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Logistical Bodies of Fulfillment

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Logistical Bodies of Fulfillment

A Thesis Presented for the
Master of Architecture
Degree
The University of Tennessee, Knoxville

Michael Steven Frush

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_dedication

i'd like to dedicate the research and design of this thesis to future speculative self. thank you for keeping me motivated and giving me someone to continually chase. may the energy of this work continue to inspire you to dream and accomplish amazing things.

_acknowledgements

existence occurs in a spatial assembly of multiple scalar experiences that is intensified and brought to perception by the exponential advancement of a virtual extension.

the physical realm that human cognition experiences acts as a bound container influenced by natural law and trusted forces. the virtual realm exists as a medium through which linkages are made that suppose unseen law, forces, and connections. the human existence experiences an interface between the multiplicities of the physical and the virtual. as technologies advance exponentially the recognition of a multiple temporality is intensified by digital networks and spatial extensions. the trusting of physical bounds is skewed at possible specific moments and seeks to create a new nature of spatial assemblage.

this spatial assembly occurs across multiple strata of scales and ranges. a new spatial extension questions the influence of experiences towards the factors of existence including politics, economy, and culture. does the recognition of an extended spatial assembly across scales through a virtual realm anticipate a future trajectory for the discipline of architectural practice?

logistical bodies of fulfillment speculates on the provocations of a new spatial extension intensified by a virtual existence. this speculation seeks provocations on the notions of bodily engagement and fulfillment through the logistical sequences of assemblage across multiple strata of scales.

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"i construct, and i am constructed, in a mutually recursive process that continually engages my fluid, permeable boundaires and my endless ramifying networks.
i am a spatially extended cyborg."

-bill mitchell,
 from *me++ the cyborg self and the networked city.*

as technology intensifies the perception of virtual space it is significant to understand the foundation that forms such intensity. the humanistic era [h] has seen an increase in intellect and technological advancements since the evolution of the cerebral cortex in homo sapien species. with the coming technological advancement, humans will undergo another transformative evolution that will shift from the humanistic era to what is defined as posthuman [h++] [figure 01].

posthumanism is the existence of a new experiential epoch in which high-tech enhancements and virtual networking connections have extended biological and intellectual entities beyond the understanding of humans. posthumans will be the advanced cyborgs that interface human intellect with machine intellect through a transformative process. the posthuman agency is on the impending horizon of advancement in spatial recognition.

as the evolution towards posthumanism is occurring, human existence is currently experiencing a transformative transition into cyborgian territory. a cyborg is a human biological entity interfaced with a low-tech enhancement. this is evident in most current societies as human experience is extended through elements of digital technology such as cell phone linkages or social network connections. this current cyborgian territory creates a timely manner for challenging how spatial assemblies may evolve based on an interface between physicality and virtuality,

the cyborg and the posthuman are not to be confused with a third narrative known as the transhuman [h+]. the transhuman is not the intellectual and biological enhancement through machine, but the intellectual enlightenment through machine. transhumanism foresees humans gaining a better understanding of existence with minimum biological enhancements. transhumanism appears to be a part of the transition as the humanistic era moves towards the posthuman.
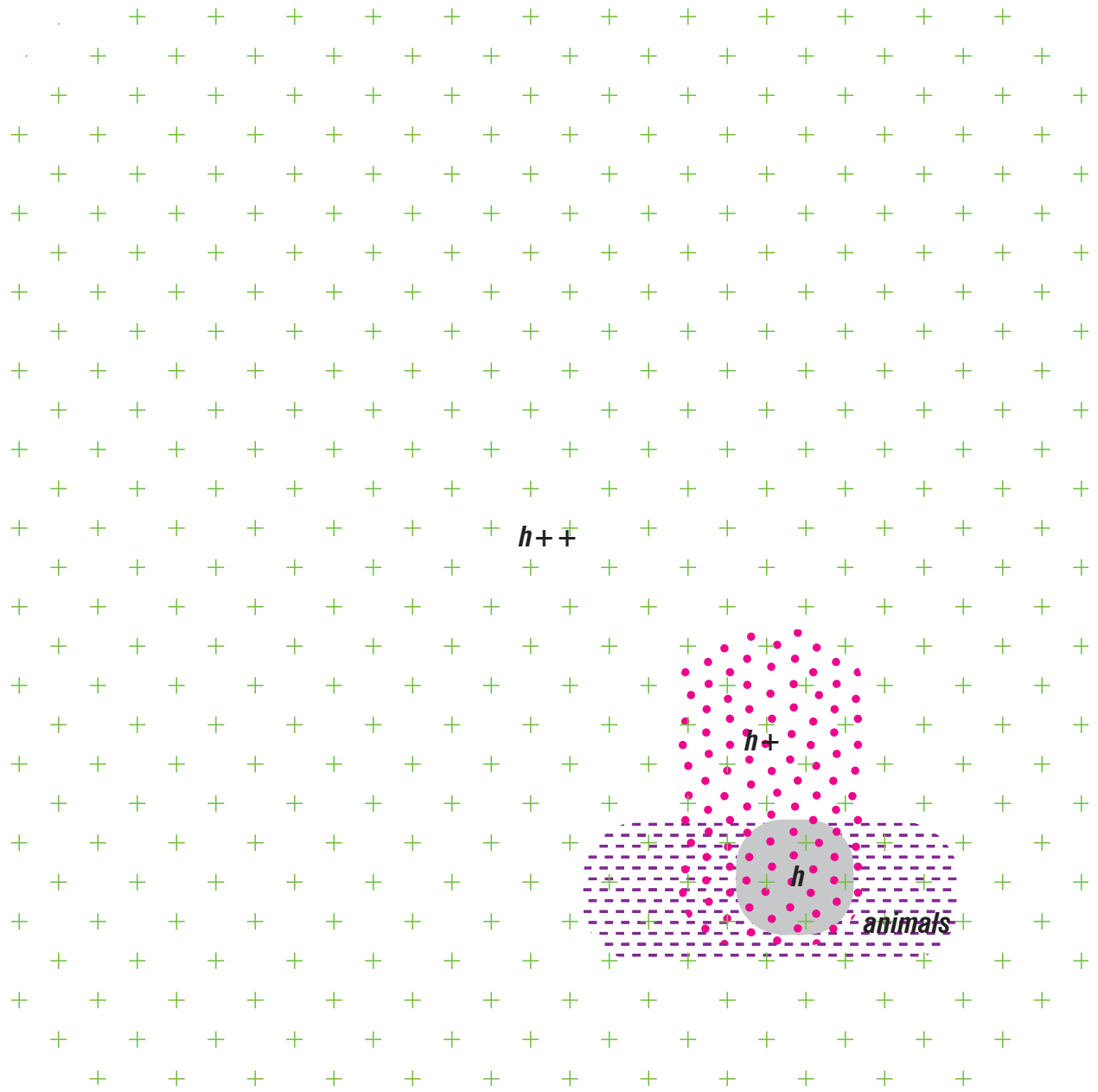
figure 01: posthuman trajectory.

figure 02: aesthetic of the aircraft.

figure 03: new visions of the landscape.

figure 04: interfacing representation.

the transformation of a perceived spatial existence is not seen as a new understanding but can be traced throughout history. andy clark and david chambers utilizes the interface between human biology and extended hardware processes known as 'intellectual scaffolding'.[1] clark states that the interface between biology and hardware "machines" is hardly a new occurrence but one that is evident throughout history since early humans used primitive tools as a means of merging biology with extensive hardwares.[2]

the interfacing of biological flesh, organs, and intellect [meat bodies] with the extensive hardwares of scaffolds seeks interesting assemblies between experiences and spatial qualities. the industrial revolution of the 19th and 20th centuries changed how architects, engineers, and constructors assembled buildings and infrastructures. new emerging technologies provided scaffolds for design of new assemblies of spaces and new perceptions of extended experiences across multiple scales. this shift in technology and industrialization caused le corbusier to claim, "the airplane is the symbol of the new age... a new state of modern conscience. a new plastic vision. a new aesthetic."[3] the mechanization of the aircraft was recognized by le corbusier for not only its sheer beauty but also recognizes new modes and methods of visualizing architectural landscapes, territories, and interfaces between body and machine [figure 02].

the aircraft allowed for new methods of viewing and representing architectural landscapes by offering the introduction of the bird's eye view and experiences of architecture from the sky [figure 03]. in addition to new visions of the architectural landscape, the juxtaposition of the aircraft over the picture plane of the city created new interesting visions and imaginations of interface between urban territories and mechanical hardware extensions [figure 04]. this juxtaposition lead to new methods of architectural design of modernism that reflects the age of mechanization in the 19th and 20th centuries.

1   jonathan hale, "from the extended body to the extended mind,"
         in architecture, technology and the body: from the prehuman to the posthuman.
         10 november 2011, 516.
2   ibid.
3   le corbusier, "preface," in aircraft. (great britain: foundation le corbusier, 1936): 6.

figure 05: amazon distribution center.

figure 06: rhizomatic network.

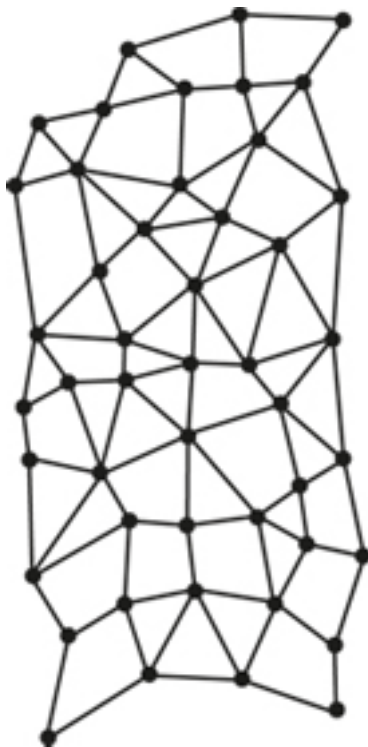the recent past and contemporary society and cultures of an emerging technology are finding a new shifting and transforming epoch that follows the scaffolding of biological extensions and interfacing bodies and data. just as the aircraft prompted a symbol of the new age of mechanization in the early 20th century, distribution, data, and fulfillment machines are prompting a new age of logistics [figure 05].[4] this emerging and new age of logistics finds interfaces between biological meat bodies of human experience and the data that extends and strews from those bodies across borders, territories, and regions to create and find new perceived experiences that are intensified by a virtual existence.

the interfaces between the meat body and the data body are found and utilized by companies in territories of fulfillment and retail. amazon.com utilizes search engines and customer feedback data to offer merchandise to customers based on data algorithms.[5]

a new emerging age of logistics finds new territories of consumerism and fulfillment that offer interesting insights into the urbanism of extended physical biologies across a virtual network. territories of fulfillment place the body on display - both meat and data bodies are now open for design. the age of logistics finds a "just-in-time" ethos where the data of goods and services are provided in a timely perfection rather than stored and awaiting for the extension of the meat body.[6] the data body lives as an extended meat body through the fulfillment of logistics.

new territories of fulfillment utilize an urbanism that operates within the collision of digital, retail, fulfillment, and logistical urbanisms. a new urbanism that emerges finds a speed and lightness that spars with the traditional notion of static architecture and operates within a rhizomatic network that is real and actual and in what gilles deleuze states is "a constant state of becoming" [figure 06].[7]

4   jesse lecavalier, "introduction,"
     in *the rule of logistics: walmart and the architecture of fulfillment*.
     (minneapolis: university of minnesota press, 2016): 8.
5   amazon.com
6   jesse lecavalier, "introduction,"
     in *the rule of logistics: walmart and the architecture of fulfillment*.
     (minneapolis: university of minnesota press, 2016): 22.
7   gilles deleuze and félix guattari, in *what Is philosophy?*
     trans. hugh tom- linson and graham burchell
     (new york: columbia university press, 1994), 112.

figure 07: the first cyborg.

the interfacing extensions of biological hardware with scaffolding machines creates an understanding of the cyborg [figure 07], a term first used by manfred clynes and nathan kline in 1960.[8] the understanding of the cyborg is significant to imagine not only the biological extensions of fleshy hardware through created machinery, but also the extension of the biological meat body and atmospheres of the body through a virtual dimension that is real but not actualized as a biological component.

finding the interface between the biological meat body and the strewn out data body realizes new modes and operations of challenging the discourse of static design and provides avenues for experiences of the perceived extension of the body. the [data] body is not open for design. the age of posthumanism is here.

8   nicholas de monchaux, "introduction," in *spacesuit: fashioning apollo*.
         (cmabridge: the mit press, 2011): 3.

"the power of ideas to transform the world is itself **accelerating**."

-ray kurzweil.

events in recent historical events and short future trajectories hint towards a coming circumstance that would establish the necessity for the intensified experience of a spatial assembly across multiplicities to exist. ray kurzweil describes this circumstance at the coming singularity; the merging interface between human intelligence and technology.[1] the exponential and accelerated increase of this merge will occur until the year 2045, when the posthuman agency becomes the most apparent and the intersection of biology and technology collide [figure 08]. this epoch is seen as the time when the trusted laws and forces of the physical realm will be skewed to establish a new nature and spatial assembly among scalar strata.

vernor vigne indicates the creation of an incomprehensible super intelligence will signify the end of the humanistic era. the singularity is the circumstance that drives the creation of a new architectural environment at the age of posthumanism[2].

the concept of singularity also follows a theoretical and intellectual event through which designers, theorists, and philosophers are discussing contemporarily. the singularity attempts to find the inflection of data information within moments between the extrema of the data; this concept is known as the "fold" by philosopher gilles delezue and theorist bernard cache.[3] using this theoretical concept of the singularity finds network linkages and a spatial meta-thread among the scalar strata.

the experience of bodily extension finds an existence across these multiple scalar strata. the singular curation of the scales offers a narrative approach to challenging the discourse of architectural thinking of the existence of bodies in architectural environments.

1   ray kurzweil, "the six epochs," in the singularity is near: when humans transcend biology.
        (new york: penguin, 2006): 23 - 33.
2   vernor vigne. the coming technological singularity:
        how to survive in the post-human era. (ohio: nasa, 1993):
        https://www-rohan.sdsu.edu/faculty/vinge/misc/singularity.html.
3   bernard cache, "folding towards a new architecture," in earth moves:
         the furnishing of territories. 5th ed. edited by michael speaks.
        (cambridge: the mit press, 1995): xvii.
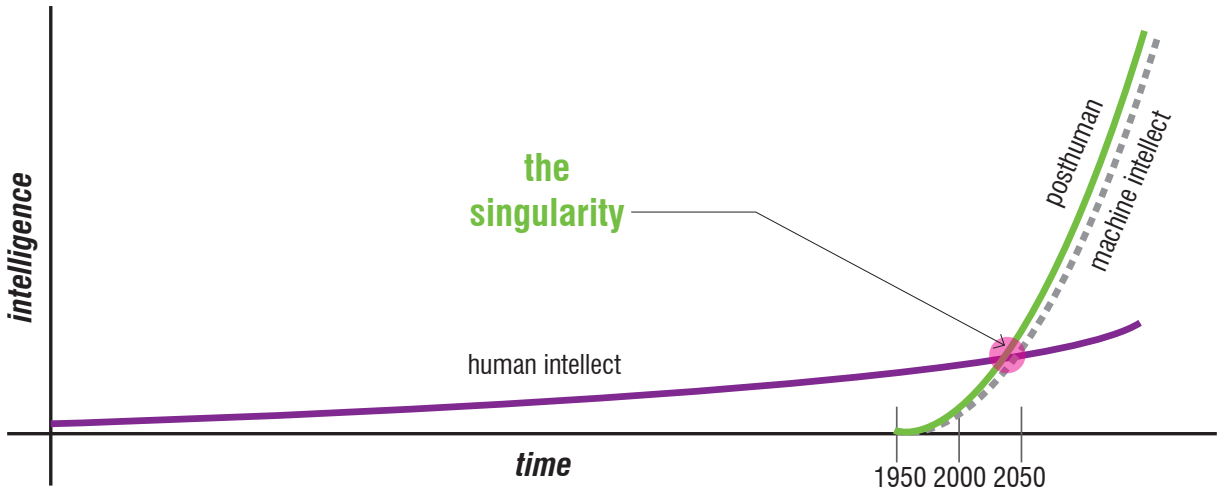
figure 08: the singularity.

"in other words, what happens if 'form follows function' is replaced by '**form f@#ks with function**?"

-lewis, tsurumaki, lewis,
 from *pamphlet architecture 21: situation normal...*

architectural program traditionally dictates the function and utility of architectural production that occurs at and through a physical site. the circumstantial and methodological approach to site territory offers and challenges the mode in which architectural program will be established in the interfacing spatial assembly between physicality and virtuality. the interrogating of traditional modes of program attempts to find the conceptual singularity among the conventions of programmatic architecture; not opposing the conventions of program but rather finding the forgotten or unseen forces at play within the folds of the programming. the illogics of the logical will be sought to find the missing components of program [figure 09 + figure 10].

the illogical interrogation of the program will find and make aware the glitches of the spatial assembly between physicality and virtuality where the folds of the program exist. in this sense, the glitch will be used to accelerate and intensify the perception of the multiplicity existing across multiple scalar strata, where the formation of the virtual extension fucks with the functionality of the physical existence.

the programmatic methodology further warrants a mode of representation through the curation of the meta-thread among the scalar strata that lies between the conventions of traditional program. the representation of the design experimentation + investigation will represent in a manner that supposes the functionality of the virtual realm imposing on the traditional forces of the physical realm to challenge the notions of typical architectural program.

figure 09: a fence as barrier.

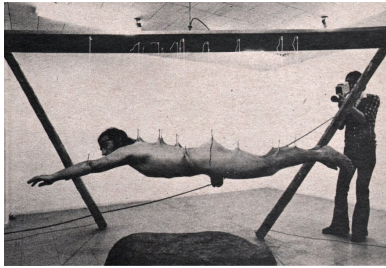***figure 10:*** a fence doubles as a door.
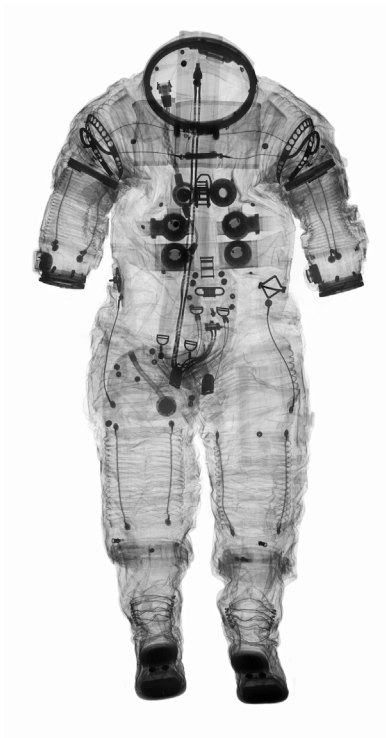
figure 11: bodies spar with gravity.

figure 12: apollo spacesuit.

the programmatic approach anticipates the operation of interfacing between meat and data bodies to engage within a territory of fulfillment. this interface recognizes the multiple existences of bodies across the scalar strata at specific given moments. the strewn out data body finds engagement with the failed hardwares of the meat body within the hertzian space that it occupies. this operation pushes the common notion of a static body existed in one place to a multiplicity of existence strewn across space and time towards a degree of 64 dimensions. challenging this notion spars with the trusted known forces of human existence [figure 11].

furthering the programmatic discourse of interfacing bodies in the urbanistic activation within landscapes of fulfillment. the meat body is interfaced with accoutrement as prosthetic organs that engage with the hertzian space around the body. this manner of extending the biological meat body through prosthetics into a itinerant skin is similar to the manner in which astronauts of the apollo 11 utilized the playtex space suit [figure 12].[1]

finding agency from the engagement of the meat body with the prosthetic organ as an itinerant skin, the illogics of the program finds engagement with a suit of suits, or osmotic body suit, that utilizes the interface between the biology of the meat body an resources the strewn out data body [figure 13]. the program utilizes the data body to allow inhabitation of the body shop and place the body within the cultural cult of the body inherent in the age of posthumanism.

1   nicholas de monchaux, "introduction," in *spacesuit: fashioning apollo*. (cmabridge: the mit press, 2011): 8.
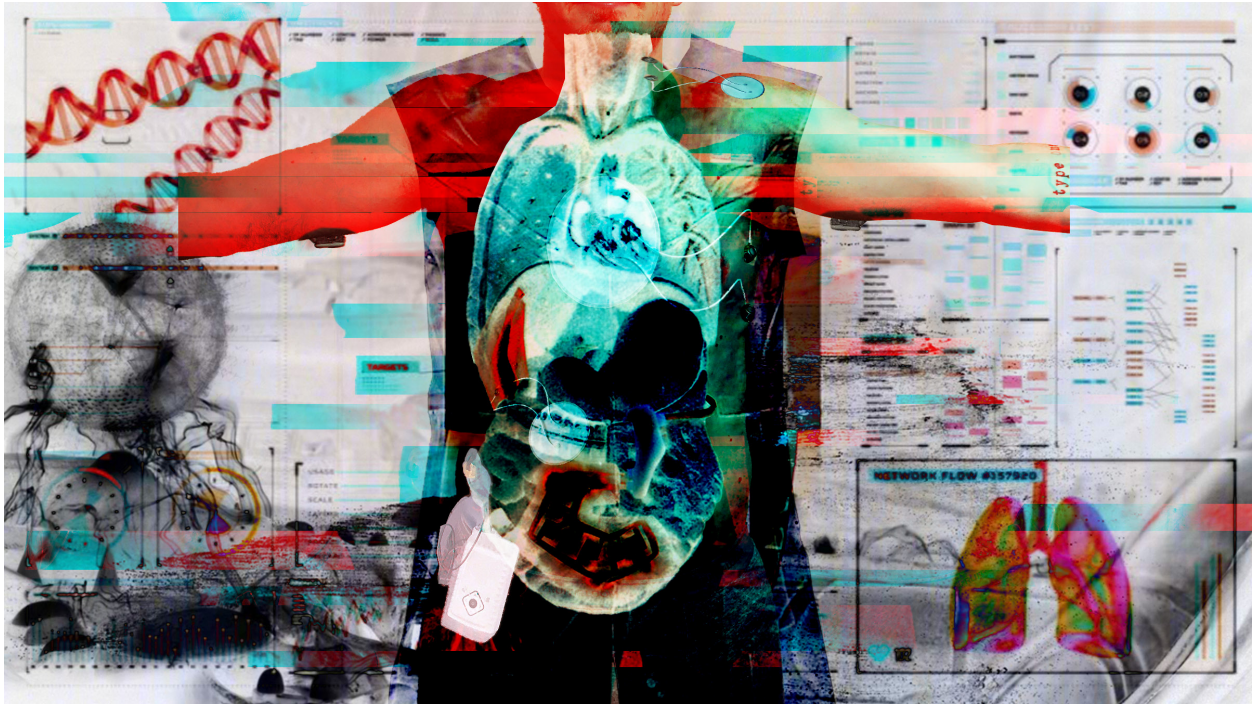
figure 13: the osmotic body suit.

"an aura, **or an extension of my skin into spaces**, into which
 people can walk."

-arthur elsenaar.

_04_hertzian territories
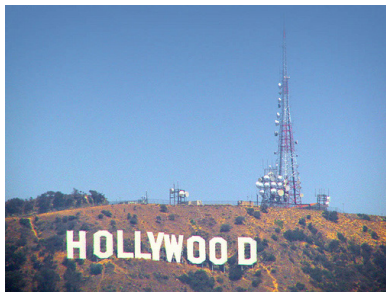

figure 14: visualizing hertzian space.

figure 15: the hollywood sign.

hertzian territory is the electroclimate in the territory inhabited by both humans and technological networks as the interfacing of electromagnetic waves and human experiences.[1] because of digital technology and mapping all objects can be understood as hybrids of radiation waves and physical matter. the electroclimate of hertzian space is an often unseen immateriality that influences the existence and experience of the physical realm. while these virtual forces are often unseen, the interface between physicality and hertzian space accelerate the spatial assemblies that exist [figure 14]. enveloping hertzian space challenges the traditional notions of site inhabitation. the site territory of hertzian space can exist within a range of scales at multiple scalar layers at a single temporality. utilizing site territory in this manner provides a new mode of working towards producing architectural assemblies that offer experiential inhabitation and perception of existential reach.

the relationship between the digital and physical worlds begins to offer cultural, political, and societal forces among people within the electroclimate that they possess. this lends towards the understanding of existing between physical and virtual temporalities within what Eric Gordon calls "the digital possessive"[2] [figure 15]. the digital possessive offers insight towards how architecture of the singularity might experience site territories and existence across global scalar strata and the political implications such an existence might influence.

1   anthony dunne, "hertzian space," in *hertzian tales: electronic products, aesthetic experience, and critical design.* (cambridge: the mit press, 2005): 101.
2   eric gordon, "the database city: the digital possessive and hollywood boulevard," in *the urban spectator.* (hanover: dartmouth college press, 2010): 175.

figure 16: non-sites; anaglyphic pair.

figure 17: subject + object siting.

the existence of human experience within an interface between a physical and virtual realm provides insight towards understanding the inhabitation of hertzian space. relating this understanding towards the translation of architectural production from studio creation to physical site existence provides opportunity for exploring representative means of spatial assembly.

this mode of understanding physical site territory and virtual site production relates to the "theory of non-sites" as created by robert smithson.[3] smithson explains the non-site + site interface, "the 'trip' becomes invented, devised, artificial; therefore, one might call it a non-trip to a site from a non-site."[4] the theory of non-sties follows an entropic methodological approach to creating architectural production across scalar stratas between physical and virtual existence. the theory of non-sties is an abstract representation of a physical site, analogous to the physicality of the grounded site [figure 16]. the non-site begins to provide a mode of the representation picture plane, transforming it from a traditional two-dimensional *tabula rasa* to a three-dimensional abstraction. the site is constantly in a state of becoming, as explained by gilles deleuze and feliz guattari.[4]

the representational abstraction of the non-site also offers an insight towards a working methodology. this methodology would call to create objectified architectures that establish an abstract representation with a scalar entity; an actor within the network of physical + virtual interfacing. the actor would exist as a physical scalar strata in the physical realm, and retain data representation within the non-site of the spatial assembly among the actors. this methodological approach of metaphor between object + subject [artifact + actor] is utilized by stasus in the design of an experimental film studio[5] [figure 17].

3 robert smithson, "earthworks." *robert smithson*. accessed 31 oct 2016.
   http://www.robertsmithson.com/earthworks/ew.htm.
4 *ibid.*
5 gilles deleuze and félix guattari, in *what Is philosophy?*
   trans. hugh tom- linson and graham burchell.
   (new york: columbia university press, 1994), 112.
6 james a. craig and matt ozga-lawn, in *pamphlet architecture 32: resilience.*
   (*new york: princeton architectural press, 2012): 55.

harnessing agency from the theory of non-sites and the concept of becoming, the siting of a proposed body shop for the strewn out data body to interface with the failed meat body finds territorial operations in sites of fulfillment. this sites, regions, territories, etc. further gain agency from the concept of the age of logistics and the display of the cult of the body in territories of fulfillment. these sites are located numerously and variously across landscapes of fulfillment and include regions of retail, consumerism, shipping, freight, and commercialism; these sites are inherent to the interface between meat and data bodies. the body shop utilizes engagement with these sites to cause perception of the virtual self in a physical reality.

the city of atlanta is recognized as one of the most popular consumerism urban centers in the united states and features many landscapes of fulfillment [figure 18]. the operational modes of google earth and aerial visionary allow for these sites to be explored and investigated as a data body operated through a meat body. the methodology of investigating a specific territory engages with the methodology of the program of the body shop and follows the meta-thread through the concept of the multiplicity.

#territories

the consumerism and digital culture of metro atlanta serves as an apparatus to engage with new modes of interfacing data and meat bodies. your fucked up body is now open for design.

figure 18: territories of fulfillment; atlanta, ga.

"electromagnetism becomes a field that **binds building to the sky** instead of the to the earth."

-anthony dunne.

figure 19: asphalt rundown.

the methodological approach to spatial assembly between physicality and virtuality builds on the methodology of the site and the programmatic approach. the design methodology experiments with the notions of bound forces and turns the trust of those forces on its head. through explorations with physical forces the concept of lightness can be explored and transformed. the traditional mode of *gravitas* [grounded] is challenged and the method of *celeritas* [speed] is explored. this experimentation borrows insight from robert smithson's *earthwork* projects[1] [figure 19]. these projects build on the methodology of the non-site and attempt to find representations using a three-dimensional tabula rasa that exists in physicality.

to explore and study the physical force [*gravitas*] is to study the virtual force of speed and lightness [*celeritas*]. this exploration finds the interface between the forces of the physical and the unseen forces of the virtual and how the variations may create a spatial assembly at given specific moments. this study is furthered with the theoretical concept of removing the static claim to architecture and finding the movement of spatial assemblies.

[1]   robert smithson, "earthworks." *robert smithson*. accessed 31 oct 2016.
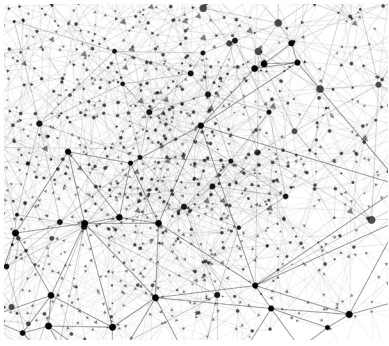   http://www.robertsmithson.com/earthworks/ew.htm.

figure 20: rhizomatic ants.

everything in existence lives in an endless rhizomatic network that causes influences upon event and circumstance in a multiplicity of spatial assemblies [figure 20]. the existing lives in the rhizomatic network may break and fracture, but will become replaced and grow infinitesimally as they reside on plateaus in the network.[2] the lives of the network are understood as actors in a series of influential networks that are endlessly interwoven [actor-network theory].[3] this finds spatial assemblies among the actors and across scalar layers. the perception of the spatial assemblies is accelerated by digital technology and finding a linkage between the physical existence and the virtual actors.

the methodological approaches of circumstance, program, site, and design each build on the theoretical underwriting of the actor-network theory [ant]. the influence of actor-network theory on the methodological approach finds the meta-thread that exists between the components and theories.

the methodological approach uses actor-network theory as a means to find a curated singularity among the components. the methodology is furthered from the curated singularity to find a meta-thread across eight scalar strata [skins of scale]. the actor-network theory underwrites the methodologies of singularity, illogical program, object + subject non-site, and physical exploration lending towards a design methodology of experimenting with the actors among the skins of scale. the singular methodology will experiment and build to find a meta-thread among the actors that explores the interfacing existence of physicality and virtuality.

2   gilles deleuze and félix guattari, in *what Is philosophy?*
         trans. hugh tom- linson and graham burchell
         (new york: columbia university press, 1994), 112.
3   bruno latour and albina yavena, "give me a gun and i will make all building's
         move: an ant's view of architecture." in *explorations in
         architecture: teaching, design, research. (*basel: birkhäuser, 2008): 86
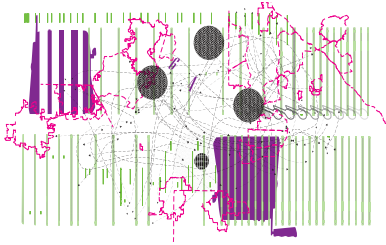
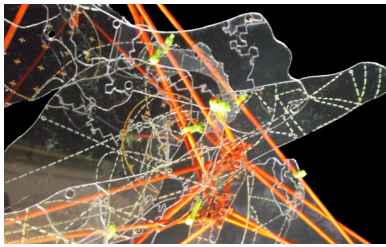*figure 21:* diagrammatic software.

figure 21: diagrammatic hardware.

the design methodology of experimentation finds two modes of existence; the digital [software] and the physical [hardware]. the exploration of *gravitas* undergoes a diagrammatic process through a perpetual transformation between software and hardware. the developing process will follow the methodology of the singularity to interface the data of the virtual with the forces of the physical to find the fold that lies between the two. the software diagrams will provide the analytical method of instilling data upon the hardware artifact of the physical [figure 21]. the physical will become an abstraction [non-site] of the territory that the scale experiences [figure 22]. each scalar exploration will build upon the last to further experiment with the interface among the skins of scale rather than establishing an expertise with a specific scale. the curation of the skins of scale will serve as the programmatic meta-thread that explores a potential spatial assembly that accelerates and perceives the experience of existing between physicality and virtuality.

the analysis of interfacing physicality and virtuality offers a need for the development of the design methodology. the design methodology finds a working exploration that is 7/8 experimentation + 1/8 interrogation. this design methodology does not find a necessity of becoming an expert in the realm of speculative interfacing but aims to explore architectural production through experimental methodology. the investigation will be speculative in nature and explore many modes of methodlogies performed in a curated singularity. this trajectory did not aim to end in an "architecture" but rather find a potential spatial assembly based on the curated explorations and forensic interrogations of the experimental process. this process is underwritten by the works of designers and artists such as perry kulper, nat chard, bryan cantley, robert smithson, and many others. the trajectory hopes to enhance and transform traditional modes of architectural production and discourse to not oppose the logics, but interrogate the illogics and bring towards the existence of interfacing their spatial assembly.

building on the underwriten explorations aforementioned, the methodology of exploring lightness and breaking trusted laws was investigated through gravitational pulls. the method of using gravity to find the architectural limbo in a spatial assembly was used. *gravitas* sparred with *celeritas*. paint was used as a non-newtonian fluid that used the force of gravity engaged in an interface with the speed to establish a concept of lightness [figure 23]. the concept of lightness was engaged and given agency through the territorial and programmatic methodologies of the body shop.
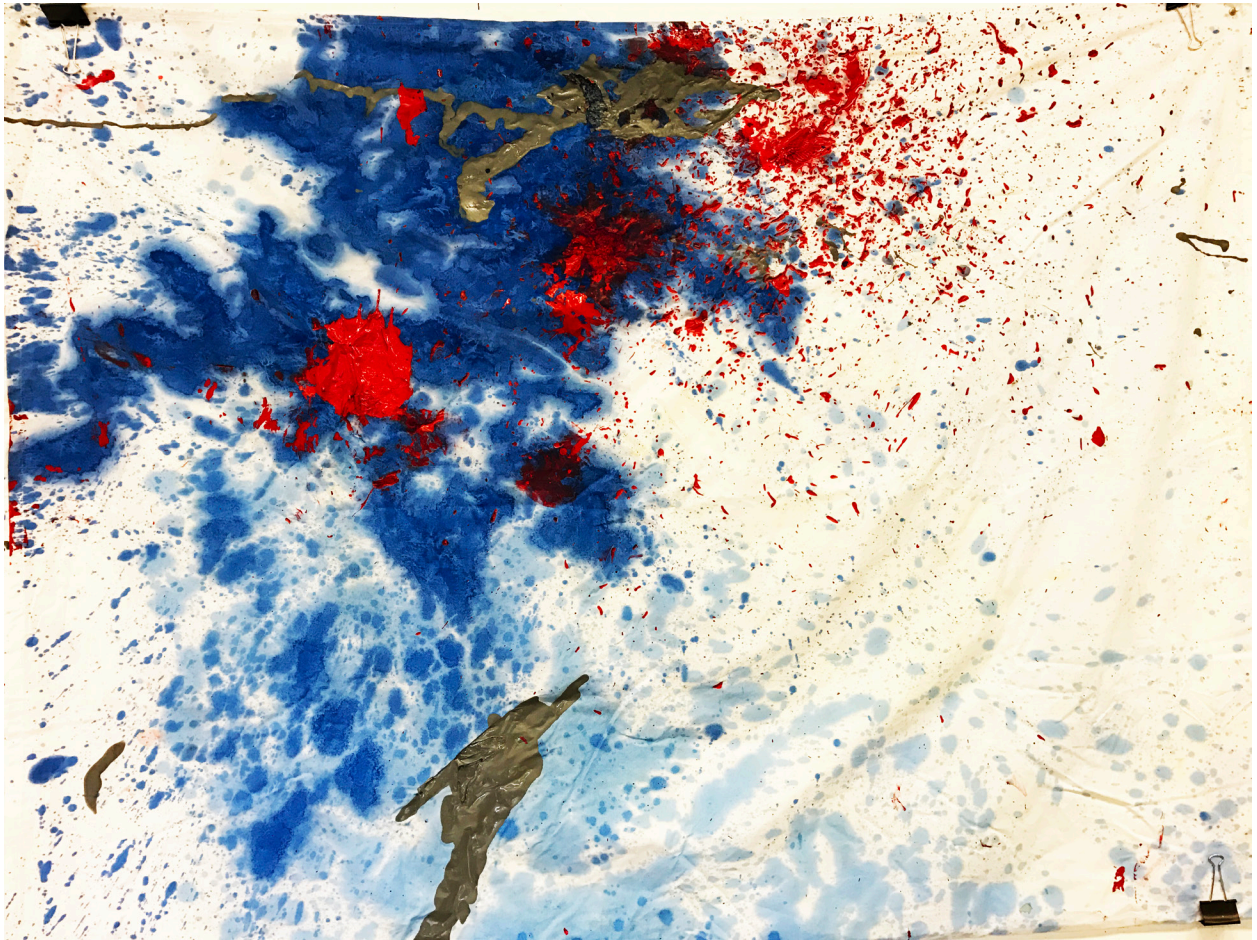
figure 23: sparring with gravity.

"i surround myself with successive [artificial] **skins that continually vary** in number and character to my changing needs and circumstances.

-bill mitchell,
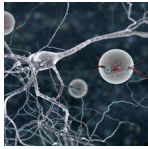 from *me++ the cyborg self and the networked city.*

figure 24: nano injection.

figure 25: prosthetuc organ.

figure 26: biological meat body.

figure 27: room vehicle.
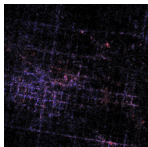
figure 28: container collection.

figure 29: datascape infrastructure.

figure 30: territory geopolitical.

figure 31: global lightness.

the skins of scale operate as continuous spatial assemblies that expand the human biology through a virtual network. the existence of physicality resides in a continuous interface with the various scales that makes itself apparent at specific moments according to the acceleration and intensity of the digital manifestation. the skins are determined as leaky and interconnected, with access points provided by the virtual network of the actor-network for modes of travel among them. it is possible to reside in multiple scales at a given temporal moment.

to find a non-site subject within each scale, an actor personification is given to represent the scale at an abstract level. the actor is investigated through the design methodology to further expand on the representational method of the non-site, to give subjective meaning to the objective scale [subject + object] [figures 24 - 31]. an experimental method between the software and the hardware components is explored to build upon the experience at each scale. the scales are interfaced to explore the spatial assembly and meta-thread among them.

the interface among the skins of scale are explored through various modes of virtual linkages and access points to transform the scales through intermodal means of transportation. the geopolitical, cultural, societal, economic, and experiential linkages are explored through the interfacing among the skins.

as the skins of scale are explored, the possibility of obscuring identity and physical experience within the scale is establishing. architectural limbo may exist where a physical experience of local reality exists with the virtual reality across scales becoming blurred and confused. this provides the opportunity to present the folding spatial assembly at specific moments.

the skins of scale operate as 8 scales that range from the nano to the global and can extend even further beyond. the investigation of these 8 scales are explored through the software and hardware methodologies of pressuring space and time. the scales are curated to follow a narrative along the meta-thread of the spatial assembly among these scales.

the investigation of the skins of scales finds the curation of the meta-thread within the spatial assembly of the narrative. the narrative begins with the biological meat body, as the body and the self is the first perceptions of existence. the meat body is defined as the fleshly and physical manifestation of the biological body. the body is made up of a tectonic assembly of parts that constitutes the meat [figure 32]. in the age of posthumanism the meat body is linked with technological hardwares that allow the data of the body to be strewn across scales at given specific moments and finds itself in an existence of architectural limbo. the linkage of the data body with the meat body makes existence available in a multiplicity and the aphorism "i think therefore i am" is transformed to "i link therefore i am" [figure 33].
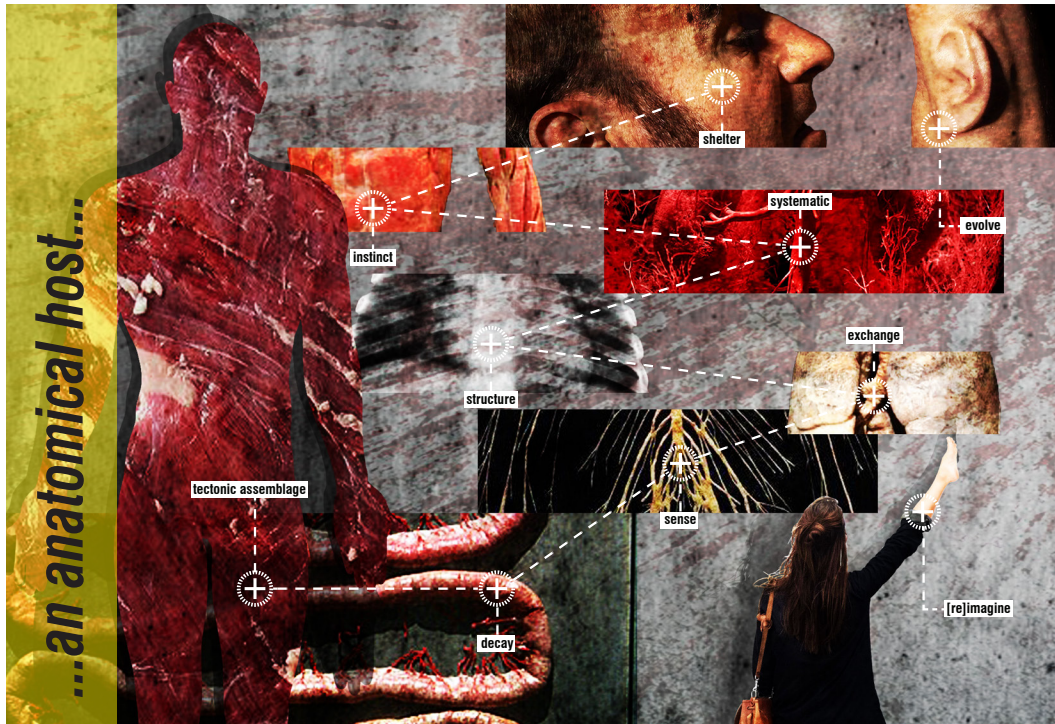
...an anatomical host...

shelter

systematic

evolve

instinct

structure

exchange

tectonic assemblage

sense

[re]imagine

decay

figure 32: an anatomical host.

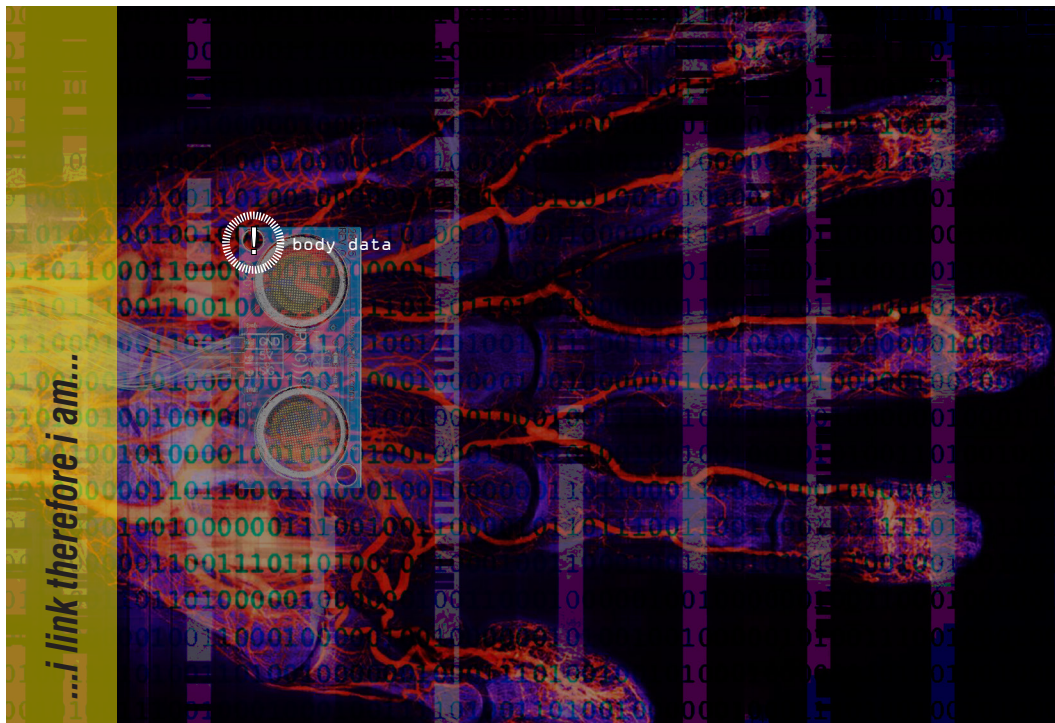*...i link therefore i am...*

body data

figure 33: i link therefore i am.

as the meat body is linked with technological hardwares to strew the data body it becomes realized that the existence of the body resides at both a global and local multiplicity. the body now exists at the global lightness scale. the data body is strewn across the globe at unrecognizable speeds and interacts with other data bodies as an avatar of the meat body [figure 34]. the data body of the interactive avatar lives on beyond the biological meat body in the global network. the interactive avatar lives on an asks "is anybody there?" [figure 35].

...an interactive avatar...

layer

interact

bypass

transmission

speed
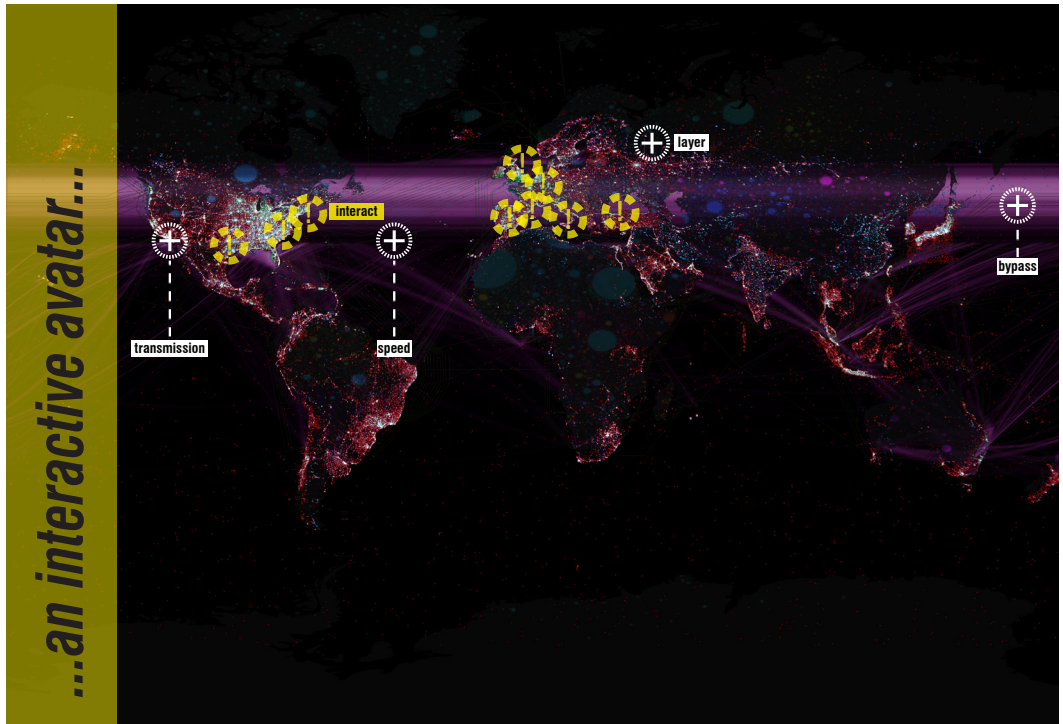
figure 34: an interactive avatar.

...the more the merrier...

IS THERE ANYBODY THERE?
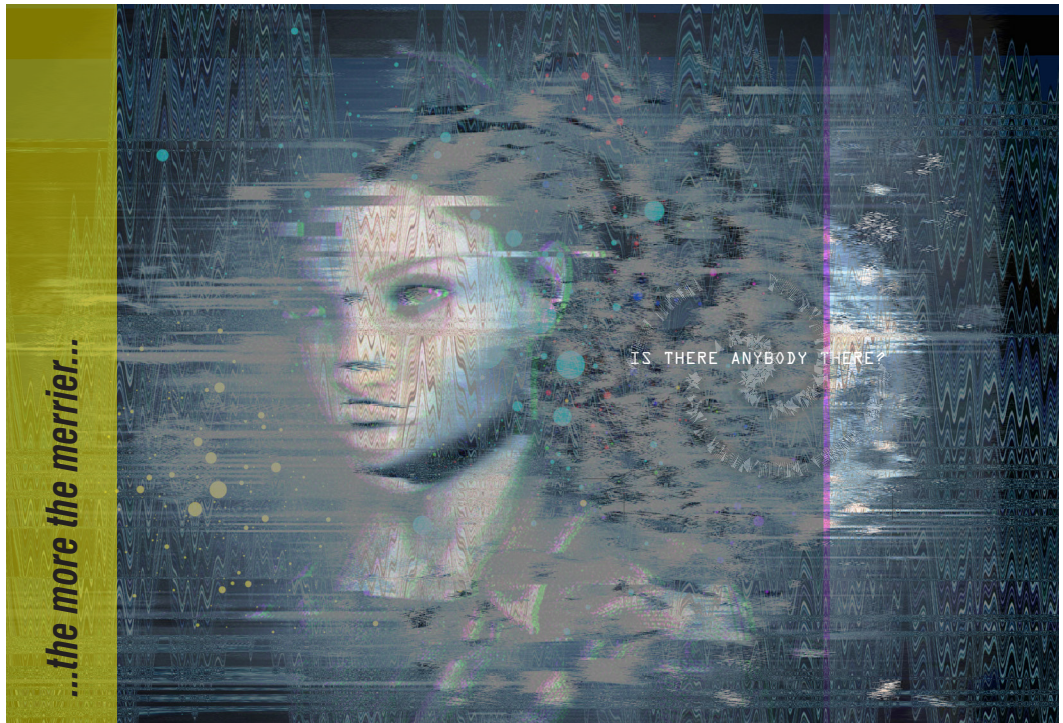
figure 35: the more the merrier.

the strewn out data body finds new boundaries and borders of a territory. these boundaries and bounders constitute geo-poligical, societal, and national realms that begin to find new modes of intersection. the data body of a presidential candidate in 2016 gets elected through a twitter avatar and makes up a transnational glitch [figure 36]. the data body finds new geopolitical borders in the existence of twitter and leaves a nation in utter shock. the truth is indeed stranger than fiction [figure 37].
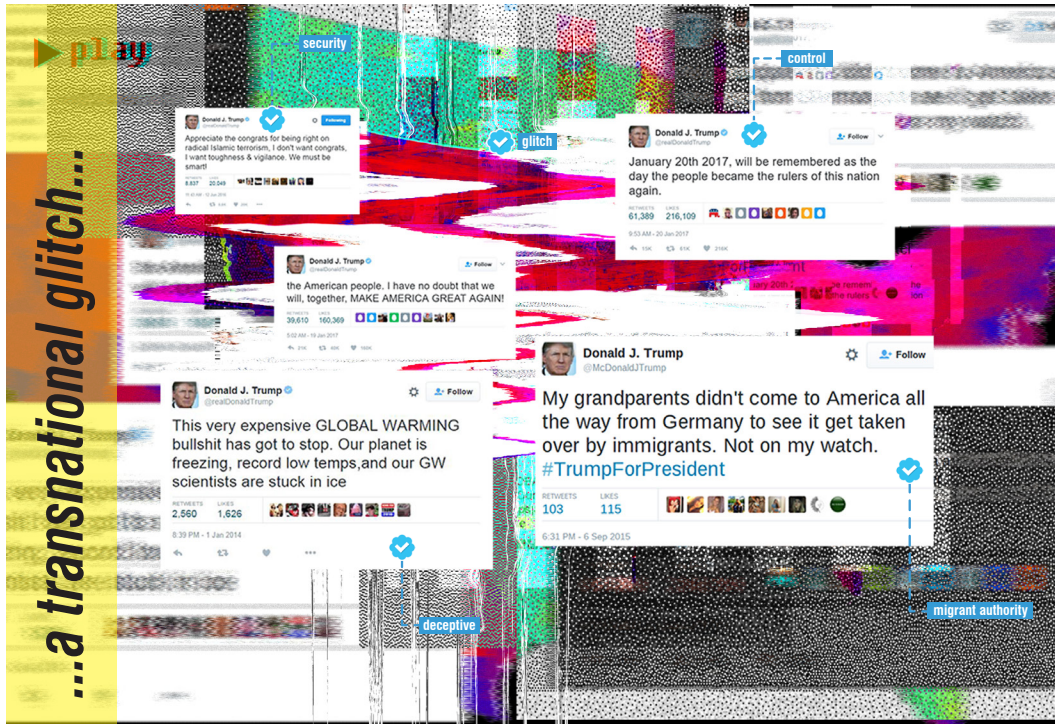
figure 36: a transnational glitch.
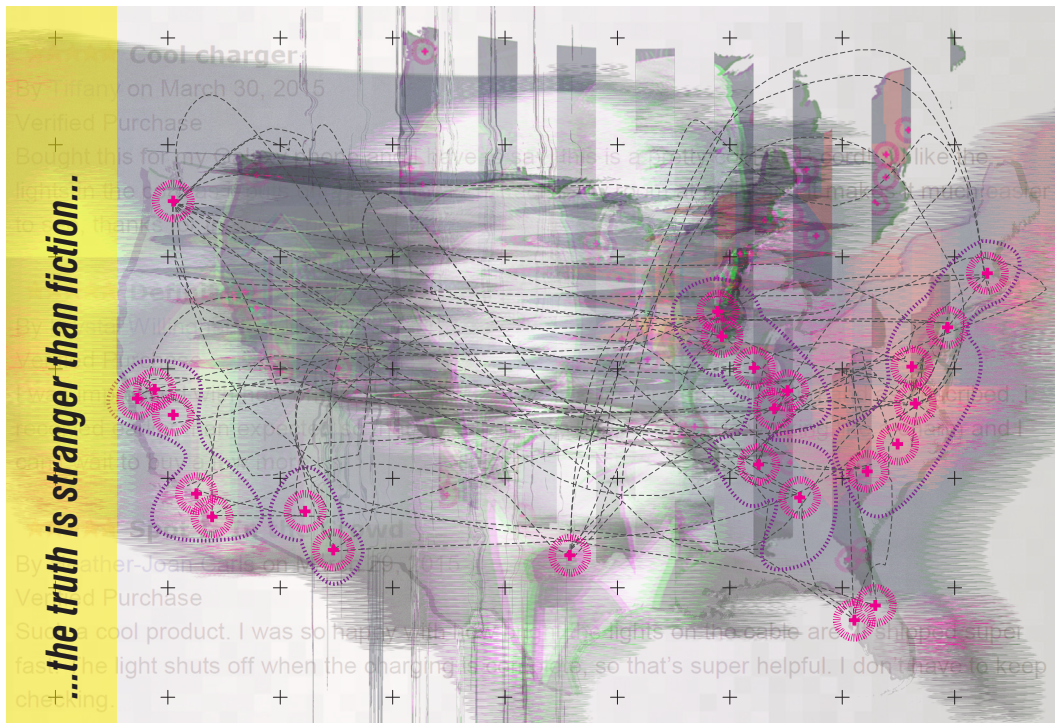
figure 37: the truth is stranger than fiction.

the strewn out data body finds new ways of engaging within the multiplicity of the global network. introverted meat bodies can become extroverted behind the barrier of the interface between physicality and virtuality. the data body becomes an extroverted spectacle and finds a loss of privacy and intimacy [figure 38]. the extroverted spectacle finds new of arrival and departure as well as interfacing with other data bodies. a new mode of interaction infrastructure is created by interfacing data bodies. data from amazon.com purchases interact with the interface of data bodies [figure 39]. customers who bought this also bought...
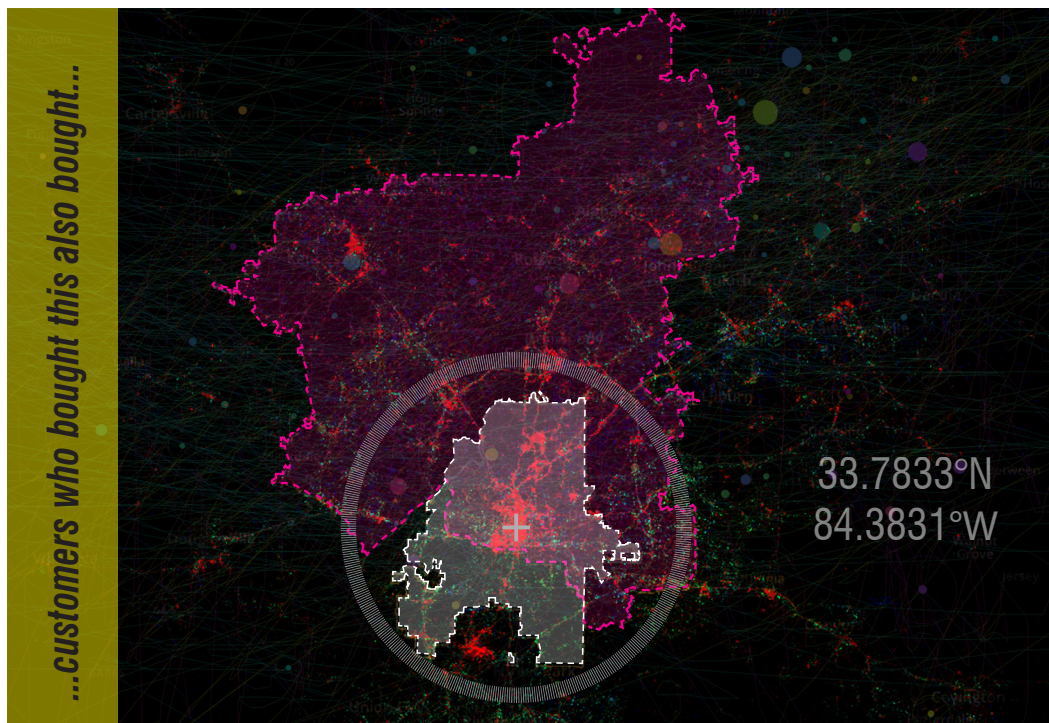
figure 38: an extroverted chatroom.

figure 39: customers who bought this also bought.

the data strewn from the meat body finds the interface through prosthetic organs that act as scaffolds of extension. the prosthetic organs act as biological ghosts that interpret and utilize unseen forces of data [figure 40]. the prosthetics of the body find the interface between the physicality of the meat body and the virtuality of the data body. prosthetic organs imitate the hardwares of the meat body and find that imitation is the sincerest form of flattery [figure 41].

figure 40: a biological ghost.
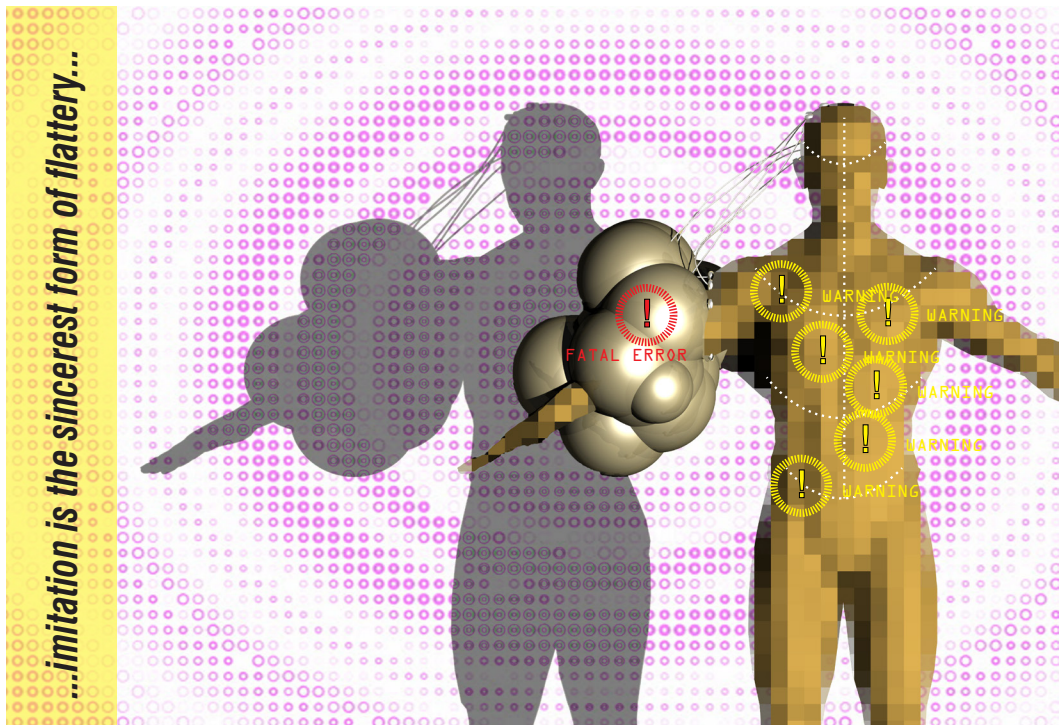
figure 41: imitation is the sincerest form of flattery.

strewing and extending bodies finds new modes and methods of organizing infrastructures in a system of networks. these infrastructures exist as a container of collections that are dynamically rearranged and create new spaces in a mutliplicity [figure 42]. new virtual infrastructures exist that create new interactions with spaces that interface between the physicality and virtuality. build it online and they will come [figure 43].
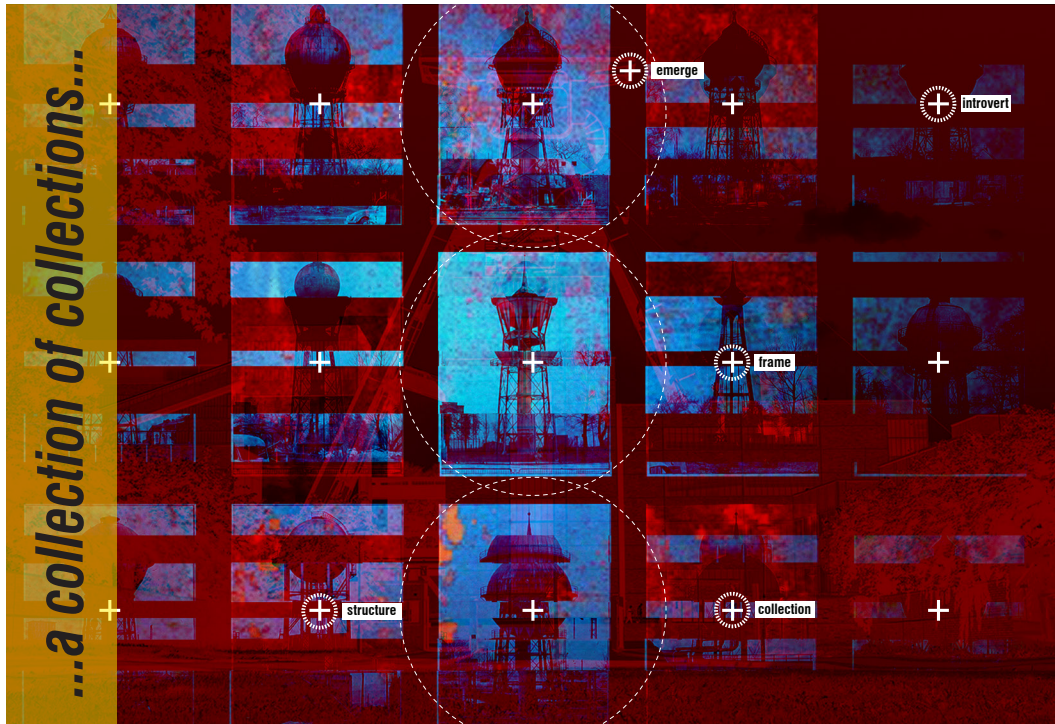
...a collection of collections...

emerge
introvert
frame
structure
collection

figure 42: a collection of collections.

...build it online and they will come...
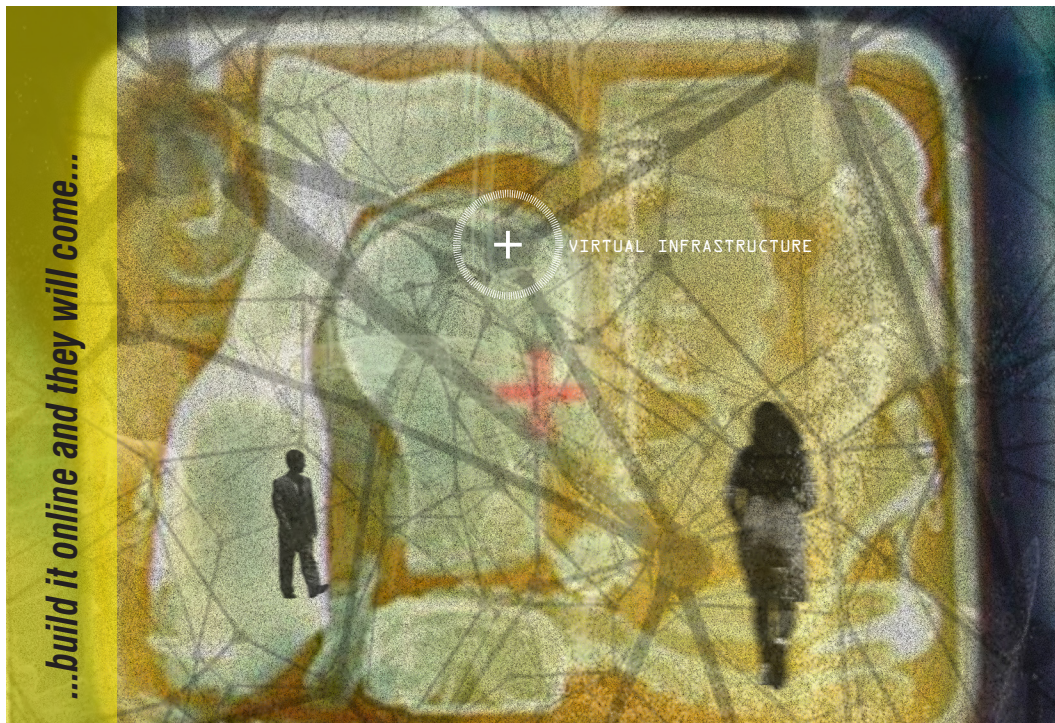
VIRTUAL INFRASTRUCTURE

figure 43: build it online and they will come.

the strewn out data body finds new ways of engagement and exchanges between and around other bodies. atmospheres and elements of the bodies constitute that space around the body, such as hertzian space. the space around the body makes up an itinerant skin that interfaces and interacts with other bodies around and inside of that atmospheric skin [figure 44]. the exchanges between bodies allows for meat bodies to exchange data and physical atmospheres. oxygen and oil is transferred between bodies and it is realized that every cubic inch of space is a miracle [figure 45].
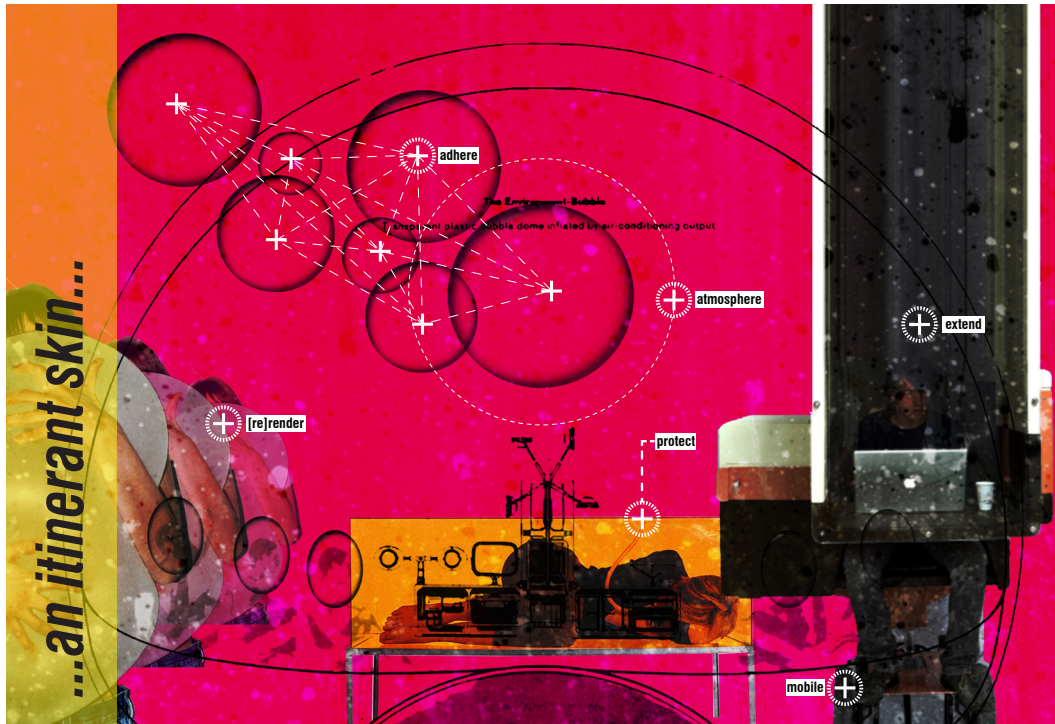
figure 44: an itinerant skin.

figure 45: every cubic inch of space is a miracle.

the injection of bodies at the nano scale find unseen agents that act on the body. these agents can be either inherent to the biological or digital make up of the body or exist as a foreign agent [figure 46]. these nano agents can enhance the body or interfere and cause failure of infrastructural hardwares and softwares. the body finds that convenience comes at a price [figure 47].
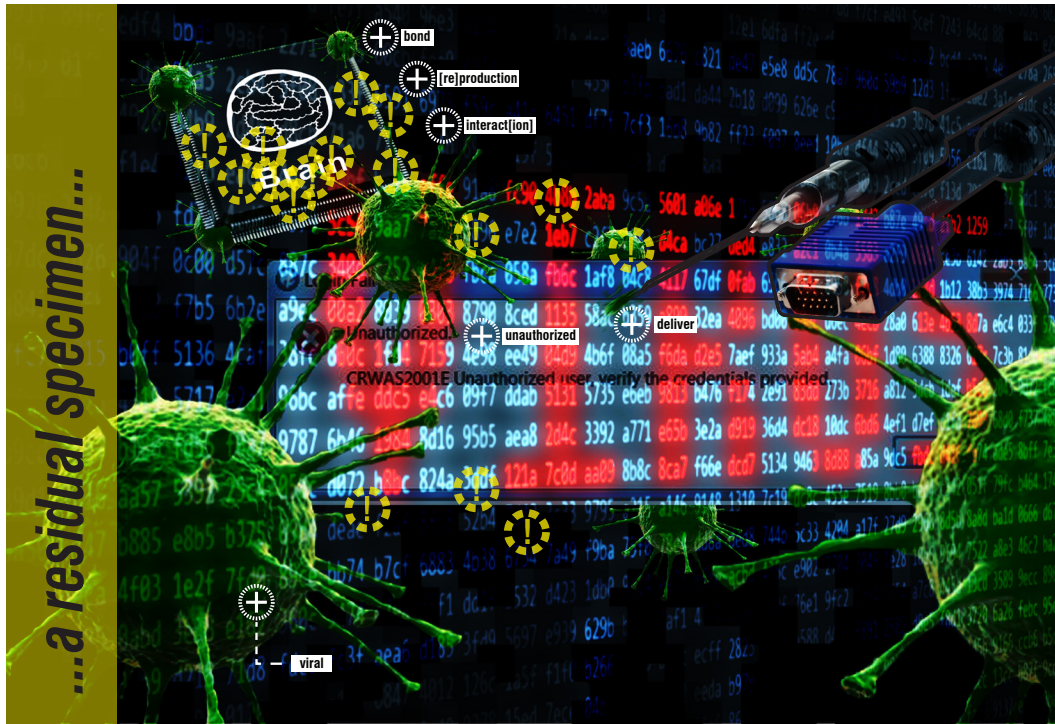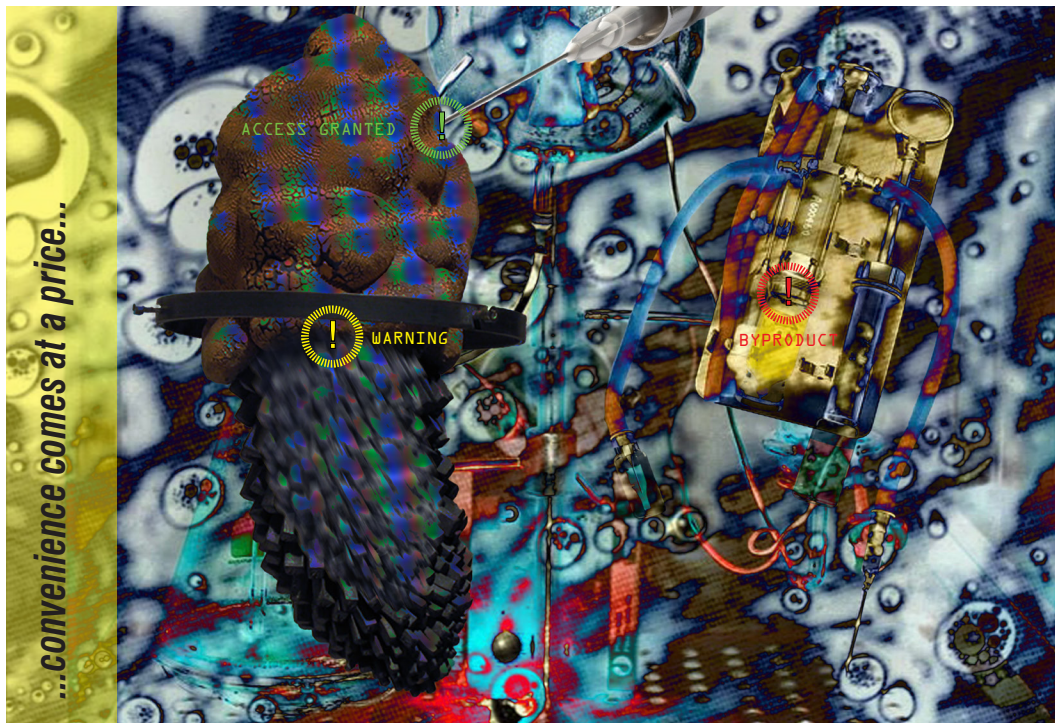
figure 46: a residual specimen.

figure 47: convenience comes at a price.

"as earth's environment and our **human bodies** are now open for design.

-sean lally,
 from *night white skies* podcast.

the body shop is the singular manifestation of the narrative curation of the meta-thread that follows the schema of the skins of scale. the body shop finds a subjective approach to operate within landscapes of fulfillment. the physical locating of the body shop is interfaced with the virtual existence of the data body that is strewn across space and time. the body shop operates in the 64th dimension; 8 skins of scale taken by the cross section of 8 analyses to find location in the 64th dimension.

the body shop operates as an illogical program of the body. a body with a failed biological hardware arrives at the body shop. the strewn out data from the body is analyzed and placed on display and an extroverted arrival [figure 48]. the logistics of arrival finds the interface between the virtual data body and physical meat body. the program of the body shop operates on the surrogate functionality of the body [figure 49]. the logics and illogics of the body shop interface to create the logistical bodies of fulfillment.

once inside, the body is placed on display and exchanges are made among bodies of meat and data [figure 50]. the body is met with the osmotic body suit to strew data and engage with the body shop. exchanges of oil, stimulation, prosthetics, research, and placing the body on display are evident in the body shop. hanging bodies are found to spar the body with gravity just as the body shop spars with the interface between forces of *gravitas* and *celeritas*. the body shop can be found in the landscape as floating away from the earth [figure 51]. the body shop is found in landscapes of fulfillment and engage with gravity in various manners, such as floating, hanging and symbiotic relationships with the existing context.
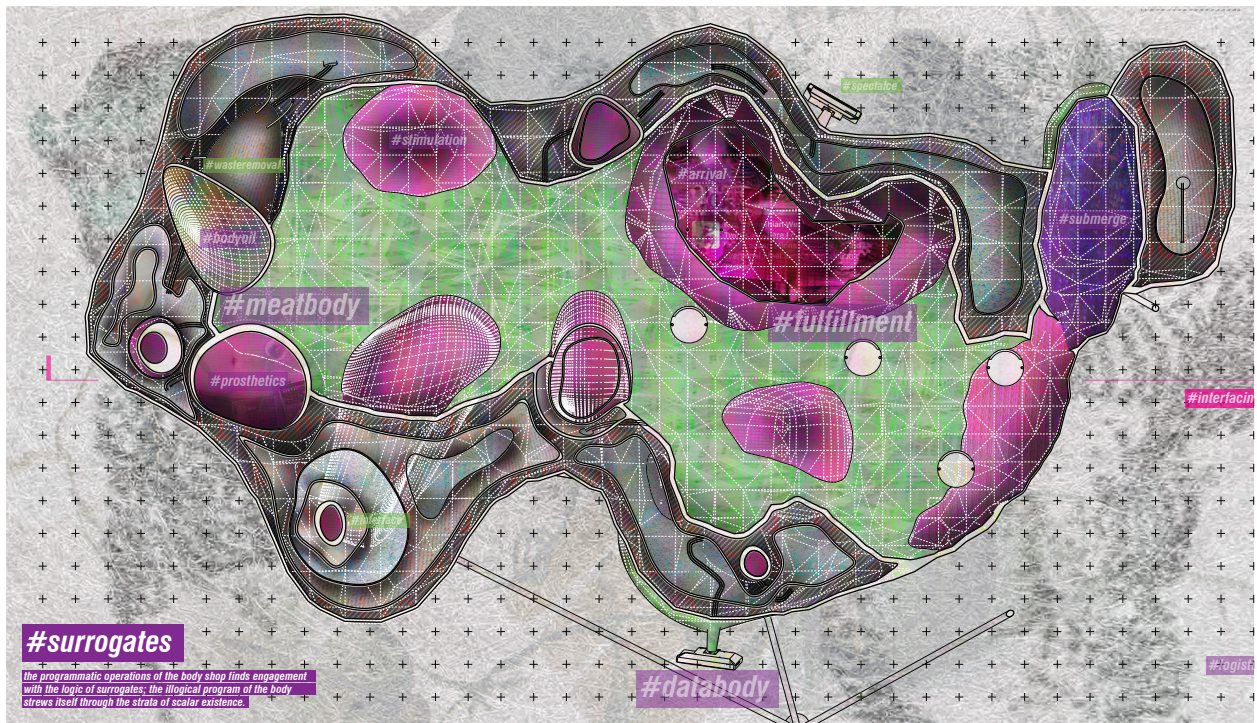
figure 48: unnormative.
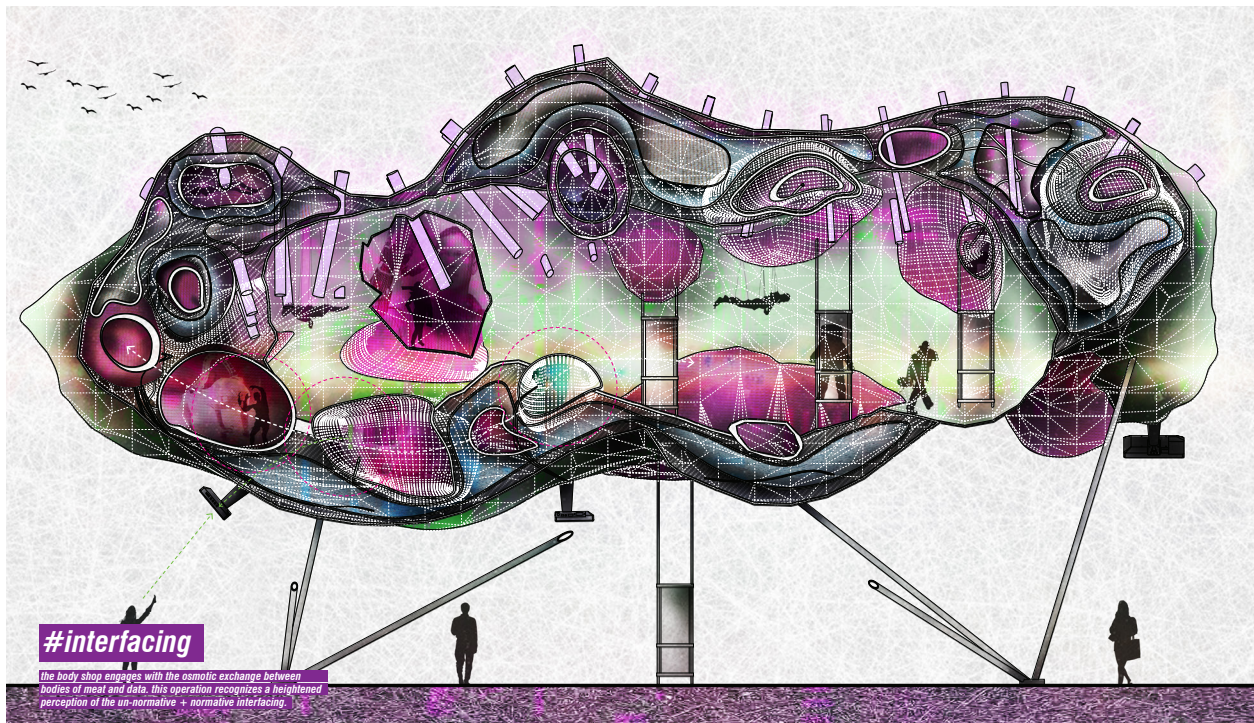

figure 49: surrogates.

#weirdbodies
the fucked up body is cared for and displayed at the body shop.
the diabetic engages with the operative agency of the program
and finds existence strewn about the 64 dimensions.

figure 50: weird bodies.

#interfacing
the body shop engages with the osmotic exchange between
bodies of meat and data. this operation recognizes a heightened
perception of the un-normative + normative interfacing.

figure 51: interfacing.

the body shop engages with other subjects that operate within the landscapes of fulfillment. logistical professional drivers find the body shop as a weird machine and refuse to engage with it. however, the strewn out data body of the truck driver finds operation with the body shop even through the digital camouflage [figure 52]. the body shop always finds the interface between bodies of meat and data.

the body shop itself operates as a subject with a personality, mary [figure 53]. mary finds the interfaced engagement between the subjects of the body shop and the strewn out data body. mary exists only in the network as a data body herself and exists only in the virtual realm.

the bodily make up of the body shop exists as a layered systematic machine. the layers of the body shop allow for the exchanges among bodies and furthers with the buoyancy of the body [figure 54]. the layers constitute the tectonic assemblage of the body shop the same way that the strength of layers of the body are weak, but act in a strong manner once interfaced.
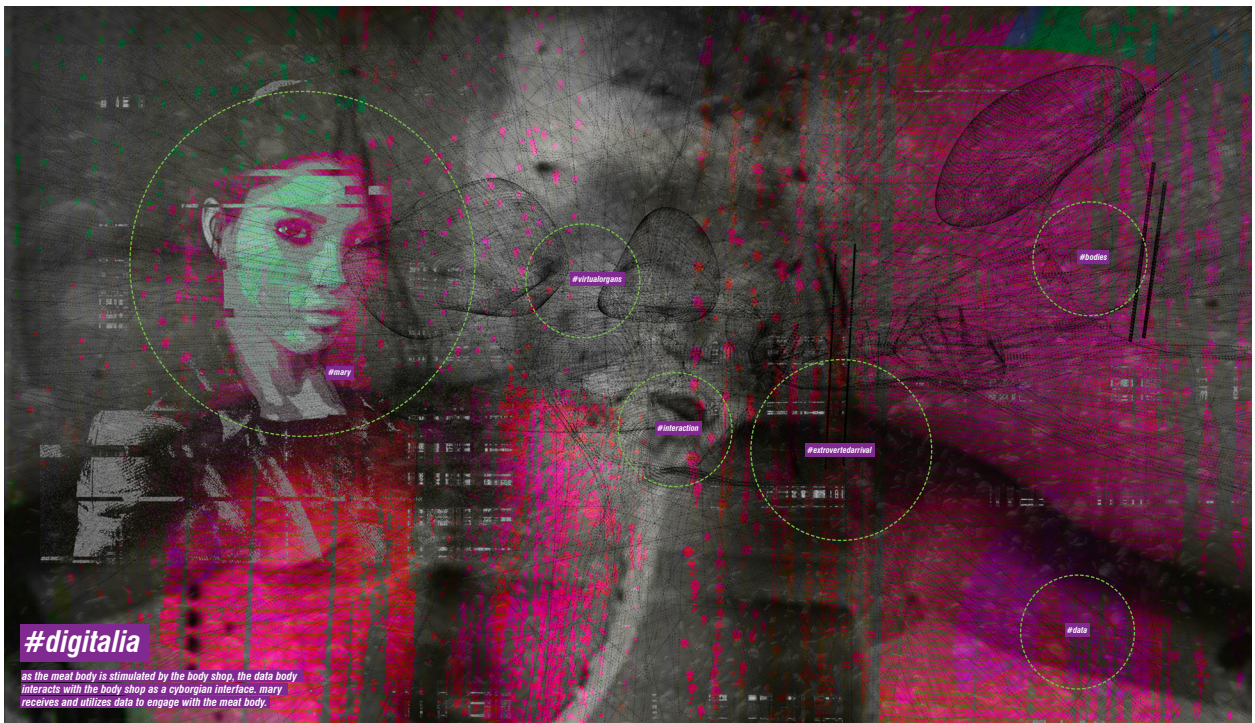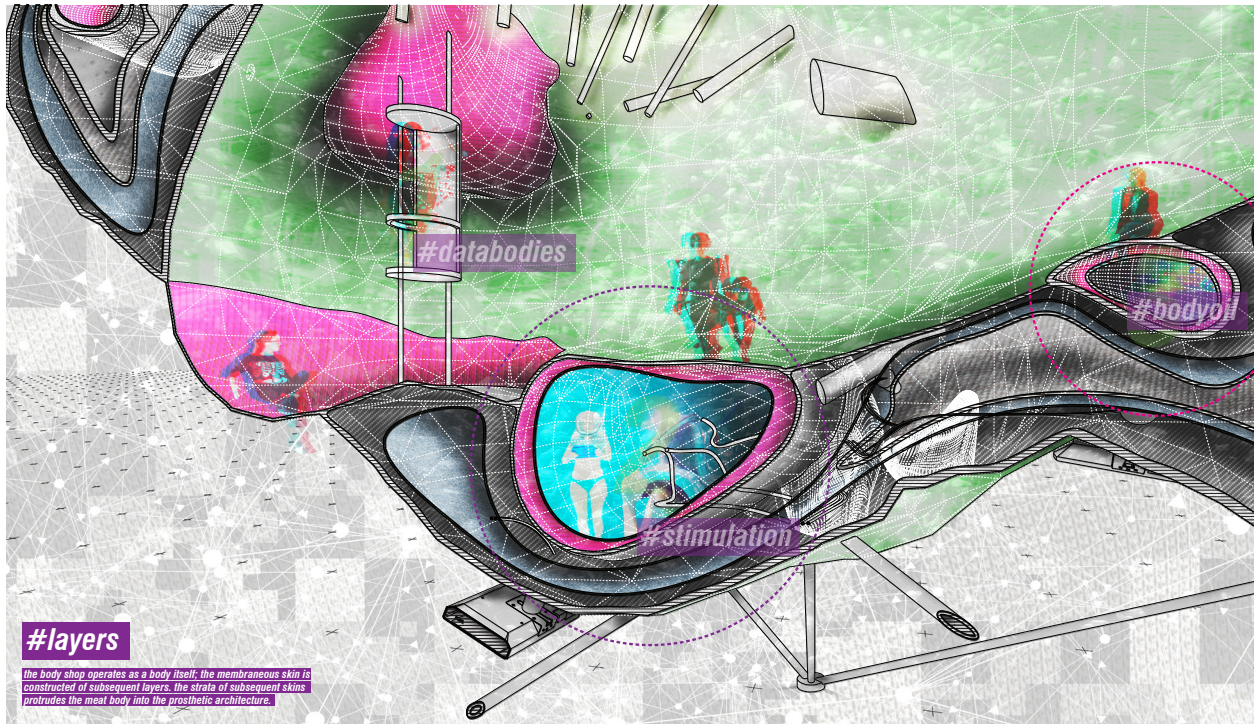
#logistics

the underlying apparatus of logistical networks is utilized as a
collection of infrastructures that naviagate the scalar extinsions.
the truck driver finds the body shop as odd, and disregards it, but
operates within its agency without notice.

figure 52: logistics.

#digitalia

as the meat body is stimulated by the body shop, the data body
interacts with the body shop as a cyborgian interface. mary
receives and utilizes data to engage with the meat body.

figure 53: digitalia.

On the image, the following labels appear:

#databodies

#bodyoil

#stimulation

#layers
the body shop operates as a body itself; the membraneous skin is
constructed of subsequent layers. the strata of subsequent skins
protrudes the meat body into the prosthetic architecture.

figure 54: layers.

"bring something **incomprehensible** into the world!"

-gilles deleuze.

the methodological approach of the strewn out data body interfaced with the physical meat body finds a speculative future that begins to challenge the discourse of architectural thinking and design. the body shop exists in a fantastical future of speculation where architecture begins to operate on the physical body and virtual data body. at times the virtual body may precede the perception and existence of the physical body.

the future trajectory these explorations set up aim to see architectural discourse in a transitional phase, creating a new epoch of architectural design and research that rests on the perception of spatially extended posthuman beings. the speculative thinking of architectural spatial assembly of this kind presents creative and interesting challenges to the traditional modes of architectural production. the exploration of a certain design methodology seeks to find what thinking in this manner means for the discipline and discussion of architectural discourse. the methodological exploration aims to underwrite future processes of design thinking and approach to architectural production.

the speculative methodological approach to exploring architectural assemblies gathers insight towards existing in a digitally active world and seeks to find complex positives and consequences that occur at various moments in the actor-network. the body shop finds a future architecture that will interface between physicality and virtuality.

_works consulted

aghakouchak, ava. "post-human architecture."
> *interactive architecture lab*. november 7, 2015.
> accessed 25 july, 2016.
> http://www.interactivearchitecture.org/post-human-architecture.
> html.

cache, bernard, michael speaks edited, and anne boyman.
> *earth moves: the furnishing of territories*. 5th ed.
> edited by michael speaks. cambridge: the mit press, 1995.

chard, nat.
> *nat chard: drawing indeterminate architecture indeterminate*
> *drawings of architecture*. austria: springer-verlag/wien, 2005.

chard, nat and perry kulper. *pamphlet architecture 34: fathoming the*
> *unfathomable.*new york: princeton architectural press, 2013.

craig, james a. and matt ozga-lawn. *pamphlet architecture 32: resilience.*
> new york: princeton architectural press, 2012.

de monchaux, nicholas. *spacesuit: fashioning apollo.*
> cambridge: the mit press, 2011.

deleuze, gilles, félix guattari, and brian massumi.
> *a thousand plateaus: capitalism and schizophrenia.*
> london: continuum international publishing group, 1987.

dunne, anthony. "hertzian space."
> *hertzian tales: electronic products, aesthetic experience, and*
> *critical design.* cambridge: the mit press, 2005. 101 - 121.

dunne, anthony and fiona raby.
> *speculative everything: design, fiction, and socialdreaming.*
> cambridge: the mit press, 2014.

gissen, david. *subnatures: architecture's other environments.*
> new york: princeton architectural press, 2009.

gordon, eric. "the database city: the digital possessive and hollywood
> boulevard." *the urban spectator.*
> hanover: dartmouth college press, 2010. 171 - 207.

hale, jonathan.
> *architecture, technology and the body: from the prehuman to the*
> *posthuman.* 10 november 2011.

harrison, ariane lourie, ed.
    architectural theories of the environment: post-human territory.
    new york: taylor & francis, 2012.

herron, jerry. "criticism: q & a." provided by professor jason young,
    arch 580 - thesis seminar, university of tennessee, knoxville,
    college of architecture & design, fall 2016, print

kielty, matthew. "ten thousand years." *99% invisible,* podcast audio.
    may 12, 2014. 08 aug 2016.
    http://99percentinvisible.org/episode/ten-thousand-years/.

koolhaas, rem. "junkspace." *october 100*, spring 2012. 175 - 190.

koolhaas, rem. "the generic city." s,m,l,xl.
    new york: the monacelli press, 1995. 1239 - 1264.

koolhaas, rem and bernard tschumi.
    "2 architects, 10 questions on program."
    praxis, re: programming, no. 8 (2010): 6 - 15.

kurzweil, ray. *the singularity is near: when humans transcend biology.*
    new york: penguin (non-classics), 2006.

lally sean, and jesse lecavalier. "the rule of logisitcs."
    night white skies, podcast audio. 10 april 2017.
    http://www.nightwhiteskies.com/new-blog/2017/4/11/jesse-
    lecavalier

latour, bruno and albina yavena. "give me a gun and i will make all building's
    move: an ant's view of architecture." *explorations in
    architecture: teaching, design, research.* basel: birkhäuser, 2008.
    80 - 89.

le corbusier. *aircraft.* great britain: foundation le corbusier, 1936.

lecavalier, jesse.
    the rule of logistics: walmart and the architecture of fulfillment.
    minneapolis: university of minnesota press, 2016.

lewis, paul, marc tsurumaki and david j. lewis. "snafu."
    pamphlet architecture 21: situation normal...
    new york: princeton architectural press, 1998.

lucarelli, fosco. "theory of non-sites by robert smithson." *socks.*
    modified 14 june 2014. http://socks-studio.com/2014/06/14/
    theory-of-non-sites-by-robert-smithson-1968/.

mcclelland, mac, brad stone and pat walters. "brown box."
    radio lab, podcast audio. 16 march 2017.
    http://www.radiolab.org/story/brown-box/

mitchell, william j. *me++ the cyborg self and the networked city.*
     cambridge: the mit press, 2003.

rajchman, john. "lightness" and "grounds." *constructions.*
    cambridge: the mit press, 1998. 37 - 54, 77 - 89.

rowe, colin. "program vs. paradigm."
    the cornell journal of architecture, vol. 2. (1983): 9 - 19.

smithson, robert. "a provisional theory of non-sites." *robert smithson.*
    accessed 31 oct 2016.
    http://www.robertsmithson.com/essays/provisional.htm.

smithson, robert. "earthworks." *robert smithson*. accessed 31 oct 2016.
    http://www.robertsmithson.com/earthworks/ew.htm.

stanley, mark. *euphoria machines*.

stanley, mark and micah rutenburg. *geographies of consumption*.
    los angeles: woodbury university.

tschumi, bernard. "introduction." *architecture and disjunction.*
    cambridge: the mit press, 1996. 3 - 23.

vinge, vernor. *the coming technological singularity:*
    how to survive in the post-human era. ohio: nasa, 1993.
    https://www-rohan.sdsu.edu/faculty/vinge/misc/singularity.html.

yoon, j. meejin and eric howeler.
     expanded practice: howeler + yoon architecture / my stuido.
    new york: princeton architectural press, 2009.

young, jason. "
    polyseamseal or how i learned to stop worrying and love caulk."
    journal of architectural education, vol. 67, issue 2, 2013.
    288 - 289.

_image credits

_appendix

Michael Frush was born in Maryland and raised in the eastern panhandle of West Virginia. Following a life-long interest in creativity and design, Michael received his Bachelor of Science in Architecture from Fairmont State University. He continued his education and interest of design by pursuing a Masters of Architecture at the University of Tennessee.

Michael was diagnosed with Type One Diabetes on April 14, 2016 while attending the University of Tennessee. This diagnosis and abrupt change to his life led to the inspiration and motivation behind the research and design of *Logisitical Bodies of Fulfillment*. Michael hopes that the inspiration and energy of his work will continue to push and challenge the discourse of architectural thinking and design.