of how my practice as research was used to examine contexts for producing Black animated figures when I raised the question 'What is a B/black body?'

The following transcribed excerpt from my journal provides further reflection on my fragmentary exploration across several aspects of conducting tests. These were questions I posed that did not always require a definite answer.

MARCH 2020

SUNDAY 22
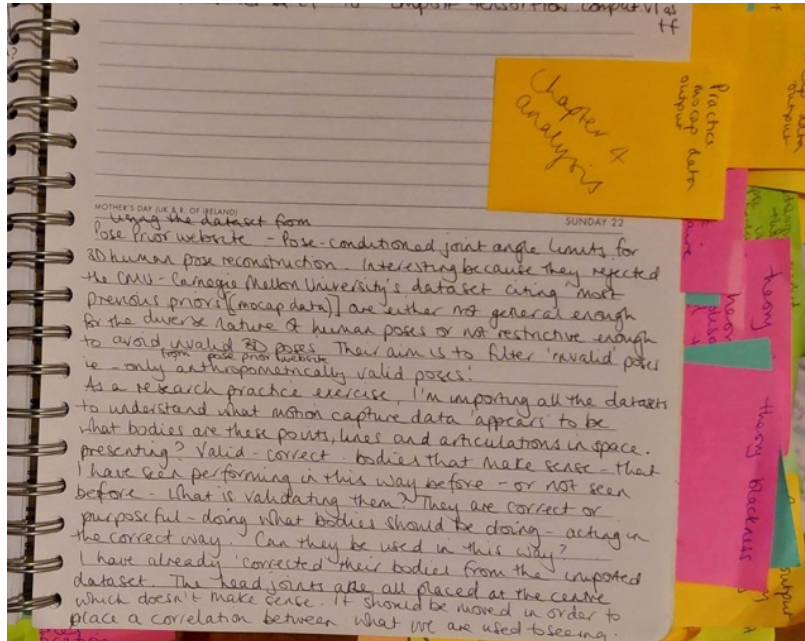
Journal entry reflections on using Prior Poses's motion capture data.

Using the dataset from Pose Prior website – Pose – conditional angle limits for

3D human pose reconstruction. Interesting because they rejected

The CMU- Carnegie Mellon University's dataset citing 'most

previous priors [(mocap data)] are either not general enough

for the diverse nature of human poses or not restrictive enough

to avoid invalid 3D poses' from pose prior website. Their aim is to filter 'invalid poses

ie – only anthropometrically valid poses.

As a research practice exercise, I'm importing all the datasets

To understand what motion capture data 'appears to be

What bodies are these points, lines and articulations in space presenting?

Valid – correct bodies that make sense – that I have seen performing in this way

before – or not seen before – what is validating them? They are correct or

purposeful – doing what bodies should be doing – acting in the correct way. Can

they be used in this way?

I have already 'corrected' their bodies from the imported dataset. The head joints are all placed at the centre which doesn't make sense. It should be moved in order to place a correlation between what we are used to seeing.
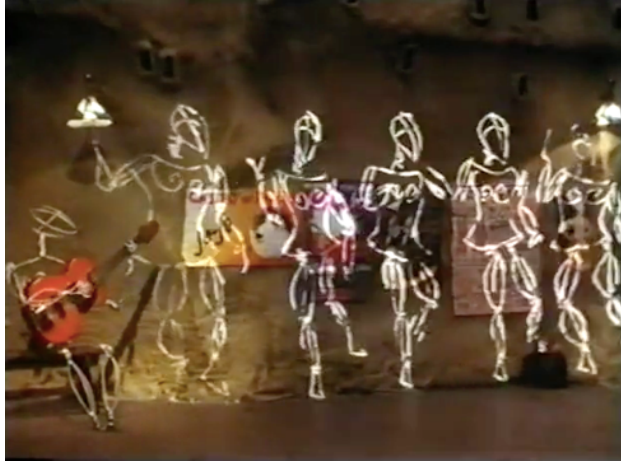

Mama Lou (dir. M. Peters1996). © Maybelle Peters.

23/03/2020

I indicated in my diary that my decision to place the figures into a linear formation was based on proprioception. Stating that, 'The chorus line in vaudeville shows' was a reference to my film *Mama Lou*, 1996 (shown above) I had attributed movement as sensory corporeality to visualising the results from a previous animation. I noted that previously, this arrangement was indicative of repeating similar patterns of aligning objects. I used video to document the steps for importing the data and making adjustments to 'skeletal joints'. Skeletal joints as highlighted in green in the image below represent a human skeleton. The screen capture software recorded the changes I made.
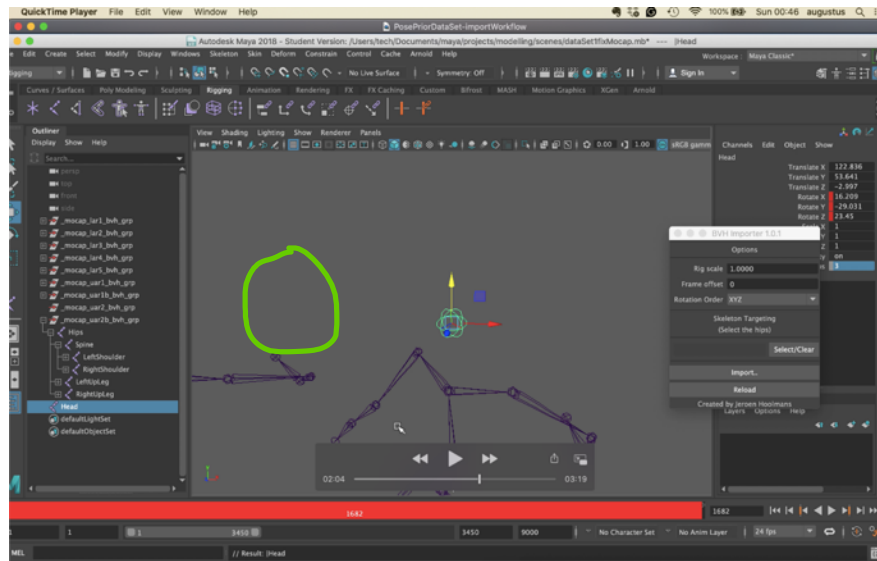
Video still of Pose Prior workflow for importing motion capture data.

I noted in my diary the following observations of using screen capture software.
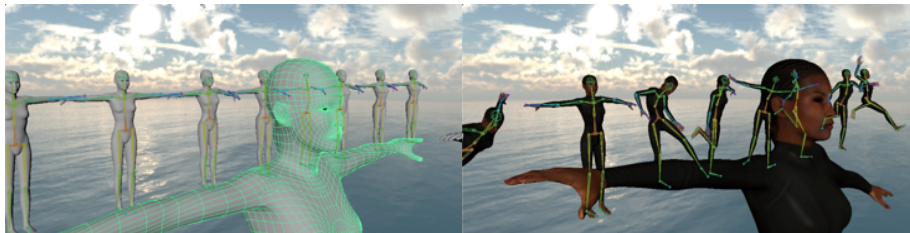
Pose Prior motion capture data used with Autodesk Character Animator 3D model.

April 2020

Saturday 4

Watching   Stretching It out   outstretched   Stretch.
I'm reminded of Josephine Baker, Fred Moten's writings on
non-performance, vaudeville, athletics, gymnastics. The spaces
, places where the black performing body is permitted and policed
outstretched arms held in reposes or submission. The eyes
are omitted, not intentionally but left out because they
give nothing away. The blank expression helps to focus on the
performance. The cartoon animation stretch caused by ~~the~~ my
lack of attendance to 'fixing' the 'skin weighting' is an

aesthetic choice. The majority of the joint placements and

paint weighting is applied to the head and hands as they

were deemed distracting when not fixed.

Does the application of black performing bodies to the

mocap from 'PriorPose' give a new reading to the use of

movement? I've not intentionally altered the duration

but the slow motion does create an altered reading.

Am I drawing attention to the movement? Should the use of the

mocap remain intact? There weren't any meshes ie

bodies attached to the mocap; only a skeleton. I downloaded

a character from Autodesk's Character Generator app.

The aim was to use a character that had a similar skin tone as me

wearing neutral clothing and no discernable characteristics ie

*wasn't representing a known person, character.*

The render was created using QT screen recorder rather than a

render using Maya. This helped to speed the process up

so that I could reflect on the work in a relatively short

space of time. The work had to be made in order for me

to see what the work was doing. Initial tests of skeleton/joint/

rigs performing had a separate/different reading. They're

'uncoded'; neither male or female. Are they neutral because

they're not read as belonging to any other classification other

than human (biped)

The methods I employed to collect data such as screen recording and notation software aided my reflections on the processes of using motion capture data beyond technical instruction.

Reflections on my process

22/03/2020

Noting my framing of motion capture technology as a tool for reappraising representations of virtual animated figures, I focused on the availability of motion capture data. Further tests functioned as examinations of how I obtained and used motion to create animated figures. My reflections on using computational data supported my aims to account for motivational factors affecting my decision-making processes. Alongside my tests using existing motion capture data, I aimed to determine if the processes used in motion capture technology could be considered motion extraction rather than motion capture.
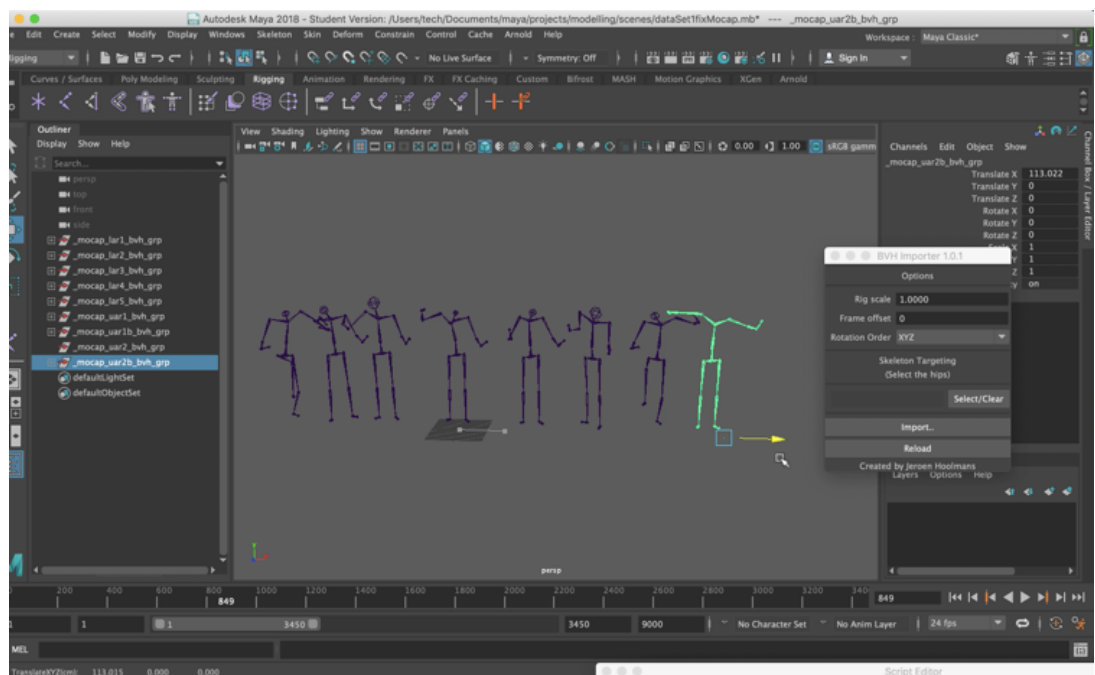
Importing existing motion capture data.

I used motion from Pose Prior's website. Computational data generated from human motion as shown in the above image was imported into the software program Autodesk Maya. The data was used to animate a digital 3D model. This motion could be applied multiple times to any number of virtual characters. I aimed to examine the implications of leveraging my use of motion as a resource. using

motion capture data. As a multi-modal approach, technical, sociocultural and political contexts were interrogated.

I reflected on whether deferring to visual ascriptions of race had highlighted a fundamental question I was unable to answer. If motion capture libraries had overlooked whose bodies provide the motions for animating virtual figures, could an assumption that motion capture technology facilitates white normativity as an accepted provision for all users regardless of their identity be made?
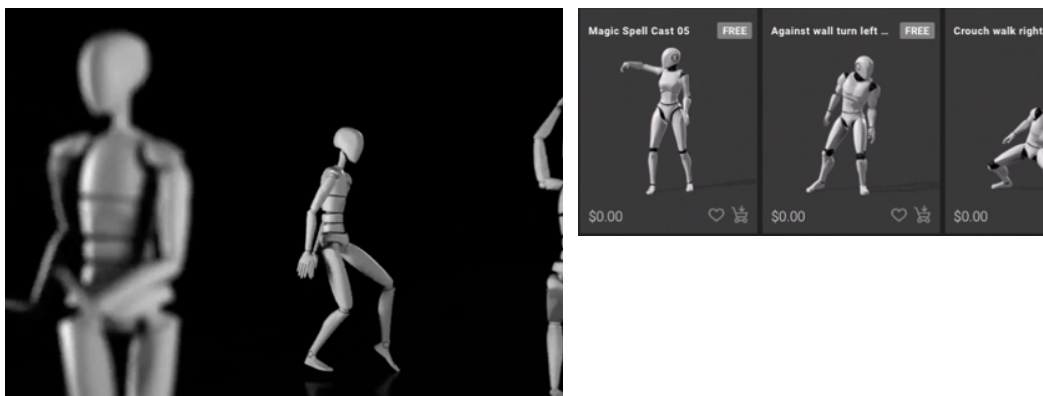
Rokoko library (left) and Actorcore Reallusion library (right).
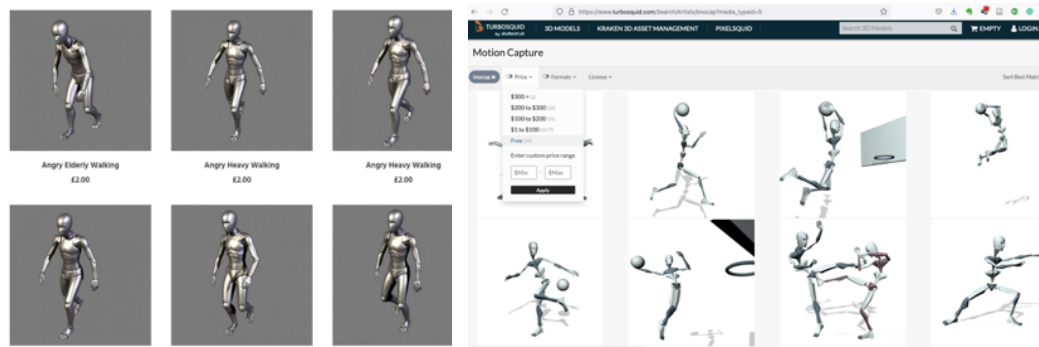
Centroid library (left)   Turbosquid library (right)

Two areas of examination had developed from using Pose Prior's existing motion capture. First, representation in motion capture libraries warranted further analysis. Second, my in(ter)vention in creating motion for virtual figures needed to focus on movement.

Continuing my analysis of motion capture libraries, I turn to a journal entry for notes on my search criteria. The question of the availability of motion and its suitability for a project I had begun is expressed in two separate entries highlighted below. Identifying where I needed to search to locate a (black) body and define a context for its motion was instructive.

12/10/21
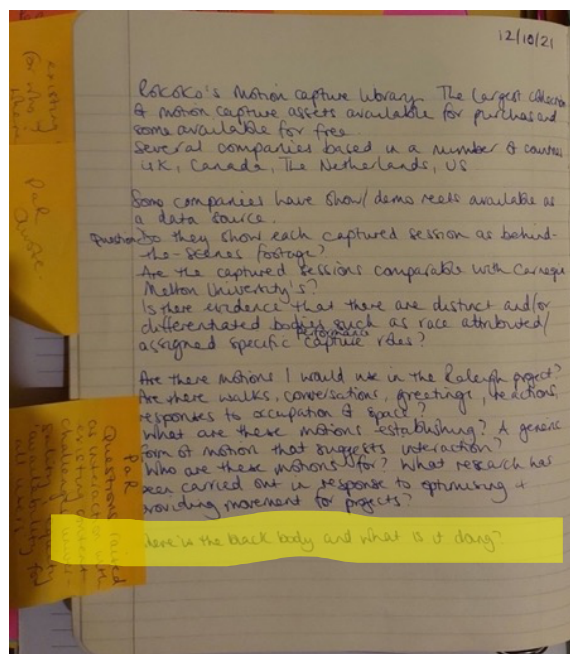
'Where is the black body and what is it doing?' A page from my Practice as research journal.
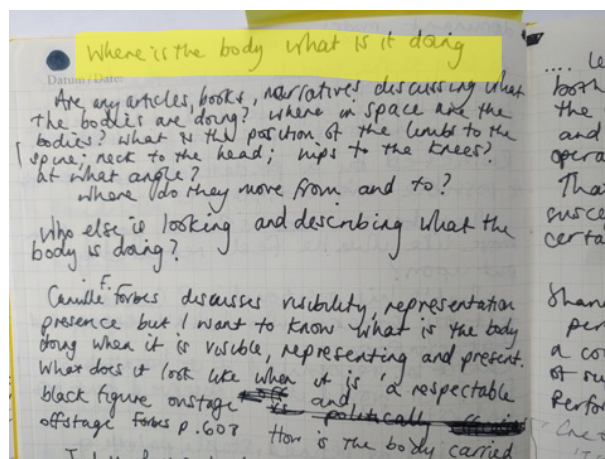
'Where is the body what is it doing.' A page from my 2019 journal.

In my Practice as research Iterative tests my question of what contexts determined the black body led to searches online and iterative tests. As indicated in my following reflections, I had aimed to determine what constituted a black body.

Search online motion capture libraries for free motion capture data/non-commercial use.

Examination of Existing Libraries

In Chapters 2, and 4 I have given an account of how I examined online content libraries. The purpose of this was to determine how technological apparatus makes the creation of universal human figures possible and consequently reproduces cultural and dominant hegemonies. I have premised this part of my study on the production of human figures found in motion capture libraries to understand how normative codes create homogeneous bodies. Central to this consideration on how systems creating notions of neutrality affect the meanings of black identity was a practical test to explore mechanisms that became a catalyst to question and disrupt the reproduction of privileging some bodies and subordinating others. As the study proposed Blackness as a critical modality for using motion capture technology in contemporary art practice, I documented my engagement with motion capture libraries. These were used as datasets for reflexive analysis in my Practice-as-research moving image outputs detailed in Chapter 5: How to Move a B/black body. Additionally, I took existing texts from artists' discussions related to their experiences of using motion capture libraries for my evaluation. I aimed to attend to the motivational factors incurred when artists Bill T. Jones, LaJuné McMillian and Rashaad Newsome decided to create digital human movement. A large range of existing libraries posited as being available to all users prompted my decision to contest notions of universality and acts of decoloniality. I have discussed these processes in Chapter 2: The Master's Tools.

List of examined libraries

The following online motion capture libraries were searched for visual representations of Black women and motion capture data of 'everyday' actions relating to home, leisure and work.

Library	Website Address	Date Accessed
Actorcore Reallusion	https://actorcore.reallusion.com/	1/10/2021
AXYZ Design	www.axyzdesign.com	7/06/2020
Chordata Motion	https://chordata.cc/	7/03/2020
Centroid Library	www.centroid.com	06/09/2021
Motion capture data	www.motioncapturedata.com	Undated Access
Rokoko	www.rokoko.com	12/06/2020
Turbosquid	www.turbosquid.com	01/09/2021

17/05/22

Before I revisit the research output Walking on Water and Other Animated Acts Pt 2, I will note down some reflections on the title and intentions.

Throughout the iterative making/testing output, I have sought to disentangle and separate the technical aspects involved with using technology previously learned.

This approach was to limit the effects of being a technician and software trainer who complied with 'best practices.' A necessary requirement to adhere to standards and justify certain methods. However, my aim in configuring figures for use in a moving image work was to see if readily available motion capture data produced any insights when attached to a series of meshes with identical bodies. In this case, a black female was generated using 3D software (Autodesk Character Generator) and connected to a range of animated figures found online for free if the terms and conditions were accepted. (Research + non commercial purposes).

A screen recording documenting this process of connecting the motion capture data and figure served as a witness. This was the catalyst for thinking about what was being recorded. It wasn't my thoughts. Instead, the video shows a cursor appearing and moving from one area to another. It is possible to hear noise in the background. Some of this ambient sound could be the mouse keyboard as it is depressed and released. The effect, if one only views what is happening on screen is an effect of several processes occurring without the viewer taking them into account. Although the figures would have been recorded standing on a floor; feet firmly placed on a ground plane due to the effect of gravity, the 3D software I use need not comply.

Instead of reproducing the effect of real world cartesian co-ordinates, the figures are placed on a simulated body of water

Walking on water   centre

Magic

Alchemy

Animation

Religion

Non-compliance   – defying gravity
  Logic

First translation from the cinematic to the animatic apparatus.
Animation's role in this act is to focus the possibilities that contend with the logic of working in a cartesian space determined by physical encounters whilst resisting that logic of placement.

In(ter)vention
20/05/22

Interventions that are framed by the extractivist practice;

Are – interruption(s) in the process/procedure
Address current modes of standard practice
Bring a perspective aligned to a present absence

Literally halting or intervening promoted forms of use
A hack using marginalise[d] / de-centred histories, epistemologies, ontologies culturally colonised ie separated in order to gain/accumulate and capitalise through appropriation – ie make an extraction and resource profitable.

Identified existing processes and procedures

– motion captured figures
Motion capture best practices, standardised
Workflows, instructional texts, examples,
Industries and knowledge production
Disseminated in books and available in asset purchases (not purchased in research)
Only free assets downloaded.
Costs are prohibitive and don't provide further insight into use.

A qualitative study produces data on how assets become resources rather than evaluation on how many assets are accessible.

Assets

Figures from several sites are identified including Rokoko Motion library from Autodesk Maya.

AXYZ design

Renderpeople.com

As the research is not a comparative study, only figures that can be tested with the same methods will be used.

1) *Import into Maya*
2) *Place in scene*
3) *Unlink the captured motion from the mesh*
4) *Alter the mesh volume*
5) *Relink the motion to the mesh*
6) *Circumnavigate the figure using software controls*
7) *Record process using screen recording software*
8) *Reflect on process throughout*

Whilst I had established my selection criteria of only using free 3D models and existing motion capture data to create a series of animated figures, my development of a series of steps was an additional method I considered for testing my in(ter)vention in extractivist practices.

Appendix E: Data Collection

Case studies Reflexive Thematic Analysis

As outlined in Chapter 3: A B/black Sense of Place, I adopted Braun and Clarke's (2021, 2019, 2013, 2006) six phases of Reflexive Thematic Analysis. This method promoted an introspective account of my documented processes in a thorough, adaptable system.

Familiarisation

I generated primary data by using secondary data as a form of black study. I posited black study as an unaccounted way of These are intended to support a wide gamut of each artist's perspectives. Therefore, accessing divergent texts has fostered an increase in contextual information. This is evident in biographical data.

The cycle of locating potential texts, reading for comprehension and coding required different approaches. I adopted several ways to engage with the data. The transcribing process from videos could be seen as a recent and easier process because automatic transcription tools supply a speech-to-text translation. However, reading texts that were often inaudible and inaccurately translated resulted in an initial stage of 'listening back' to adjust words. This was a lengthy and slow task. On the one hand, listening more deliberately to the words offered a deeper engagement with the texts, while on the other hand, the laborious pausing and correcting activity did not necessarily elicit a fuller comprehension. The process did however prevent me from omitting information that could occur from skimming over details when reading.

With some texts, there were notably definable separations articulated by the artist. For example, I noted that LaJuné McMillian's presentations often followed a narrative outlining how their research problem raised questions through practice, instituted reflection and warranted further investigation. My observation on how the texts I familiarised myself with differed across artists' articulations of their practice deviates from the analysis of data. This interaction was notably insightful as it revealed how my affiliation with the discussed topics was not suppressed. Instead, I actively sought to record my responses to each artist's testimonies.

Generating initial codes

The artists' responses to how they make their work connected to production stages I observed in my iterative tests and practice-as-research moving image outputs. Noting that all my case studies had been selected after my initial moving image works *Walking on Water Pt 1* (2020) and *Ocean Going Figurine* (2020), I formed several questions related to the means of production. As a result, some topics and themes have been constructed before my adoption of reflexive thematic analysis. This observation points to my selection of case studies as overlapping and connected themes I developed. Although this insight was a significant introduction to how I coded and themed texts, I have used reflexive thematic analysis to record how I have conducted my phases.

My aim was not to predetermine which areas of creative production I focused on. The list of topics documented in the Appendix I: *What Artists Do*. Identifying these areas of interest were the results of a phased process. Its purpose was to capture my analyses across the dataset. These topics had been construed as points of discussion I had composed from reflections Bill T. Jones, LaJuné McMillian and Rashaad Newsome discussed on identity, experiences and ideas of creative practice. These were documented as topic sentences. They were constructed in the absence of obtaining direct responses. Instead, they remain as an open-ended address.

From my engagement with the data and datasets, I began a deep and thorough phase of getting to 'know' what the texts contained. To arrive at a set of topics such as what is assumed about the technology's capabilities, I have narrated the concept expressed throughout the dataset using a quote or phrase. My aim was not to look for frequency as the study was not a quantitative analysis. Using criteria that privileged the artists' accounts, I read and identified texts to deduce creative, sociopolitical and sociocultural factors for using motion capture technology.

My coding process as detailed in this Appendix, enabled me to see what was of interest in alignment with the research questions I posed. It was a systematic process to initially identify artists' thoughts on their utilisation of motion capture technology. To garner additional information about artistic practice and blackness, I needed to develop phased reading to ensure data was not overlooked. Topic summaries were used to capture a range of responses. These were connected to a phrase or sentence in a text. At times, I highlighted text about a specific topic such as artistic practice, technology, sexuality, or race. Notes were made of my process documenting how I applied codes to the data.

Despite using headings, my responses to reading texts did not automatically default to using themes or codes. At times when I was undecided, I did not assign a label. Instead, my phases of familiarisation, reflexive writing and theoretical framework were methods that enabled the process of coding to take place asymmetrically. As noted previously, the phase of familiarisation involving transcription provides an opportunity to read and connect to observations stated as they are reformatted. The length of time between writing in the journal and the transcription into typed texts indicates a duration long enough to have become vague. Re-reading texts offered a reconnection to comprehend, understand and interpret ideas particularly if further questions arose.

Selected quotes and phrases

Bill T. Jones

"Paul feels that by placing such an emphasis on my black gay body, they [scholars] shut off any ability to recognize the myriad metaphorical forces at work in the piece." (Jones, B.T. (2015). 'Bill's Blog', At: https://newyorklivearts.org/blog/bills-blog-signifying/ (Accessed 27 March 2023).

"I personally take issue with the assumption that the Arlene Croce *Still*/*Here* affair made me rush to digital technology's "utopian" space that promised race-free, sex-free entre in the upper precincts of the race-free, sex-free serious art world. Such a notion ignores all of the highly formal, constructivist works." Jones, B.T. (2015). 'Bill's Blog', Available at: https://newyorklivearts.org/blog/bills-blog-signifying/ (Accessed 27 March 2023).

"But an even stronger impression was made by the way people danced around us all the time. Being migrant workers–a colony of itinerant African American fieldworkers seasonally migrating along the eastern seaboard–we were forced into a cultural enclosure that was hardly self-sufficient, though resourceful and vital in its social expressions." (Jones, 2002:103).

"No, I do not want to be a disembodied, denatured, degendered series of lines moving in a void that has no relationship to history, to the psychology that makes us who we are as animals, and makes us great, and makes us terrible, that has no yearnings." (Jones cited in Rindler et al., 1999:39).

LaJuné McMillian

"I've been working on a documentary about black figure skaters who taught themselves how to figure skate in the 1940s and 50s and they created this group called Harlem on Ice. My great great uncle was one of those skaters and what's so amazing about this story is that when I think about his legacy and how that also translates to me as a black figure skater so often our histories get erased and sometimes it reflects as if oh black people they don't figure skate or black people, they're not technologists. No, like we're very much everywhere doing everything, and we've always been, you know doing everything everywhere."

McMillian, L. (2023) *New DEMO*. At: https://www.youtube.com/?v=1h7MEvrVlOI. (Accessed 22 July 2023).

"I decided to start the Black Movement Library, which started as an online database of Black motion capture data and Black character base models. But I realized that my approach to creating this space was not necessarily correct. Mainly because representation is not enough. I did not want to perpetuate systems of harm on our bodies and on our movement and how we move in this space. So I needed to start to question what it means to be seen in these digital spaces and what it means to be liberated in these spaces as well."

McMillian, L. (2021). *Art && Code Homemade Archive | Open Transcripts*. At: http://opentranscripts.org/sources/studio-creative-inquiry/art-code-homemade. (Accessed 15 March 2023).

"In my upbringing I was exposed to Black spaces, white spaces, mixed cultural spaces and different socioeconomic spaces. When I was seven, my family moved to a predominantly white, middle-class neighbourhood. We rarely talk about how harm can manifest in these spaces: for instance, how a neighbourhood and school system can uphold white supremacy, and how that mentally affects children who will never "fit" the criteria of whiteness."

McMillian, L. cited in Longhi, L. (2020). *The Black Movement Project: An Interview with LaJuné McMillian* https://www.berlinartlink.com/2020/08/21/the-black-movement-project-an-interview-with-lajune-mcmillian (Accessed 21 June 2022).

Rashaad Newsome

"… I think collage is just embedded in black experience particularly black American experience you know when you know black people. First of all [we] never decided that we were black it was like a term that was given to us and we're creating this identity and culture." (Newsome, 2022, 46:32)

"…there is a sort of improvisational aspect of living within a black experience and you have to sort of collage together many different things to sort of create an identity of self." (Newsome, 2022, 46:50)

"I was thinking a lot about bell hook's theories…the culture of domination and how you know we really need to move away from those impulses as a society…Being was a gesture towards a post-race post-gender Futurity. If that is even something that can be created." (Newsome, 2022, 47:27)

how does that resonate for you in terms of what it calls attention to or makes possible
32:18
anyone have a thought
32:41
>>[KIYAN WILLIAMS]
Can you hear me?
That's a great question. Um I guess I'll respond by sharing a bit of like on reflection. Um during the evening seeing the show on Thursday at the opening. Um and so when I arrived and I was being you know walking

Audio transcribed manually.
Audience reception and reflection.

---

towards the entrance I had this feeling of being overpowered by the architecture and the building and I felt, um felt kind of the dominating presence of the military police state as in the Armory that is owned and operated um by the military. Um and that sort of, and I was like you know sensing and working through that feeling. Um I of course arrived at the idea of how um Black people assembling is rated criminal, in know a threat by the state. Um I'm thinking specifically about um formally black queer trans ??? of New York City particularly like the Christopher Street queers which because of various um, various policies of distribution ??? is no longer a site where black queer trans groups are welcome in the city. Um, I'm thinking about black people assembling on the street corners on that Saturday. Um there are no longer the practice that can take because of over policing um and so I walked into the building having feeling that presence because of the architecture of the building. Um and immediately walked into the first installation and felt a counter-presence um which was catalysed both initially by the installation of the video um if you look at the video um moving through various worlds um in space and uh I was reminded that part of what I would call a black social practice is how you engineer and hack anti-black and queer trans antagonistic space and recreate it to one in which black livelihood black queer trans ontology, black queer trans feeling is foregrounded. Um which I'm sure is not what you know the original architects; the people who built the building [inaudible] [laughter] Um so that was kind of you know. Um I felt my body very happy in embodied ways. That kind of shift between uh how the space feels from the outside to the inside in a transformationary way.

Williams' response attests to the effects of subjection and oppression experienced in the location Newsome's work is exhibited.

Speaking of the violence and negation embedded in the use of space (Drill Hall, Armory) and its wider environment such as once occupied by black and queer people, Williams attends to Newsome's considered and resistant acts of occupation. Negotiating the history that remains present.

Observes how despite the maintenance of the spatial and temporal weight of continued subjection, Newsome has challenged with deploying black sociality (ways of coming and being together with the omnipresence of anti-black racism).

Reflects on the possible vision held by those responsible for its creation and their intentions being queered by a black insurgency.

In the transcribing process of 'listening back' my familiarization phase required repeated attempts that could not be recorded using the coding methods I had adopted.

Appendix Case Studies selection

In the following Appendix, I present a sample of a colour-coded engagement with familiarisation. This example indicates an excerpt. The annotated notes at the bottom of a transcribed text of an interview with Bill T. Jones. Here, a summary of topics has been generated after the initial phase of reading, listening and reflexive study. Further interactions are recorded using a 'highlighted marker'. In the example below, yellow indicates a separate phase from the later purple marker whereby additional topics were identified.

Sample coding: Excerpt 1

psychological, racial, even sexual—and concentrate on pure movement as the sole design for dance. While this decision was made as a way of escaping the aftermath of critical reactions to the emotionally wrought *Still/Here*, it was the same one that would govern his solo improvisations for *Ghostcatching*, but for different reasons. As the project developed, and Jones' movements were filtered through a battery of machines, it became increasingly obvious that the end result would be a choreography detached from content, allowing the viewer to watch closely, and close-up, the evolution of movements and their after-images as well. Transformed technologically, from solid self to cipher, it fascinated Jones that the computer could reproduce bodies that moved exactly like his own, just as he had attempted to do in *We Set Out Early*. "Those movements came out of my own body," he said of the earlier work, and it is the reproducibility of shapes, over and over again, that most pleases him in the *Ghostcatching* installation. Dance, as Jones points out, is a teacher-to-student art form. "One human being teaches another human being what the form is, and the other human being has to fill it with his or her essence." For Jones, and for us, *Ghostcatching* is an absorbing virtual stage where that transmission process can be examined in all its complexity.	Questions asked of the technological capabilities of motion capture What was the potential for the racialised, gendered, identity-laden body to be de-linked to become only kinetic and kinaesthetic ie decontextualised and abstract.
	A choreographing non-human
	Replication made possible through datafication process. Potential to become an instructional tool. The ability to closely study the procedures; to interrogate it.

Background to Jones's work and intentions throughout his career. Seen as challenging normativity of dance canon coded white. Indicated by formal, reproduceable movement that is validated institutionally.

Familiarisation and coding take place. Phrases that are of interest are highlighted. At times, there are sentences that are deemed significant to the inquiry. These purple marked excerpts will be re-read but not without the whole text being overlooked.
What familiarisation affords is a connection between texts. Through a process of associations between examined theories such as Tiffany Barber's analysis on America's post-racial conflict, observations and patterns of ideas read across secondary data are brought together. It is this continuous act of making affiliations of artistic practice, technological capacity and subjectivity that allows for the research to undertake a navigational strategy.

Phases of coding indicated by notes made at the bottom of the page followed by assigning different colours to coding phases.

Sample coding: Excerpt 2

this reason, I began to think about it in terms of a library. Libraries are great because they don't just hold books; they hold a wealth of knowledge in many mediums and they bring people together, building community. I am thinking of the BMP as a "future library"— what new ways can this space hold Black movement? How can it bring a community together? How can it protect information? Regarding my art practice, I mainly stay in the abstract, in a land of questions, where the answers reveal themselves over time through me as the vessel. When I google "activism", it reads as "the policy or action of using vigorous campaigning to bring about political or social change." Activism deeply inspires me. It can manifest itself in many ways— including art—but I am not sure if my art does that yet, or if it will. Maybe that's the "line"? What makes art special is when it holds a life of its own, outside of the artist. It always interests me when someone sees something in my art that I have yet to see. In that way, art is not always straightforward. It is something one has a relationship with that grows over time. This article is part of our monthly topic of 'Institutional Critique.' To read more from this topic, click here.	Reflection Considers what structure attends to the identified aims and objectives. Views libraries as multi-modal and communal Something beyond its current formulation Aims and objectives Responds to the effects of subjection and negation. Sees their practice as aligning with abstraction. Finds influences with activist practice due to its expansive formation. Reflection Art practice meeting its aims and objectives.

How MacMillian sees the potentials and pitfalls of technology. Aims to question (in)visibility of black bodies in virtual domains. Explores possibilities beyond existing narrow frame of references that have questioned art, technology.
Responds to what is seen as non-accommodating spaces for some people sharing her identity.
Personal experiences – patterns – lived experiences.
Navigating spaces and reflecting on the experience of operating in environments that can, and do have adversely negative effects.

Rethinking movement
Using an embodied and political approach to address impositions found in occupying white spaces eg figure skating environment experience prior to tech work.
Sees libraries as more than books – oriented towards a future.
Recognises precarity and vulnerability of black living. Seeks to counter proximity to negation.
No explicit reference to theories.

Coding phases for an interview with LaJuné McMillian are indicated by making notes at the bottom of the page, highlighting text initially in yellow and then green.

Transcript	Codes
kind of choreograph it or make it give it a structure and i realized very quickly that that was just 52:25 like not the point you know it is a you know truly uh 52:30 improvisational dance and no matter what i tried it would never um whenever i let go of that it was 52:37 always what then i was able to see what i was trying to um to get at um 52:42 and so uh that kind of radical 52:48 black body language was always something that was really exciting and 52:54 inspiring for me um but then you know at the same time you know like 52:59 voguing is a part of vogue culture and that culture is uh 53:05 available to all black and brown LGBTQAI plus people whether you like are walking or uh 53:13 spectating and but at the same time there was you know that space 53:18 has not always been a completely safe space for everybody and so one thing 53:23 that was really important to me too with this project was to um bring a critical voice to that space 53:30 in a way that i think hasn't been done before because i feel like so much of the um 53:37 product around vogue has often been done by flaneurs and so there's a kind of um 53:43 uneasiness about being critical because they're kind of already conscious of the fact that they're there and maybe 53:49 they shouldn't be there already and so i felt like in many ways that's what um the uh 53:55	Creative intention Aims Organise and arrange through choreography Response Understanding its improvisatory inherence. Responding to it through acknowledgment of its integral form. Creative practice Creative intention Responding to Vogue's cultural production Vogue inclusivity. Contested spaces Responses Creation of generative spaces. Questions Reflections

Excerpt from coding from Rashaad Newsome panel discussion transcribed from an audio recording.

Note-making in diary.
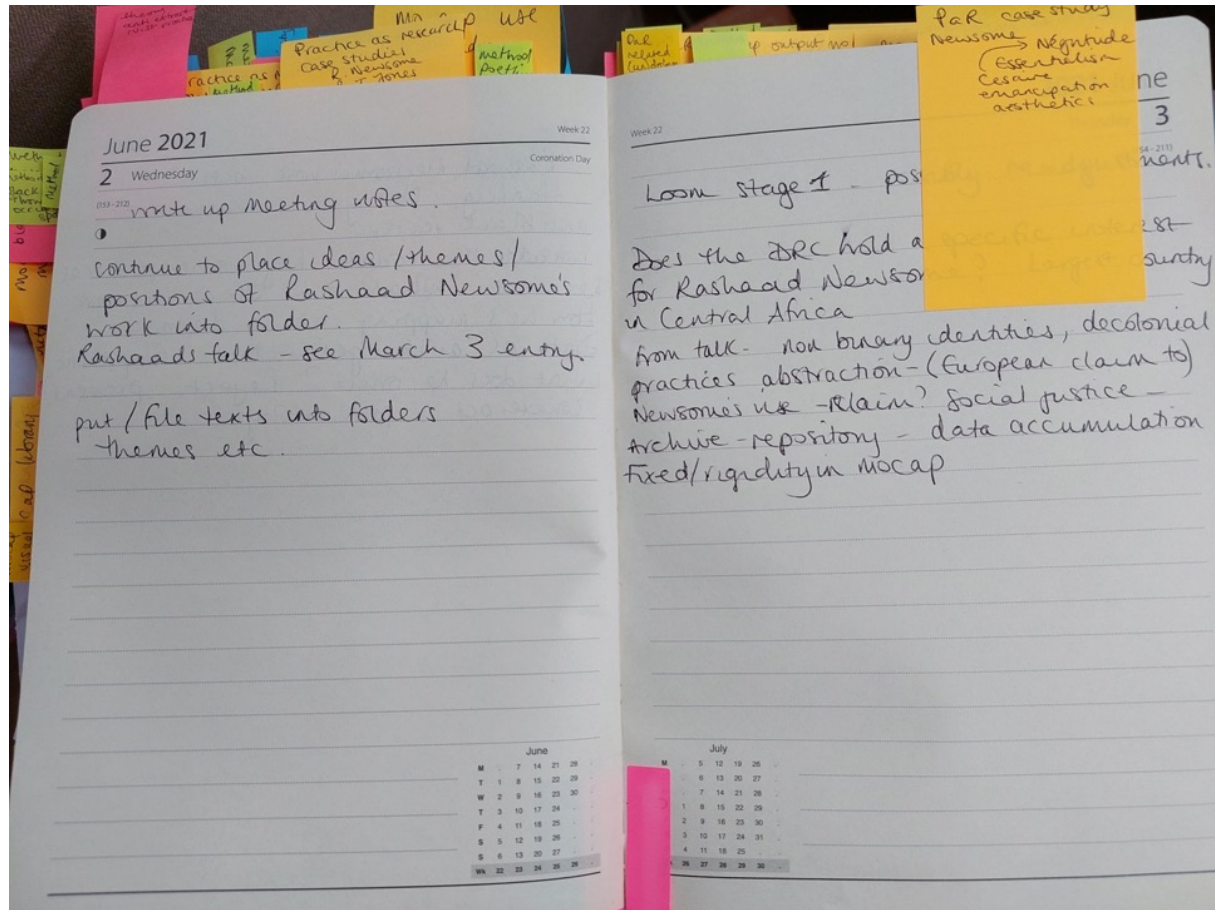
Diary entries – June 2021.

As questions begin to be formed, a dual approach to familiarisation takes place. Software is used to respond to watching interviews, panel discussions, reviews, presentations, shows and exhibitions. It is an immersive, deep dive into hearing words whilst notation takes place. Registering initial responses is a strategy to document persistent ideas, different subject positions and theoretical influences. A list and diagram indicating an array of subjective interactions indicate an overlapping confluence of intersecting perspectives.

Cyclical phase – Open coding
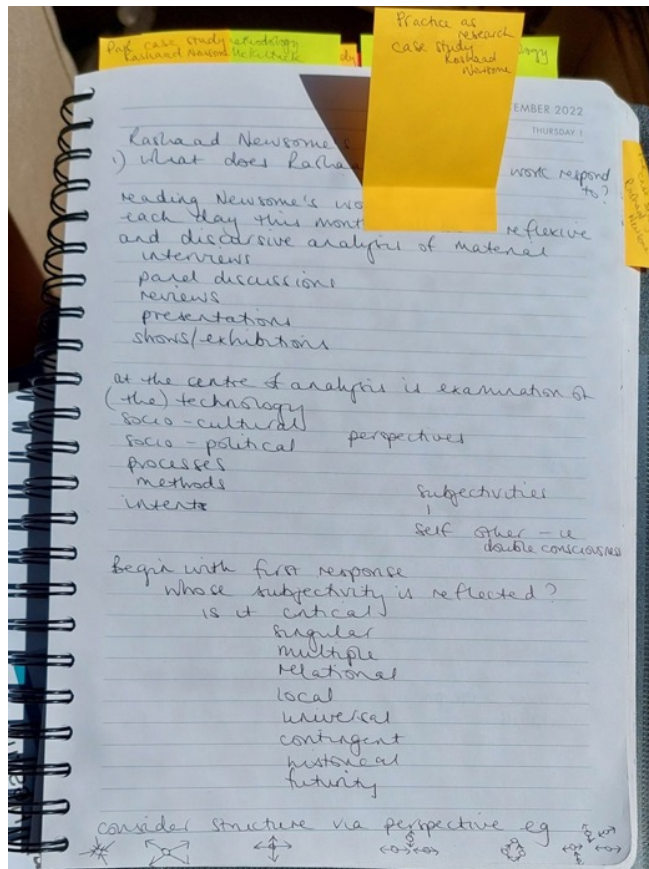

Diary entry – September 2022.

The process of analysing these multiple perspectives allows subsequent re-readings to be accounted and reflexively revisited throughout the study. Despite the unnamed and formally distinguished engagement with Newsome's work, there is a methodical approach to acquainting the artist. Digital trails such as metadata from downloaded content and analogue recordings of mapping texts convey the role of encountering during repeated interactions with several video recordings. Although there are overlapping discussions heard across many documented events, this phase of familiarisation aligns with a thematic analytic method. Undertaking this task of attending to unknown data exposed an overlooked part of collecting disparate texts. Through a sustained activity of listening and transcribing, I produced insights. This informed the coding process which will be outlined in the following section.

Coding

Coding as explained in thematic analysis guidelines set out by Braun and Clarke (2019, 2021) offers clarity on its organising structure. As set out in their widely adopted framework, Braun and Clarke state how differences between the phases underscore the aims and objectives necessary for engaging and evaluating data. These instructions tend to follow a regimental procedure enacted after data familiarisation has taken place. However, a linear set of steps is neither a formality nor a strict set of instructions (Braun and Clarke, 2019, 2021). The role of coding and its use in determining the research scope with visual markers supports my process of generating data for analysis. Written on August 24th 2020, I note the following:

"Colour coding seems to be the most immediate way of focussing the areas of research. I veer from wanting to include mocap research into Black performing bodies as a set of quantitative data to not thinking it provides any useful data at all. What might be useful is to focus on Black female performing bodies because it's a specific use that allows me to centre on my particular practice and research. I don't see my output as Black performative expression but because of the data available, I've included male, female, and would include at this stage non-binary performing bodies."

As stated previously, each cycle of data familiarisation, coding and generated themes drawn from this dataset is diasporic, exploratory and navigational. There is a framework to operate within that supports the questions constructed by the theoretical formulation of blackness set out in Chapter 2: The Master's Tools and further constructed using my iterative tests. By using reflexive writing together with a record of codes and themes, datasets produced from texts relating to artistic outputs provide a multivariant examination of motion capture technology and the use of motion capture data.
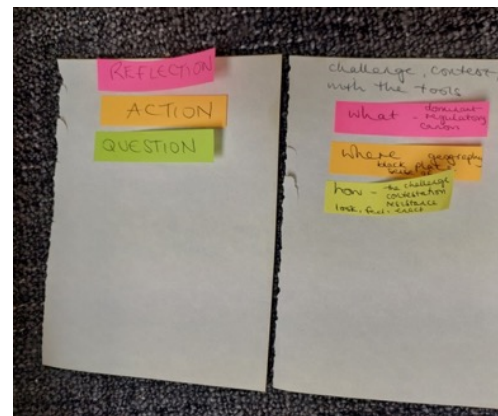
Notes for coding were made after a familiarisation phase of all case studies.

Appendix I: What artists do

Find evidence to confirm or challenge the following statements.

Form conclusions based on a list of deductions.

Use their experiences of navigating spaces

Draw on theories to challenge existing ideas of neutrality

Question the tools use as an assumed logic

Are concerned with the proposition of commodification of data

Have initial ideas challenged through how they perceive the technology's capacity to align with their needs

Pursue a critical perspective throughout their engagement with the technology

Return to the technology as an ongoing inquiry

Are invested in the technology through insights gained whilst examining its possibilities

Work collaboratively to achieve their aims and objectives

Observe and recount the technology's possibilities as liberatory

Seek to adjust the technology to achieve their aims and objectives

Have specific aims they intend to attain

Want exploratory approaches to using the technology

Clear goals are set out at the start of the project

Devise open-ended goals they can produce new knowledge

Are constrained by the technology

State how the limits of technology hinder their aims

Have identified cons of using technology

Observe advantages of using the technology

Want to have other users accessing and developing the technology

See the benefit of having a commercial approach

Identify historical associations with the technology

Respond to negative associations

Respond to positive associations

Locate their creative intentions in a discipline or field

Specify what that discipline or field is

Have creative inquiries that are applied to the technology

Observe convergences in any applied fields to the technology

States what the convergences are and whether they are significant

Wants to make associations for a particular aim

Sees their practice as overtly political

Sees their practice as overtly juridical

Sees their practice as overtly creative led

Has pursued a creative approach to using technology

Has pursued a technical approach to using technology

Is led by the technology's capabilities

Is probing the technology's capabilities

Rejects the technology's capabilities

Conclusions

The technology is autonomous

Capture is impossible

Erasure is impossible

Autonomy is impossible

Extraction is not part of the process

The artist's hand is evident

The intention cannot be ascertained

Race is still required

Race is still desired

Not pursuing race is a fallacy

Desire is the only worthwhile pursuit

Everyone is appropriating

No-one can own the data

Data is imagination

Animation is overlooked

Animation is mis-identified

Blackness is fetishised

Commodification is the endgame

Creative capital is the aim and objective

Motion capture technology is the Master's Tool

Representation is the requirement

Erasure is overdetermined

The above list was a reflective process for developing alternative topics on the use motion capture technology. The aim was to explore how a wider frame of reference such as animation practice was directly or indirectly addressed in the secondary data. For example, I noted that despite the term animation being used, no further discussion on the topic of animation practice was advanced. Although it was outside the scope of this research to explore where additional 'cul-de-sacs' appeared, I aimed to compile further interdisciplinary areas to research.