

Seeking Oblivion: The Ease and Difficulty of Becoming an Animal

By Sarah Bennett

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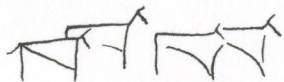
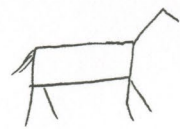
Figure 1 Cover page presented mostly according to the rules

Figure 2 Abstract

Figure 3 Please turn the page

Abstract

Rejecting humanist models of identity that emphasize human independence, agency, and symbolic prowess is currently popular. Alternatives, such as those proposed in posthumanist animal geography, look to embodiment to formulate new frameworks for understanding identity, politics, and ethics. However, embodiment may also support earlier, humanist models of identity. This work challenges posthumanist frameworks by looking at two case studies using a Deleuzian relational ontology. The first case study follows how zoologists behave like cranes as they raise crane chicks at the International Crane Foundation. The second case study looks at how horses, riders, and cows engage in a mirroring dance in the rodeo sport of cutting. In these scenarios, people are challenged to shed their habitual human movement repertoires and conform to the needs of those immediately around them. This research uses Laban Movement Analysis, a methodology from dance, to investigate how the practitioners in these cases take up space and navigate relationships through embodied movement. The results and discussion are presented in visual forms including comics, diagrams, and isoline maps. The unusual approach taken for this research helps us understand how the body contributes to humanist and posthumanist conceptions of identity, as well as gives us tools to explore and be mindful of our co-constitution with animals in a vivid way.



Seeking Oblivion

The Ease and Difficulty of Becoming an Animal



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University of Wisconsin-Madison Department of
Geography

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Bob Kaiser (chair)

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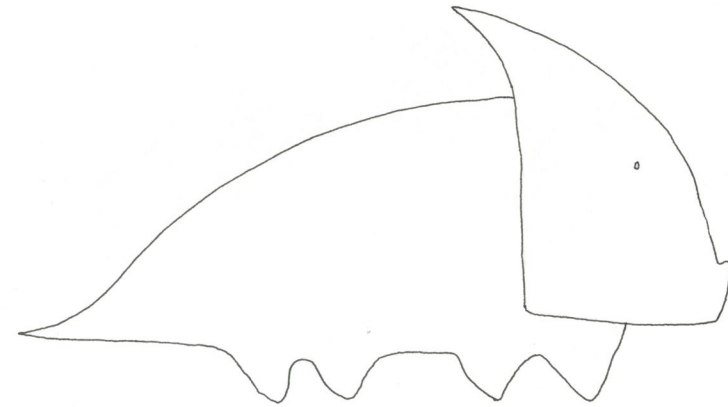
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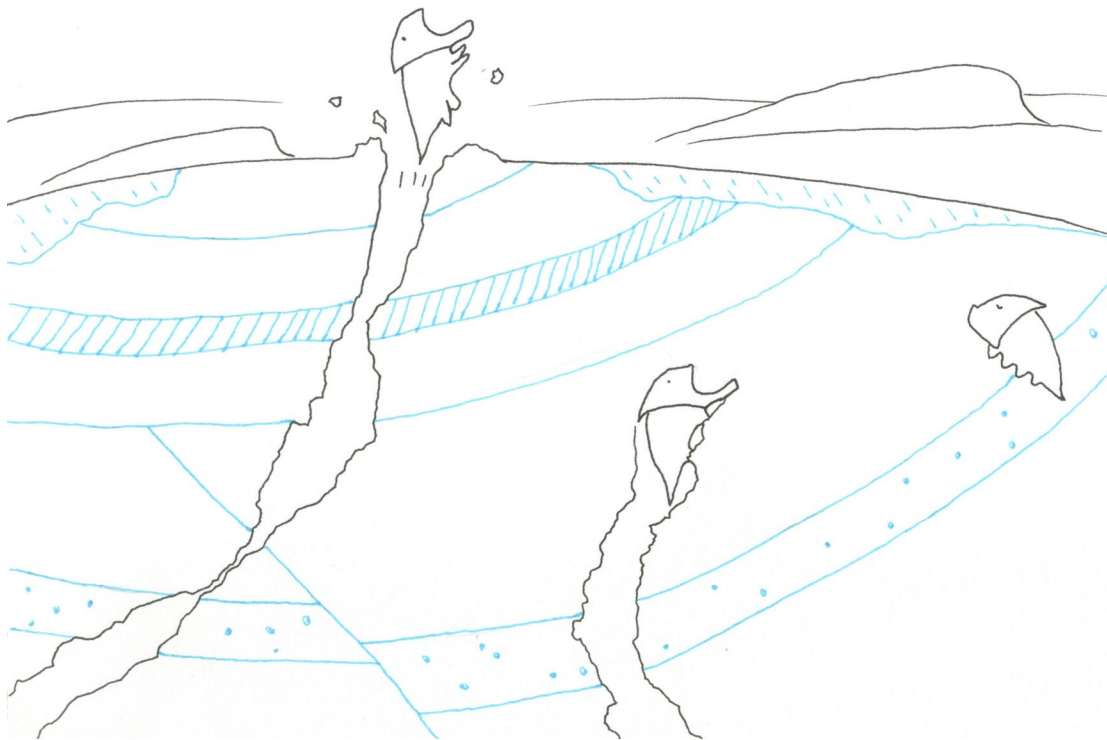
Friends, it may be that I could still have made this book if I were a landshark.

A landshark?

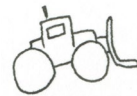
Landsharks immediately became a misunderstood species upon being unearthed some years ago by fantasy gaming enthusiasts. Since little was known about them, it was supposed that they were hungry and idiotic miscreants who tended to swim out of the ground mouth agape into human and dwarven affairs. This threatening framing fit well with human needs to be the center of existence. It is unclear what dwarves think about them.

In reality, one is never to meet a landshark. Today's resonance technologies for probing the earth's mantle have yet to find them. They are supposed to swim through the ground at great speed, and are implicated in making drumlins, landslides, and earthly tremors. This is a bizarre hypothesis because they may have four heavily muscled legs arranged a bit like those of a triceratops. But it is more likely that the skeletons have been misconstrued, making their limb arrangement and their mode of locomotion unclear. In any case, among specialists, landsharks are known for the apparent total mismatch between the workings of their bodies and their dense habitat. They are an ecological question mark, a raw challenge to the order of things, an absurd fantasy of disconnection. They clearly need more consideration.

Left: landsharks interrupting a syncline.



wherever you go, there you are



BOOK 1: ON CHALLENGING OURSELVES 11

Introduction 13

Can we let animals show us what to do? 13

General Project Overview 17

How to lose our humanity? 19

Camouflage, shapeshifting, and mimicry 19

Ways to mimic others 22

Mimicry in raising wild cranes 25

Mimicry in the sport of cutting 26

What using movement could mean 31

Intellectual History 37

Why are we dissolving our humanity now? 37

Forms of identity formation 38

How we relate to animals 40

Relational ontology (used in assemblage theory) 42

Visualizing affect 46

Definitions 55

Movement, space and identity 55

Nested territories around the body 56

Embodiment, humanism and posthumanism 59

Ideal and other movement, embodied and visualized 60

The body and space, familiar examples 62

Immanent identity formation 63

How does shapeshifting happen? 64

Fluidity and the territorial character of identity and difference 67

Mapping the nested territories around the body 68

Assembling a new body 71

The field of potentials 75

Strata as the barrier to flexibility and reach 76

Methods 81

LMA and the BESS movement system 81

Movement observation and note taking 84

Looking back: How did LMA fair for this research? 87

Crane field notes 90

Cutting field notes 91

Case Studies FAQ 93

Cranes FAQ 93

Cutting FAQ 97

BOOK 2: MOVEMENT RESULTS 103

Cranes! 104

How to have two heads 105

Crane and costume kinespheres 106

Crane connectivities 107

Costume connectivities 107

If cranes were more like us 108

Since they aren't 109

Humanness and Birdness 110

How to lead a crane through a gate: choose your own adventure 111

Crane and Costume Effort Qualities 112

Connections through Space and Time 114

Rhythms of connection and disconnection 115

Assumptions about one other implied in movement 116

Sharing Umwelts 117

How we see things 118

What are these bodies? Summary portraits 119

Cutting! 122

- How to share three heads 123
- Horses that are cats? 124
- How cutting moves 125
- Horse kinespheres: post-equine? 126
- Horse and rider connectivities 127
- Basic technique: how to stop for a turn and stay together 128
- The rider and the horse: what is it? 130
- Using space in cutting 131
- Cows 132
- What's the herd body? 133
- Telling herds apart 134
- Finessing the turn: horse magic 136
- Connection and space 137
- The cow's options 138
- The power trip 139
- Latching on and the quit 140
- What are these bodies like? Summary portraits 141



Robert F Bukaty for AP



BOOK 3: GEOGRAPHY AND MAPS 143

The spaces of shapeshifting bodies 145

Mapping FAQ 147

- Raising cranes viewed from the side 150
- Cutting viewed from the side 158
- A rough cut viewed from above 166
- A smooth cut viewed from above 168
- A busy hour in the chickering yard viewed from above 170
- A lazy hour in the chickering yard viewed from above 176
- A tricky cut viewed from above 178
- A crumbly constitution viewed in steps 182
- The cows from a first person perspective 184
- The chickering yard from a shared first person perspective 186

Conclusion 195

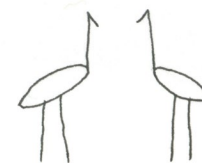
- Is this shapeshifting? 195

Bibliography and Credits 207

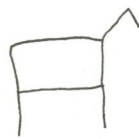
- List of Labels and Illustrations 216

This is an INTERACTIVE pdf. The page numbers here link to their sections. Hyperlinks to websites are marked in *brown italics*.

Unfortunately, this is also a dissertation. It may not need to be read cover to cover. Just sayin'.



BOOK 1: ON CHALLENGING OURSELVES

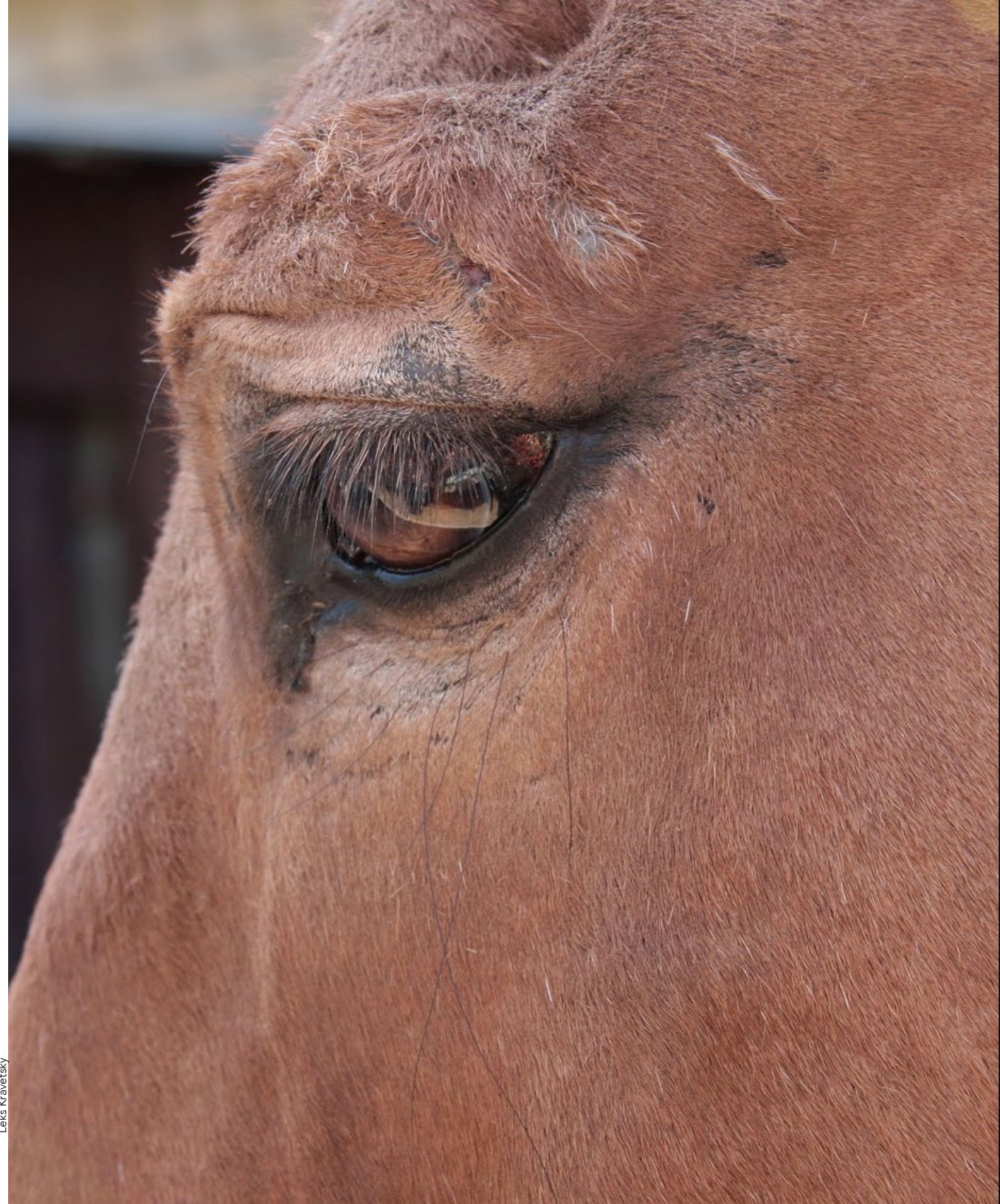




"And what does such a compulsion to become Other imply for the sense of Self? Is it conceivable that a person could break boundaries like this, slipping into Otherness, trying it on for size? What sort of world would this be?"

Taussig 1993; 33

Leks Kravetsky



Introduction

Can we let animals show us what to do?

On a recent winter evening, I was standing in a dimly lit Wisconsin barn as my friend put the horses out for the night. My friend Ann once told me that horses are like two-year-old humans. They don't always want to do what's expected of them and sometimes they throw tantrums. The horses are keeping an eye on everything because Ann doesn't usually have guests in the barn. After being fed, they have to go back out to pasture. My friend opens a stall door at the far end of the barn and ushers out big Bill. Bill doesn't want to go. He pauses. He knows the tap on his croup is coming, but he still dallies. Ann gives a final clipped warning, "come on!" and Bill takes half a step. Then he gets the tap. He starts with a bounce and trots out the barn door.

Watching an experienced animal handler is a pleasure. A conversation of gives and takes unfolds between a person and an animal who know each other well. When an unexperienced person like me enters a barn, it's an intrusion, since I cannot sense and react to the animals (Warkentin 2010). As I walk in the barn, I picture myself as a giant spritzer bottle, sending droplets of water arbitrarily into the animals' faces. My arm movement shocked the horse whose nose I attempted to pet. My sudden entrance into a unused stall sent Sophie the barn cat climbing through the rafters. But, the jangling are mutual; the animals shock me too. Tip, the dog, showed up and licked my dangling hand when I least expected it, causing both of us to jump and feel mortified. I regained my composure and attempted to make peace with Tip, but she was still a little unsure of me and I still felt bad. I've been coming to this barn for brief summer and winter holidays since I was a kid. I wonder, how many stables would I need to muck out before I figured this place out?

What I like about being in the barn is that it is an opportunity to become someone different. I have to think about my presence and pay careful attention to others. My usual habits, which have made me a successful dance leader and design consultant, are suddenly of no use. The transition I'm attempting is attempted all the time by many people and animals, but it rarely gets noticed outside of specialist communities. I have chosen these practices as the focus of my work because as a form

of posthuman practice they provide an arena for testing our new understandings of posthuman identity. Theorists and geographers are embracing posthumanism for its philosophical, cultural, and ethical possibilities. But fitting into a barn is difficult. So how does one actually embody a post-human identity?

Being human for most people in the West today means maintaining the convincing illusion of a consistent and bounded self and pursuing life in the specific circumstances of one's body and consciousness. Each of us allegedly has privileged and inescapable access to only one set of sensations, capacities, and trajectories. We experience our selves as being bounded. As geographers we critically examine and expose human-nature and mind-body binaries, yet most beings, ourselves included, continue to experience the world within these familiar frames. Posthumanist efforts to take down boundaries like these often takes the form of a cultural project where we aim to change our conscious understanding of ourselves to be more inclusive of the networks we are situated in [Power 2008, Smith 2003, Lorimer 2006, Greenhough 2012, Greenhough and Roe 2011, Brown and Dilley 2012, Bingham 2006, Bear 2011]. But it is importantly also an embodied project involving merging, dissolving, sharing, touching, and otherwise changing the boundaries between insides and outsides. Such activities are broader than animal handling and can be found in the West in a variety of contexts, but most have gone unrecognized in human geography. If a posthuman performative politics is to be understood as present or emerging in Western culture, we must find and study examples of Western bodies involved in assemblages that require them to dismantle exactly the boundaries that embodiment has offered in support for humanist identities. This research takes this challenge as its focus, and asks:

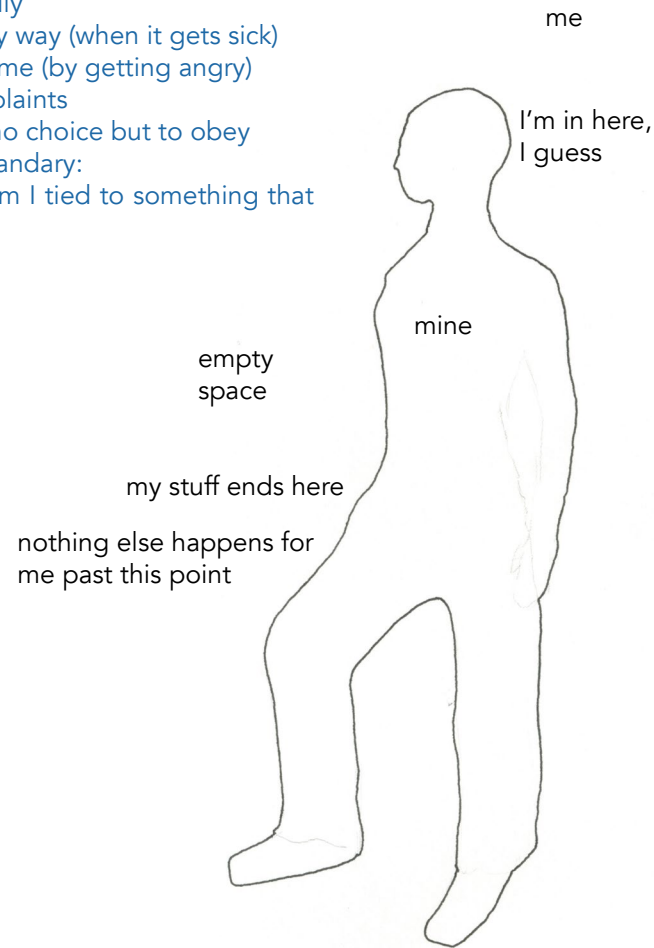
How are western bodies engaged in performances and practices that challenge the legacy of humanist embodiment?

Considering this question immediately brings up another question.

(b) What sorts of circumstances would require us to dismantle our humanist heritage?

Traditional Understanding of the self in the body

My body
 It's mine
 It's a base of operations for me
 I can't get out of it, really
 sometimes it gets in my way (when it gets sick)
 sometimes it surprises me (by getting angry)
 I like to ignore its complaints
 but sometimes I have no choice but to obey
 It puts me in such a quandary:
 How can I die? Why am I tied to something that wears out?



TRANSCENDENTAL things are things that exist in the realm of ideas. Consider the difference between learning a skill such as carpentry in a computer game and learning the same skill in real life. The real life skill is something embedded you. The skill in the computer game is transcendental: you couldn't make a real dresser by moving a mouse. You are creating the idea of a dresser. Similarly, death in computer games don't affect your material body: the game is using the idea of death.

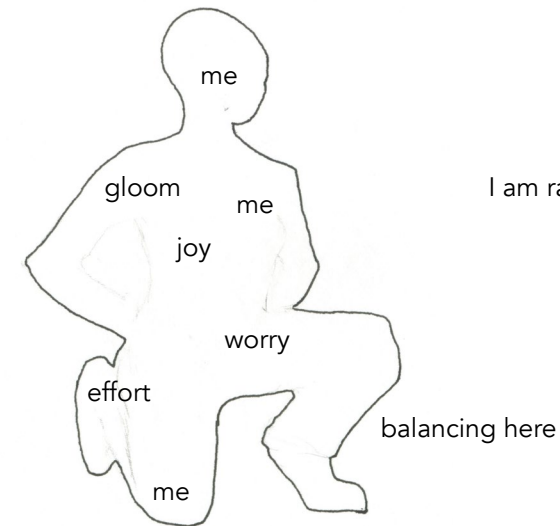
Our idea of ourselves and our conscious experience of the world usually seem transcendental to us.

An alternative understanding of the self in the body

This body
 It cares
 Sometimes all I notice is how my hand hurts
 And I feel like all I am is my hand
 But then my friend walks in,
 or I go swimming,
 and I start to glow.

This body motivates me, resurrects me,
 brings me up and down.
 I move around inside it.

How could I be me without it?



I am radiant into this space

beginning of something else

yawning unknown space

edge of radiance

anticipation

MATERIAL things are real, concrete things. They are handleable. They're what we usually think of as reality.

It might make sense to look to non-western people for alternative embodiments, and then incorporate or aspire to their approach (like [Watson & Huntington 2008](#), [Abram 1996](#), [Ingold 2000](#), [Turnbull 1989](#), [Taussig 1993](#)). However, we are more interested in the unevenness of humanism found here in the West. Any given embodiment persists and evolves in a landscape of uneven empowerment among other bodies and things. This has two ramifications. We are neither perfectly empowered, nor are we alone in our embodiments. This means we as westerners must be engaged in activities challenging our humanist repertoires and that we are doing this in contexts of interdependency. We seek these moments in constructing this hypothesis:

1. [Large social mammals and birds, whether domesticated or wild, make sufficiently substantial demands on human embodiment in mundane human contexts that embodied repertoires found in those contexts will differ from traditional humanist framings.](#)

A tidier wording would help us keep this hypothesis in memory:

1. [Animals challenge us to change our ways.](#)

Animal geography has recently begun investigating the stories told through interdependent heterogeneous embodiments ([Johnston 2008](#), [Buller 2014](#), [Buller 2015](#)). These arenas are interesting for the light they shed on questions of how human animals can be understood as ecological beings. The dimensions of nonhuman agency are getting more deeply probed ([Cloke and Jones 2004](#)) and proposals for how humans should approach and include animals are ongoing. We are encouraged to shoulder various ecological responsibilities, many of which involve tempering our production of power ([Anderson 2014](#), [Hinchliffe et al 2005](#), [Taylor and Carter 2013](#), [Smith 2003](#), [Fox 2006](#), [Bingham 2006](#), [Lulka 2004](#)). These debates bring up a third general question for this research, follow by a more specific hypothesis.

(c) [What power dynamics are operating in the arenas we are interested in?](#)

2. [Complete disempowerment on one side of an embodied relationship is impossible without disintegration of the self. As a result, voluntary disempowerment is limited.](#)

Again, a tidier rephrasing:

2. [We can listen to others to a limited extent.](#)

To test these hypotheses, this study will present three case studies of human-animal interactions and a methodology new to geography for studying the power dynamics of embodiment. This work will follow on recent geographies of animals ([Wylie 2005](#), [Spinney 2006](#), [Lorimer 2006](#), [Hinchliffe et al 2005](#), [Watson and Huntington 2008](#)) by narrating vignettes of uneven empowerment found in the three case studies. It will provide empirical findings relevant to geography's relational reframing of boundary negotiations between humanity and nature.

Crossing, shifting, and dissolving the boundaries between humans and other things is has been theorized in assemblage theory, feminist theory, and recent phenomenology ([Deleuze & Guattari 1987](#), [Haraway 1985](#), [Ingold 2000](#)). Nevertheless, many of us live day to day as though the boundaries of our bodies were firm. It is difficult and rare to leave our habitual sense of self and embody another way of being. Luckily, dance analysts have tools that will help us tell the difference between someone who is going through the motions and someone who successfully blurs their identity. This study aims to highlight the moments when another way of being creeps into our movements. What does it mean to embody movement identities that dissolve humanist self and other?



The VIRTUAL is a new concept in social theory used to explain the relationship between what could happen and what really happens. It is easiest to imagine the virtual as a wide horizon in front of you, populated with all the things that could come to be. You can sense that some of those things are more likely to happen, and you can influence them to some extent. Our sense of the horizon manifests as emotions and intuitions.

The virtual is used to counteract our sense of ourselves as transcendental beings by increasing our awareness of our selves as a whole body.

This is the best representation I've found of the virtual so far. I like how planes and groups of things come together at odd angles, connected and interacting, but not all settled. It has almost recognizable details that are then prevented from complete self-definition on the page. It also has a lot of dynamic energy. It shows the sensation that things are afoot.



General Project Overview

This project uses assemblage theory for understanding spatial identity transformation (shapeshifting) through partnered embodied movement. The study is envisioned according to the posthumanist thesis that humans are not the most powerful beings around and that research is needed to show how this can be. The case studies are designed to show how human-animal assemblages unfold on a locally even playing field.

The first case study looks at zoologists who raise baby cranes. The second looks at how cutting horses, equestrians, and cattle engage in the rodeo sport of cutting. Each of these scenarios is connected to broader, mostly human networks of meaning and power that could easily overwhelm the humans and animals involved (Wolch and Emel 1995).

Locally, however, specific animals relate to specific humans, and everyone present participates in telling the story of their relationship. These stories go unspoken, making it hard to notice them and learn about them. This study proposes looking at embodied movement on a gestural scale to learn more about these stories.

Humans, large mammals, birds and the politics between them are available to study in their bodily movements. This study borrows a movement analysis system from dance called Laban Movement Analysis (LMA) for its methodology. Using this methodology here aims to broaden the empirical evidence supporting relational theories of identity in the context of embodiment.

Movement is ephemeral enough that its political impacts can be hard to determine. This research introduces a cartographic process for working through the political implications of movement in space. This approach has led to new ways of substantiating the co-production of identity.

While this research embraces contributions from relational frameworks, it also wonders the extent to which current theories can withstand empirical investigation.

Related Subjects

Animal ethics, empathy, anthropomorphism, domestication, zoology, husbandry, hunting, herding

Environmental politics, conservation, ethology, affordances, natural history, biophilia, perceptual ecology, territoriality

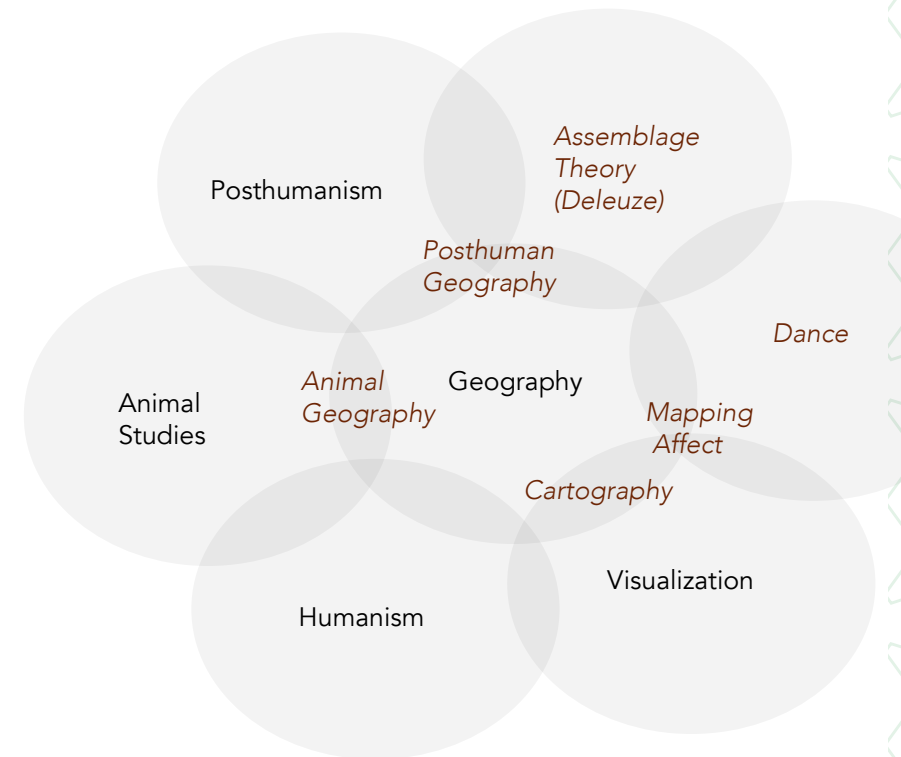
Martial arts, kinesiology, dance

Qualitative methods

Environmental art, movement visualization, cartography

Performativity, hybridity, humanism, posthumanism, nonhuman agency, materialism, vitalism, post-phenomenology, dance philosophy, political geography

Mimicry, shapeshifting, and skill.



Daniel Kish makes clicking sounds to echolocate on his bike.

"Now you might think I'd be all over this shapeshifting business, Paxto, but if comic books, cartoons, and Sci-fi Original Movies have taught me anything, it's that shapeshifting comes with a bunch of rules and restrictions that limit its potential Turn-Into-A-Bulldozer-Whenever-I-Wantity.

You can turn into a machine guns but not bullets, contemporary jazz turns you back to normal, you can only turn into presents that grandma's knitted for you.

Crap like that.

For example, let's say I could turn into any species... OF BALLOON ANIMAL!?!?

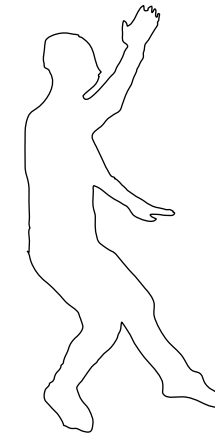
Oh yeah, another thing about shapeshifting is that you need to have a cool sound effect that happens every time you change form."

~Strongbad
(*Strongbad email #192*)



Thatcher Cook

This T'ai Chi form is called White Crane Spreads its Wings.



How to lose our humanity?

Camouflage, shapeshifting, and mimicry

This project began when I was dabbling in perceptual ecology a few years ago.

I was thinking about what it would be like to wield some sensory faculty that other animals possess, like echolocation or magnetic wayfinding (*some people do!*). Such exotic senses must reveal different worlds (umwelts) to the species that wield them, worlds that we can barely imagine (Uexkull 2010). We have technology that can approximate animal faculties to some degree and for a lot of human purposes. We can also construct a first person experience in a movie or game. This is how we make our way transcendently into the worlds of bats and migratory birds and many others without much trouble today. But it's an approximation at best, and, as I thought at the time, we could never really understand what it's like to be a bat or a bird.

In spite of my pessimism, the idea that we might want to try to be a bat or bird stuck with me. Could we do it in the first person, without the intervention of technology and media, even a little bit? What if there was immanent entrance into another umwelt? I started looking for situations when people were trying to become certain animals through imitation. I thought, what a difficult taskmaster an animal model would be! And what an irresistible challenge.

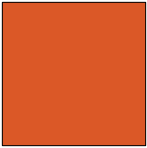
As I read about mimicry, shapeshifting, illusions, and camouflage, I collected instances of bodies practicing them together. I found a profusion of animal imitators in theater and movies (*Warhorse's horse puppet, X-men's Mystique*), and shelves of stories with sorcerers and trickster gods (see Huppauf 2014, Brandstetter 2010). There's plenty of insightful *popular commentary* and catalogs (*tvtropes, wikipedia*). Some sources underline the unknowability of the world. Others try to stabilize our human identity by defying it. Some skillfully illustrate the tension between the power of being unrecognizable and the risk of losing oneself. One experiment in pretending to be a *reindeer herd* in Finland for a day came really close. In the end, though, I turned away from them. These stories were told inevitably for human audiences, which do not make the same kinds of ineffable demands

that an animal would.

I found that mimicry across species boundaries occurs when there is something at stake. The *masquerading*, attracting, seducing, misdirecting, mesmerizing, and frightening that goes on between insects and their avian predators, flowers and their pollinators, mammals and their kin make rich stories. Research in animal camouflage has only barely coalesced into a field, and Stevens and Marilaita (2011) point out that in these studies humans usually assess an animal's camouflage themselves, instead of from the point of view of the intended receiver of the illusion (4). They advocate for an evolutionary framework to replace this anthropocentrism. A few fascinating studies testing animal illusions through animals have been published recently (e.g. Barber et al 2015, De Bona et al 2015, and *unstudied examples: a bird imitating a snake for an unknown intended audience*). A second recent trend in this vein is to create media or entertainment for animals, such as youtube *videos of squirrels for domestic cats, music for cattle, or media games for pigs*. These works mark an framing of animals as audiences.

Caillois (1935) offers an early social perspective on camouflage in butterflies, ascribing mimicry to a kind of magic where "things that have once been in contact remain united," and where "like produces like" (*unpaginated*). He says this magic undermines an individual's sense of distinction from their surroundings, which causes them to become "tempted by space," to lose their personality and their relationship to place, cease normal life functions, and become "seriously undermined" (*unpaginated*). The self-destructive potential of mimicry is a common focus and underlies my second hypothesis.

By contrast, others focus on the power of mimicry. Frazer ((1890) via Willerslev 2007 and Taussig 1993) is credited with first discussing how an imitator can gain magical power over an original. He said the power comes from the magic of contact between the two, and the magic of their similarity. Taussig (1993) elaborates, explaining how mimicry was intended to give one control over the original or take on it's characteristics. He shows how colonial subjects imitated their colonizers in order to manipulate them. Embodied practice is a running theme in these works, but appropriate methods for engaging with it and evaluating it were not yet in use (Abram's (1996) use of slight of hand stands



Mimicry to frighten

The owl face on this butterfly implies a much larger being is present.

Mimicry and Detection

Animals mimic for specific audiences. The tails on the wings of the luna moth garble bat echolocation calls, making the moth invisible to the bats.



Shawn Hamrahan



Unknown



Didier Descouens, 2011



These two butterflies are from the same species, *Papilio dardanus*. This species imitates other butterflies around it. These two examples are from different places, imitating a different local butterfly. It makes you wonder by what metric we consider them the same species. The usual answer in biology is sexual compatibility, but this is not something easily tested in the wild.

out as an exception).

Willerslev (2007), inspired by recent developments in phenomenology (e.g. Ingold 2000), looks specifically at embodied practices. He noticed that mimicry creates a hall of mirrors, where the imitator is indistinguishable from the imitated. He echoes Caillois' point that the differences between the mimickers is what keeps them from collapsing into each other. Both similarity and difference are important sources of power in imitation and have specific roles to play together. Willerslev's and Ingold's work provides embodied, first person and skill-based accounts of relationships that may be common in hunting and herding societies and among indigenous peoples.

It is not surprising that most mimicry research has occurred in anthropology. I've noticed that here in the West, animal imitation is not necessarily socially acceptable (for example, *the lizardman*), and is relegated to the sidelines, appearing for children, dance performances, and eccentric fandoms like furrries. It is rare to meet a person who has developed convincing animal imitation skills (for an unusual example, see *monkey runner* about a man who runs like a monkey, who has recently developed *a literal following*). Walter Benjamin commented that premodern people were better mimes, and that mimicry is an aspect of humanity in modern times as well. Thrift does "not accept that the mimetic capacity has to be interpreted as somehow a primordial cognitive faculty which modernity has caused to decay. Many authors still want to argue that the main outpouring of mimesis now is in the play of children and is given up as the adult world approaches, or they consign mimesis to supposedly archaic categories like magic. In contrast, I would argue that mimesis is in fact a perennial human imitative capacity, closer to a biological drive" (2008, 238). Both authors reject the division between Western and non-western peoples on this point. Following them, I believe mimicry in the West has been made invisible, and I have structured my work to bring our attention back to it. I would be surprised however if animal imitation were to occupy a prominent position in the West given how urbanization has changed our relationships with animals. Technological imitation of non-humans has gained a better foothold today (Johnson and Goldstein 2015, Goldstein and Johnson 2014).

A dog reacting to a robotic dog





Ways to mimic others

Thomas Thwaites approximating a goat
Engineering



Kenichi Ito runs like a monkey
Athletics

A troupe of monkeys took in this robotic monkey
Robotic puppetry

Charles Foster being a badger
Behavior and ecology

Transformation into a bird
Photoshop

Someone dressed this dog up as a spider. It's convincing because of how the dog and the costume move together.

Costuming



Felicity McCabe for the Guardian

Tim Bowditch

BBC Earth

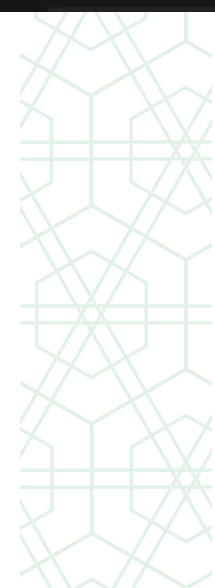
Unknown artist

SA Wardega



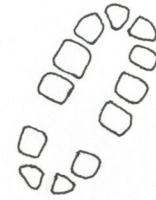
Asadata Dafora's stunning ostrich dance

Many dances, such as *this one*, that imitate animals are done so for human audiences. This means the movements that animals find salient among themselves may not appear in the dance.





The plastic crane decoy. This year there was a great heat wave. The grass turned brown.



Crane, after infancy, before adult feathers come in

Views of the chickering yard through the camera at ICF, left, center, and right.

The doors to the "runs," where chicks live



The yard is fenced and protected by netting from above to prevent eagles and hawks from swooping in. Hanging on the left is a shade tarp. Hanging on the right is a plastic crane decoy. It swings in the breeze above the pond.



The live model adult crane, Faith, looks in through the fencing on the right. She appears as a hint of white here.





Mimicry in raising wild cranes

Images from the field

At the International Crane Foundation, costumed zoologists raise baby whooping cranes to adulthood. The goal is to prevent the birds from imprinting on humans and prepare them for life in the wild.

I chose this case study because each participant was likely to become more like the other. In the crane's case, it's through youthful impressionability. In the costume's case, it's through hard work. The mirroring between the two is already visible in the costume the zoologist wears. It makes you wonder how deep this mirroring goes. Cranes are also compelling because they are similar enough to use that we inhabit similar spaces, but their wildness makes them possibly foreign enough to drag us out of our usual habits.



Costume mirrors crane at the pond edge



Cutting horses attending to their riders in Denver



The audience in Denver, Colorado consisted of participants, friends, and family.



Losing the cow in Denver

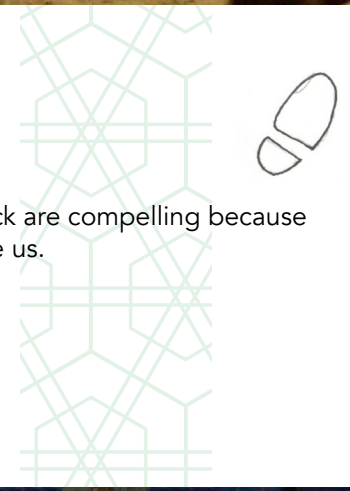
Mimicry in the sport of cutting

Images from the field

Cutting is a rodeo sport where a mounted horse selects (cuts) a cow from the herd, separates it, and keeps it from running back. The horse and the cow run back and forth face to face as the cow tries to find a way around the horse.

I chose this cutting because of its reputation as a dance of mimicry. Ideally, the horse, the cow, and the rider look like reflections of each other in a mirror. It seemed likely that participants were

somehow blending together in this challenging and athletic sport. Livestock are compelling because their size makes them able to throw us around. They might really challenge us.



Horses wait outside the arena in Spanish Fork, Utah



The judges seated in booths in Denver

Cows awaiting their turn in Denver

The cutter, cow, and two turnback men are visible in the arena



The arena in Spanish Fork, Utah



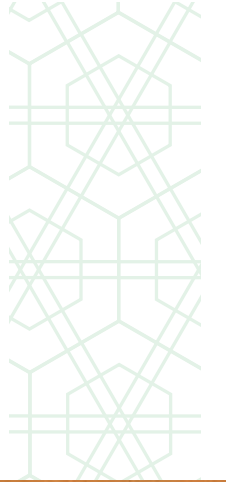
Cutting in Spanish fork
(the cutter and cow are a blur)



I led a mostly sedentary life until about a decade ago, when I discovered Eastern European line and circle dancing. Coming to my own in this new context was a revelation to me because it was a form of social interaction that didn't depend on words. I embraced a set of new identities, from class clown to connected and respected leader, all because of how we moved.



I love this painting ("The Studio" by Larry Rivers, 1956), because it shows people as a amalgamation of several actions. They are compelling as personalities in themselves in spite of being in partial and layered.



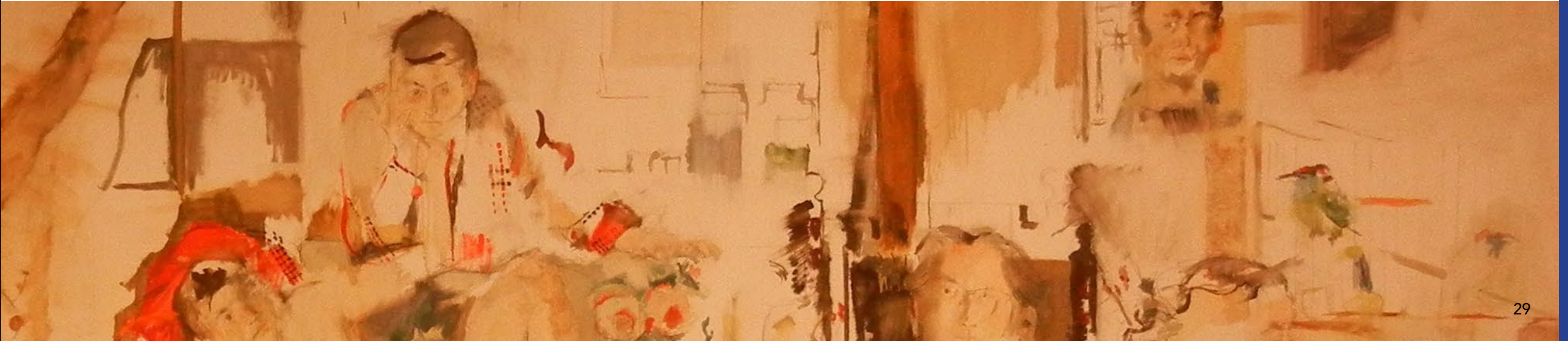
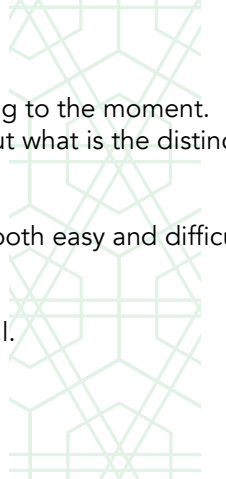


Becoming animal and becoming human

That dancing is an articulation of a social identity is easy to accept. It is harder to imagine how in each instant of a dance, one's existential identity forges forth, assembling itself according to the moment. Mimicry exposes this as well. It is easy to imagine people pretending to be animals or learning animal movements. It is hard to imagine how they may actually be becoming animals. But what is the distinction between pretending and becoming? Is it worth making?

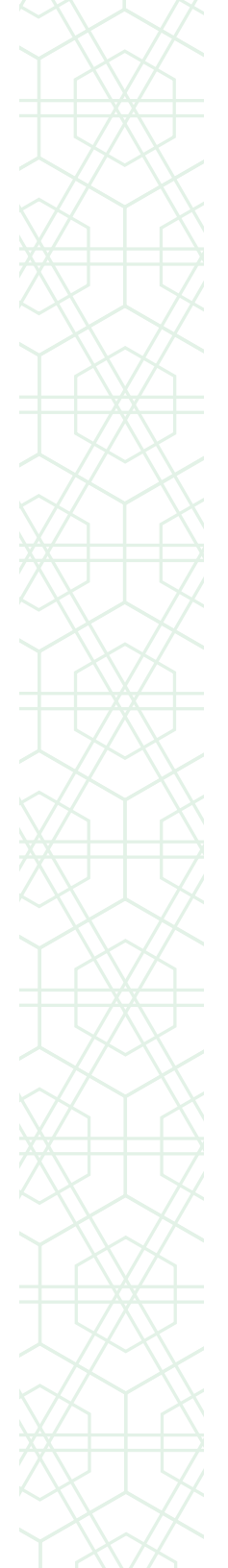
On one hand, it is easy to become an animal, because we already are one. On the other hand, it takes a lot of effort to look past ourselves and deconstruct what makes us human. It is both easy and difficult to become a human animal.

Agamben says man is the animal that must recognize itself as human to be human (in [Brandstetter 2010](#)). We spend so much time becoming human that it erases how we become animal.





Fernand Leger's *Three Figures* (1910) shows a relationship between an artistic lens (cubism) and perceptual reality. The artistic lens helps to make another understanding of the body more imaginable.





What using movement could mean

Some people are emulating animals to get insight into what it's like to be them. They discuss some interesting political moments that come up in the process.

In 2010 year, a group of Finns spent the day *as a reindeer herd*. Their goal was to “restore the urban landscape back to a state of nature by viewing it from the point of view of a semi-domestic, semi-wild herd animal” (Toisissa tiloissa 2011, unpaginated). They agreed to guidelines that would help them become reindeer, such as how to pick a path through the landscape, how to avoid bunching the way humans do, what to carry, and whether to make noise. The differences in how they move are evident in the video they made. They flow. It's quiet. And each is doing something a little different from the rest, but they're all there together. It's interesting how herds make communal decisions. The exhausted member 'votes' by trailing behind, and the thirsty one by gravitating towards the water. Bodies moving this way influence each other by simply being the qualities that they are. Herd bodies deal with conflict in ways we can't really see.

More recently, Thomas Thwaites became famous for pretending to be a goat in the Swiss Alps. He outfitted himself with prosthetics so he could move as a quadruped. He regrets that the prosthetics didn't allow him to move down rocky slopes well. Grazing was also awkward. It is interesting that before his outing, the shape of the body was most important to him, but during his outing, bodily affordances came to the forefront.

Thwaites' goal was *to escape* human worries for a time. Matthew Braga, a journalist, records how Thwaites encountered embodied politics suddenly. “I found myself at nearly the highest point on the hill of the whole herd of goats, and there was this moment where I looked and noticed that all the other goats had stopped chewing and were looking at me,” he recalled. ‘I hadn't been scared at all before, but I suddenly became aware of their quite sharp and pointed horns’” (Braga 2015, unpaginated). This realization reveals that other animals also have concerns, and that those concerns inform not only their embodiments but also ours.

Driving is a familiar example of using our bodies to negotiate space. Although it makes me nervous watching *this large intersection* in Addis Abeba without traffic lights, it strike me that every driver is more alert than they would be at a controlled intersection. At a controlled intersection, the space is organized transcendently, allowing the body to turn off.



Endoethiopia viajes y aventuras



Toisissa Tiloissa, the *Other Spaces* live arts collective in Finland, on their reindeer safari in 2010. They spent a day as reindeer.



Thomas Thwaites followed a herd of goats for a few days. Ate grass. Became a media event



Lauri Kontula

Tim Bowditch

Charles Foster, a lawyer in England, has tried living as a good number of animals. He spends lots of time as them: birds, deer, hares, badgers, otters. A *journalist at The Guardian* (Hattenstone 2016, unpaginated) writes,

“As for being a red deer, he really struggled. Yes, he grew his toenails and hair long, but these felt like superficial gestures. He asked a friend to set his bloodhound on him, so he could know what it was like to be hunted. There was an initial surge of adrenaline as he ran, but ultimately the experience was humiliating: when the dog tracked him down, it just gave him a contemptuous glance and walked off. Foster admits he was a rubbish deer. “I found it impossible to come down the pyramid and become a victim.”...“The revelation occurred when he was living as a fox, and came face to face with another fox that had stolen his chicken leg. “I felt not just that I was looking and observing, but that I was being looked at and being observed. That was the reciprocity I had longed for. I don’t feel I got that anywhere else.”

Foster’s interest in joining a community of relating animals, and his difficulty in achieving it, is fascinating. It signals that animals are selective in how they include each other in relation, much as we are.

I don’t want these examples to make it seem like we should all run around pretending to be non-human animals. That won’t work. A case in point, a man in Japan has inspired a number of others to run like monkeys. Kenichi Ito has spent over a decade studying how animals move and perfecting his technique. Julia Telfer, a journalist, says he has six styles that vary *from a ramble to a gallop* (Telfer 2012). Yet humans on all fours with limbs fully extended are hampered by their downward sloping torso. Like that, a full powered stride from the legs sends you over your head, or it gives you too much air, causing you to crash down on your arms. Ito copes with this by keeping his legs tucked in, so he maintains a smooth horizontal trajectory. This takes strength and determination. But these embodiments don’t endear him to animals so much as estrange him from humans. Ito says he attracts the attention of police and has been confused for a boar by a hunter. Ito’s experience is telling because his politics remain that of whether he is to be included or not in the category of human. This is the same ethical challenge to humanism as we have seen progressing for centuries now.

What the Finnish reindeer herd, the goat man, and the British lawyer have in common are their use of their body to re-engage in local negotiation. They avoid doing it with people. They are disciplined. And, the part of greatest meaning is when they face conflict, although they remain unharmed.

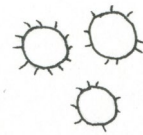
What could following more intense interactions with animals tell us about embodied politics? Would it tell us if it is always violent? If risk and harm are always bad? Would it give us the tools to challenge local power structures? Perhaps we could legitimize embodied power and prepare ourselves for such encounters? And perhaps, once and for all, we could leave humanism and its exclusionary ethics behind.

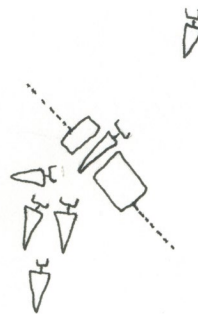
One of the remarkable things about the internet is how excited people get when animals defend each other across species boundaries. Bunnies breaking up chicken fights, chickens breaking up bunny fights. These events can be rare to see live, but added up they show that animals participate in a single political arena using their bodies, whatever they may be. These events shouldn’t be surprising. We think of animals as parts of categories: a bunny is a rabbit and rabbits eat carrots. But animals don’t have to think in categories. They can think in terms of threat, leverage, and possibility, no matter who is involved.

We can’t really dial back and remove the layers of culture and symbols we operate in. But we can wonder how these politics unfold across species.

Performers such as *Marc Antoine* use interactive projection technology to enhance the spatial effects of their movements. Their visualizations make the extended presence of their moving bodies more tangible. This presence has political ramifications that we’ve forgotten about.









It is hard not to credit a landshark with this butte, but in all probability, a variety of living and non-living factors brought it into being.

Intellectual History

Why are we dissolving our humanity now?

Posthumanism and Vitalism

Posthumanism emerged in geography and elsewhere to challenge some related foundational binaries in western social thought: society and nature, human and animal, and living and non-living. Whereas nature is usually considered to be a backdrop to human social negotiation, posthumanism takes a more inclusive framing and emphasizes the interconnectedness of human and non-human actions. Posthumanist theories such as actor-network theory and assemblage theory say that agency is co-produced in groups of connected entities. Agency is not the sole domain of people. Rather, everything that contributes to a given outcome must be considered to be playing a role of similar import as people, even non-living things like infrastructure or climate. This approach provokes us to reexamine what constitutes an actor and what roles non-human actors are playing in the world today. In other words, posthumanism asks, when you jettison humanist definitions of humanism, who are we now?

A few notable authors outside geography have helped conceptualize the shift to posthumanism. [Haraway's \(1991\)](#) intervention first imagined how to break down the separation between human and machine. [Wolfe's \(2010\)](#) work explains how the animal has to become a major figure in thought, resonating with how animals have been growing in importance in popular debates. [Grosz \(2008 and 2012\)](#) offers a feminist approach to difference in a posthuman context. She explains that the world and beings in the world is most interested in experiencing and producing intensity. Intensity results from meetings of things that stand out from the background and are different from oneself. She brings in sexual selection as a key evolutionary innovation for producing difference. Her approach marries feminist insights about gender and difference with a materialist account of agency.

[Braidotti \(2013\)](#) explains that posthuman thought would be really helpful in today's world. Our tendency to ignore, erase, or downplay the influence of impersonal forces won't help us face current issues like climate change and social justice in a globalized world. Today's elites know how to

modulate political tone and dip into or channel economic flows ([Massumi 2010](#)). She pleads for the humanities to tap into the "roar of life" to create a more inclusive future in the face of neoliberal capitalism's facility with posthuman agency. These thinkers help us understand what's at stake in posthumanism.

Following Wolfe's lead with animals has resulted in a broader investigation of how things that were originally thought to be socially irrelevant, like materials, objects, and plants, can be understood in the context of posthumanist ontology. While it is easy to accept that such things are somehow involved in social interactions at this point, it's hard to imagine them as fully agentic in the way humans seem to be. As [Cloke and Jones \(2004\)](#) point out, plants are not conscious or willful. How could they play a meaningful role in political negotiations? Geographers have probed this and similar questions through a variety of case studies that will be discussed here soon.

Key voices that have shown how materials in particular could be considered significant players in the outcomes of human events are Bennett and Malabou. [Bennett \(2009\)](#) pieces together a history of thinkers who ventured to conceive of all matter being alive. Her work brings social issues like stem cells and electrical grids into dialog with a variety of perspectives on the limits and possibilities of liveliness. For her, intersubjective spaces, proto-agents, agentic spectrums, causality, the pre-personal, motor intentionality---things proposed by Merleau Ponty and others---can explicitly include nonhumans. Not only does naming the roles things things play in events chip away at mythical domain of exclusive human agency, it calls into question the idea of agency in the first place. How can one say that something or some things caused something else to happen? Can one parse what each thing contributed to the event?

[Malabou \(2008\)](#) looked at the political potentials of the neurons in our brains, a scale apparently inaccessible to us as subjects. She says that cognitive scientists have been studying neurons for how they construct the self. She says this is a conservative perspective and argues instead that neurons are caught in a contradiction between the homeostatic self and exposure to the outside. This means that neurons are always in a tension from which transformation becomes possible, as well as a new explanation for the apparent separation between our conscious and neuronal lives. This work and

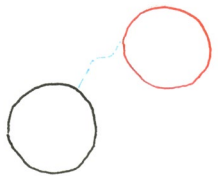
Forms of identity formation

Essentialism or transcendental identity

An implicit background to our lives



I'm me because I am

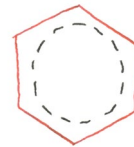


I'm me because I have a unique soul and mind

This approach is folded into humanism as a legacy of Christianity. It makes explicit our urge to preserve life. Today a secular version is well known: "I think therefore I am."

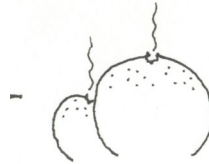
Hybridity

A way to avoid essentialism



you can be something other than what you are if you combine yourself with other things

Unfortunately your avoidance of an essentialized identity means that its absence is palpable



Performativity

How to get recognized



weird unknown thing



repetition across time and bodies



known thing. now when you reference it, people get it.

This principle also holds up for changing the meaning of a known thing, say when you reclaim an identity

more like it (Connolly 2003) comes together in a philosophical position called vitalism.

Over a century ago, vitalism began as the idea that living things were different from material things. Vital things propelled themselves and mechanical things require an input to act. There was some disagreement about whether animals were alive like humans are or mechanical like machines (Uexkull 2010). This debate persists today in the debates about instinct and learning, otherwise known as nature versus nurture. Ingold (2000) proposed that many of the things we consider instinctual in animals, like nest weaving, are actually learned in youth much as humans learn skills then too, making humans and animals more similar. Robinson and Barron (2017) just proposed a new framework using epigenetics to explain how learned activities can be passed down biologically, blurring the boundary between instinct and learning, machine and living, even more.

Now vitalism has been recast to include material and mechanical things as having their own vital potentials (whatever that may be) as part of a relational ontology (Whatmore 2006, Greenhough 2010). Vitalism can be critiqued for being unable to explain what exactly the vital force is and therefore coming off as a spiritual position (Braun 2008). I see vitalism as a specific framing of Deleuze's relational ontology, which I will get into more later. For now, we should value vitalism for helping posthumanists understand that there is no line to draw between what is human and not, and what has agency, and what does not. Understanding ourselves as human does not rely on an exclusionary definition of agency.

Non-representational theory and affect

Here, non-representational theory took up the reins and asked how identity negotiations could work if discourse is not the only way to have agency. Semiotics, language, and discourse were dominant modes of understanding culture, politics, identity, and society in the later twentieth century. Those approaches proposed that the world as we know it is constructed of signs and that it is hard to conceive of anything else (Wittgenstein 1922)). It also established a framework for critiquing how some signifiers (male, white, etc) are more valued than others (female, black, etc), and recognizing that those values are not absolutes (Derrida 1967). Performativity represents an early bridge between exclusively discursively negotiated identities and identities made otherwise, specifically those materialized through the body.

Performativity proposed an iterative system that allows unrecognized ways of being to enter social discourse (Butler 1993). An unrecognized identity could be performed repeatedly across bodies in such a way that the bodies begin citing each other as sources of meaning. This would result in the identity---and the body---coming into recognition and becoming normal. Goffman's (1956) work on our conscious presentation of self and our slip-ups can be seen as operating within the umbrella of performativity. However, it is important to realize that we don't have conscious control over our identity and how we present it. Norms materialize across bodies in ways that make it nearly impossible to deviate and stay socially connected. Performativity is a powerful tool for making sense of identity politics and is important here for incorporating embodiment. However, performativity is critiqued for being dependent on symbolic culture as a source of meaning, making it inappropriate for situations involving "nature" (Barad 2003).

Barad (2003) offers an alternative formulation of performativity which dissolves the nature-culture dualism. In Barad's ontology, things become defined by an agential cut, a moment of local resolution where something indeterminate splits into parts that mean something to each other. This meaning isn't dependent on an outside material sphere of indeterminate stuff that contrasts with a symbolic cultural sphere to come into being. One can therefore see agency appearing among any kind of thing that has become locally organized into insides and outsides. This makes it useful for dealing with more-than-representational politics. It enfranchizes bodies, all bodies, in and of themselves.

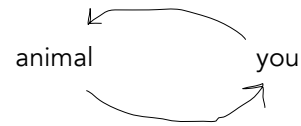
The development of performativity was joined by geographers interested in how to approach space without discourse. What could these non-representational spaces be like? Geographers turned to Deleuze and Bergson for inspiration and looked again at cities, gardens, homes, parks, media, globalization, and so on (Panelli 2010). They found spaces filled with events chained together through resonance, contagion, amplification, and modulation. They investigated triggers, urges, and intensities (see Lorimer 2005, Thrift 2004). Along with this came supposedly unruly writing styles and experimental methods aimed at entering and conveying these vibrations (Wylie 2005). The body was seen as the instrument with which one could tap into or influence non-representational politics. This was an important move. It provided an alternative to the mind as a thing that participates in politics.

A few debates about the status of the body cropped up right away. A tricky area is the difference between emotion and affect. Non-representational theory posits affect as an expressive response that runs through a body as the body moves into the future (Thrift 2008). Emotion, by contrast, is characterized as a formal nameable feeling or expression that operates in the realm of signs (Rushton 2002). Faces can express known emotions (say, irritation) to communicate canned identities (girls don't like those jokes and I'm a girl). Some have critiqued that this definition of emotion is rather narrow and that it devalues emotions (a traditionally feminine realm) as a focus of research (Thein 2005). Be this as it may, research in emotions has burgeoned because emotion seems like a close cousin to affect. Others have critiqued affect theory for being universalist and ableist (Tolia-Kelly 2006). There isn't much focus on the important roles played by social differences like race, class, gender, and so on. Nor is there leeway given for those who cannot use their bodies in these ways.

One aspect of affect that is particularly salient here is the idea that affect comes with a valence or quality associated with it. Bennett (2005) compares this to the Chinese idea of "shi," the "style, energy, propensity, trajectory, or élan inherent in a specific arrangement of things.... it is the mood or style of the open whole" (461). Bergson (2004) sources this in the process of perception, where our consciousness lays in a sense of continuity among successive moments. Interestingly for this project, he talks specifically in terms of movement: "yet these movements, regarded in themselves, are indivisibles which occupy duration, involve a before and an after, and link together the successive moments of time by a thread of variable quality which cannot be without some likeness to the continuity of our own consciousness" (202-203). Grosz (2012) explains how life then converts these qualities into useful things that enhance spaces. She believes that a geographer would attend to "geopower," the specific qualitative variation in places. This aspect of affect has not been well studied in geography because we don't have a language for dealing with qualitative aesthetic distinctions. This project aims to remedy this enrich our tool set by introducing dance's powerful movement characterization system, Laban Movement Analysis. This system will help make visible

How we relate to animals

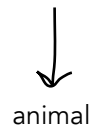
Some tidy ideal



A problem with this ideal is that you can't prevent mistreatment, in either direction. Even if mistreatment is unlikely, it is still a possibility. There are circumstances where each is similarly threatening to the other but such circumstances are rarer nowadays. Humans have a lot of leverage now.

Today's world

All of us and our human magic



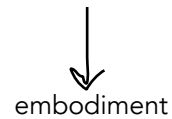
Today's world, in some detail

Total habitat infiltration
 Penning and fencing
 Managed breeding
 Landscape
 Segregation
 Legislation
 Conservation
 Animal rights activism

meat source
 pet
 zoo animal
 facing extinction
 hard to find
 contaminant,
 vermin
 dangerous
 science test animal
 labor source
 collectible

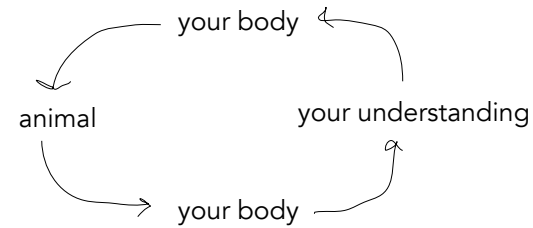
Today's world, summarized

Effects of transcendentalized politics, agriculture, human population etc



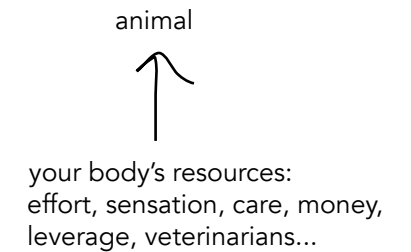
Corporeal Understanding

The idea here is that if you put the body back into the equation, you'll get less mistreatment



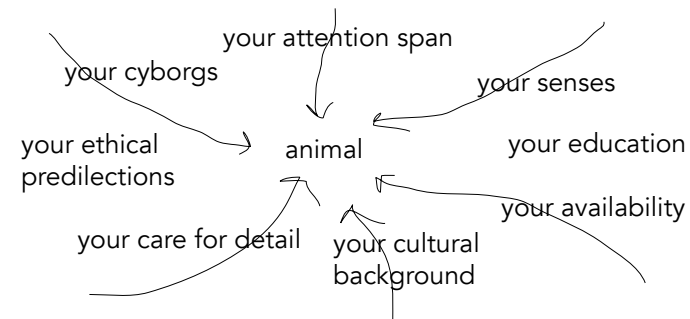
Being for the other

Here, the focus is on what we can do to make their plight less dire. A re-balancing, or a boosting, a way to channel power our health and power back to them.



Attending and availability to animals

This framing explains how we can bridge the gap between us and them. We are their go-betweens.



In each of these scenarios the animal's own affordances are moot. We're imagining parenting them as the best possible outcome. Meanwhile, the person here is connected to the human world as a way to boost the animal, but the circumstances of the human within the human economy are overlooked.

distinctions in space among bodies.

Human-animal geography

The inclusion of the body in geography as an agentic participant in spatial negotiations led to a profusion of bodies being taken into account. A particularly active area is animal geography (Buller 2014, 2015, 2016). Animals in this project offer us an opportunity to reform ourselves. While this project isn't about the animal in particular, it does deeply involve animals, and its findings can shed light on our relations with them. Geographers have been asking about how the body is involved in posthumanist conceptions of identity, and animals are a wonderful area with which to expand our understanding. Animals are unlikely to materialize their identities in exactly humanist ways. However, animals may also be able to show us that they have their own variants of what we call humanism, which would mean that our humanism has animalian foundations. If that were the case, how could we escape our own humanism?

Let us look at how animals and the human body have figured in geographic literature.

First, a note on terminology. One of the major goals of animal studies is to emphasize humanity's membership among animals. This goal has signaled a shift from using human and animal as dichotomous to talking about human animals and non-human animals. I respect the reasoning behind this shift. However, we have more-or-less reinscribed the separation in the new terminology while garbling language. The word human gets to keep its meaning of "not-animal" when used alone. And adding length, a negative particle, and a modifier with an opposite in it makes the language harder to parse. Nevertheless, using "human animal" and "nonhuman animal" strategically for emphasis is a good idea. I find it more clear though to leave human and animal alone according to their normative meanings and use "beings" or "bodies" to discuss their shared ways of life. One could even say that this way, the word human can begin to mean human animal.

Animals appeared in human geographic literature most recently as a forgotten participant in global flows and identity construction (Wolch and Emel 1995, Whatmore 2002). Studying animals in geography today can be grouped into three orientations. In the first orientation, geographers ask what animals themselves do and how they contribute to spaces. This includes dealing with nuts-and-bolts issues and facts involved in getting to know animals and recognizing them around us (Lorimer 2007, Urbanik 2012). A second orientation (Derrida 2002, Deleuze and Guattari 1987) involves using animals to help us think. This orientation sees animals as being an outside presence that challenges our conceptions of self and human. This approach tends to ignore the particularities of the animals involved, reinstating and leveraging The Animal for theory as a constitutive outside (Haraway 2007).

A third orientation in animal geography has been to combine posthumanist approaches with efforts to treat animals and the environment better. A prominent example is Haraway's recent work on response-ability (2007) which has a strong following in animal geography (Fox 2006, Power 2008, Brown and Dilley 2012, Greenhough 2012, Greenhough and Roe 2011). This orientation depends on understanding the "openness" of the human subject and putting it to work. *Openness means the ability of the body to perceive empathetically what is happening in another body.* Care, listening, learning, imagining, and attending all figure heavily in these practices. This sets up an ontology

of one subject facing and enfranchising another. There is a long debate in animals studies about when to assign personhood (Protevi 2009, Willerslev 2007) and whether it is a form of extensionism. Braidotti (2013) critiques this approach for searching for "an innate and genetically transmitted form of moral tendency" (78). The work of animal geographers has helped to refine this orientation in three ways.

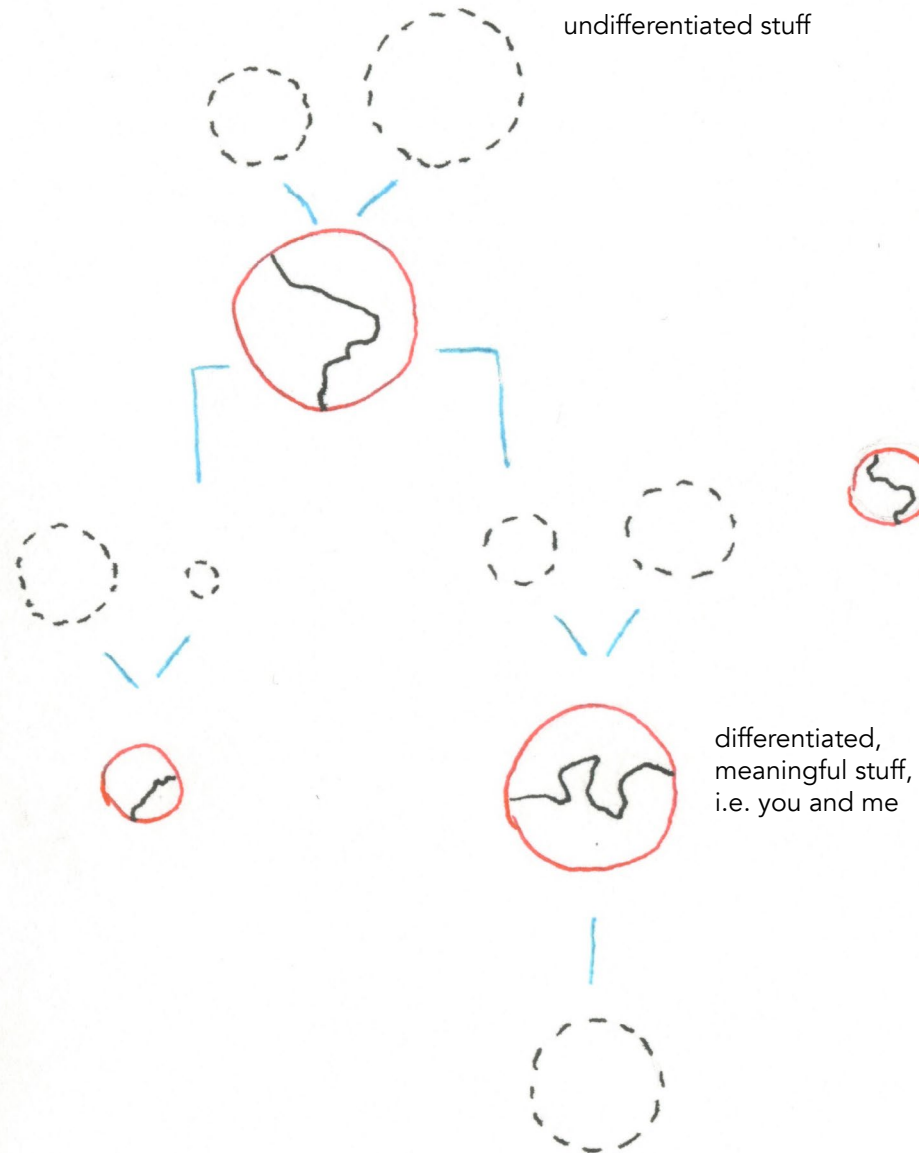
The first refinement is "*corporeal understanding.*" This approach critiques systems and rules that state how animals should be treated because they leave no wiggle room for what it might take to actually care for an animal. These authors explain that care is an embodied practice of ongoing contact with an animal that results in better outcomes for the animals. Greenhough and Roe (2011) explain that we should judge research protocols based on if they preserve our embodied capacity to respond with care to animals used as subjects, rather than on representational protocols like informed consent. They are echoing similar critiques of how human subjects are treated in pharmaceutical research. Corporeal understanding is posthumanist because it favors the open-ended and empathetic wisdom of the body in the context of rational bureaucracies. Adopting this approach would greatly enhance relations governed by bureaucracies and law. One difficulty with this approach is that while the body is involved to subvert rationalism, the body ultimately serves and translates for a fully agentic human actor.

The second refinement is "*being for the other.*" This approach asks humans to place their advantages at the disposal of animals to even out or improve the power differential between humans and animals. This is framed in geography as a project involving the human body as a mediator or caretaker. Power 2008 explains how pet-owners were "practically and emotionally extending themselves to dogs as they attempted to meet the needs and wants of their companions" (542). In Hinchliffe et al 2005, humans use their bodies to detect a threatened vole and then bring their experiences to conservation activism to protect vole habitat. In some sense, it is a reorientation of human subjectivity away from the human achievements and towards the wellbeing of an animal, similar in some ways to parenting. This approach has a popular resonance in the green movement, which enjoined consumers to use their funds to support ecologically responsible products, products whose production in some way supported threatened lives. This approach has not yet proposed what is considered a sufficient amount of being for the other. In other words, it's not clear how much one has to humble oneself to become ethical. It also suffers from placing an agentic human actor at its center. Today, however, it is an important tool for getting through our environmental cataclysm.

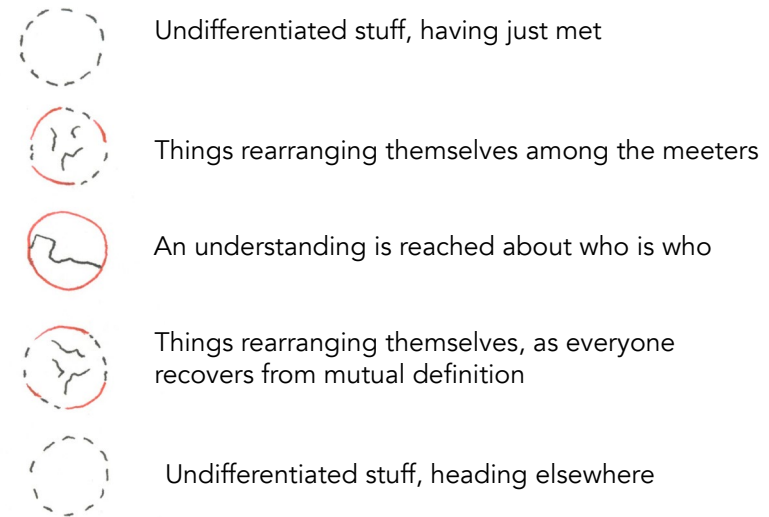
The third refinement is a component of the previous two. I call it "*attending and availability to animals.*" This approach explains how we can bridge the gap between humans and animals. Caring approaches run immediately into the problem that it is hard for humans to know what an animal wants or needs. Posthumanism offers affect as a medium common to interacting bodies, whether human or not, so geographers and others have been looking more carefully at how exchanges come about between interacting bodies. For example, Greenhough 2012 explores whether humans can intentionally get infected with and incubate the human flu virus. Participants in flu research studies did everything they could, including jumping in creeks on cold days, to attend to and encourage their viruses to flourish. It turns out to be quite tricky. A problem with this approach is that the human is seen as the go-between between animals and the world.

Relational ontology (used in assemblage theory)

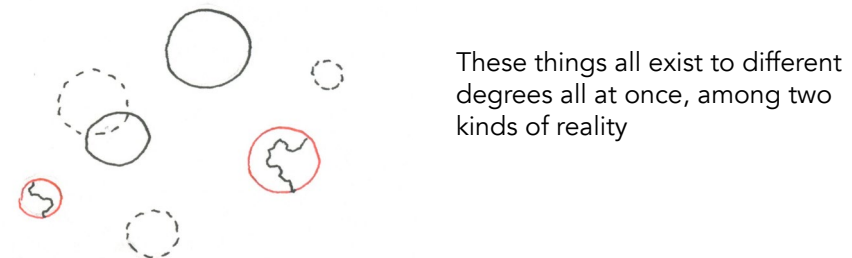
How to meet someone, and then someone else... and eventually figure out who you are, maybe.



A closer look at how relational differentiation happens, according to Barad



The real 'temporality' of the meeting, according to Deleuze



The plane of immanence. Between each differentiation, there isn't time. If there was time, we'd have to be undifferentiated between each meeting. In reality, we are always meeting things, never separated. To remove our sequential crutch, we must involve the virtual. The virtual is where things go between differentiations. It is the repository of our past differentiations and our future possible differentiations.

This work links earlier representational measurements of moral behavior with current visions of affective interaction and politics. They are important contributions for human society today given our reliance on representation and our overwhelming management of space. They emphasize the opportunities we have as embodied humans. Some authors (Power 2008, Bingham 2006, Spinney 2006) discuss the limits and lack of choice involved in these practices. However, the overall tone is of hope that the body can build a fairer future. Often, the body appears unattached, somehow always resourceful, present and available. Its location in a political economy is forgotten. Its housing of a being with its own limitations and concerns is undesired. The physical proclivities of that given body can go unnoticed. Meanwhile, the animal becomes a social dead end reliant on the human body's ability to stay solvent in human society. The animals are presumed to be talking to us (Despret 2016) now that we are listening to them, which makes it harder to understand when they are not. Taken to an extreme, this human body has replaced the human mind as an infinite resource whose properties can be turned to bringing animals into the human fold. This resurgence of human exceptionalism in animal studies is concerning, especially with regard to the body as a new locus of human subjectivity.

Animals in embodied assemblages

A different group of geographers takes another approach to animals by employing assemblage theory more overtly. These studies include those like Lulka (2004) who advocate heartily for the animals and their potentials in constraining human contexts. These studies use relational ontologies and embodiment to show how certain assemblages cut through humanist structures. In them, the animals and humans each have certain advantages and disadvantages that afford certain outcomes and responsibilities. One can learn a lot about how to picture humans among others. My work is inspired by the fairness and complexity in these approaches. Here, the nature of the body as a player among others is more visible, which should make the construction of humanist and posthumanist identities more visible as well. Each is constructed in an environmentally and socially situated context that constrains embodiment. Three areas stand out: physiology, training, and rhythm.

Assemblage theory has helped us delve into how we and others are environmentally situated and constructed. Ethology, the study of behavior in environmental context, gives us an understanding of an organism's physiological limitations. Lorimer (2007) turns ethology around from its usual focus on animals and describes human perceptual constraints. He shows how variables like our dependence on color vision and our daytime activity period affect which animals we find detectable and therefore charismatic. Bear (2011) attends to an octopus for a couple of years at an aquarium, and upon finding out that the octopus had died and been replaced, learned that humans were not adept at distinguishing individual octopi and had not realized the switch. Bear's case study shows us the boundaries of our ethology. These boundaries break up the worlds available to organisms. Uexkull (2010) shows how the world is not a singular place, but constituted of overlapping umwelts (worlds), each built by each organism's perceptual capacity. This prompts the question of what happens when one's perception is extended by technology. As a cyborg, how does one's openness to the world change, and therefore one's ability to act in it? Barratt (2011) shows how feet, climbing shoes, and indoor climbing walls extend the body's ability to explore vertical spaces, but also restrict its ability to climb outside, or sense and cope with rock textures. Similarly, riding a bike up a mountain changes one's perception of affordances, as vision becomes compromised by effort, and need for the relief of

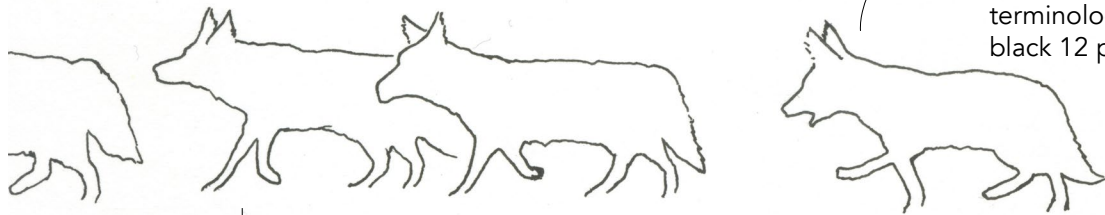
shade increases (Spinney 2006). The meaning of the environment is not fixed ahead of time; rather, its affordances become clear through the hybrid body that finds itself there. Here we have seen how our physical dependence on the environment, as seen through our ethology, affordances, and related assemblages, is a major player in the possibilities and limitations of human responsiveness. It will be important to take these issues into account when we challenge our humanism.

Assemblages are also always on the move, and geographers have found that with animals, we are always in training. Dogs are a major focus of work on training (Brown and Dilley 2012, Fox 2006, Power 2008), but also horses (Acton 2014) and dolphins (Taylor and Carter 2013). All of these authors expect the humans involved to also become trained, because training is a way to ensure certain outcomes in a relationship. Brown and Dilley (2012) discuss the limits of responsiveness, saying "Our study suggests that responsible practice is not only a case study of enabling animals to be articulate, but for humans to cultivate ways of co-knowing (in this case knowing-each-other-in-the-outdoors) that enable response in a timely and geographically-attuned manner to such articulations" (42). They show how distance, distractions, and environmental demands can interrupt dog and human expectations about responsiveness. Power (2008) also discusses human adaptation. She says, "both people and dogs were altered by the experience of cohabitation. ... People found themselves, their routines, and homes shaped and pulled by the particular preferences, behaviors and activities of the dog(s) with whom they lived" (552). However, some new dog owners found themselves pulled to such an extent that they seriously considered giving up their dog. These studies show what limits are like in relationships with domesticated animals. More on the wild side, Bear and Eden (2012) describe how anglers attempt to become-fish through the ethological boundary of water. Fish present a different challenge from living with a dog, and so anglers' restraints become visible through how they reject relating to certain fish based on their interests in competitive fishing, pleasure fishing, or trophy fishing. Bear and Eden argue that it is "useful to demonstrate how human difference also matters in dealing with fish difference" (340). Training for humans shows the limits of our flexibility, albeit that our flexibility seems rather wide compared to many living things. Our dreams of becoming posthuman will need to be informed by these findings.

Studying training brings out another important issue: rhythm and withdrawal. Rhythm implies an on and an off time, and is important in two ways. One is in lining up these periods so they resonate through mutual attention (Ingold 2000, 199) as Bear and Eden (2011) say, "rhythmic engagements and bodily recognitions demonstrate a complex process of becoming-fish for anglers, not simply by imitating the fish but by sharing their rhythms, engaging with their patterns, and encouraging them to adapt to new foods" (343). Rhythm here becomes a form of ecological relation. Rhythm can also be a framework for withdrawal, or times when contact is not sought. Harrison (2009), in defense of sleep as a kind of non-practice, nails this point when he says, "the underlying significance of practice emerges not simply from its 'patterned ongoingness' but from the existential fact that we, as corporeal existents, disengage and engage, and will disengage again, every morning and evening" (995). And even every few minutes or hours if need be. Plumwood's (1993) critique of deep ecology comes to mind here when she says that if one merges with another completely, one is unable to care for them because difference is erased. Thus proximity and distance are both part of creating a meaningful or caring relationship (Rautio 2013, Riley 2011). While connection is an important aspect of training, separation is too, and it comes folded right into the relationship.



I think my work would be best expressed in many pages of paragraphs with topic sentences, esoteric terminology, and black 12 point font.



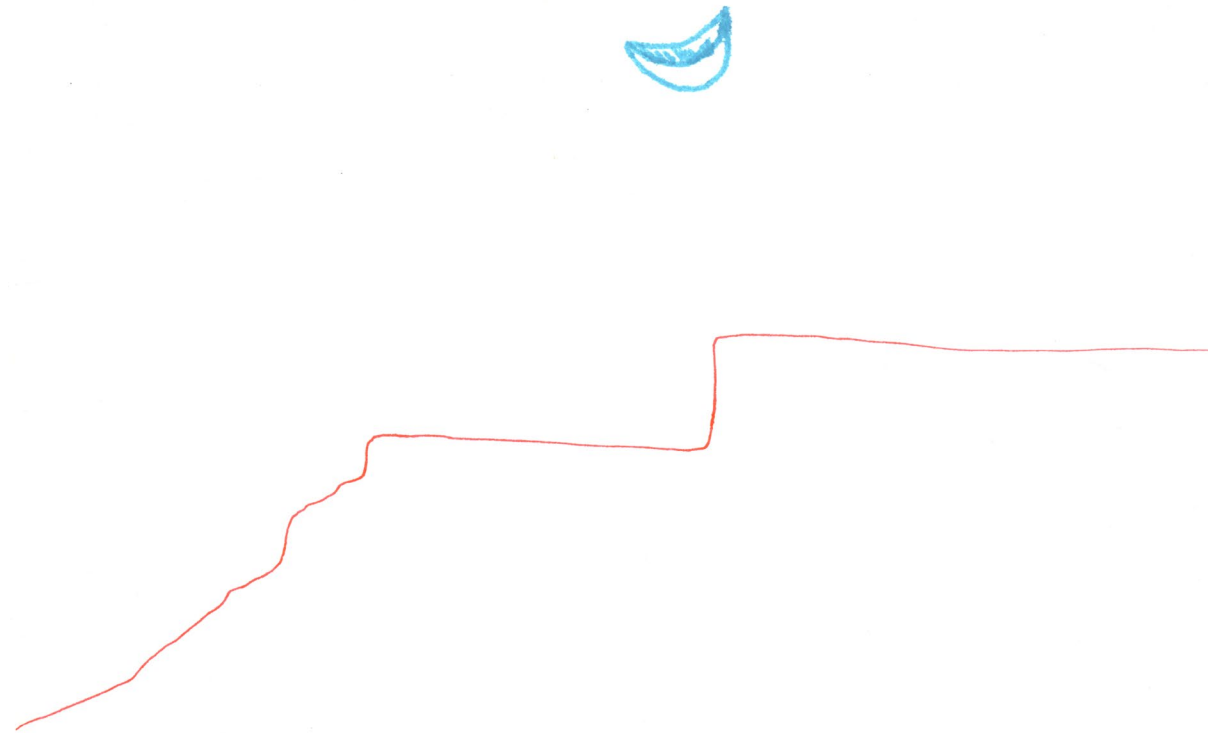
Oh, why is that?



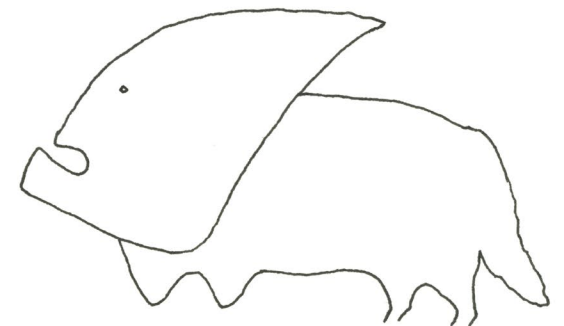
Because it allows for broad synthesis of ideas, efficiency of expression, is culturally appropriate for me, and speaks to one of my key audiences.



OK, that sounds good. But you should defend that choice with an evening of howling first.



Aaaa woooooooooo!



Based on these efforts to elucidate human-animal assemblages in embodied contexts, we can formulate some suggestions for further work in posthumanist geography.

- The way other things make demands on us is important. In particular, edge cases are important, when humans are pushed past their comfort zone, and potentially disempowered, or when other organisms are thriving.
- Complete disempowerment of one side of a relation is only occasionally remarked on. What happens in these cases seems extremely important to informed practice.
- The way withdrawal and closedness happen needs more attention. What it does, and how to understand power relationally at these moments is not clear.
- Understanding one's own limitations as a practitioner needs to be clearer in methods sections.
- How one ends up in a situation where one can or cannot attend to others is important to understanding the limitations of that attention. Embodiment needs to remain linked to other sites.
- Study currently focuses on the British Isles and former British colonies. Extending citation networks to be more inclusive of authors and case studies from other locations would be wise.

If these are scenarios in which we find the posthuman, among the assemblages, they may also be scenarios where we find the human as well. We've seen the human body become entangled with others and transform, and that that relationship is not without variables. This work undermines the idea that the human has the option and the resources to become posthuman at will. It bases its insights on how bodies interact. But it does not search for the things about bodies that contribute their independence from each other. Nor does it ask how the body reacts when pushed passed homeostasis, as might happen when supporting another. The questions I ask are aimed at addressing these holes in the literature. Recall that the hypotheses guiding this research are:

(a) *Animals can challenge us to change our ways*

(b) *We can listen to a limited extent*

These questions should probe the edges of posthumanism. They test whether humanism and posthumanism are mutually exclusive, and they should reveal more about how embodiment is implicated in relational frameworks. I will be introducing a new method called Laban Movement Analysis (LMA) for this work because it should make the ephemeral moments of embodied identity construction visible in a rigorous and spatial way. It offers a formal, precise vocabulary for embodied sensation. As of yet, it has not been combined with geography and affect to bring the full geopolitics of embodied space into view. Geographers are good at seeing how power dynamics play across larger spaces like farms, households, museums, and wildernesses. The spaces generated by moving, relating bodies are fleeting by comparison. As Cloke and Jones (2004) point out, "ANT does not recognize how these coming together[sic] can have qualities or have qualities brought to them" (327). Our sensations in these spaces are, for now, the best guides we have to what is happening within them. Improving our dexterity with describing these sensations, whether from

within the event, or outside of it, should bring the dynamics of these momentary spaces more into view. It may show that our body is not only enrolled in posthumanist relations.

My aim is to substantiate the story of our co-constitution with animals in such a way that it is hard to impose humanist ideals on the people involved and the outcomes that are sought. I am hoping to address four things: (1) what humans are capable of on the edge of their existence, (2) how the body is involved in humanist and posthumanist identity construction, (3) our methodological imprecision in dealing with lived qualities, and (4) our difficulty in maintaining the vision of ourselves as also interconnected members of the animal world. This last goal I will address now.

Seeing the Invisible

I join other geographers in introducing new methods in geography to learn more about our embodied lives. In searching to train and hone our perceptual skills for non-verbal research, McCormack (2003) suggests that Dance Movement Therapy can help one cultivate an affective sensibility. This means, however, that someone involved in such training would become trained in responding to the affects of that space, and as such, is perfect for an investigation of Dance Movement Therapy itself. Instead of training for openness generically, many researchers have turned to using deep participation in the relational skill set of interest (Spinney 2006, Willerslev 2007, Acton 2014, Watson and Huntington 2008, Wylie 2005). These give us a perspective not heard from before in the literature, although Risan (2005) doubts our abilities to move past our anthropomorphic gaze. They are complemented by video (Brown and Dilley 2012), photography (Power 2008), interviewing in context (Spinney 2006), and long term, repeated group interviewing (Riley 2009). Lorimer (2006) additionally brings up an interesting possible visual method when he discusses how Edwin the reindeer herder drew and photographed his reindeer to become more acquainted with them. Similarly, Rautio (2013) investigates letter writing as a form of environmental bond. Many of these methods challenge approaches to communicating one's research, and have prompted shifts to narrative form (Wylie 2005, Spinney 2005, Lorimer 2006, Hinchliffe et al 2005, Watson and Huntington 2008, Bear 2011). Many also include visual imagery in their papers, but journals are not prepared to handle presentation of such materials (e.g. Lorimer 2007, Power 2008). I would suggest more reflexive acknowledgment of the limitations to these new methodologies. However, I would suggest overall more use of them, as interviewing is still a primary form of investigation.

If we are to understand ourselves as posthuman, we need to connect our probable posthuman condition with our lives as we experience them. Many of the implicit assumptions we make as we live our day to day lives, such as being able to make free choices, are necessary cognitive simplifications that also support the humanist framing of who we are. Training ourselves to interact in spite of those ingrained assumptions as interconnected beings could mean building an alternative story about what it means to be human. While much work has already gone into creating such stories, this project embarks in a new direction by visualizing them in maps. This requires borrowing methods from cartography.

This project first introduces an analytical movement system used in dance. Second, it embraces geovisualization as an important tool for exploring and communicating posthumanist results. Combined, these results make a strong case about the role of bodies in the coproduction of agency.

Visualizing affect

The tricky ontological status of what I'm mapping (it's balancing between the virtual and the material) make it hard to access. Typically you go by proxy (machines that measure sweat to calculate arousal in the sympathetic nervous system). I'm not convinced that what I have (movement) is actually a proxy. But whether it is or not, it's not always clear exactly where it is. This is kind of a mess for cartography, since cartography is pretty invested in exact locations. One way to address this is to use wavy, multiple, semitransparent lines to imply approximation. The other way to deal with it is to remember that if what I'm drawing is in the virtual, then it is only one possibility among many similar variations, and that I'm highlighting this possibility (and its similar variations) against something significantly different, not against something only slightly different. Therefore, exactness is relative to my comparative material, not to Cartesian space.

Storytelling space

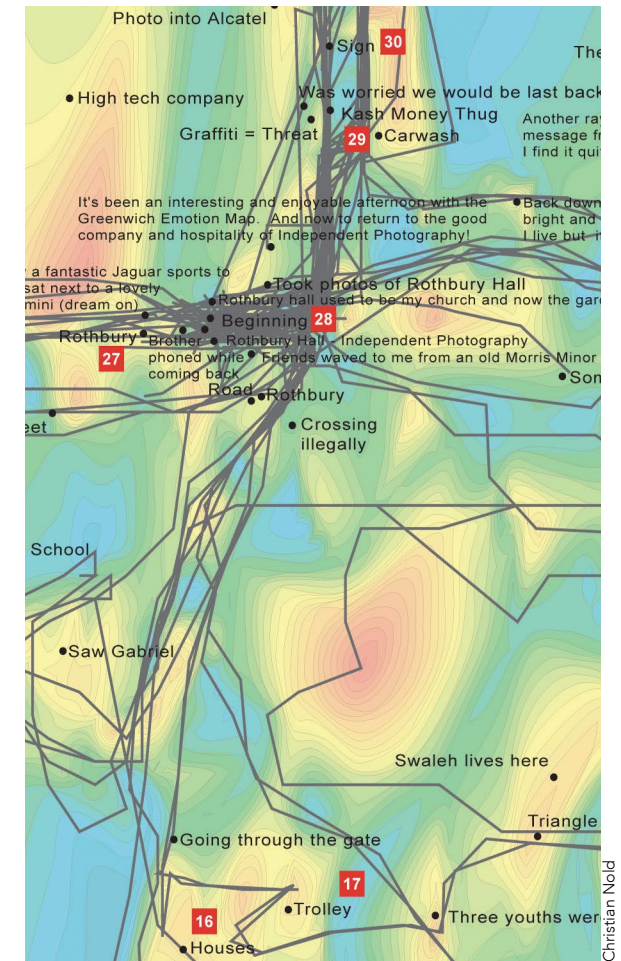
First person movement narratives can be really informative. Look at how the Beast takes a corner.



Aggregating affect

This is from Nold's *Emotional Cartography* (2009). He invented a device that uses galvanic skin response to detect arousal while walking around. The grey lines are paths participants took through the city. He asked the participants to comment on their walk, so qualitative information is symbolized with words.

He used an interpolated surface between data points from different people collected at different times, annotated with participant's notes. While I like the interpolated surface because it implies that there is emotion everywhere, I'm not convinced that one can infer that the spaces with no data are wholly characterized by their neighbors. Nold's other maps use proportional symbols, which seems like a better approach.



Animal geographers hope that we can use this world instrumentally. To do that, we would need to be able to learn, share, imagine, and ultimately, live through these worlds. My project's primary methodology checks if relational ontologies can be lived through by finding out how they are practiced in unexamined daily life. Cartography, as a secondary methodology, is another check, to see how it might be possible to live through these frameworks intentionally. If my findings cannot be pictured, then they may be less useful than we think. If we cannot picture the details of ourselves as ethical embodied actors or as co-constituted actors, how could we construct a posthuman identity?

There are earlier arguments about the value of non-traditional scholarship and thought. A famous one is that the only way to get away from old knowledge is to get away from old vocabulary. Sally Marston reiterated this point at the annual meeting of the Association of American Geographers (AAG) in 2012 (Marston 2012). The ideas worth working on are so new that they are at or beyond the limits of known expression. This idea sits behind the inventive and often impenetrable quality and quantity of writing in post-structuralist work. For some reason, social thinkers seem to be literary people and they do not see a similar horizon of knowledge between words and other mediums like drawing. As a result, alternative formats are excluded from mainstream thought by not appearing in high impact journals, by being relegated to hobbies or art departments by academics themselves, and by not counting towards professional publication expectations, though the new journal *Geohumanities* is an encouraging development.

Another reason for non-traditional approaches is defamiliarization. While this has also been used in defense of opaque writing, it merits some attention. Defamiliarization is the idea that you will only see something new if you take a familiar thing and make it look odd. I use the transition between a verbal description of an idea and a visual diagram of it, as both reader and producer, as Ingold (2000) provides for in his work, as a check to make sure I've understood the idea. I find this process usually clarifies the idea as well.

Logocentrism in theory

The logocentrism of social theory has long irritated me. While new ideas may in and of themselves be difficult to express, at this point many of these ideas are no longer new. Their ongoing unintelligibility to students and the broader public is unfair. Many of these theories have inspired or explained significant changes in social fabric over the last few decades, affecting almost everyone. Yet the wordplay that strong authors used has long trickled down into the profession as a whole, producing an exclusionary zone around great ideas (Chandler 2002, Davies 2009). Initiates find this zone to be overwhelming and depersonalizing, while others have critiqued the profession as having features of a cult (Ruddick 2001). The profession as a whole is losing important contributions from those who can never find a home in it (such as marginalized groups, see Four Arrows 2008). While some successfully write for public audiences, there are many ways to engage in our deeply visual culture. In this context, using non-verbal formats is a move in defiance of the selfishness of social theory.

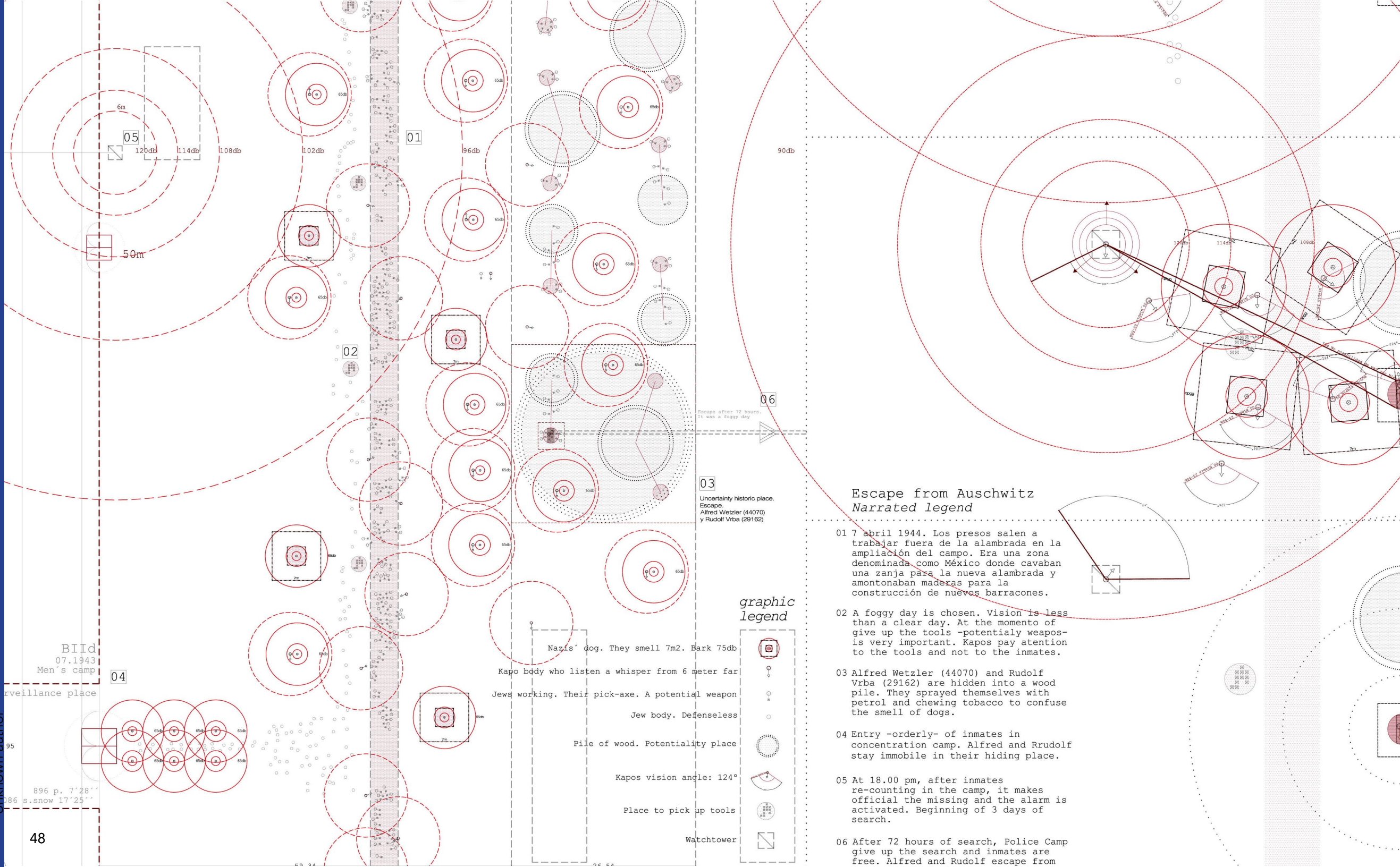
Logocentrism is also blocking resonance between wisdom practices and academic knowledge. Many wisdom traditions such as t'ai chi are based in habits, practices, and training of the body and mind. Geography today has the tools to make sense of these practices in verbal form. Geography

today also recognizes that these alternative knowledges are valuable. However, verbally presenting and explaining these practices is a shadow of the actual practice. Geographers could become an unusual and compelling presence in academia for maintaining knowledges in alternative forms. This is particularly important for human geography because of our focus on exclusion and erasure. Marks (2000) has shown how other senses are brought to bear implicitly in art by excluded groups to enunciate their identities. If one cannot have a meaningful effect in geography without using words as professional vehicles, our voices will (and have) become monotonous. We need to establish a history of thought in other forms because thought itself has many forms.

Combine the above problems with the developing cultures of disrespect for knowledge cultures and the situation becomes dire for academics. Universities and research appear at risk with shrinking state and national funding and multiple political threats (Leshner 2015). Pressures to remain relevant and produce results are squeezing creativity, sociality, equality, and happenstance out of university life, even as these are recognized as important aspects of intellectual work (Austin 2013). There is fear that the humanities, social and theoretical sciences are irrelevant in the eyes of those providing tuition and grants, and to the public at large (Braidotti 2013). Meanwhile, increasing numbers attend college seeking to enter the lucrative information economy, with mixed success (Carey 2015). Those that participate in our meritocracy value intelligence and culture (The Economist 2015) and have created a cutting edge public sphere that feels relevant but is under threat. The role academics play in this sphere should be more obvious. If we want our expertise to be valued, it is incumbent upon us as academics to become better communicators. Making research entertaining and accessible through design and storytelling is key.

In this project, the main theoretical foundation is assemblage theory, which is reliant on a relational ontology. Relational ontologies are extremely awkward to write with because our most straightforward grammatical structure, active voice, relies on a clear naming of the agent as the subject of the verb. Describing changes that come about among and through grammatical subjects is a baffling task that tends to water down the full force of the argument and stymie the public. Similarly, assemblage theory structures its ontology on time and change, which can be difficult to deal with in paragraph form. The substance of phenomenal life usually falls through the cracks. Combine this with the academic professional propensities I just discussed, and it is hard to name an excursion into assemblage theory in a non-exclusionary form.

The format here represents an attempt through two visual devices to guide someone through an understanding of the coproduction of human subjectivity. Visuals are not in and of themselves a clean solution. They are an alternative to verbal strategies that benefit from being more memorable and typically more accessible. Visual mediums like comics, which I use here, usually also require a sort of subject and verb: a drawing of a person doing something. This is much the same problem as verbal communication. As such, I begin with comics and popular figures because they help make the entry into movement and Deleuzian events smoother. I present a different scenario on each page to make multiple views of the same process visible at once. Through this storytelling, I can first present apparent subjects and then show the relations that constitute them. I can also build up a family of associations (Sousanis 2015) and perspectives that will later deliver us into more foreign terrain.



01

02

03

04

05

06

03
 Uncertainty historic place.
 Escape.
 Alfred Wetzler (44070)
 y Rudolf Vrba (29162)

06
 Escape after 72 hours.
 It was a foggy day

graphic
 legend

- Nazis' dog. They smell 7m2. Bark 75db
- Kapo body who listen a whisper from 6 meter far
- Jews working. Their pick-axe. A potential weapon
- Jew body. Defenseless
- Pile of wood. Potentiality place
- Kapos vision angle: 124°
- Place to pick up tools
- Watchtower

Escape from Auschwitz
 Narrated legend

- 01 7 abril 1944. Los presos salen a trabajar fuera de la alambrada en la ampliación del campo. Era una zona denominada como México donde cavaban una zanja para la nueva alambrada y amontonaban maderas para la construcción de nuevos barracones.
- 02 A foggy day is chosen. Vision is less than a clear day. At the momento of give up the tools -potentially weapons- is very important. Kapos pay attention to the tools and not to the inmates.
- 03 Alfred Wetzler (44070) and Rudolf Vrba (29162) are hidden into a wood pile. They sprayed themselves with petrol and chewing tobacco to confuse the smell of dogs.
- 04 Entry -orderly- of inmates in concentration camp. Alfred and Rudolf stay immobile in their hiding place.
- 05 At 18.00 pm, after inmates re-counting in the camp, it makes official the missing and the alarm is activated. Beginning of 3 days of search.
- 06 After 72 hours of search, Police Camp give up the search and inmates are free. Alfred and Rudolf escape from

BIId
 07.1943
 Men's camp
 surveillance place

896 p. 7'28"
 086 s. snow 17'25"

Anthropomorphism

One problem with discussing animals and their actions generally is the spectre of anthropomorphism. One is inevitably putting words in their mouths. This is especially true in more narrative modes of communication such as those being introduced here.

Anthropomorphism is a perspective where animals are seen as having human characteristics, like emotions, wills, and personhood, which is accomplished through projection by a human causing erasure of differences. It is a self-indulgent human practice (Braddock and Irmischer 2006). As Braddock and Irmischer comment, "Anthropomorphic thinking becomes problematic when it stunts our appreciation of the full complexity of nature and, to paraphrase Tom Tyler, when it restricts the fullness of what we can think about ourselves and other animals" (64, 2006). This definition has been complicated by animal geography, although that is not to say that this form of anthropomorphism doesn't exist or isn't a problem.

The trouble with this understanding of anthropomorphism is that it implies that there is some sort of objective perspective in which the animal can be recognized for itself, and it points at humans as the only actor in the relation. Rautio (2013) explains, "humans as a species cannot escape their biophysical conditions, and thus experience and communicate the world as any other species but the one they necessarily are" (447). While one can get closer or further from erasing the other, no animal can assume an objective perspective regarding another. Greenhough and Roe (2011) even suggest that careful anthropomorphism is useful in what they call "critical anthropomorphism." It's when one approaches an animal using one's intuitions about what is best for oneself and other people, adjusted for particularities of the species like behavior or physiology (54-55). Both Lorimer (2007) and Despret (2016) have cautioned that seeking an objective standpoint can go too far. Lorimer (2007) characterizes it as when people who worry they'll be accused of sentimentality avoid cute understandings of animals. He considers this also a kind of blindness. He adds that is also important to remember that animals can also erase human presence through "the breakdown of meaning that results from being confronted and overwhelmed by the other" (920). Hobson (2007) calls this reversal of anthropomorphism "zoocentrism" to encompass its more relational framing and its basis on the particulars of the body.

With this debate in mind, it is no longer clear that all anthropomorphism is necessarily to be avoided. Lorimer (2010) looks at anthropomorphisms of elephants in popular media and finds erasure in their depictions in most genres. My work is different from this because it combines genres and scales, so that neither the animals nor the humans are visible from only one angle. Anthropomorphizing the

This is the only map I've found specifically mapping affect. Each circle is drawn around a guard or a dog to show the distance within which they might hear, see, or smell an escapee from the concentration camp.

animals is not my goal in and of itself, and in many cases is not a useful tool for communicating my results. However, I wanted to include narrative and fiction-like genres (comics) because there are anthropomorphisms that set up certain shared relations between animals and humans. As Fox (2006) records, "Attributing animals with feelings such as love or grief recognizes their subjectivity and reciprocal role in the pet-human relationship, rather than basing their actions purely on instinctual behaviors or abstract attachment to the human who feeds them or whom they regard as a superior member of the 'pack'" (532). In dealing with wild animals, Willerslev (2007) and Warkentin (2010) echo that anthropomorphism can be a recognition of subjectivity or personhood within a shared relation. In some indigenous cultures, this takes the form of perspectivalism, where every creature is considered to have a human dimension that appears when they look at themselves (i.e. snakes think of snakes as human, Homo sapiens think of Homo sapiens as human) and a corporeal dimension that only appears to those with differing corporeal dimensions (that is, Homo sapiens think of snakes as snakes, and snakes think of Homo sapiens as Homo sapiens) (Vivieros de Castro 2004). Giving animals voices can be a gesture to alternative definitions of anthropomorphism or to these alternative cosmologies. It is from these perspectives that I have included human-like animals in my narrative. I'm concerned that if animals are not obviously consulted, it may appear as if they weren't consulted at all. And so the comics make presumptions about animal speech in order to include them as active participants in a narrative I'm making that concerns them.

Mapping affect

My second visual device comes after I present my initial results. I've invented a visual method drawing on cartography to remove the visual subjects from the drawing. This method replaces the implicit structure of the subject being the source of affect with a focus on the affects themselves. Affects materialize for the reader as if they were perceivable subjects in their own right. One can see them filling space and crossing boundaries in a way that could only be vaguely imagined.

Mapping affect has been attempted before, although not often (see sidebars for details). Three examples present themselves. First, Laban himself was trained in art and drew many pictures of movement sequences (see Moore 2010). Second, Nold (2009) mapped galvanic skin response (stress) as people walked around San Francisco, and then used his data to make an interpolated surface. Third, in an unattributed work, someone mapped the spaces where escaping prisoners would come into range of guards' notice. These techniques are developing as definitions, measurement, analysis, and symbolization still vary considerably from author to author.

My visual contribution across the whole of the dissertation will also ultimately be experimental. Previous contributions with mixed formats in geography includes only a few works. Turnbull's (1989) beautiful "Maps are Territories" and Solnit's (2010) "Infinite City" use both verbal and visual tracks to make their points. Also notable is "Making Maps, a Visual Guide to Map Design for GIS" (Krygier & Wood 2005). Outside of cartography, Han wrote a comic on her dissertation research on Korean missionaries at a 24 hr comic event in 2006. Paglen's dissertation (and book, 2010) tracks secret government operations with long range art photography. More recently, I published a comic on my masters research on Russian Animation (Bennett 2014), and Heather Rosenfeld's



Isn't this a nice cactus?

comic on the University of Wisconsin-Madison Geography Department's unwelcoming culture has become a beacon for current and former students (Rosenfeld 2014). This year, a comic dissertation in chemistry from University of Wisconsin-Madison made a big splash (Ferguson 2015). These works vary considerably in style and the authors only rarely have substantial training in visual arts. Examples and arguments for them are mostly found in the humanities and fine arts (Four Arrows 2008, Sousanis 2015, Ingold 2011, Dalgleish & Powell 2015, Zak 2013).

I'm making maps, drawings, comics, poems, and more because I'm concerned that there is a new humanism afoot with regards to the body. While the narrative that we are special used to highlight how we were special in good ways, it now is accompanied by how we are special in bad ways. Today, extinction, severe inequality, and the looming unknowns of climate change bode for the worse. Many are searching for explanations for our unusual impact on the world, and impact that threatens ourselves, our societies, and everyone else. Not only are the hopes that we can use our uniqueness to avert catastrophe part of human exceptionalism, as Anderson (2014, 14) describes them. So too are the accompanying guilt and horror at our capacity for destruction. While comparative arguments can be made about other species' destructiveness and global influence, and about how any one of our advantages are not really unique, it is clear that we're having a perceptible and unwelcome impact. In this context, it is reasonable to suspect that there is something especially wrong about us now.

Folded deep into this idea is the urge to become not ourselves on multiple scales. This urge undergirds the green economy's call to consumers to curb their impact through socially aware purchasing. It informs calls to consume ancient grains and a vegetarian or vegan diet. It appears in critiques of the bureaucracies handling research subjects, both human and animal. These efforts each take on a certain aspect of the proud and powerful humanist project as it is embodied today in neoliberalism. Together, they target the idea that the humanist body, whether a body politic, a social body, or an organic body, must no longer expand to fill every space, every niche, and every social relation. They then propose to undo the damage.

My research picks just one instance of this project and asks if it is possible. Can the organic social embodied person—the body that is the metaphor for all others—take on a relation that undermines its own humanistic tendencies? Can the body prevent erasure through listening, attending, amplifying, and caring? Does the body subvert its own projects and give up its own agendas for the sakes of others? At what point does the body fail to redirect its own energies to the support of others?

Addressing these questions about human subjectivity will have implications for how we approach catastrophic change and social disasters. If we indeed cannot retract and attend on a personal scale, then we need to change course and formulate a different way of undermining humanism. If we indeed do not seem to be who we think we are, particularly in terms of our deafness and expansionism, we may want to continue working against humanism primarily as a cultural condition rather than an ontological one. If, however, we turn out to be something else entirely, it may be wise to look at it more deeply.









Absolute view

These soccer players (Mjondalen vs Sandefjord) were equipped with goggles that only show them the view from overhead.

Substituting absolute space for relational space slows the game.



Relative view

The player closest to the camera with his arms up is standing just out of view in the shot above .



Definitions

Movement, space and identity

Embodied movement forms the core of this research, so it would be wise to introduce some concepts regarding how we will approach it here. Movement itself is traditionally understood as a translation from one point to another point. Movement occurs when material things change position in space. When people speak of movement in geography broadly, this is usually the kind of movement they have in mind. I will call this kind of movement “*migration*,” “*travel*,” or “*locomotion*” (Lulka 2004, Spinney 2006). Thus, generally, migration is a change in position. Specifically for this project, *migration* will usually refer to a body’s translation across spaces larger than its reach (here’s a take on *animal-human migration*).

In migration, space is seen as a stable, separate theater for action. Space is neither created nor affected by movement, and it is always there in the background. Movement derives its nature from space. I will call this kind of space *absolute space* (Peuquet 1994).

In this project, movement has ontological equality with space. Movement creates space. Space is not a given. This form of space, or *relational space*, results from things relating to each other (Peuquet 1994). Things are relationally defined when they are “identifiable only in and through the relationships into which they enter” (Willerslev 2007; 72). As a body moves through an environment, the relationships it enters and exits with the ground, the foliage, the light, and other things reveal certain spatial characteristics, like distance, occlusion, affordances, expression, and so on, that can only be appreciated as they relate to the body (Lorimer 2007, Uexkull 2010, Noe 2006, Spinney 2006, Simonson 2012, and an interesting demonstration with soccer players). *Relational space is space that materializes between relating things with properties specific to that relationship*. One could claim that all relational space occurs within a theater of absolute space, but that is unnecessary, since relational space is just as good at describing the world in all its complexity.

There are some ramifications of seeing space and movement as linked in this way. Movement is

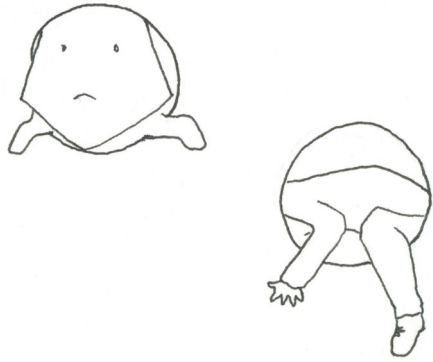
often used for expression in the arts. Movement has been set up as medium through which ideas or emotions are communicated to a watching audience (Martin 1946 (in Copeland 1983), Graham [1998] 1952, MacEachran 1995). The ideas conveyed are considered to exist independently of the movement, and movement represents an opportunity to embody them. Expressive talent in the fine arts is seen as magical skill in bridging the gap between ideas and materiality, and an artist’s insight is seen as originating mysteriously from inside her. The dance world has challenged this approach (Banes 2003a, Banes 2003b), although it is still a popularly held assumption structuring many people’s approach to dance.

The view of movement as an artistic medium masks the relationships between the mover, her environment, and her movements (Ingold 2000, Ingold 2011). Daily life would be nearly impossible without movement, making it an important ecological articulation (Buttimer and Seamon 1980, Simonson 2012). Our movements emerge from the world, engage with the world, and create the world anew. This does not mean that movement is only functional and not expressive. It means that function and expression can be the same thing (Deleuze & Guattari 1988, Grosz 2012, Thrift 2008). Expression is *the marks left behind by one’s presence somewhere*. This way, animals can be seen as dancers. Their movements need not become unrelated to their immediate context to become ‘art.’ There is no reason that humans can’t take the same path to delight in contextualized movement. Seeing movement this way enfranchises movement as a tool for understanding ourselves as ecological beings.

Another aspect of seeing space and movement as intertwined is that movement becomes an important practice for the construction and maintenance of self (Butler 1993, Goffman 1956). Much like in the arts, movement can be seen as a way to express one’s identity. This separates the construction of identity from its enactment, again turning movement into a medium. Mediums are supposedly invisible participants in an exchange of information. Movement in this scenario adds nothing to one’s identity that couldn’t be conveyed in some other way, making the space that the movements occur in irrelevant. When space and movement are seen relationally, identity and selfhood are constituted by both movement and space—neither is relegated to the background.

Nested territories around the body

Some places worth knowing about



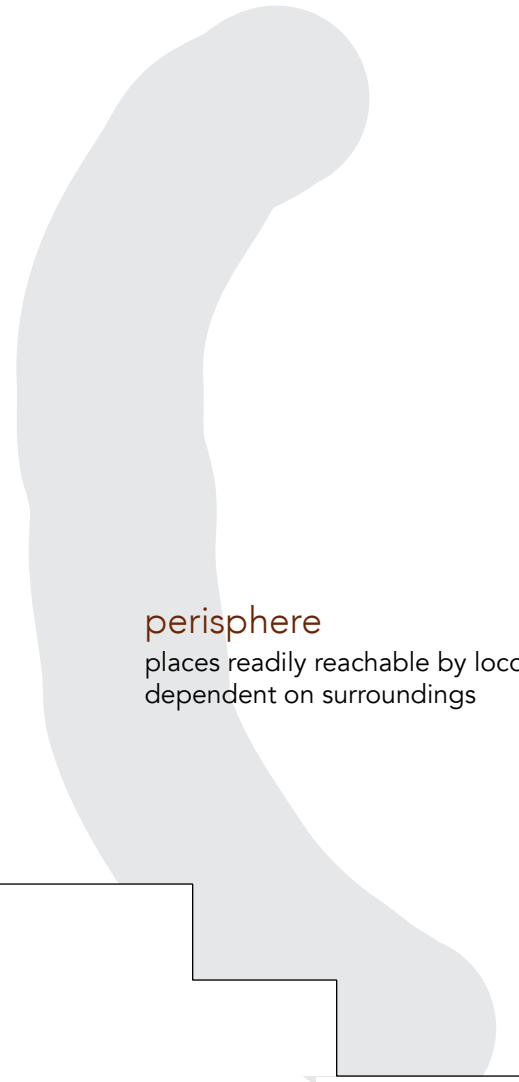
Exploring the somatosphere

Where you think you are in your own body is not stable. Serres (1985/2008) has a nice thought experiment about this. Imagine you're stuck in a sinking ship and you are partway out of the little round escape hatch in your cabin. You're trying to pull your hips through the window but they keep getting stuck. Meanwhile, your head, arms, and torso hanging out the window keep getting walloped by the waves. If only your hips would budge!

Where are you now? It's arguable that the 'you' you're focused on is in your hips. The rest of you will only survive if your hips come free. You may also be located in your face when it gets slapped with salt water or in your arms, straining to push you out.

Suddenly your hips slide through, only for your shoe to get caught on something inside the ship. Now your focus is on freeing your foot from your shoe. You'd be happy to sacrifice your whole foot, but for some reason it is inextricably attached to you and the shoe.

Now, are you in your foot?



perisphere

places readily reachable by locomotion,
dependent on surroundings

kinesphere

envelopes the body from
the skin to places within
reach

far kinesphere

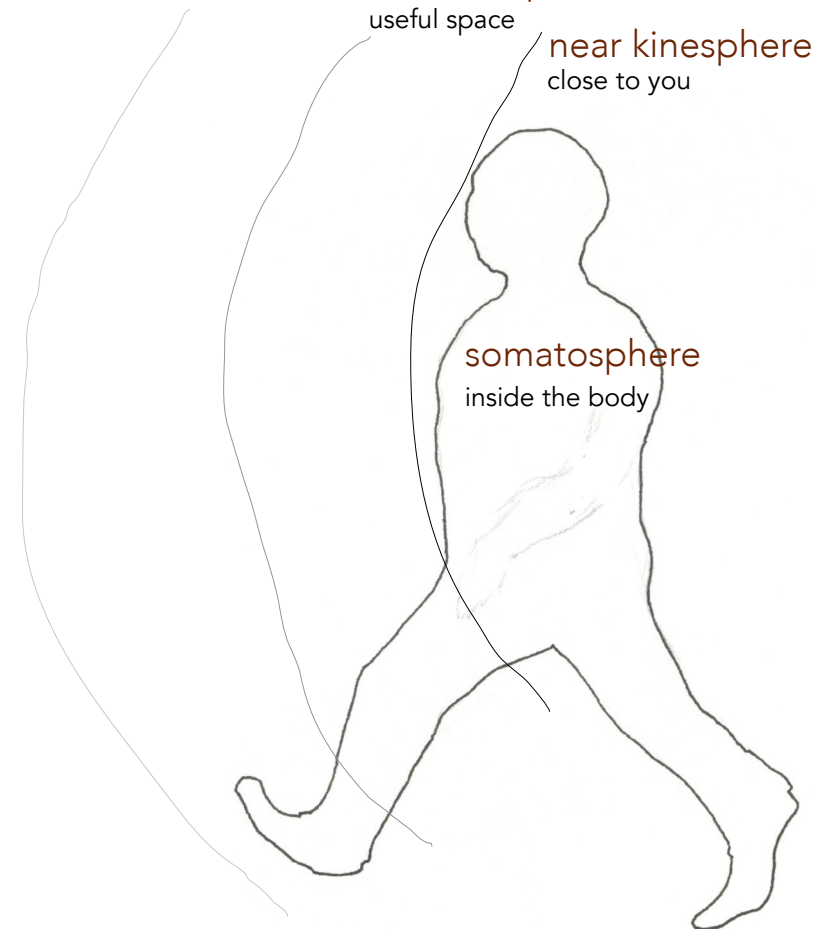
takes effort
to reach into

mid kinesphere

useful space

near kinesphere

close to you



somatosphere

inside the body

Our sensation of self is typically spatially bounded in various ways. An easy boundary to notice is the one that appears near the edges of our bodies (Serres 1985/2008). Inside that boundary is ourselves and outside is something else. This boundary is built and naturalized in childhood through movement, and refreshed with every step we take. The first person perspective is difficult to escape without retooling movement and space.

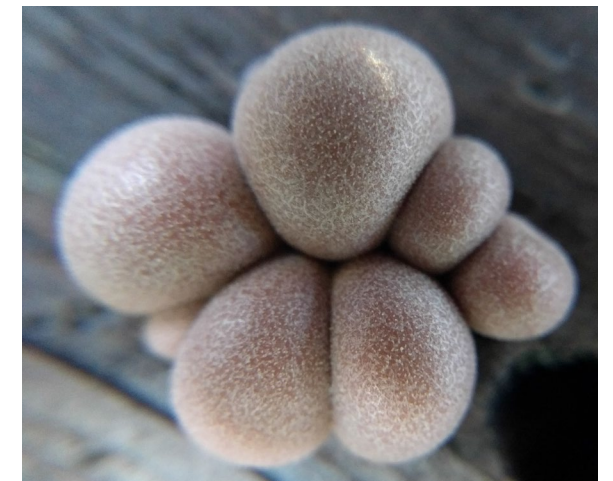
Implicit in these boundaries is the space that separates self from other. It is through space that an outsider sees the surface that is your identity. The boundaries we maintain and the surfaces available to others are made of movements, among other things. The boundary between inside and outside will play a significant role in this research. By boundary, I mean *the place where the space of one thing meets the space of something else*. The boundary can be crisp or vague, stable or shifting, or many other things depending on what is happening (Barad 2003). Often, as we will see, this boundary is strongly projected from some locus of movement, such as a limb or a torso, and softens in other places (Forsythe 2012, see also: Laban's drawings in Moore 2009). Seeing movement, space, self, and identity as related in this way means that studying movement can provide insight on the moment by moment changes in embodied relationships.

Seen in total, there are three important consequences of seeing movement relationally: 1) movement creates space, 2) movement is an articulation of interdependence with other things in space, and 3), movement is a way of making boundaries in space. These characteristics also come together in the idea of embodiment. Embodiment often means the material counterpart to an idea, as we saw earlier. More particularly, *embodiment emphasizes the material properties of existing as a living body, such as mortality, growth, potential, application, skill and synthesis*. It is easy to see these properties as limitations when compared with the reliable and eternal presence of ideas, which are free of the constraints of process, change, adaptability, and analysis.

Here, we reject this comparison to ideas as the basis of a definition of embodiment. Instead, we begin with the root of embodiment: the body. *Bodies are coordinated groups of differentiated tissues that cannot live once separated from each other* (Libby & Ratcliff 2014). This definition links the advantages of the body (coordination) and the disadvantages (separation). From here, we can derive that embodiment in general is the physical events that derive from the coordinated or connected nature of an organism. Since this can be applied to evolutionary timescales, a definition of embodiment more specific to lived timescales will be used here. Embodiment is a specific collection of habits, skills, and tools developed by living with a particular body in a particular context (Ingold 2000, 193).

Embodied movement is a subset of these habits and skills that occurs on a the full body scale such that it isn't hidden from others. And so a useful definition of embodied movement is a coordinated, physical event perceptible from outside the body. This definition excludes all movements imperceptible to the organism moving, which for this study includes things like cellular machinery, digestive movements, and so on. Movements originating from the activities of the body as a whole, like eating, sighing, flying, caring, and watching are our focus. The terms "movement" and "embodied movement" will be used interchangeably for most of this work, and other forms of movement—notably philosophical framings of movement to be discussed later—will be marked.

Specifying movement in this way is necessary for the conceit around which this research is built to make any sense. This research seeks activities in which humans and non-humans attempt to leave their embodiments behind and enter new relations involving new embodiments. Another way to say this is that this research seeks bodies that are trying to move like other bodies. These are humans and animals that have either concrete models to emulate or a defined role to play that is determined by others. If movement was understood as a decorative part of life, something not telling about the mover, and unrelated to day to day existence, moving like something else would be easy and irrelevant. One could simply put on some movements and superficially change identity at will, and those watching would know that it had little meaning. Spending some time with the shape shifters found in stories and myths demonstrates how awesome and problematic it is to be able to change one's total appearance. Movement is only part of one's identity, but it is one that builds slowly and changes only with effort. Sometimes it is easiest to recognize people and animals from behind by their movements. Understanding movement as constitutive of identity is key because then the encounter with the another's movements is encounter across difference. Difference is something one must adjust to (Plumwood 1993). We encounter small differences all the time, but most of them don't place demands on us to change much. This research seeks nearly complete transformations in movement repertoires. Since one's embodiment is difficult to shake off, it is necessary to find bodies relating with compelling, demanding, and significantly different partners. This is the motivation for looking for relationships across species. One may only achieve such transformation when one's goal is to become something that one is not for an audience that is right there and waiting. Our conceptualizations of movement, embodiment, space, identity, and difference are geared toward making these moments visible to research.

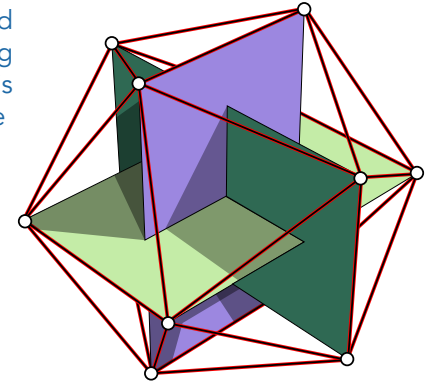


These slime mold have come together to form these nodules on a fallen trunk. They do not fit this understanding of a body because they will soon disperse again.



Perhaps an ideal man?

An icosahedron divided into its three defining planes, used as the basis for the human kinesphere



Embodiment, humanism and posthumanism

Let's return to our original concern, which is how are western bodies engaged in practices that challenge the legacy of humanism? It would be helpful to know more about the relationship between embodiment, humanism, and posthumanism. Humanism can be thought of as an entrenched cultural condition, a historical period, an ethical system, or a political strategy. Here, *humanism will be a value system based on classifying living things into a hierarchy according to their proximity to the ideal man, who is healthy, beautiful, white, western, rational, rich, powerful, free, and independent* (Braidotti 2013). The body under humanism is typically understood as a liability because it does not completely and predictably support the image of the ideal man. Thus, aspects of the body that are clearly not related to human exceptionalism and reveal our membership in the animal kingdom, like smelliness, sexuality, and illness, are policed and expunged from social interaction (Upton 2008). Other aspects, such as empathy, emotional intelligence, vulnerability, and performance are erased since their advantages cannot be contained within the frameworks of rationality (Thrift 2008). Meanwhile, some aspects of embodiment lend support to the fantasy of the ideal man, like athletic prowess, purity, and masculinity, and are sought after and rewarded.

Humanism treats movement with similar selectivity. The ideal man moves with coordination, smoothly and intentionally, and has access to exceptional power, as can be seen in how the exuberant bursts of the precision movement of dancers and Olympic athletes are a regular part of western visual consumption. Movement is often paired with and motivated by ideas, such as when it accompanies music, stories, or character exploration on stage. *Humanistic movement is movement that materializes the ideal man*. Excluded from humanist movement, to name several, is spontaneous movement, exploratory movement, improvisational movement, infectious movement, therapeutic movement, mundane movement, reproductive movement, and movement that creates bonds. These movements have much in common with postmodern dance and research into affect (Banes 2003a, Banes 2003b, Thrift 2008). They also would fall well under the purview of posthumanism.

Posthumanism presents itself as an alternative to the way humanism organizes culture. Bruce

Braun (2004) lays out a couple possible definitions for posthumanism. One is that posthumanism is a form of vigilance that critical thinkers espouse in order to fend off the tendency to fall back on humanism. Such vigilance takes various forms and hybridity is a prominent one. Braun critiques hybridity, saying that the human is recuperated as the thing to be avoided. He argues instead for posthumanism to signal a shift away from essentialist ontologies. We'll start with Braun's ontology and add that *Posthumanism includes any position that undermines the use of the ideal man*. To focus it a little further for this project, posthumanism has four related defining features: 1) *reliance on relational ontologies*, 2) *narration as the product of research*, 3) *curiosity about material identity and change*, and 4) *emphasis on embodiment*. Relational ontologies undermine the humanist urge to categorize and return the ideal man to his material surroundings. Since it is difficult to resolve ethical problems without categorical evaluation, posthumanist research prefers to follow the unfolding of events through time and space, describing trajectories and possibilities (Lorimer 2006). Given the centrality of change, such narratives cannot leave intact the way humanism asserts stable identities. Posthumanist stories select for the moments when it is unclear who is who and where things are going. This means that participants are "more-than-human"—some combination of what we understand as traditionally human combined with other things, whether microbes, animals, or machines. Posthumanism turns to embodiment to better understand these ensembles.

Given the prominence of embodiment in posthumanism, it is worth considering some claims being made about the body in posthumanist literature. The posthuman body is pictured as being more in touch with other bodies than the humanist body since the posthuman body finds its direction entirely in the material world. Connections between bodies are thought to be achieved through empathy, rhythm and affect (Haraway 2003, Bispaham 2006, Protevi 2009, Thrift 2008). These connections are seen as opportunities to undermine humanist separations between species and rehabilitate our animal neighbors in political arenas (e.g. Hincheliffe et al 2005). They are also seen as opportunities for change on the ontological level. When one body meets another, they subtly share their status with each other, thereby changing the sensation of existence that each experiences. Change in relational ontologies is often discussed abstractly as the fabric of existence and the source of meaning. Change of all kinds, including extreme change, takes the place of ethics as the sought after goal for some authors (Deleuze & Guattari 1987, Williams 2003). Such ontological claims are

Ideal and other movement, embodied and visualized

See methods section for an introduction to movement terminology



Driving Akira's motorcycle

Restricted kinesphere except for in front

Driving turns the body into a dead weight with mobile limbs.

Large perisphere



Major Alex Armstrong prepares for action

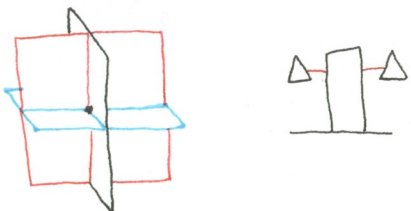
Mid kinesphere, emphasis on symmetry

Solid base (wide stance) supports highly mobile arms

Fully connected and coordinated

Bound flow, direct space

Impressive, strong, coherent, independent



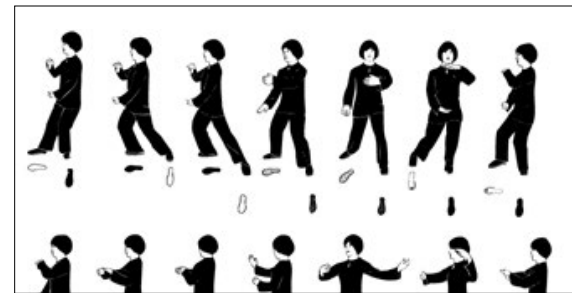
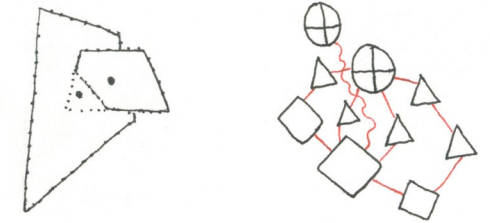
Calvin and Hobbes, tumbling.

Unclear, intersecting kinespheres

Head-tail connectivity and mutually connected

Changing relationship with the ground

Spontaneous, mundane, emotional



T'ai chi

Attention to primary planes, using near mid and far kinesphere

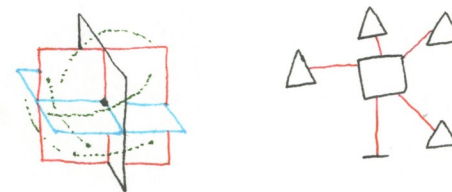
Movements take odd paths through kinesphere

consciously connected

Many mobility points moving simultaneously

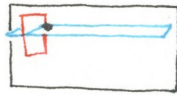
Potentially expandable somatosphere?

Therapeutic, preparatory, strength building, world building, reaction building

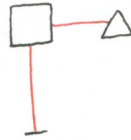


Little Nemo and a guide

Bodies in this series take after ballet forms. Straight with clear corners and angles. Feet are always together in a v position.



Bodies bend on intended axes. Far kinesphere reach



Well supported---connected and grounded

Smooth, exact, beautiful, wise



Image credits: Otomo-Genkate, Aniplex of America, Bill Waterson, The School of Tai Chi Chuan, Winsor McCay, MayanTimeGod, Walt Disney Pictures

Superman

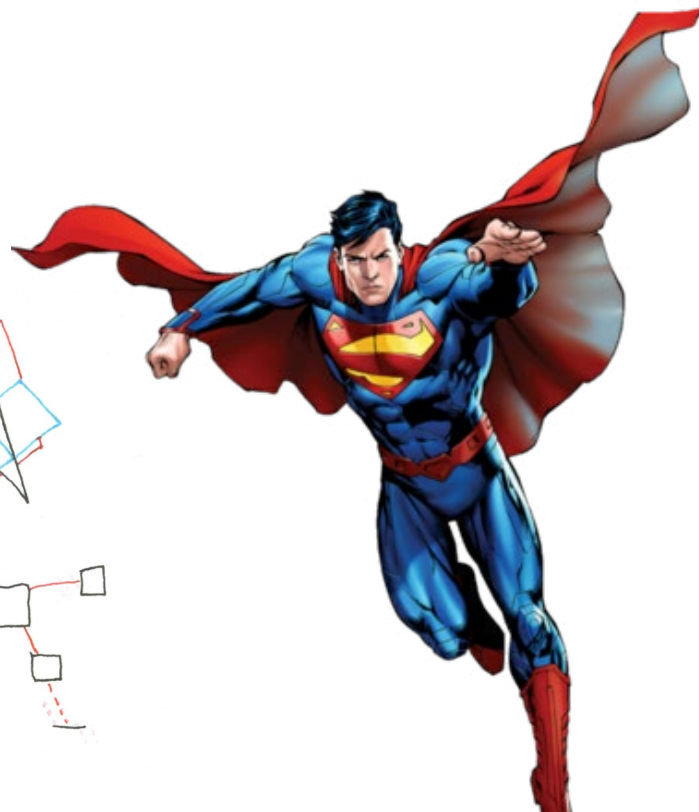
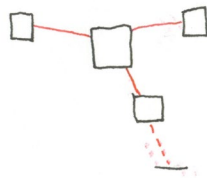
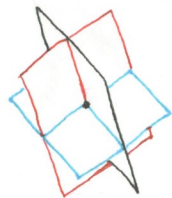
Interesting for his use of diagonals

Far kinesphere reach

Grounded, connected, through himself rather than through the actual ground

Bursts of athletic power

Does superman fly the way birds fly?



likely to be legitimate, and offering corresponding rules of thumb is useful, but when they are extrapolated to the body, it is not clear how they may be applied. The body, while a good conductor of local dynamics, is also of limited means (Willerslev 2007, Deleuze & Guattari 1987, Thrift 2008). Could a change be so sweeping that the body dissolves? How could a body seek out such an outcome and achieve it? On the other hand, if bodies are built to guard against destruction, and sweeping change is rare, then perhaps we tilted our ontological scales too much in favor of shakiness and flexibility. At its most extreme, the posthuman body appears as a shell through which the vicissitudes of the world can flow. Such a body would be useful, since it can conform and listen to anything around it, and it would be able to live in concert with many things. But could such a body, whether that of an organism or of a polity, even be considered to exist? One must ask, can the body live up to posthumanist claims? What is the posthumanist body actually like?

This research project seeks out the moments when our embodiments fail to live up to posthumanist predictions. It hypothesizes that the stories of the body that challenge posthumanism will only be visible when something asks the body to transform itself radically. It supplies movement as the way to see how interacting embodiments play out. Laban movement analysis will make visible the sharing, dissolving, destroying and creating that humans and animals perform on a regular basis, and it will be able to distinguish between putting on an act and actual transformation. This research can be seen as a trial in the transposing the issues related to bridging the divide between humanity and nature generally into the specific arena of the body. Humanity and nature were traditionally constructed as separate realms. Today, mixing and bridging are commonly accepted approaches to the conceptualizing human-nature divide (Haraway 2003), but they are understood in terms of the larger scales of environmental politics (e.g. Bingham 2006) and the smaller scales of biological mingling (e.g. Greenhough 2012). The environment supports the western body through alienating industrial networks, which can make the body's dependence difficult to trace and give the western body a sensation of floating above environmental issues. Environmental activism likes to address westerners with calls for increased responsibility for the rights of others, a call that squarely addresses the ideal man. This research targets the body as a key player in stories of interdependence and an important affective resource in environmental decision making within the broader network of environmental actors.

Is he...

Grounded? YES!

Orderly? YES!

Strong? YES!

Directed? YES!

Isolated? YES!

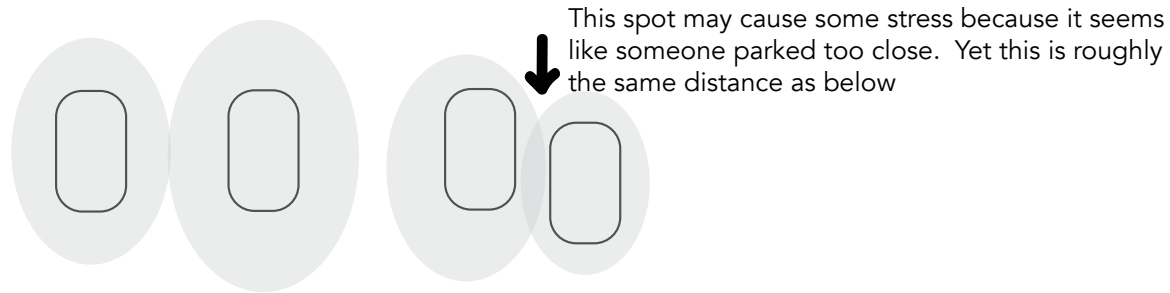
Uh oh.



The body and space, familiar examples

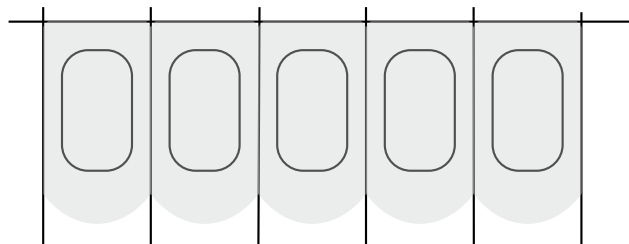
Parking without lines

People park further apart and more variably because they're depending on their sense of where their space extends at the moment they park. Relational space arranges material space



Parking with lines

People defer to the parking lot paint. Effectively the paint limits the car body's extension into space. Material space overcomes relational space through the application of outside rules.

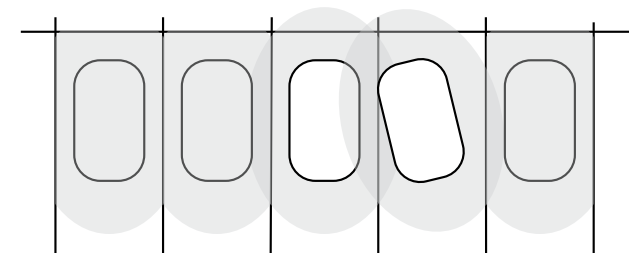


Skating

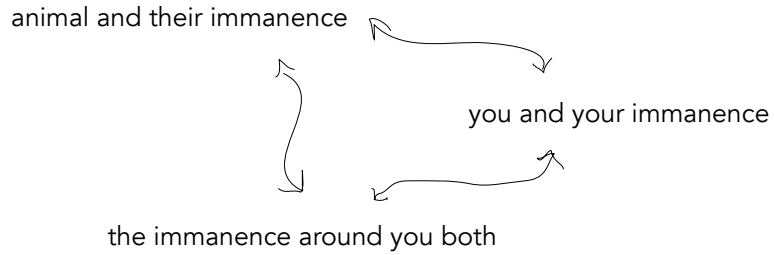
Skaters and skateboarders use an arcing pattern to maintain slower speeds on hills, and may need extra space to stop. The space they potentially need is much greater than the space they appear to occupy. Drivers find them exasperating. Some drivers end up cutting them off and others won't pass. These behaviors are deeply related to the feel of the road. Cars also project spaces, and many cars together will make a road a road for cars. We all know what happens when a skateboard shows up in busy traffic. Virtual conflict.



This behavior makes extensions reappear. It reminds me of manspreading.



Immanent identity formation

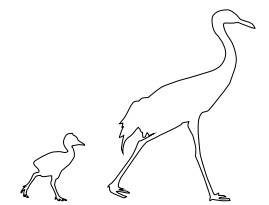
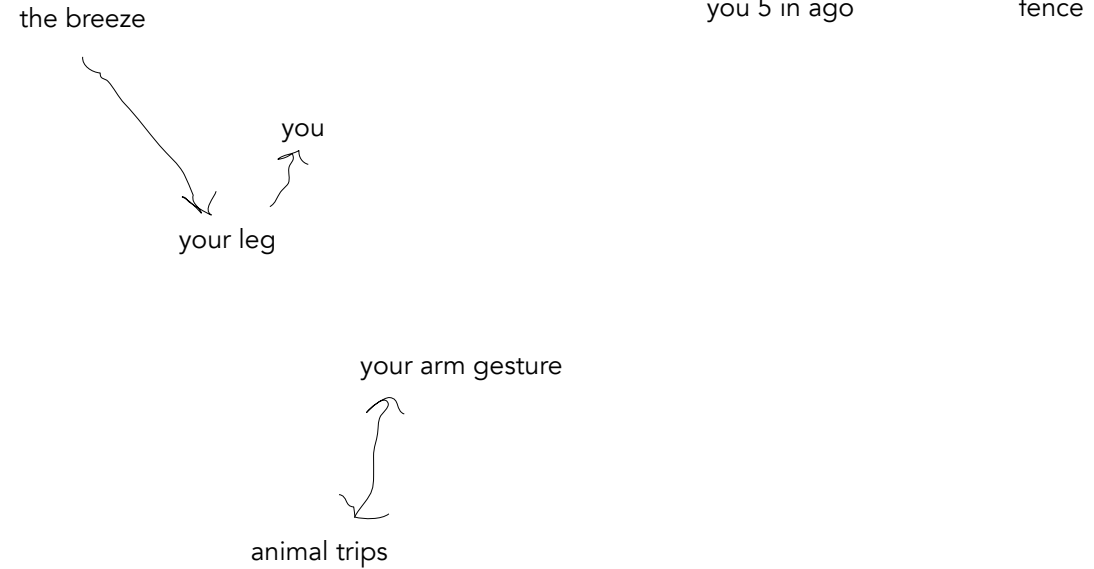
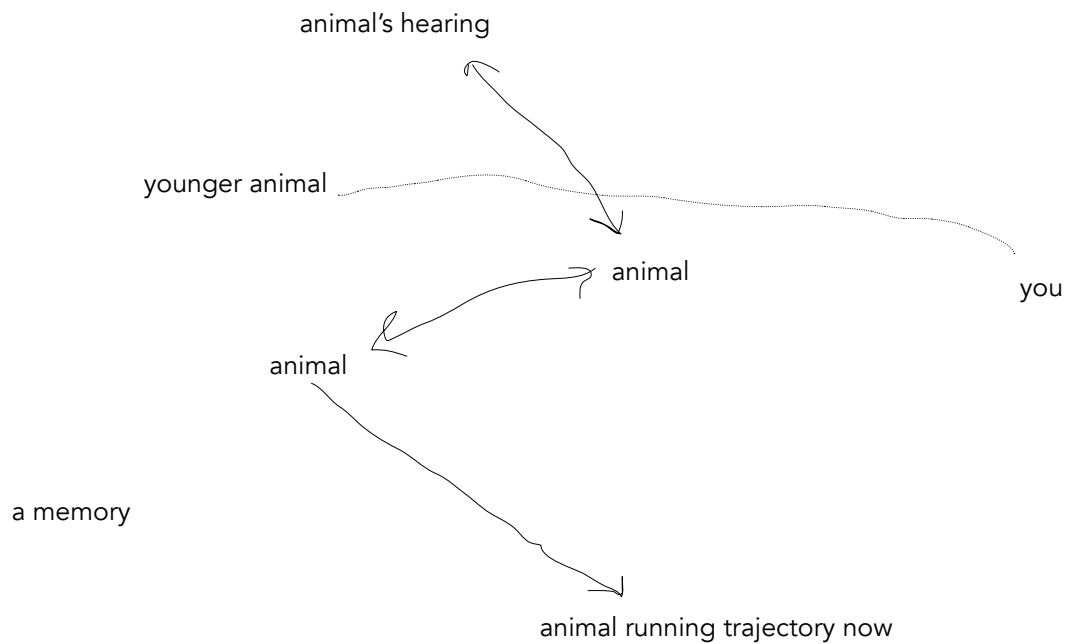


Immanent things are things that are found immediately in your environment and body

It's like the way a sneeze is immanent

We think a sneeze comes from some tickling microbes, something microscopic. But the way we feel the sneeze comes on is a sensation of immanence. The sneeze feels like a gathering of forces, a potentiality that is swirling beneath the surface. When your lungs, your consciousness, the microbes, the air, and anything else touched by that immanence has come together, you sneeze. Or maybe you don't. But you can't force it. It's not your sneeze to sneeze.

We like to think the sneeze begins in a microscopic place because that is a concrete answer. In fact, the sneeze comes from the virtual, a place not at all microscopic, but just has hard to put a finger on.



How does shapeshifting happen?

The encounter between two bodies of different species forms the nexus of this research. Understanding what happens in these encounters and how they work is crucial. Here I'll draw together salient ideas from Deleuzian theory as a framework for empirical research. Deleuze's theory of becoming describes the tension between fluidity and stability in the context of space and power. While his consideration of animals is cold and contrived (Haraway 2007) his bestial metaphors imagine a posthuman identity and provide a foundation for understanding the nature of metamorphosis.

Asking a human to become less human, to become an animal, is not easy. In what ways would a person have to change, and how would they do it? Here we must imagine 1) a way for one's identity to change, 2) the possibility of a new locus of action (a new body) and 3) a shift in what tends to happen given (1) and (2). With already such an emphasis on change here, we must also imagine that there is 4) something that holds things back. Here I propose these four components of posthumanist metamorphosis:

- 1) Territorialization
- 2) Assembly
- 3) The Field
- 4) Strata

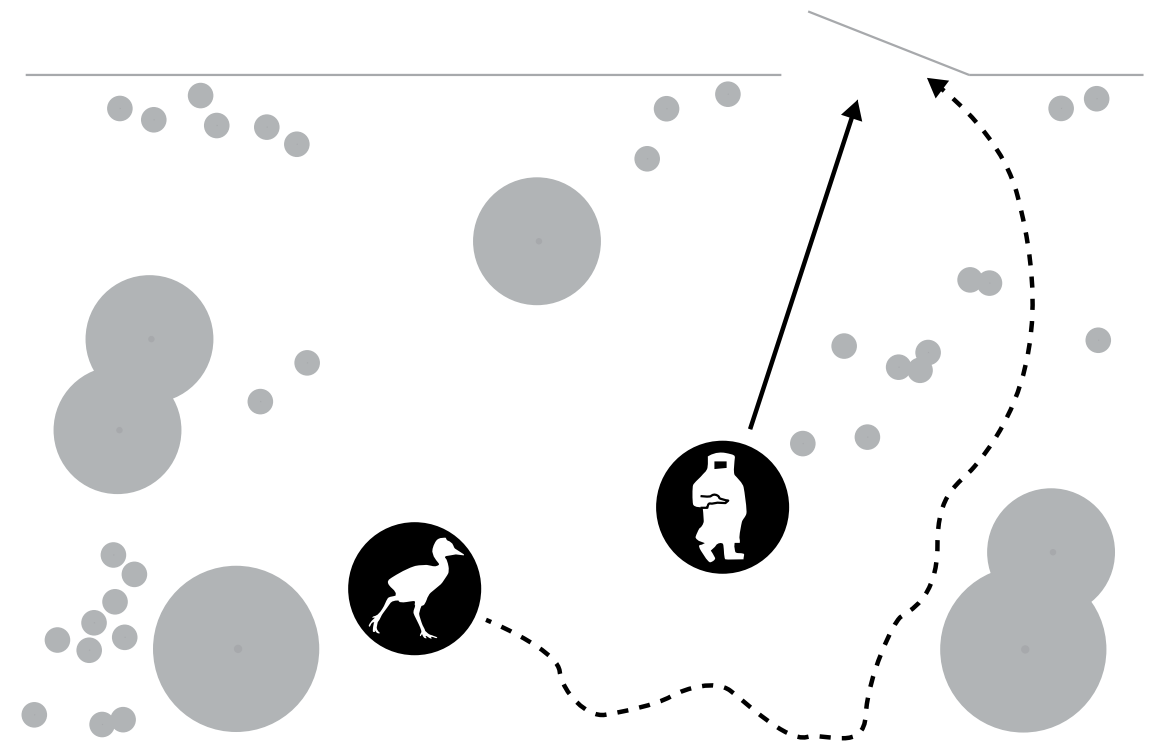
These four components compose four views of the single, synthesized event that is a shapeshift.

The appearance, constitution, and effect of a metamorphosis are all the same thing at their root. Separated here, they are poised to help us understand posthumanist identity through embodied movement and space. As Lulka (2004) points out, our "inability to recognize the multiple character of non-humans brought about my movement and exhibited by divergent spatial formations" (444). If we are to be posthuman, we must find ourselves in spaces defined in movement and change. Deleuzian theory is equipped to do that.

These components are already commonly found in geographic literature. Here, to find out of the posthumanist body exists, we will need to find out if these processes are also found at the scale of the body.

Traditional Cartesian space

In this world, bodies don't project anything. They just travel.
The next image is of the same event.



Deleuze's virtual space

In this image, the black shapes on the lower right progressing up the side show the incoherent waddle of a youthful crane as it navigates the landscape. The crane has not figured out how its body parts fit together and it is spraying bits of itself all over the place.

The person walking along with the crane is haunted by echoes of themselves and their imagined counterparts, adult wild cranes, in various stages of merging.

The person and the crane are moving through a landscape filled with sensations of different qualities.

This image is an approximation, a nod, really, to the richness of the spaces we have access to through embodied politics.





I like Raymond Simboli's painting of the Pinkerton Riot (1948) because the blocky strokes pull the whole scene together, sidelining individuals and their actions. It shows how context bleeds between people and how action has decentralized initiations. The boil of this street conflict churns with politicized space. Powers spread, seep, and buffet.

Fluidity and the territorial character of identity and difference

Identity is how one appears from another point of view. It is a form of expression that creates boundaries and difference. *Identity is a process through which the relative boundaries and properties of interacting things become locally determined as certain embodied meanings* (Barad 2003, 815). For an identity to change, its boundaries and properties must change within that interaction. Here we will focus change in face-to-face, co-constituted embodied relationships.

Identity can be understood in terms of territory and territorialization. *Territorialization is a process in which a body or bodies mark or maintain a certain territory, their spatial domain* (De Landa 2006). Territories are not 'owned.' Something "territorializes onto" a place, meaning the place becomes managed or characterized by it. A territory can be maintained expressively though singing, as birds do, or by frequenting along a certain perimeter leaving signs of one's presence (Deleuze & Guattari 1987, Winichikul (in Eley & Suny 1996), De Landa 2006). A territory can also be announced in a decentralized way, shared through suggestion and contagion (Thrift 2008).

Territorialization is not an exercise in producing and placing exact copies of oneself around a landscape (De Landa 2006;15-16, Thrift 2008). If every cardinal sang exactly the same song, there would one big cardinal territory for all time, instead of a new little one for each breeding pair each season. There must be variation between each copy, whether through time (this dog is more tired passing here today yesterday), or through space (a crowded room erupts with a hundred unique laughs). For Lulka (2004), this open-endedness is crucial to understanding wildlife; he says, "movement without destination constitutes the essence of nonhuman populations" (453), an important point for posthumanists. The indeterminate variation available through territorialization makes room for identities to change (Butler 1993).

Maintaining a territory means constantly adapting to new surroundings. As Grosz says, life is framed by other life forms too, to the extent they let it maximize its opportunities (Grosz 2012). Territories are ecological negotiations. Territories overlap, touch, interfere, and merge with each other, producing and erasing boundaries between them. De Landa explains that an outcome of

territorialization is that things inside the territory become more similar to each other, the body more stable, and the boundaries around it more clear (2006). These similarities are what produce the territory as recognizably different from the spaces around it. Territorialization is important for the creation and elimination of difference.

The territories we project and participate in are how we become known. However, the body and the territory can become confused, or the participating body can be unavailable to the senses, becoming known entirely through its territory, as often happens with wildlife (Hinchliffe et al 2005, Bear and Eden 2011). Our territorial histories must be traced to understand our identities (De Landa 2006, Lulka 2004). As Lulka describes it, "a population that (...) changes its geographical distribution, its boundaries, and its densities is no longer the self-same population" (2004: 451). Similarly, the territory created by a moving body doesn't have a stable shape or location. It may have crisp boundaries or vague ones, it may move around, or it may have other properties, depending on what the body is doing. In dance, territories are often projected past the visible edges of the body from a locus of movement or intensity, such as a thrown limb, an erect torso, or a gaze (Sheets-Johnstone 1966, Moore 2009, Forsythe 2012). The synthesis of these moments over time produces an identity for the mover.

The processes of territorialization are usually broken into two ideas: deterritorialization and reterritorialization, even though they occur constantly and simultaneously. *Deterritorialization is the process by which a body opens up to a broader set of potential futures*. If a body fails to manage its territory as usual, its territory may be removed or invaded by others, which prime a different set of possible outcomes for that territory. When something deterritorializes, it can be said to leave the realm of earthly existence (the *real*) and return to the realm of the possible (the *virtual*). In concrete terms, this could mean that a body has sprained a joint or shared in a sleepy activity, for instance, making the body unable to articulate itself in its usual spaces. Repairing the body becomes a possible future in these scenarios with varying potential of coming true depending on what is immanent in the circumstances.

Repair or return is a classic case of reterritorialization. *Reterritorialization is when something*

Mapping the nested territories around the body

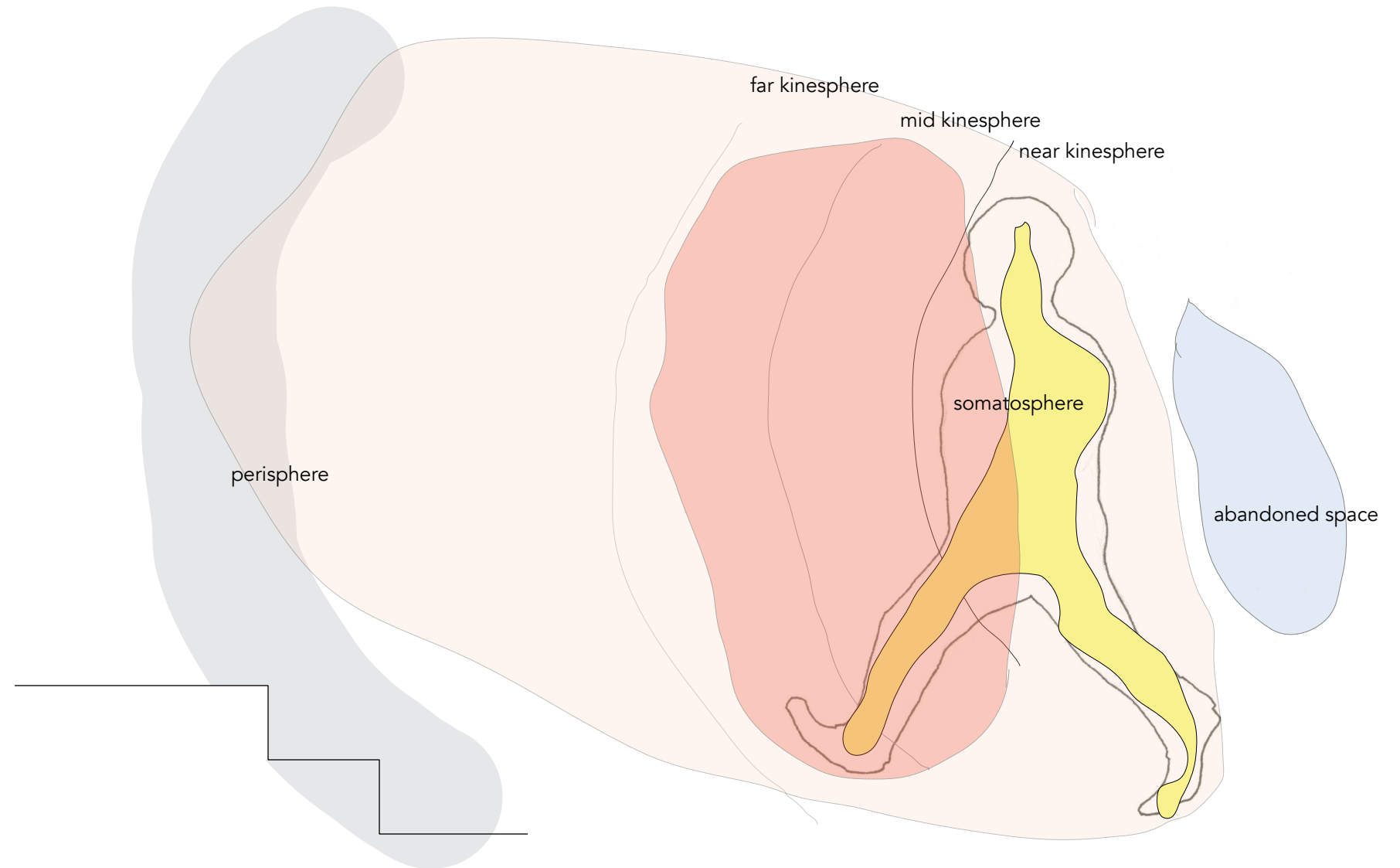
To come up with this image, I considered the person's trajectory. They appear to be walking energetically to the left. This means that they are unlikely to use the space behind them. They don't look prepared to wave their hands all about or break their stride, so their kinesphere becomes salient in front of them and isn't well defined above or to their sides. Consider how a basketball player's kinesphere would look different here.

Their large strides push into their far kinesphere, and it's conceivable that their arms are swinging into their mid kinesphere.

The body is connected through its vigor, but it is unlikely to be able to stop suddenly and balance on one foot. Compare it with someone limping and a ballerina

The perisphere is some distance away since they have momentum. This staircase means the perisphere is a little higher than would be normal.

Any of these boundaries could be nudged one way or another and they would tell a similar story here.

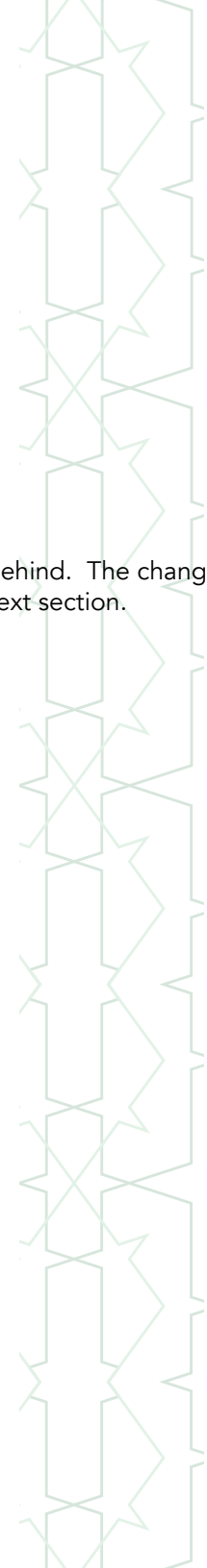


immanent crosses the horizon and becomes actual. Regaining health and mobility allows a body to assume a territory once more. However, that territory may have shifted. This is the beauty of reterritorialization. According to [Deleuze & Guattari \(1987\)](#), when something deterritorializes, it will find another spot to reterritorialize onto, one that is open to change, one that is currently deterritorializing. This helps us understand how an butterfly may look like a face or an ant like a spider. An incomplete copy of a different territorial marker (a hawk's face) has reterritorialized on to the moth's body, hiding it from view from its usual predators and expanding the presence of the stolen face. This creates identity confusion when the deterritorialization is particularly convincing. [Protevi \(2009\)](#) describes the decades long court battle over a woman in a vegetative state with an unusually expressive face, a reterritorialization of her earlier face onto an empty vessel. It is only confusion, however, if there is a core true identity that one is expected to conform to. The moth can evade its role as prey through its dissimulation, arguably changing its identity, while an expressive body in a vegetative state can evade oblivion, making it different from other bodies in vegetative states, as it arguably really is. Reterritorialization challenges our usual categorical understandings of identity.

Reterritorialization is particularly important when it comes to differentiating bodies and territories. From earlier, a body is distinguished by tissues that cannot live separately. A territory may be made of tissues, but its parts can persist independently on some level. Returning to the moth example earlier, the hawk's eyes on the moth's wings have little to do with the fates of local hawk faces, whether those tissues are found on hawks or on other moths. This makes the collection of hawk faces an expression of a territorial identity rather than interoperating parts of a body.

Given the spatial overlap of territories and bodies, it would be helpful here to provide concrete terms for the territories that are usually found around moving bodies. Let's differentiate between three nested territories. There is *the space that the body can reach by migration and habit formation, the "perisphere"* (e.g. dogs in [Power 2008](#)). There is *the space the body can reach into with its limbs, the "kinesphere"* ([Moore 2009](#)). And there is *the space that the body takes up, the "somasphere."* Whereas the somatosphere is a territory, the body is an embodiment. The somatosphere as a territory can expand and contract, as when an imbalanced body may lean on a

banister, marking it as it stresses under the new weight and leaving sweat behind. The change in the body during that event is a form of assembly, which we will discuss in the next section.





"Woman with cat" by Kees van Dongen, 1908

Assembling a new body

A new territory implies a new locus of action and a new set of activities that came to life with that territory. This means a change in embodiment. Let us recall that embodiment is the physical events that derive from the coordinated and connected nature of an organism. A change in embodiment would thus be a change in the connections that a body can make and use; which, in concrete terms, means changes in the habits, skills, and tools at hand.

When bodies begin to mirror one another to the point of creating connections, some considerations arise: how much, how well, and how permanent the change. There is also the question of what an assemblage even looks like in the context of posthumanist embodiment.

An assemblage is an interoperating group of differentiated things (De Landa 2006). This includes bodies but is not limited to bodies because assemblages also include separable groups of things, and usually, interest in them emphasizes this semi-independence. As Despret (2004) frames it, a member of an assemblage makes themselves available to other members, but need not obey anybody. A territory is also populated by independent things, but it is different from an assemblage because these things do not cooperate. Since we're interested in shapeshifting as a technique or process, it is most useful to think in terms of processes of assembly and disassembly. A geography of assembly and disassembly across embodied spaces would be an interesting outcome of studying movement assemblages (Hagen and Bryant 2003).

The ideal man's moving body is assembled out of expected things: the usual limbs, permutations organs, and senses, plus some fabulous exercise equipment. Deviations from the ideal ensemble could take various forms. For simplicity here, let's consider how two bodies might assemble. First, two bodies could merge completely into something new. For example, when a fungal spore infects conifer, their merged flesh creates a witches broom cluster growth on the tree. Very differently, but in the same category, are the rafts that some ants make cooperatively out of their own bodies.

Second, two bodies could merge partially, creating a shared middle ground between them, as in

the banister example from earlier. This type of assemblage in particular brings affordance theory to mind. Third, each body could become separated into parts, which mix and regroup into any number of new things, the way Legos work. A *recent meme* provides an entertaining imaginary example, but a better example might be hermit crabs and shellfish.

Fourth, one could completely swallow the other. Yukaghir hunters sometimes describe their encounters with elk as mutual seduction (Willerslev 2007), with the real possibility that the hunter will be completely seduced and become lost among the elk, returning months later. And lastly, each body could disassemble and fail to reassemble into anything recognizable, disappearing into oblivion completely. Eating a poisonous plant comes to mind here.

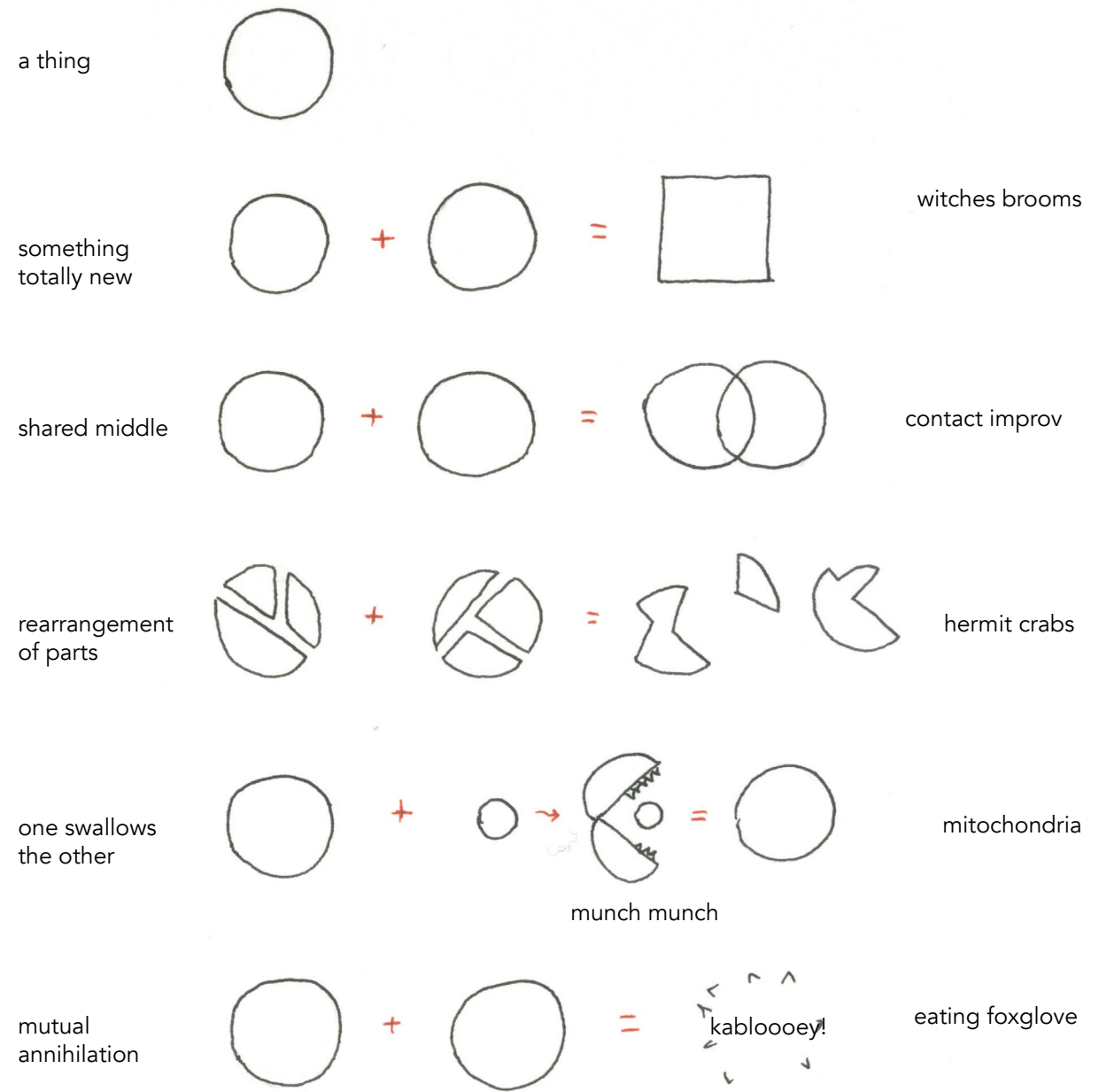
When considering whether something has meaningfully assembled, a couple of related concepts ought to be teased apart. It is easy to believe that if an assemblage comes together permanently, that it then counts as an assemblage. While this may be true, there are plenty of temporary assemblages (e.g. dogs and their owners in Brown & Dilley 2012). Similarly, it is easy to believe that if the assemblage involves both bodies completely, to the total exclusion of their earlier existence, that it also counts as an assemblage. However, partiality is an important aspect of assemblages (Deleuze & Guattari 1987). Lastly, when it comes to bodies, some appear better than others at assembling. An exercise of skill does not require a prior intention or function; rather, these are immanent to the skill as a practice unfolds in situ (Ingold 2000; 291). Skill level can be thought of in terms of how experienced a body is at something or at how capable it looks—measures of imminence. It can be contrasted with assembly by chance, where a practitioner is receptive and flexes with the event unfolding, in spite of having no prior related experience with it. It is possible to imagine similar variation in disassembly as well.

With this variety of ways to assemble, it is important to remember that the assemblages that matter for this work are the ones that deviate from the standards of humanist embodiment. So even a brief, clumsy attempt tells us something about how a posthumanist body can exist. Differentiating between a humanist and a posthumanist assemblage is about the contrast between approximating an ideal form and operating as a multiplicity.

This is a witches broom

Foxglove is a common poisonous garden plant

Ways to Assemble



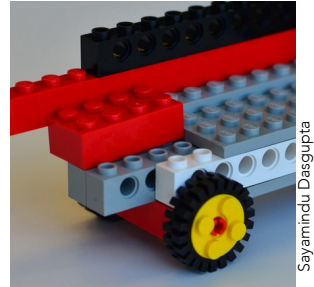
Scales of Meaningful Assembly: Evocative Terms

Permanence: fleeting, temporary, long term, and irreversible/permanent

Completeness: shallow, immersed/submerged, deep, abyssal, gone

Skill by experience: naive, dabbler, fledgling, competent, seasoned

Demonstrated skill: inept, clumsy, capable, dexterous/adept, exemplary



Sayamindu Dasgupta

A multiplicity is an articulation of an assemblage. Multiplicities are best understood through Deleuze and Guattari's (1987) example of the wolf pack. A wolf pack is different from a set of wolves. A set of wolves would consist of identical wolves who aren't relating to each other or are docilely obeying a higher order. Reductive variations on this theme are commonly in use (Fox 2006) and it serves as contrast. A set of wolves has just as much affect on the world as the number of wolves in the pack. It's linear (De Landa 2006). A set is defined by sameness (Lulka 2008) and commanding analogical structures (Deleuze & Guattari 1987). In a wolf pack, each wolf is different from the next, and those differences must be taken into account by each wolf (Acton 2014). The relationships between the wolves make each wolf pack unique, and these relationships change. *These three qualities—member differentiation, relational structure, and relational flux—make up a multiplicity.* A multiplicity's effect on the world is related to these three qualities rather than the pure number of wolves.

Multiplicities are important concepts because they allow an assemblage to define itself. A group can assemble and define itself through its members and relations, while retaining internal difference. If the group dissolves, each of the members gains new identities as they join different groups. In a set, by comparison, members of one set can join another set and retain the same identity and relations, because they are defined by their location in a repeating categorical structure rather than their specific relations with the rest of the pack. Understanding multiplicities as they are engaged by beings involves recognizing that "the creativity of life-processes lies in their capacity to bring forth, rather than in the novelty of the results compared with what had gone before" (Ingold 2011). The prominent acceptance of unfolding change in a multiplicity can make them conceptually slippery, but this ontology is what makes shapeshifting possible.

Through this wolf pack metaphor, the process of changing one's identity is called "becoming-animal." The idea is that animals relate as multiplicities rather than in sets, and so becoming-animal is ironically a way of understanding human identity transformation. A human approximating the ideal man is attempting to participate in a set; a human approximating a posthumanist embodiment is attempting to join a multiplicity. Both are actually "becoming-x" in any case, since being identical

to anything is impossible, and nobody can become an ideal. The "animal" portion of becoming-animal is not a restriction to become only animals. It is an evocative generality that coincides with this project's belief that we have something to learn from animals.

There are some important points to make about becoming-animal, especially since it is our theoretical counterpart to shapeshifting. Becoming-animal is not about actually becoming a specific animal. It is not about becoming a perfect imitation. Instead it is about finding ways to join a pack of animals as a unique member. Bear & Eden (2011) describe how anglers become-fish. The anglers were not only imitating the fish, they also were "sharing their rhythms, engaging with their patterns, and encouraging them to adapt to new foods" (343). This process is never ending, as the anglers are always a little outside of being fish. What's more, fish don't have to be present for anglers to become-fish, with reveals the constantly shifting nature of multiplicities. Imitation in a social vacuum is not a form of transformation. Shapeshifting occurs only across difference. It must not erase difference, but it may change how each member differs.

Bodies are assemblages in two ways. One is as a multiplicity, where the being exerts a full-body, environmentally aware intelligence to coordinate and apply itself. This body can fragment and can be experienced as fragmenting (Willerslev 2007). The other is as an organism, which, through much tighter connections, requires a permanent set of relations. The organismic assemblage also displays multiplicitous relations through other scales (Greenhough 2012), but they remain outside of our definition of embodiment.



The field of potentials

Our definition of embodiment highlights the habits, skills, and tools developed by living in a particular context. We have not touched on what those habits and skills do. [Massumi \(2002\)](#) says that *a body is a transducer, a channel for the transformation of a local physical movement into ... potential energy* (74). Bodies, he says, sense eddies in the field of potential, they look past the material into the virtual, and then, if they're well trained, they can thread through the eddies in just such a way as to bring fourth a certain outcome (74). Bodies look into their possible futures and sometimes nudge some of them into being.

It is important to remember that bodies are not subjects or agents in the traditional sense. When we are going about our daily activities, we tend to think we're in control. It is anathema to consider yourself spurred on by outside impulses and it would be bizarre to consider oneself a programmed machine. It is convenient and apparently correct to turn to our mental lives as the source of our power and uniqueness. But our attributions of isolation, constancy, and correctness to our mental lives and the tendency for our unexamined experience to match this perception buttresses humanism and has been called into question on multiple fronts.

Much of what we believe happens in the brightly lit stadium of our consciousness actually happens on the outskirts of the parking lot or beyond somewhere in the streets and fields on the horizon. While the scientific details of the non-rational human seem generally accepted in the mainstream, they still are usually accompanied by a mock incredulous framing, which reveals how entrenched passive humanism is and probably reinforces it. We resort to it for easy explanations. It is not easy to understand how a dispersed model of agency could work for our daily activities. We must account for how people still nevertheless do things.

The first thing to do is to remove the lights from the stadium. Our mind is not a constant, clear, obvious place, but instead a jumble of shimmers and snippets that rise and fall out of awareness ([Massumi 2002](#), [Noe 2006](#)). We feel different degrees of presence of our selves, thoughts, things, and, others ([Noe 2010](#)). Concepts aren't descriptions of ideals but techniques for accessing the

world, affording the possibility for action ([Noe 2010](#)). We live forward improvisationally, with creativity, forging forth, and seeking precision ([Ingold 2011](#)).

Goal-oriented action is not eliminated from the posthumanist view of the person. Humanist agency is all empowering and separated from all context, like a superhero. Posthumanist agency is dispersed, imperfect, incomplete and responsive, but not aimless. Skilled practices, "in the very precision they seek — are bound to respond to moment-by-moment variations in the environmental conditions of their enactment" ([Ingold 2011](#), 2). Accurate execution, by contrast, sticks with a preplanned model held in mind despite conditions ([Ingold 2011](#), 8). Posthumanism spurns accuracy and not precision. The posthumanist view of dispersed agency is consistent with an understanding of bodies as strategists. How those bodies strategize and how that relates to their surroundings is where posthumanism differs.

There is a geography to the fabric of potentials in which a person operates. The potentials come from outlay of goals on the landscape. The goals take the form of 'attractors,' points that will change the fabric of potentials in a relationship. They create a polarized field between them, motivating action. Bodies relate to that field as much as to their material surroundings in order to forge the future. A potential is a modification of space ([Massumi 2002](#), 75). This is not a single evenly spread potential taking up all of space, nor is it a patchwork of isolated potentials. *A field (arena) is a fluctuating field of potentials created between relating bodies.* It is like a battlefield, a sports field, or a gravitational or magnetic field. Any modification of space affects the full fabric of potentials perceived by the engaged bodies. That modification may be incremental, affecting the relative likelihood of the potentials as they are, or global, affecting which potentials are in play and how they materialize in space. Every participant feels the pulls change around them in the full richness of space.

The construction of spaces around a moving body is a way of modifying the geography of potentials. Paired and grouped bodies negotiate spaces in terms of their potentials. Here we are considering the spaces of the body and places they can extend themselves into. Bodies, especially human ones, operate in much larger fields extended by media, planning, technology and so on. These fields

often set up a circumstantial balance of power between interacting bodies (Greenhough & Roe 2011, Holloway 2007) that should be kept in mind. However, they are not our focus.

The geography of the spaces that materialize between human and other animal bodies has attracted a small amount of interest. The potentialized field itself is tenuous. Fields between bodies that move too far apart or become distracted fade and disappear (Brown & Dilley 2012). Barriers and cutoffs like hills or noise can intervene, changing the play of intensities across the field. Limitations imposed by rules and referees can change the layout of potentials (Massumi 2002). People and animals will make an effort maintain a certain geography potentials around them, a geography in which each is responsive to the other (Acton 2014, Taylor & Carter 2013, Fox 2006, Power 2008, Brown & Dilley 2012). This involves training, mutual attentiveness, and rhythmic routines. Engaging in these relationships reveals the limits of responsiveness for all parties, limits that can be understood in terms of the field of potentials moving around them.

Understanding shapeshifting in terms of a geography of potentials gives us two leads. First, we can tell from global changes in the field that a new assemblage has formed. Assemblages are characterized in part by their distinctive capacities to affect the future. Their changing capacities and the field around them co-constitute each other to create a new geography. Second, we're interested in the smaller tactical actions that contribute to the overall tenor of the space. These local variations in potentials can build up or presage a breakthrough.



Strata as the barrier to flexibility and reach

Shapeshifting relies on an organism's ability to attend and react to others. As an embodied approximation, it is a skilled performance that is learned through many mistakes and a lot of effort. Experience brings a practitioner the flexibility and skill to extend themselves past their usual limits. But there are limits to embodiment that cannot be pushed through effort and learning. These circumstances are strata. *Strata are the potentials made most persistent and prominent through the course of history for a given space or relation.* Strata is the reason that change doesn't happen everywhere all the time.

Becoming as a theory of imminence requires that everything unfolds from what came before. What came before can be dominated by sluggish, solidified, sedimented, highly connected materials, whether social, biological, or physical in nature. These materials produce both the necessity of care when shapeshifting, for they provide the limits of bodily change, and the difficulty of the performance, since embodiment figures so prominently in identity.

Human shapeshifting doesn't happen all the time nor with all things. Living in a particular body makes it difficult in at least three ways. The first is simply perceptual access to other beings through shared spaces. A body optimizes itself to live in a particular niche, abandoning all environmental details that would confound its existence (Uexkull 2010, Sponberg et al 2015). Each body views the world in a limited way, making human crossover possible with only some beings. Lorimer's (2007) analysis of human ethology showed that detectability, as found in the visibility, size, speed, sounds, distribution, and space-time rhythms of other beings affect whether ecologists researched a specific animal. Aesthetic and corporeal charisma also played a role for researchers. Distinguishability is also a problem (Bear 2011, Lorimer 2007). Some of these barriers may not be as important as we think, however. Bear & Eden (2008) show how fishermen penetrate the barrier of water to become with aqueous species, and cooperating with animals or technology can extend human perception (Lorimer 2006, Lorimer 2007). Perceptual reach can limit the beings with which human shapeshifters can engage.



A second way a body provides a barrier to shapeshifting is through inability to extend how one acts and moves past a certain point. The body's affordances (Barratt 2011), self maintenance, homeostasis (Spinney 2006), and ingrained habits affect how far a being can reach out of its normal zone into a becoming. For example, Harrison (2009) sees sleep as a routine form of disengagement, and asks if one can relate while sleeping? While other fields come to mind where these kinds of barriers have been explored minutely, geography has largely remained aloof to how far a body can reach into a new space.

A third circumstantial barrier to shapeshifting is found in how inclined a being is towards socializing, and how that inclination unfolds with particular humans. This may be related to life-stage, as in the imprinting process in birds (van Dooren 2014), or to domestication, or to motivation (Despret 2010). Some animals may be sociable and dangerous (check out "Grizzly Man" 2005). Others simply avoid human spaces altogether. Other factors also crop up, such as whether they will follow humans (negotiated in "Winter Nomads" 2012), or if humans can provide them with food and shelter (Greenhough 2012). There may be as much variation in these questions from individual to individual as from species to species.

Humans face similar barriers. Career choice can make humans inattentive (Greenhough & Roe 2011), and an inability to adjust to animal presences will readily cut off relations (Power 2008). Human variation in gender (Power 2008) and social abilities (Wolfe 2010, Gibbons 2014) also play a role. Humans are known, however, for displaying great latitude for learning (Hincheliffe et al 2005). There may be variation in this from person to person. Practices that attempt to coax a being past their usual social abilities eek a mouse vary widely in their success (Greenhough & Roe 2011). It is wise to be aware of these as both potentially variable but also simply givens in certain shapeshifting arenas, especially those where beings have been in contact for a long time.

Humans are often called upon for their social prowess, particularly when it comes to dealing with animals ethically. Haraway's popular (2008) "response-ability" requires those depending on animals to spend time caring for them and responding to them to ensure ethical treatment. This approach assumes that every human will be moved by contact in the same way (clearly not the case, as in the

gap between the reported and reporters in *this case*, but also *in dance*. It relies on the situation to automatically produce ethical outcomes, denuding all participants of their potential to participate relationally. Braidotti (2013) critiques neohumanism for seeing empathy as "an innate and genetically transmitted form of moral tendency" (78). Empathy seems like an easy fix when we are faced with the significant economic, cultural, and political barriers to ethical treatment of animals (Riley 2011, Lorimer & Whatmore 2009), but it reifies our human heritage as the source of fairness.

Strata is an important player in this research because it is presumably the factor that will restrain people from leaving their humanity behind. It is what can may make us only listen to a limited extent. Learning more about what these strata are like on an embodied level will be important to understanding humanism and posthumanist possibility to a greater degree.







Three puppeteers with a horse puppet meeting a real horse. The puppeteers use breath to make their horse come to life on stage for human audiences in Warhorse. I wonder what this horse makes of it.

Methods

LMA and the BESS movement system

Rudolf Laban began working in dance in the 1910s (Moore 2009, 17). Over the course of decades of working with dancers, arts communities, and industrial laborers he developed movement dimensions that today fit into the Effort, Space, and the Shape portions of the BESS movement system. BESS stands for Body, Effort, Space, and Shape. The remaining parts of this system have been filled out most prominently by Irmgard Bartenieff, Peggy Hackney, and Warren Lamb. Laban was influenced by Henri Bergson, Ernst Haeckel, figure drawing, Rosecrucianism, Balkan dance, modern art and dance, and turn of the century ideas about health and exercise. See appendix for example chart Laban analyses for common kitchen movements.

Body

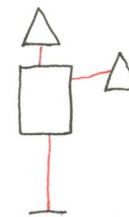
Each part of the BESS system has a different focus that when put together describes the whole moving body. The first part, *body, focuses on how movements in the body are integrated with each other through connectivities*. An example of a *connectivity* is the necessity when walking of finding support with one side of the body in order to free up and move the other side of the body. The movements on the two sides of the body have to be well integrated, or connected, in order for the whole motion to work. The body in BESS was developed so that a moving person can support motion extending in all directions around them. Using the eight connectivities in body, one can tell whether a person is skillfully using their whole body in their movements, or letting their motions be determined in a less centralized way.

Effort

The second part of the BESS system is effort. *Effort describes the dynamic or expressive qualities of movement*. Effort takes place in the *dynamosphere, an inner world of impulses and moods*. Effort is broken down into four motion factors: *space, weight, time, and flow*. Each of these can oscillate between two poles of fighting and indulging movements and a third option of being passive. Laban used his motion factors in combinations of twos (states) and threes (drives) to describe most



This person is using their torso as a locus of stability for moving their head and hand



locus of stability



mobility unit/limbs



connection

movement dynamics. For example, a motion sequence with strong weight and free flow (together making up an instance of Dream State) would be different from a motion sequence displaying strong weight, direct space, and sustained time ("press" in Action Drive). Each person has affinities for certain combinations of efforts and will use them strategically in different ways. It is unknown how effort works for animals, although my pilot study showed that species and potentially individuals may also have affinities. Skilled people will often display greater variation and more appropriate application of effort qualities than novices.

Effort constitutes our movements, since we could not have movement without space, weight, time, or flow present as well. In this sense, effort operates alongside consciousness, sometimes rising up to be noticed or controlled, other times flowing just below perceptibility. Effort is movement and our most immediate experience of movement. Laban, working in the early 20th century, understood effort as a sign system giving external expression to a person's inner life, and spent much of his life trying to link effort to external movement spaces on one hand and psychological and mystical theory on the other. Here, effort will not be understood as a conduit between insides and outsides so much as a way of being encompassing the whole body.

Space

Space is third part of the BESS system. *Space is the three dimensional territory around one's body that one can reach into without taking a step.* This space follows the body around like a bubble. Laban called this area the kinesphere since this space is where all movement happens. It echoes the idea that the body creates its own space through movement. Laban described movements as using the *near, mid, and far kinesphere, meaning movements that stay close to the body, movements that use a mid-range around the body, and movements that reach far from the center of the body.* For humans space is roughly spherical and can grow and shrink at movements use different amounts of the kinesphere. Laban mapped scaffoldings into the kinesphere of the *cube, octahedron and icosahedron* to learn more about and structure movements in the kinesphere. While Laban developed extensive movement work in these platonic solids, I will be using them primarily to structure bodily orientation in three dimensional space and to articulate variation in the mobility and stability of the body.

Shape

The fourth part of the BESS system is Shape. *Shape describes the way the body maintains and changes form.* In dancing, it is used to coordinate expressive qualities (effort) with the body's shape. A curved body in motion is different from a straight one, for example. The first part of shape consists of still forms: *pin, wall, ball, and spiral*, which the body can maintain. The second part are shapes that describe how movement moves through space: *spoking, arcing, and carving*. The third part is related mostly to shape change in the torso, which can either appear to *gather* in or *scatter* outwards through hollowing, bulging, widening, narrowing, lengthening and shortening. Each shape is allied with a relationship with the environment. Carving, for example, is notable with its complex three dimensionality because occurs when movements must work around or with things in the environment. Arcing and spoking, by comparison, are selfish actions projected out of the body or for the body. Gathering and scattering reveal how the body relates to itself: for example, the body might shorten and hollow when it is tired. Using shape, a mover can close itself away from the

Weight: your body's presence. How you affect mass, yours and others'

Light weight: gentle, buoyant

Strong weight: firm, rooted

Space: shape of outward focus

Indirect space: amorphous, wandering

Direct space: aimed

Time: Is it time yet? Waiting and marking in time

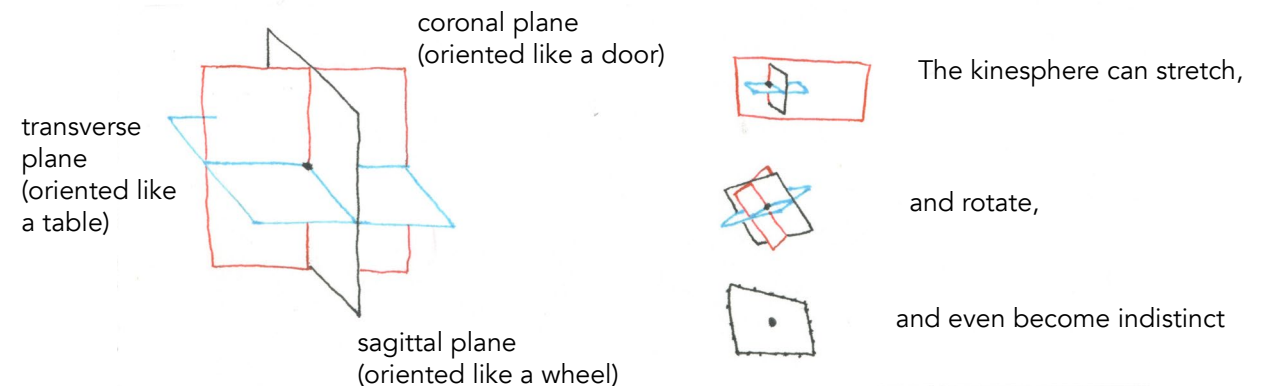
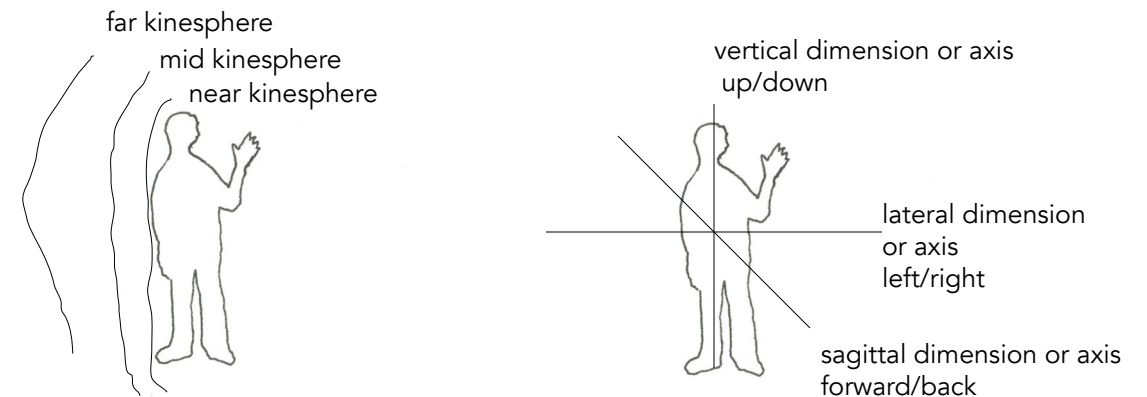
Sustained time: focus on the gaps between the beats

Sudden time: focus on the beats

Flow: relationship to control

Free flow: release, permeability

Bound flow: ready to stop, under control



environment, take a stance against the environment, or become outward looking.

BESS offers us tools that uncover how bodies change through time in minute detail. I propose that these details will make visible the behavior of the four components of a shapeshift. Bodily connection may stray from the obvious outline of the body. Effort may bleed across boundaries and echo in weird harmonies. Spaces of different kinds may expand suddenly and dissolve moments later. A participant might suddenly turn inwards, clogging up their availability to others. These dynamics map well onto territoriality, assemblages, and potentialized fields and should make them visible for analysis.

Despite the outward appearance of being a categorical system relying on predefined movement essences, LMA is compatible with Deleuzian theory. Laban was deeply influenced by Bergson and structured his system around ontological change. For him, every movement quality is transitory, blending with others and beyond grasp. His qualities are not stable; rather, they are understood as intensifying and falling away, and it is this durational change that makes them distinctive. Training in LMA involves concentrated repetition of movement sequences emphasizing sensing movement flux rather than movement identities. LMA's durability is due in part to this ontology.

Laban's system has some limitations for this project. LMA is structured around single bodies moving, something that will be explicitly addressed in this project. LMA was developed with only human movement models, and may lack qualities found only in certain animals, may make no sense with different bodily arrangements, or may unfairly reframe aspects of animal movement expression. I will be watching for these issues for this first foray into new embodiments, but ideally a follow up study aimed at these questions would be needed. Finally, Laban's system was developed with a dualistic conceptual system of movement as either 'fighting' or 'indulging'. These line up uncomfortably with masculine/feminine dualisms and may cause problems during analysis. However, Laban insisted that all movements are actively performed, and I've found that their dualistic character gets lost in recombination. Moore (2009) suggests that these be understood through whether one resists or accepts surrounding conditions, which while still a binary opposition, is a more useful and less damaging characterization.

I've introduced in passing some aspects of LMA that may be particularly revealing for shapeshifting: effort drives, carving, and flexibility. Effort drives are difficult to perform. A shapeshifter whose is relying on familiar habits would have trouble achieving an effort drive in the target embodiment. Similarly, a shapeshifter who is out of touch with their surroundings would be unable to carve. Lastly, a shapeshifter who is skilled in their target movements will use a more sophisticated and responsive collection of effort qualities. Practitioners who move deeply in a posthuman way should be distinguishable from those who have yet to internalize their practice.

Laban's effort system: evocative examples

Laban's system has four variables, space, time, weight, and flow, which can be combined with each other to describe a wide variety of movements. Here are actions done in the kitchen.

				Space					
		indirect		direct					
Flow	free	light	pulling fingers from hot object	slamming implement down in frustration	egg beaters	cork popping out of bottle in hand	putting holes in eggplant skin for roasting	tapping a stuck jar on a surface	
		strong	spreading tomato sauce on pizza dough	spreading peanut butter	swinging greens dry	spritzing oil onto a pan	snapping asparagus		
	bound	light	pouring rice from a big rice bag into a jar		rattling spoon in jar for dregs	measuring baking soda with the spoon on the edge of the box	opening stuck jar	kneading dough	testing a baked good for doneness
		strong			scrubbing the counter	pinching pie crust closed	pouring oil on a pan	using can opener	prying something open
				Time					
		sustained		sudden		Time			
			wiping the counter collecting crumbs		separating an egg using the shells	sustained	stirring pudding	cutting tofu	
			sifting		catching falling object		sudden	rinsing spoon	slicing key lime pie
					opening heavy fridge door		pushing around stir fry	pushing carrot through the food processor	
					pinching pie crust closed		shaking out a plastic bag	dicing an onion really small (place knife, check it, and cut!)	
					shaking the juice pitcher to mix it		plopping sour cream	grabbing a stirring spoon	
					juicing a lemon				
					shaking garlic in a jar to peel it				
					shaking the juice pitcher to mix it				
					juicing a lemon				
					shaking garlic in a jar to peel it				
					splitting a squash				
					tortilla pressing				
					grating or slicing cheese				

Movement observation and note taking

Explaining what happens during observations sessions is important to ensure the replicability of my work and the comprehensiveness of the data.

Training

Training is an important part of making reliable movement assessments. Professional movement analysts typically finish degree or licensing programs in LMA. My studies under Dr. Andrea Harris at the University of Wisconsin include two courses, one in 20th Century Dance History and one in Laban Movement Analysis. Andrea requested that I get more training from other teachers before I finish my degree. I will be attending an immersion workshop by Integrated Movement Studies in Salt Lake City just after submitting this transcript.

Activities at Observation Sessions

I have learned that my peak movement attention span is about 20 minutes, so that will form the core of a session. Sessions totaling more than 4 - 6 hours a day become unreliable. An observation session might look like this:

- Preparation (5 min)
- Attunement (5 min)
- Note-taking (20 min). Rest and repeat.
- Break after 2 hrs or so (15-30 min)

Data Reliability: Exposure to Movement

Attentive note-taking is the core of data collection. The ideal twenty minute session would need to be repeated three to six times for a given practitioner to get a good characterization of their movements. Additional observation may be needed to provide more opportunity for extreme or unusual movement events to be recorded. It is not possible to get an even spread of participants. The costumed zoologists appeared in the yard seemingly at random and the cutters and their horses enter competitions in different permutations. Each case study would need to find a balance between overall exposure and numbers of participants.

Preparing for movement observation requires following some guidelines to increase awareness of movement and attentional focus. The first step is to seek relaxation through yawning, stretching, breathing, and finding a comfortable position. This will increase one's receptivity to the environment, but shouldn't put one to sleep. The second is to tune into movement by responding to it. That might include saying "watch" every time an interesting movement occurs, vocalizing in a dynamic echo of the movement, doodling the shape and energy of the movement, or mirroring the movement with one's body. After attunement, one can progress to concentrated observation and note-taking. Following that, one should recuperate in order to maintain alertness over long periods. This may include glancing elsewhere, socializing, going for a walk, or going back to the relaxation and attunement steps. These steps are described in detail by [Moore & Yamamoto \(1988\)](#).

I found that these attunement steps didn't work every time. I found it much more useful to remind myself of the whole BESS movement system by working through it. My movement checklist, described below, helped considerably. I would watch for things in the checklist and then become absorbed by the movement I was seeing. I also found that having the same set-up routine helped.

While in the field I took some video and photos. The photography has helped provide context for the movement. Although I took all of my photos in public spaces, I've been careful not to use photos where people are easily identifiable. This means people are distant, blurry, or cropped out. Animals seem to live in a different legal context. While I took a fair amount of video, I found it easy to get lost in during analysis. Video might be better suited for follow up research on specific kinds of movement events.

The videos and photos are not supposed to be professional quality or have artistic value, and will be taken as snapshots. They were primarily for documentation and are not the emphasis of the project.

In hindsight, it would have been nice to have better videos and photos. I would like to get some training in photography before embarking on a similar project again. This would make demonstrating my points with clips more feasible, which would make my points clearer for lay audiences.

Participants

This project was reviewed by the University of Wisconsin Behavioral Sciences Institutional Review Board. This study was originally designed to enroll participants because some movement may not have been in public spaces, because I may have wanted to engage participants in formal interviews, and because participants may have wanted to decline being photographed. Since I only observed participants in public spaces, it wasn't necessary to enroll anyone.

Note-Taking

I developed two note-taking structures for this project. One is a checklist meant to ensure that all of my movement parameters from the BESS system get addressed in general terms, especially the passive ones that I may not otherwise notice. This turned out to be very useful!

The other is more free form, for taking notes in the moment as action occurs. I developed a shorthand for the BESS system that will help me keep up with the action. I used it along with short phrases and diagrams to describe the action sequences. I found it useful to notate times, locations, video IDs, page numbers and so on in the margins. The blank backs of these pages turned out to be wonderful places to brainstorm and synthesize ideas.

Processing Notes

Each day after fieldwork I usually re-read my notes, clarifying and annotating them. After my fieldwork, I digitized, collated, and synthesized my notes. More details on that on the next page.

Laban's Analytical Systems

While my focus during fieldwork was on Laban's effort system, I found it much easier to approach my material through connectivities first. The effort system produced so much data that it was hard to know what to do with it. I spent a lot of time combing through it for themes which eventually lead to a larger picture in combination with other parts of BESS. Then I analyzed for Laban's movement states and drives, the combinations of two and three movement factors. States and drives can highlight movement trends, absences, correspondences, and the qualitative character of interactions.

Laban offers two higher level analytical frameworks that I'm less confident of. One is his ideas about how to line up motion factors with then current Jungian psychology. I was hesitant to overlay this level of intentionality to movement, especially movement of other animals. In the end, I found these interpretations generally matched my material, but I didn't investigate it deeply since my argument took me elsewhere.

The other framework that Laban offers for analyzing movement is movement harmony. *Movement harmony is an extensive matching of musical structure to dance.* Laban wanted to reproduce the scales, symmetries, and harmony of music in dance. As Moore explains, this is an analogical metaphor (2009, 189), and it is unclear if music and dance really are related in these ways. It would take significant reconfiguration to apply this framework to this project since it seems to relate more to art, expression, and natural perfection, so I did not use it.

Why only movement?

LMA is used precisely in situations where verbal reporting gives limited results. Interviews depend on self awareness, recollected experience, prepared stories, representational cultural inclinations, and so on, which jam up in shapeshifting events (Willerslev 2007) and can carry humanist inflection. Movement, by comparison, should be more revealing of affective politics. Interviewing would be an excellent way of learning about techniques for shapeshifting, such as what sort of mindset produces the best results. However, becoming should not require one to intend to imitate another animal, to sense oneself as another animal, or to picture the perspective of another animal. Interviews and ethnographic studies have shown a mix of such techniques in use (Smith 2003, Greenhough & Roe 2011, Bear and Eden 2011), but movement should tell a different story.

I would like to leave the relationship between interviewing and movement observation to later projects when I can collaborate with geographers who like to interview. This project targets a current need in geography for methods that access non-representational life, recuperate affective dynamics, and enfranchise animals in social theory. This project's contribution of a rigorous methodology applied to a unique set of case studies is of sufficient magnitude to stand alone.

Jungian interpretation of Laban's effort factors.

Modulation in:

WEIGHT shows intention and desire to do something. Related to the visceral sensation of movement.

SPACE shows attention to things. Related to the thinking and attitudes towards the environment.

TIME shows commitment and decision making. Related to intuition.

FLOW shows progression or holding back. Related to the emotional engagement of movement.

Effort drives: three of the four efforts combined

Vision Drive: no weight. Withdrawal into a clear mental space.

Passion Drive: no space. Blindly expressing oneself, self absorption, pain, pleasure, sensation.

Spell Drive: no time. Reverie, a timeless idyll. Losing track of things.

Action Drive: no flow. Mundane, workaday, applied and practical movement. Lacks emotion.

A Relational Movement Framework

1. Similarity of movements across body boundaries, not necessarily at the same time.
2. Complementarity of movements across body boundaries.
3. Synchrony of movements in time, in particular, tested by changing pacing.
4. Action-Reaction patterns, showing that bodies are located somewhat in the same sensory niche
5. Effort flexibility. A large variety of efforts displayed and applied in appropriate situations. Some extraneous efforts and movements inserted to maintain variety. This is a common analytical method used in examining people's professional skills.

Note taking formats (the right-hand one shows only half the page)

Movement Parameter Checklist. Select all that occur regularly:

Participant # _____ Notes Page # _____

Species: human herd prey predator social domesticated wild

Movement: still punctuated constant varied
subtle overt varied

Space: Kinesphere: self-touch inner mid outer touch-others

Sensory focus: none internal indirect direct

Migration: sedentary small large directed all-over

Connectivities: breath core/distal head/tail
(integrated: y n) upper/lower body half cross-lateral

Shape Flow: none subtle gathering scattering

Shape: arcing spoking carving

Rhythm: exertion-recuperation stability-mobility

Effort: *Space:* direct indirect varied
Flow: bound free varied
Weight: strong light varied
Time: sudden sustained varied

Noise: inaudible quiet medium loud sustained punctuated

Smells: present modulated drifting blowing un/noticed

Views: clear moderate occluded, short medium far, changing

Touch: handling poking pushing cold warm wet firm light

Place: Date: Time period: Images:

Description of situation:

A	B	C	D

E	F	G	H

A	B	C	D

E	F	G	H

= ?

w/ w) s/ s) t/ t) f/ f) sf/ sf) (-) +++ kⁿ k^{mid} k^f gather scatter arc spoke carve still integrated co

Looking back: How did LMA fair for this research?

About halfway through my fieldwork, I explained to someone at the site that I was a dance analyst. Their face lit up. Previously, I had been calling myself a geographer and had only gotten confused looks. Being a dance analyst turns out to be a wonderful thing!

When I started this project, I had isolated a few aspects of LMA that I thought would be particularly interesting for relational movement: carving, drives, and effort patterns. If only I'd known how much material LMA would generate! I was quickly inundated, and this instead project focuses on creating foundational accounts of these movement repertoires. Later research would find fertile ground for more focused movement analysis.

LMA and Foreign Anatomy

Attending to animals brought up a variety of interesting challenges. First of all, I found myself asking questions about the kinesiology, anatomy, and behavior of the animals I was studying. How a horse holds its head up (the vertebra are not at the top of their necks!) or how crane limbs rely on exercise to develop correctly seemed pertinent, but LMA doesn't address this at all, even in humans. Is that a strength or a weakness? While I didn't go seeking this information specifically, plenty of expert knowledge seeped in anyway.

Similarly, distinguishing animal behavior from movement while observing became extremely confusing. I'm still not sure if they are different things. Behavior, at least, seems to have intentionality ascribed to it in hindsight, whereas movement can be analyzed as it happens. In any case, I can see why Maxine Sheets-Johnston moved from dance philosophy to zoology in her studies.

Animals present different bodily arrangements that ended up figuring prominently in my work. Four-leggedness and the lack of hands make animal connectivities, focuses of weight, and grounding quite different. In both cranes and cutting, their head and neck become their primary extender, in addition to holding eyes, ears, and mouths. I rearranged their connectivities without referencing formalized human ones, so there is an opportunity for more depth here. However, while these differences were key in understanding new stability-mobility mappings, they didn't disrupt or suggest an alternative theoretical model. The only serious challenges to this framework are flying and floating. For these, due to their lack of grounding, we need some other way of making sense of how such body parts are coordinated. Other fields have probably already looked at this.

A few other physical facts of these animals' bodies also played a role. Carving, arcing and spoking are difficult to apply meaningfully to livestock. While they carve, arc, and spoke with their heads and feet, they do this as a matter of existence. The points of comparison in humans (absence of limb use, and shape flow) are not clearly opposing alternatives for them. Actual body weight seems to affect movement repertoires, although the relationship isn't direct. This is discussed more in the results sections.

Animal Efforts

Animals also challenge Laban's effort system in a few ways. I found cranes to be quite difficult

to characterize. My first notes are all space and time, and no weight or flow. I found myself re-analyzing and shifting results around as I worked. Then I seemed to be seeing animals exhibiting drives all the time. Is that actually the case? What does that mean about animals, humans, and the idea of a drive? Efforts also didn't always follow Laban's binary structure. A bathing crane is both strong and bound, but there's a significant amount of error or wiggle in their movements. Does that mean they're both free and bound at the same time? Separated cows were similarly confounding in their rubberiness. Flow may be different in some animals, and the boundaries between effort categories may be adjusted. If Laban were working today on animals, he might indeed coalesce on different efforts. This leaves my results in some question.

As I was working on drives for a relational perspective, I found myself becoming confused about external and internal perspectives on movement. For example, when considering the ideas of bound and free flow, one can picture a Lego doll and a rag doll. This is an uninvested perspective on the movement, where outside forces determine the quality of the body's movements. Meanwhile, one could characterize flow as the person's relationship to control. This characterization is volitional, where the movements are determined on some level within the person. I did not explore this issue much this time, but it should play a role. In a relational framework, movements come from both places. A horse can create rag doll out of their rider by jumping too much, or the rider can do so by letting go, or both can happen at once. It may help to clarify external and internal perspectives when defining efforts in the future.

Methodological Invisibles

I will be making a number of claims based on movement that LMA is not well prepared to deal with. That makes these claims interpretive or analytically realized, although it strikes me that methodological growth might make it possible to broach them more directly. It is, for one thing, impossible to see what riders are doing through their saddles. Connections through touch and contact are tricky to make out. Breathing, such a huge player in human movement, is not only difficult to note, it is also unknown what role it might have in animals. Preparatory movements, such as limbering up, become folded into the current action in an indivisible way, as is presumably the point. Without knowing the whole context, one may miss a major aspect of movement and virtuality. It is also hard to tell if staggered movements are linked or cumulative. This is where my thoughts on spatial rhythm make a leap of faith. Similarly, it's hard to tell through LMA how movements extend out into space and how they combine or compete. Extrapolation seems required to make conclusion about these kinds of claims.

Problems

I ran into a few problems along the way. One problem was the quantity of movement in front of me. Hundreds of participants, each with personal foibles and a distinctive style. I watched both in person and had some videos for backup. The videos allow second by second analysis of each space of the body. This is not necessarily an advantage, since it brings into question which seconds to watch, and how much heft they should carry in the analysis. Foundational Laban is focused on whole movements that require the whole body. Many movements are not at that scale though, and yet they may be salient.

Movement fundamentals for ungulates: guided imagery.

Start with the chew.

Chew is the most fundamental movement. It is the source of all our movement and our first experience of movement. The chew gives us a sense of all three dimensions.

Now chew down, now release. Now chew down, and release.

Now chew bringing the lower jaw across your hard palette laterally. This is the third dimension of chewing.

Make sure to release afterwards.

Now left. Now release. Now right. And release. OK.

Chewing in the third dimension allows us to properly manage our cud. Without it, the movements of the stomachs are disrupted.

Each time you chew, notice your mouth shrink and then expand. You can chew sagittally or laterally and still experience the shrink and expand.

Now chew again, and release. Shrink and expand. When you expand, your neck muscles should relax.

It's like when they violently stuff you into the shoot for an inoculation. Relax and expand.

A common mistake to make is to keep the back of your head a little lifted off the floor. This is because you're tensing up in your shoulders and haunches since you're not used to lying on your back with all your feet splayed out to the sides like this.

But we've found that on our backs we can isolate the most fundamental movements.

Chew, and release.

So if you're finding your head tilting off the floor, imagine that there's a river of water flowing out of your mouth up to the ceiling.

You may start drooling. Chew and release.

It's like when they tie your front two hooves together, and your back two, and stretch you out on two ropes to be shorn. Or to be branded. Remember the sensation of nausea that comes with that. And the outward flow.

Take A Gambit, hon, try not to vomit. Chew in the third dimension.

Feel your shoulder muscles release and your jaw drop into the ground. Your chewing should be lighter and deeper now.

Shrink. And expand. Chew and release.

You should now feel grounded into the floor from the back of your head, down the entire length of your long neck, and across the shoulder blades. Chewing deeply releases those muscles. Your legs will splay out a little more.

To Be Cherished, you're kicking Galactic Power. Can you release more here? Think of the nausea in all three stomachs. Yeah, that's better. Did you feel that? Your haunches should be more connected now.

Chew and release.

Must Be Magic, you're disrupting your second stomach when you hold your chew. You have to keep chewing if you don't want to slobber all over Galactic Power.

Shrink and expand. Chewing is so therapeutic. It helps us get through things, like when they put 300 pounds of zor shriner on Galactic Power's back.

Don't forget to chew in the third dimension.

Think about how Galactic Power's back bowed. And how he tripped. And how his ribs hit the dust.

Chew and release. Drop your back like Galactic Power's and feel the release.

Galactic Power, dear, where are you going?

Chew and release. Your back should now be grounded through the haunches.

Feel the grounding coming back up through your shoulders and neck from your haunches. It should connect all the way into your jaw. And when it is time, allow your head to rise.

It's like when they've forgotten to fill the water trough again. Your head should gradually rise without you wanting it to.

This is how the grounding through the chew will lead to more complex movements, such as fleeing.

If you feel the need, give out a sonorous meeuuoooooo.

A similar issue arises when considering participants. Is the idea to get to know a few participants well, or to get a sense of the whole spectrum of possibility? I got stuck a few times trying to make a strict account of each participant by each type of encounter, so that I could make what felt to me like more verifiable truth claims. Later I turned instead to a more vague and subjective strategy of watching for things that would help me fill out a point or a gap in my movement system. I'm guessing that LMA is also like this in other applications, although I haven't seen much discussion of it.

Another problem I had was the ease of slipping into the rich English language instead of breaking movements down into their constituent parts. Although I started out noting almost only raw movement, I soon realized that contextual information was also important. My notes turned more into vignettes. Then, after I realized that a list of actions wasn't useful either, I tried to combine the two. This turned out to be the best approach. I would often take the note using expressive adjectives, phrases, and diagrams, and at a later pause, characterize what I meant in analytical terms from memory. This helped me go over my notes later looking for themes and rich characterizations.

A fourth problem I ran into was that my case studies fell too far apart in my schedule. It would have been better to do them in the same year so that their distinctiveness would have stuck out more. I designed the study for long exposures to movement because the case studies and the methodology would still be new to me. This turned out to be a good idea for those same reasons, and for horses in particular because it was hard to see how horses looked different from each other at first. However, I think movement analysis as a research program should be done regularly in short bursts. One sees something new and meaningful in movement when one has fresh but familiar eyes. Then one must return to the office to work through the evidence.

A final concern is that LMA locates focus on the body as the source of movement. In good faith, I looked for movements in the surrounding environment. But when it came to time for analysis, there was no way to figure them in. While my theoretical framework suggests that bodies as we know them may not be the organizing force for movement, both the Laban system and the practice of observing make it hard to come up with an alternative at this step. Instead, one watches the movements as originating in assumed bodies, and then extrapolates to show how in fact the movements are betraying the presence of a different set of bodies. Perhaps with practice, one could begin to observe with the indirection needed to avoid watching the assumed bodies in the first place.

Fun crane words

subtle
clacks
fast
skipping
flapping
jumping
picking
jittery
swaying
leaning
pulls
recoils

tearing
absent minded
wiggled
softly
curly
dynamic
still
spontaneously
mellow
faster now
taps
high energy

lazy
uncooperative
responsive
catching their eye
fully raise puppet
pacing
suddenly
swirls
good connection
digging
energetic
terrible

loose
rare
adjusts
attracts
moves off
level
pointing
scratching
tighter
fake drinking
crouching
gestures

Fun cutting words

lurch
jumbled
plow
shuddery
stuttery
scrambled
mad dash
leapy
pounce
swirly
angular
jagged
wumping
jerky

panic
rowdy
boing
kachunk
bursty
pops up
deep
lunging
wobble
barreling
porous
buoyant
tight
blompy

jabbing
low
rough
lag
warpy
gets tall
shove
explode
squeeze
thick
smooth
stiff
limp
swirl

pop
swinging
curly
boing
scoop
chug
plop
bump



Crane field notes

Both years I took some video, which I haven't ended up using. It may become most useful in presentations and demos.

I developed a shorthand for my notes as well as drew diagrams.

I noted clock times for entrance and exit of each participant, which I could later crosscheck with ICF's records for who was out there then.

2012

Drought, over 100F some days

4/29/2012 5 pages of practice notes

6/14/2012 - 7/7/2012 Concentrated study
19 pages of handwritten notes total
3 pages per sitting

Sittings lasted 4 hours in the afternoon

5 pages additional notes to ensure breadth

9 - 19 non-unique participants each day
11 unique human participants total

Deep exposures from 20 - 60 min.
Some only passed through, ~5 min.

After digitizing, I organized my notes by person
Longest exposure 257min (>4hrs)
4 participants < 2 min
5 participants, average 66 min each
Total exposures were 257 min (~10 hours)

Scenarios I sorted my notes into in 2012

Eating plants,
Passing through
Leading
Failed to motivate travel
Sharing lead
Parallel travel
Running (young)
Running (middle aged)
Watching—foraging pairing
Preening
Walking
Drinking
Bathing
Foraging
Waiting alone
Co-foraging
Food offering
Exertion—recuperation
Direct intervention
Crane to crane
Checking out adult crane

In 2012 I became preoccupied with figuring out whether something I was seeing was a pattern or a random occurrence, and how to value it accordingly. This may not have been quite the right path to go down.

2013

80F, sometimes cooler

6/19/2013 - 7/6/2013 Concentrated Study
19 pages handwritten notes total
More journaling this year
3 pages per sitting

Sittings lasted 3 hours in the afternoon

11- 26 non-unique participants each day
13 unique human participants total

Deep exposures 20-40 min
Some only passed through, ~5min

I didn't digitize these notes or calculate individual exposures. I read through them for themes and things I'd missed from 2012.

In 2013, I focused more on higher level movement issues like rhythm, connection, and recuperation.

Themes

Connectivities: birds
Connectivities: costumes
If cranes were more like us
Me in doubt
Head down / bird decision tree
Characterization clouds
On the move /spatial and temporal echoing
Timescales of connection
Pointing is for hands (facing is better)
What are these bodies?

Cutting field notes

UCHA
Spanish Fork, Utah
Feb 26-27 2016
Weekend Show

Attended 2 days, 11am-6pm, with breaks; 7 pages of notes

10 pages of notes from watching videos; 7 participants

At this show I was primarily interested in seeing cutting in person. I found that it's hard to take notes on each participant because they're only there for 2.5 minutes.



UCHA Spanish Fork Cutting Spanish Fork, Utah - February 26-27, 2016

Place	Spanish Fork Fairgrounds, 475 South Main St., Utah 84660
Show Mgrs	Jake Ream & Mike Holman
Approvals	NCHA, UCHA
Show Begins	8 a.m.
Secretary	Kathryn Webb, kwebb50@msn.com or 801-380-4031
Entries Due	Pre-enter by Wednesday to Kathryn by email or text to above number Saturday's entries due by Friday end of show
Stalls	\$30/night \$10 TB stall fee/show horse
Practice Pen	Flag
Judge	Nate Miller, AAA
Motel	Western Inn Spanish Fork, 801-798-9400, 632 Kirby Lane, Spanish Fork, 84660. Directions: Off I-15 on Hwy 6 (directions Price), Take exit 257B.

Working Order	Class	Added Money	Entry Fee	Cattle Fee	Other*	TOTAL
1	Open	\$300	\$100	\$100	\$30	\$230
2	Non Pro	\$300	\$100	\$100	\$30	\$230
3	50,000 Amateur	\$200	\$80	\$80	\$30	\$190
4	\$25,000 Novice Horse	\$300	\$100	\$100	\$30	\$230
5	\$25,000 Novice NP	\$200	\$80	\$80	\$30	\$190
6	Derby Open	\$300	\$100	\$100	\$30	\$230
7	Derby Non Pro	\$300	\$100	\$100	\$30	\$230
8	\$35,000 Non Pro	JP	\$70	\$70	\$30	\$170
9	Classic/Challenge Open	\$300	\$100	\$100	\$30	\$230
10	Classic/Challenge NP	\$300	\$100	\$100	\$30	\$230
11	\$15,000 Amateur	JP	\$70	\$70	\$30	\$170
12	\$5,000 Novice Horse	\$300	\$100	\$100	\$30	\$230
13	\$5,000 Novice NP	\$200	\$80	\$80	\$30	\$190
14	Youth	JP	\$20	\$20	\$30	\$70
15	\$2,000 Rider	JP	\$70	\$70	\$30	\$170

Circuit Awards – between this show and the 1st Spanish Fork show 2/5-6. To be eligible for the circuit in your class, you must show at least once at both shows and be the highest mor winner.

Directions: From I-15 coming from the north, take the Spanish Fork Exit. Continue down Main street to the Fairgrounds. From I-15 south, take the Benjamin Exit and continue to Fairgrounds.

I took videos and analyzed some of them second by second over the next few months in preparation.

Cutting is not an easy sport to get into. There is little about it that isn't behind a pay wall or in jargon. It's also repetitive and subtle, and doesn't lend itself to being watched.

I met with a friend who is a cutting fan to get some inside details about how the sport works. I also watched videos on youtube of popular cutting horses and of horses and cows generally.

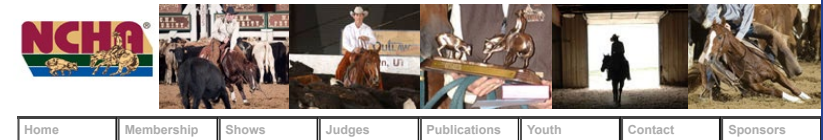
Dean Sage published a manual in 1961 that was also of some help.

NCHA Western Nationals Denver, Colorado April 27 - May 6th Finals for the 2015 award year

Attended 8 days, 11am-6pm, with breaks; 16 pages of notes, followed players and horses

In Denver, I took thorough notes for the first 2 days. I then took more impressionistic notes as I saw new aspects of movement.

I chatted with audience members to learn how to see technique and how to understand scoring and classing. They sometimes confirmed and sometimes denied things I had noted. Learning to cut and learning how cutting actually works are different pursuits.



Presented by

National Western Complex
4655 Humboldt St. Denver, Co 80216

April 27 - May 6, 2016
Tentative Schedule as of 04/06/16

Date	Time	Event	Round
71 Wed, April 27	8:00 a.m.	\$15,000 Novice	1st Go
72 Thurs., April 28	8:00 a.m.	\$5,000 Novice	1st Go
71		\$15,000 Novice	Finals
50 Fri., April 29	8:00 a.m.	Open	1st Go
66		\$2,000 LR	1st Go
64 Sat., April 30	8:00 a.m.	Junior Youth	1st Go
65		Senior Youth	1st Go
Grand Entry			
64		Junior Youth	Finals
65		Senior Youth	Finals
72		\$5,000 Novice	Finals
50 Sun., May 1	8:00 a.m.	Open	Finals
66		\$2,000 LR	Finals
63		\$50,000 Amateur	1st Go
61 Mon., May 2	8:00 a.m.	\$15,000 Amateur	1st Go
63		\$50,000 Amateur	Finals
62 Tues., May 3	8:00 a.m.	\$35,000 NP	1st Go
67		\$15,000 Amateur	Finals
Taste of Minnesota			
75 Wed., May 4	8:00 a.m.	\$5,000 N/NP	1st Go
62		\$35,000 NP	Finals
61 Thurs., May 5	8:00 a.m.	Non-Pro	1st Go
74		\$15,000 Novice/NP	1st Go
75 Fri., May 6	8:00 a.m.	\$5,000 N/NP	Finals
61		Non-Pro	Finals
74		\$15,000 Novice/NP	Finals

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Hotels

[Double Tree by Hilton Denver](#)
3203 Quebec Street
Denver, Co 80207

[Double Tree by Hilton Denver-Stapleton-North](#)
4040 Quebec Street
Denver, Co 80216

[Photo - Video West](#)

[Video - Video West](#)
661-265-0341

[Entry Form](#)



A zoologist in costume, known as "Costumes" at the International Crane Foundation

Case Studies FAQ

There are two cases of imitation and interdependence that interest me in particular: the way zoologists raise wild cranes at the International Crane Foundation and the way cows, horses, and people play the sport of cutting.

Cranes FAQ

what is the International Crane Foundation (ICF)?

- The International Crane Foundation is a conservation organization operating worldwide whose mission is to protect wild cranes. They work directly with local stakeholders to create and protect spaces where humans and cranes can cohabitate. Their home base is in Baraboo, Wisconsin, where they have a small crane zoo and a crane rearing facility for whooping cranes.

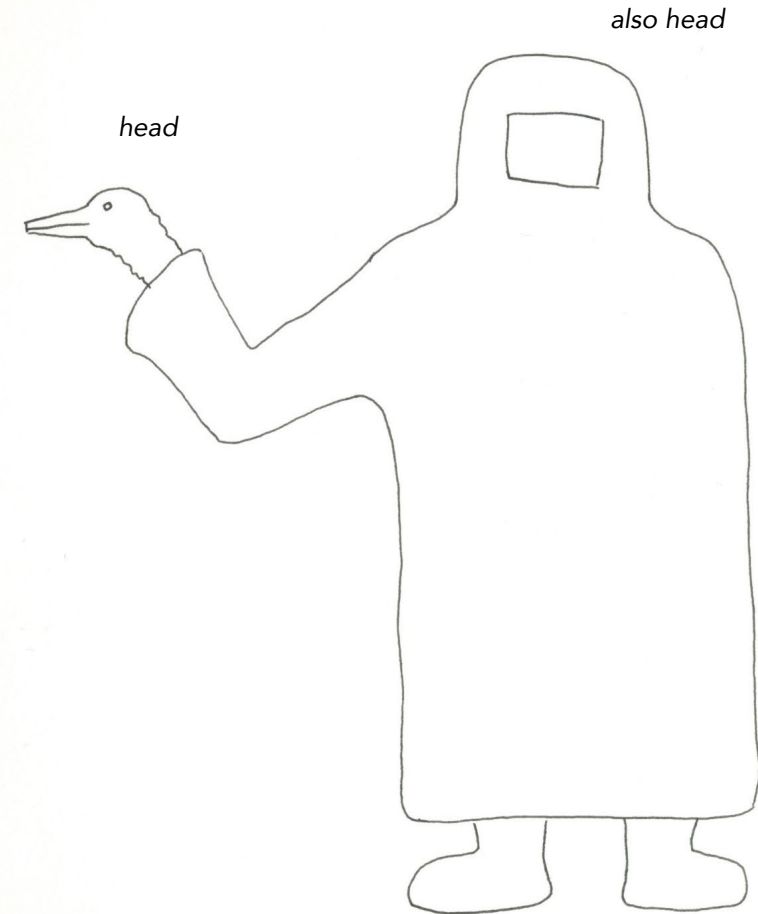
what's a whooping crane?

- Whooping cranes are a snowy white, critically endangered, North American species with an inbred genetic pool. A small wild population still migrates. Since the 1960s, zoologists have been raising captive birds using human, human-puppet, human-airplane, and live crane and crane effigy surrogates to boost the wild population ([van Dooren 2014](#)).

why Cranes?

- At ICF, the person is the imitator.
- Cranes, like many bird species, will imprint on whomever is around during a critical period in infancy and then again before fledging. This means that if the birds are raised by humans, the birds will identify as humans both socially and sexually. Because ICF wants to raise wild cranes and not crane-humans, ICF zoologists and interns now dress and act like cranes for

I have two heads



every interaction they have with the birds. They wear large white burka-like costumes and carry a crane puppet and a crane call. Costumed interns are heavily involved at every step, spending hours a day with the cranes in the yard and at the marsh. They are asked to be as much of a crane parent as possible, something they learn primarily from the cranes themselves. It is interesting that the risk of permanent transformation is addressed through reverse imitation. It places the burden of transformation on humans. To learn more about imprinting and cranes, look at van Dooren's essay in [Flightways \(2014\)](#).

- To my knowledge, cranes raised and released from ICF have not reproduced in the wild. This brings up the specter that cranes and costumed zoologists have together become something unrecognizable, perhaps due to the circularity of their enterprise. The cranes learn to be cranes from the costumes and the costumes learn to be cranes from the cranes.

how is ICF funded?

- ICF is funded by donations, which means they are motivated to do things to bring in donations. I've heard concerns that raising cranes this way is more successful with the public than with the cranes. This year, however, they canceled the plane-assisted migration program, which inspired the movie [Winged Migration](#) in 2001. They also decided to phase out costume rearing starting in 2016.
- Raising each crane takes tens of thousands of dollars. One year a hunter shot a crane raised in the program and there were questions about whether the hunter was responsible for the value of the crane.

who has the most contact with the cranes?

- ICF hires ~8 interns seasonally who do the bulk of the work. There is one employee who supervises them who has been there for decades. The group meets weekly to discuss raising cranes.
- The interns are recent college graduates seeking a foothold in zoo careers. They work there for one season.

what is on the grounds of ICF?

- In the public part, there is a zoo where only cranes live, a welcome center with a shop, and trails through a prairie and woodland. There is also a museum and art gallery. The webcam is in a the museum.
- In the private areas, there are offices, a clinic, meeting rooms, and the chickering facility.

what is a chickering facility?

- It is where cranes are raised. I was not permitted to go there, but from what I know, there is a building, pens, crane yards, and a route out to the nearby marsh. The pens and yards have netting above them so predators can't fly in.
- The youngest birds have pens that are inside so a hand puppet can reach them. I think they are then moved into the "crane runs," where they can see each other vaguely through the walls and walk to the outdoor portion of the pen.

- The pens open onto two crane yards joined by a gate. The camera only shows one crane yard. The yard has a pond, grass, shrubs, and a mock adult crane figure. Next door to this yard is a pen with a living adult crane in it.

what gets tracked by ICF?

- ICF tracks everything that happens to each crane. When they go out in the yard, with whom, for how long, what they ate and did while they were out, and so on. They also track weight, height, and numerous other statistics.

how does ICF change the way they manage the crane's day as they grow up?

- Management depends on how much exercise the birds can manage and whether it is safe for them to be left alone or to spend time with other cranes.
- After they can walk, the birds get to spend a few hours a day alone with a zoologist in the crane yard. Then they begin taking longer walks out to the marsh. In mid-July they only pass through the crane yard on their way to long days in the marsh. By late summer, they begin learning to fly in the marsh. As migration season nears, they are moved to a nearby wildlife refuge.
- The birds start out alone because they can attack and kill each other. Since they have to be attended to individually, they are only out for exercise a few hours a day. However, they do get to see each other through the chain link fences and netting. These encounters bring out intense aggressive behavior.
- At a certain age the zoologists start bringing the birds into the yard in groups of two or three. This is a risky period. There is one zoologist per bird, closely following to make sure any violence can be abruptly stopped. Attacks become less common over the course of several days. Attacks are fierce and lightning quick.
- After the birds become socialized to each other, they are left alone as a group for expanding amounts of time. It is difficult to sneak away from the younger birds since they keep tabs on the costume's whereabouts. When they realize they are alone, the birds become nervous. They stay near the doors of their pens and keep looking around. After many days of being left this way they get used to being alone.

what about wild cranes?

- Crane families in the wild consist of two adults and one or two chicks.
- They walk for miles every day. From the marsh through farmer's fields, and back in the evening.

what did I do while I was at the Crane Foundation?

- Drive up and back (1 hr each way on Hwy 12) each day
- Say hi to Bryant Tarr, Curator of Birds
- Enter the museum and check if the birds are in the yard. I used a joystick lodged in one of the



- Van Dooren (2014) discusses other bodily interventions, such as those required for breeding, in more detail.

what about bird calls? are the costumes mute?

- The costumes carry a bird call device so they can make crane calls. The zoologists are not allowed to talk in the presence of cranes.
- The camera into the crane yard doesn't pick up sound, so this study is limited by not knowing if the cranes and costumes are relating through sounds

Left: the kiosk where I watched the cranes from the visitor center. The buttons move the camera's view around the yard. Children loved to pan all the way to the side and back, or just mash on the buttons.

interactive displays to move the webcam around.

- Watch for a bit if the birds are there. Attune to their movements. If not, get set up, digest yesterday's notes, free write, and refresh my Laban knowledge
- Take notes, usually for 2 hrs or so
- Eat lunch, walk around ICF's prairie trails, and watch and interact with cranes in person through fences at the crane zoo
- Take more notes until I burn out
- If visitors arrived at the museum, I answered their questions
- Leave after 4-6 hours total
- Some days there were cranes in the yard for long periods, other times different groups came and went, and some days no one was there.

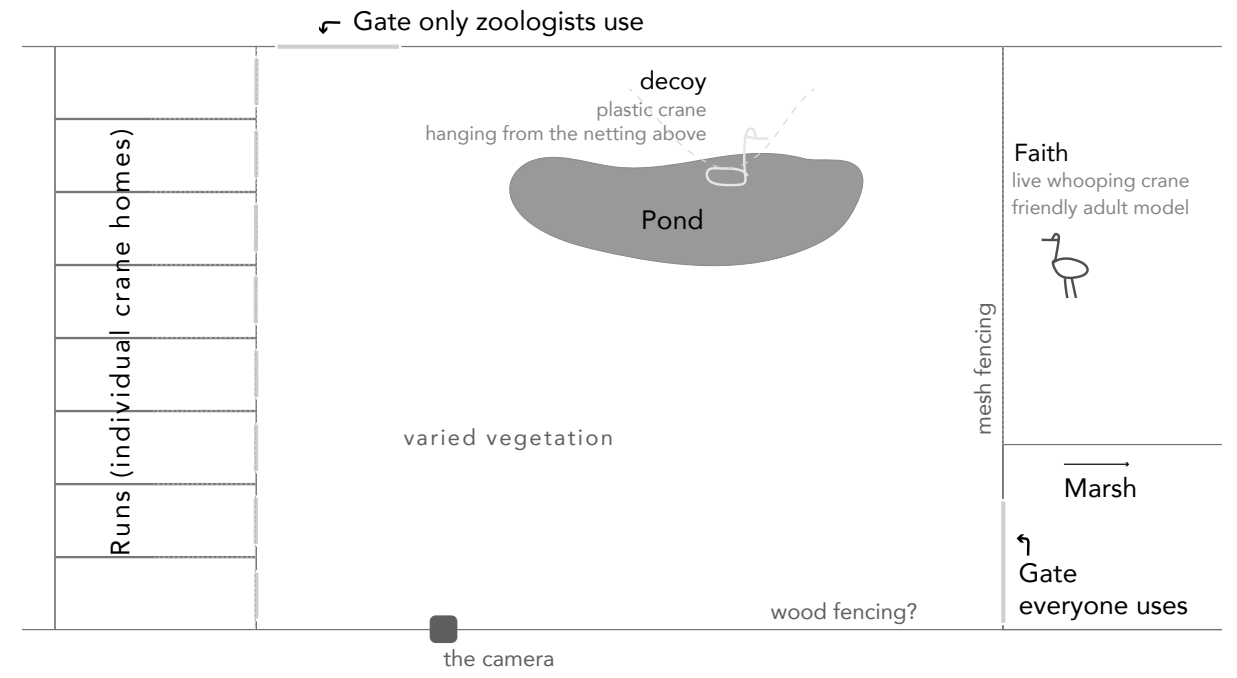
what am I doing for ICF?

- I moved the webcam so it was focused on the birds and costumes. It can't be moved remotely, so I benefited remote viewers by keeping the action in view.
- I answered questions of visitors who came into the museum as best as I could
- I'll provide recommendations based on my results

what medical interventions does ICF perform?

- They pay close attention the cranes' development. The primary threat is lameness, which results from insufficient exercise. A twist may grow into a leg or foot. Similar problems can arise while the birds fledge. ICF uses splints and surgery to address these issues. Birds whose growth can't be redirected are not released into the wild.

The Chickering Yard





The players size each other up before the next round

Cutting FAQ

what is cutting?

- Cutting is an equestrian mirroring game. It is a formalization of the cowboy practice where a mounted cowboy separates one cow from a herd. At one point cutting may have been part of the rodeo circuit. Today, cutting is an organized sport for hobbyists and professionals with independent events, magazines, and TV shows, and includes celebrity teachers and ranches.

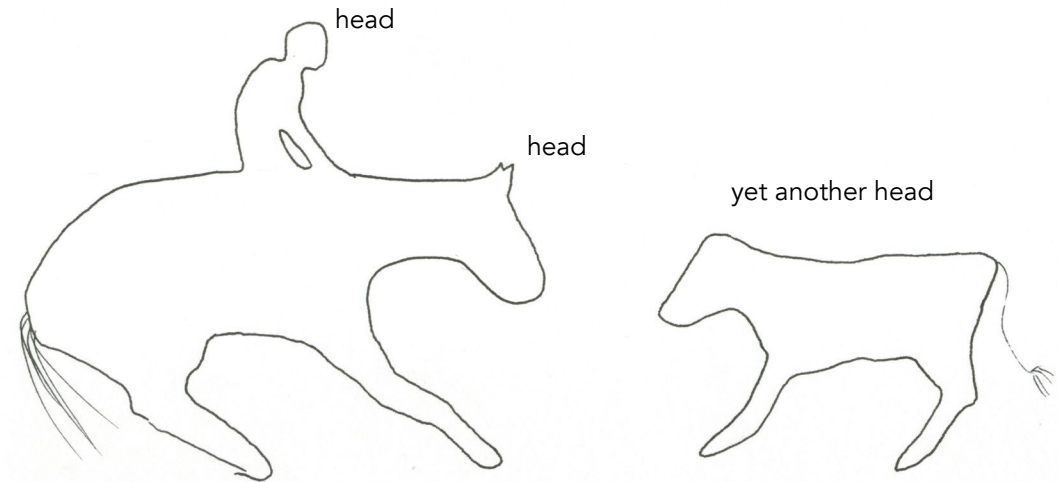
how does cutting work?

- Cutting begins when a mounted cowboy or cowgirl approaches a group of fresh cattle at the edge of the ring. The rider will cut a cow from the group and then must keep it separated from the group for a few minutes. The cow begins to panic once it is separated, and will try to run past the horse and rider. The horse engages in an elegant, face-to-face, mirroring dance to stave off the cow each time it makes a break. The rider must anticipate the horse in order to stay aboard and aid it. The human's role is to prevent their own bodies from interfering and direct strategy. Meanwhile the horse and the cow fall into unison.

who is involved in cutting?

- The NCHA publishes a monthly magazine called Cutting Chatter with competition results, horse sales, stud ads and so forth. You can find their readership demographics on their website. Their readership is twenty thousand, and may not completely overlap with actual participants. (<http://www.chatteronline.com>, accessed 8/30/2016).
- They are mostly college-educated married men. 75% are married; 83% are college educated. While 63% of members are male on paper and while the top competitions are almost exclusively male, women compose majorities at other ranks.
- 60% of subscribers are over 36. People I met had retired from some other profession.
- Most own over five horses and have 72 head of cattle. They are ranchers, trainers, breeders,

And we have three heads



and hobbyists.

- They are rich. Average household income is 177 thousand, with net worths over 1.5million. I heard rumors that the Sinclair and Gerber heirs were there, and I recognized a pro golfer.
- Each family buys 3 Western hats and ten pairs of jeans a year. Popular activities are hunting, fishing, golfing, weight training, aerobics, power tools, and lawn maintenance.

where does cutting happen?

- The cultural center is Forth Worth, TX. The NCHA headquarters are there. The youth chapter, the AQHA, has a lively presence there too.
- There are Western and Eastern conferences.
- It happens in small towns and in large cities (Denver, Calgary).

where does this sport come from?

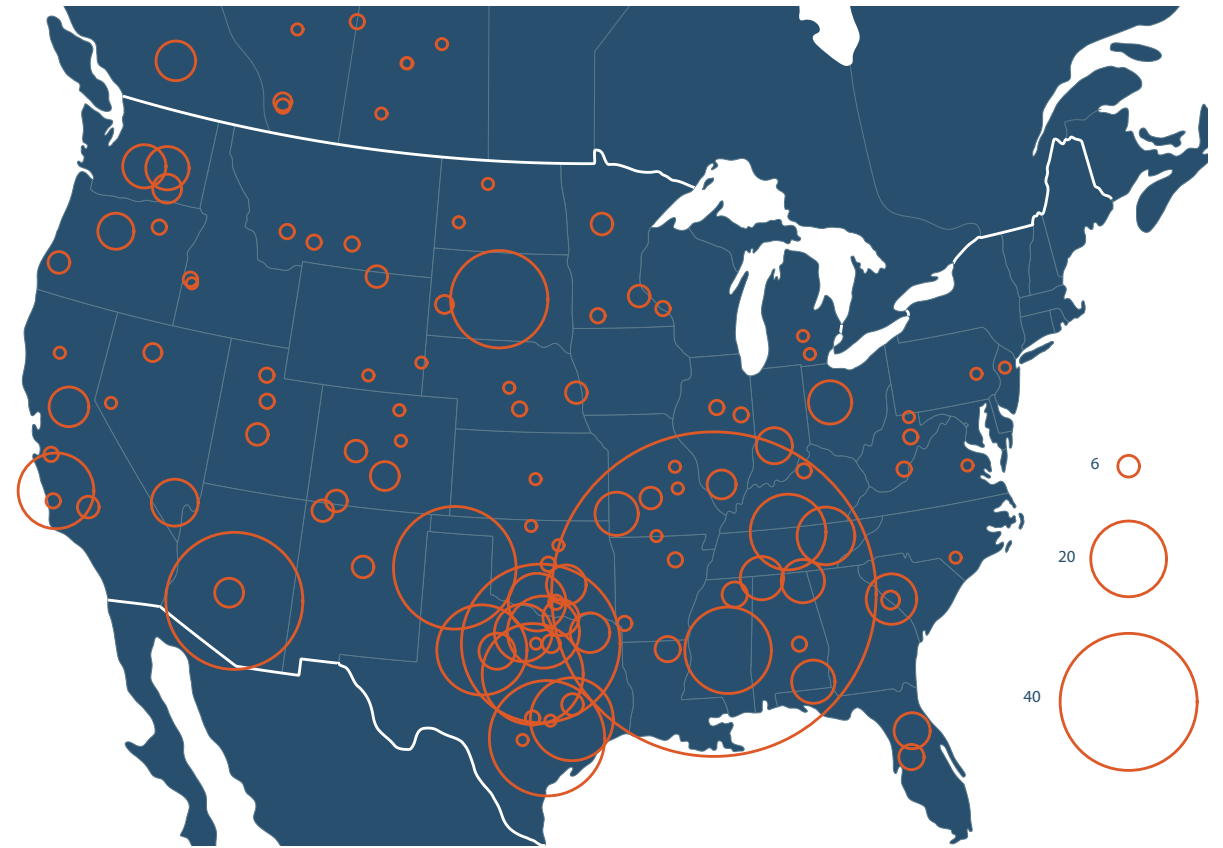
- The lore is that cowboys needed to select cows from the herd for medical interventions. I don't really believe this is the only reason a cow might be isolated; I suspect that this story has been sanitized.

where do the cows come from and why does that matter?

- Cows kept in feedlots are different from cows from open country. Cows can be driven by horses, 4x4 vehicles, or helicopters. Cows driven by horses are more watchful, and know the space around the horse's body better. They are more likely to scoot through a crevice left wide by the horse. Cows driven by vehicles and helicopters are not used to horses, will keep their distance, and won't connect to the horses. They are also more fearful and will react more chaotically. They are more likely to run out of the cutting arena.

what else do cutting horses do besides cut?

- Nothing! Cutting horses are obtained specifically for their cutting potential so they are not used for anything else. On a working ranch, they are ridden every morning for cutting practice,



Weekend NCHA Cutting events in North America, January - June 2016

and then other horses are used for ranch work.

what's a day at the rodeo like?

- It starts at 8am, and goes till 6pm or later. There is a short break for lunch.
- Cutting has a cycle: first you even up the sand in the arena (~10-15 min), then you bring in fresh cows, then you settle them (15-30 min). Then the heat starts. With ~15 contestants on the ground for 2:30 seconds, and a minute to change in between, it takes about 45 minutes. Then you remove the cows and repeat.
- For each contest, they announce the contestant, the cutting team positions themselves on the arena, the contestant enters, they cut, a buzzer rings, and everyone leaves. The score is announced soon after. Repeat.
- Unfortunately, the announcer doesn't tell the blow by blow of what's happening in the arena. This makes the sport inaccessible to spectators. Some people said this was a great failing. But it

may be that some prefer it to be exclusive.

what are the goals? what are the rules?

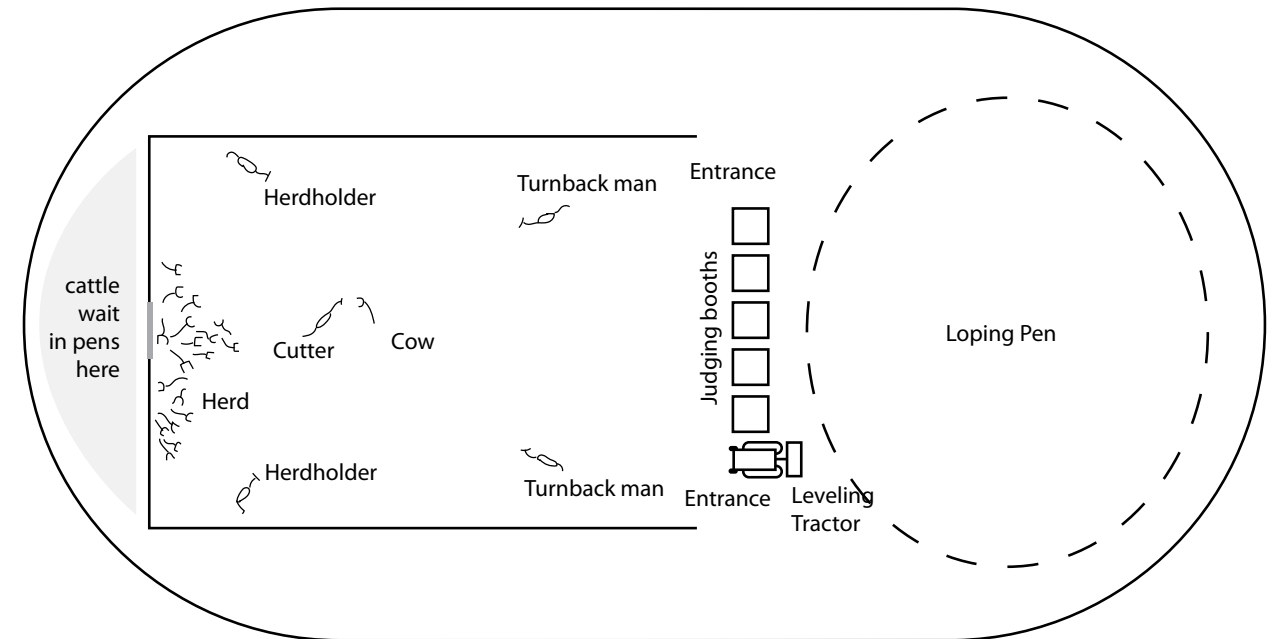
- The goal is to show everything your horse can do. You want a challenging cow that will push the edge of your horse's ability.
- Some judges want to see you using certain techniques. Others don't.
- There are lots of rules, governing everything between animal treatment and what hat you wear. You can refer to the *2017 Official Handbook of Rules and Regulations (2017)*.

what's a bad sign to the judges?

- Your cow is running to the wall and turning, instead of turning off the horse
- Your cow isn't centered in the arena
- Your horse is backing up into the herd, causing the herd to mill around or split up
- You push more than one cow out of the herd
- Your cow returns to the herd
- You switch cows after deciding on one
- Your horse stops attending to the cow (a "hot quit")

what do the scores mean?

- Each of five judges scores the contest using a form. The top and bottom scores are tossed out and the three remaining are totaled. Each judge can award between 60 and 80 points. Their forms are made available.
- Totaled scores range between 180 and 240. Desirable scores are in the two-teens. Higher than that is a remarkable performance.
- The judges can place an R on the score when they want to review video footage.



The Cutting Arena

- Sometimes scores look odd. A good contest with a surprisingly low score may have contained a hot quit that only the judges caught.
- Let's say only 12 contestants will go on from a qualifying round. Through the round, people watch the "bubble," the score you need to earn to fall into that top 12. It creeps upwards.

who is in the arena?

- ~45 head of cattle.
- The herd holders. These two riders stand on each side of the herd near the side walls and ensure that the herd doesn't move away from the close end.
- The turnback men. These two riders stand on far end of the arena near the side walls and ensure that the cow being cut doesn't leave the arena. They turn the cow back to the cutter. They also pressure the cow if loses interest in the game.
- Often your trainer is one of the herdholders or turnback men. They may be responsible for

networking to recruit the three other members of your team.

what else is near the arena?

- The arena is ringed with ads. There might be quiet music.
- Past the close end of the arena is where the next group of cows are kept. These cows have a little window into the arena so that the cows in the arena can see them. This keeps the arena herd from leaving the close end.
- At a small event, there will be one judge sitting centered on the far end of the arena. The camera is also there. At large events, there are 5 judging booths. They have 3 sides to blind the judges from each other, and they are ~5 feet above the ground with a ladder leading to them.
- The loping pen is behind the judges. This pen is where you warm up your horse. It is filled with trotting and cantering horses all moving in a circle.
- There are often mounted spectators gathered at the entrances to the arena near the judges.
- A tractor for evening out the sand
- Bleachers with seated spectators
- Pathways for horses to move around the building and be tied up.
- The announcer and a scoreboard
- Kiosks
- A lunch station or lunch room.
- A large parking lot for trailers

these cows all look the same. How do you tell cows apart?

- Any detail. Size, color, ear habits, high or low head, woolliness, mud, whether they stick to the

herd or not. Markings like hooded, bald face, mule nose.

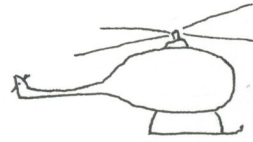
- You or your trainer pick out 8-10 while they're being settled.. You take notes and memorize.
- You want one that will face you, calm.

why do you lope your horse? Why do you settle the cattle?

- Loping is walking and running your horse before competition.
- You lope your horse so that they're limber and focused. Horses coming right from the barn are too excitable and stiff to cut well. It takes an hour or a couple of hours to warm up a horse. The long stints of running that these horses perform makes them susceptible to injury in their ankles. Many of them wear support.
- Loping may be done by someone else. When I saw a lot of men competing in the arena, I also saw more women and children in the loping ring. I also saw people lope their own horses. Some people lope for hours on end. It can make you delirious.
- Settling cattle means riding around in the herd for 15-30 minutes to make them less jumpy. Unsettled cattle won't attend to the horse and tend to rocket around the arena rather than play the game. Settling cattle takes skill. I saw different styles of settling.
- It can be a point of disagreement about whether the cattle have been sufficiently or properly settled. Cattle look settled when they're comfortable being dispersed from one another in the arena and when they stand watching the horse. Unsettled cattle keep their heads down and bunch up.

how do you use the reins?

- Riders are allowed to use the reins to guide their horse through the herd and indicate which cow to cut. Once a cow has been singled out, they must put the reins down and



communicate with their horse through their posture, knees, feet, weight, and so on. Lifting the reins incurs a significant penalty. Riders coming from other equestrian sports find it difficult to leave the reins alone.

how are scores calculated?

- Each judge has 80 points to allot. At an event with five judges, they drop the highest and lowest scores and then add the three remaining scores, making a perfect score 220. Judges fill out a form for each participant that can be viewed afterwards. Certain things, like a hot quit, reining, or changing cows, carry predefined point deductions. Other things, like turning style or centeredness, are awarded or deducted points as the judge prefers. The NCHA publishes a lengthy handbook of rules on their website.



A judging sheet

NCHA OFFICIAL JUDGES CARD

Show: UCHA Spanish Fork Cutting #1 Date: 2/26/2016 11:52:19 AM
 Class: Derby Open Go Round: _____ Class pays 7 pla

RUN CONTENT:

Herd Work: Driving a cow (+)(✓+)(✓)(✓)(-)

Controlling the cow: Working in center of arena (+)(✓+)(✓)(✓)(-)

Degree of Difficulty: (+)(✓+)(✓)(✓)(-)

Eye Appeal: (+)(✓+)(✓)(✓)(-)

Time Worked: (+)(✓+)(✓)(✓)(-)

Amount of Courage: (+)(✓+)(✓)(✓)(-)

Loose Reins: (✓)(-)

Horse Charging: (-) (only)

Forced Off a Cow: (-) (only)

Excessive Herdholder Help: (-) (only)

One Point:

(A) Miss--Loss of working advantage--11
 (a)-1/2 Miss--Loss of working advantage--11
 (B) Reining or visibly cueing--8
 (C) Noise directed toward cattle--5a
 (D) Toe, foot or stirrup on shoulder--8d
 (E) Hold on too long on a cut--8a
 (F) Working out of position--11
 (G) Hand too far forward--8

Three Point:

(A) Hot quit--13
 (B) Cattle picked up or scattered--5b
 (C) Second hand on the reins--8b
 (D) Spur in the shoulder--8c
 (E) Pawing or biting cattle--12
 (F) Failure to make a deep cut--1
 (G) Back Fence--6

Penalties:

(A) Horse quitting a cow--14
 (B) Losing a cow--9
 (C) Changing cattle after a specific commitment--10
 (D) Failure to separate a single animal after leaving the herd--15

60 - If horse turns tail--7
 0 - If horse falls to ground--17

Disqualification (score 0) - illegal equipment or leaving working area before time expires, or inhumane treatment to the horse.

HORSE	SCORE	PENALTIES			RUN CONTENT												
		1PT	3 PT	5 PT	Herd Work	Control the cow	Degree of Difficulty	Eye Appeal	Time worked	Amount of Courage	Loose Reins	Horse charging	Forced off a cow				
1 Misty	71				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
2 TOF Smooth Operator	74				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
3 Lady	60				= Trained												
4 Bobs Diesel Cat	68	F			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
5 Roys Smart Mate	60				= Trained												
6 Dual N Gritty	60	A			= Trained												
7 Vandys Smartest	0				= Trained												
8 Cd Canduit	60	A		B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
9 Reymote Cattrol	69	B A	A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
10 Callme Holipeptolena	70		E		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
11 Candelights	67		E B		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
12 Stopn Stylish	72		A		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
0																	
0																	
0																	

+ Above Average
✓ Above Average
Average #

- Below Average
Below Average #

Divisions within the penalty box represent 1st, 2nd, or 3rd cow worked

NCHA Membership No 38904 Judges Signature [Signature] 2011





BOOK 2: MOVEMENT RESULTS





International Crane Foundation

Cranes!

When we look at a crane, we see this.

This is one reality.

In this chapter we'll see this body as revealed in movement.

People wearing crane costumes don't look like most people around here, but then they also don't look unlike people.

The costume covers up one reality.

Do they cover up other aspects of their humanity too?

Themes:

- awake state,
- body mismatches,
- visual attention,
- mutual decision making,
- rhythm

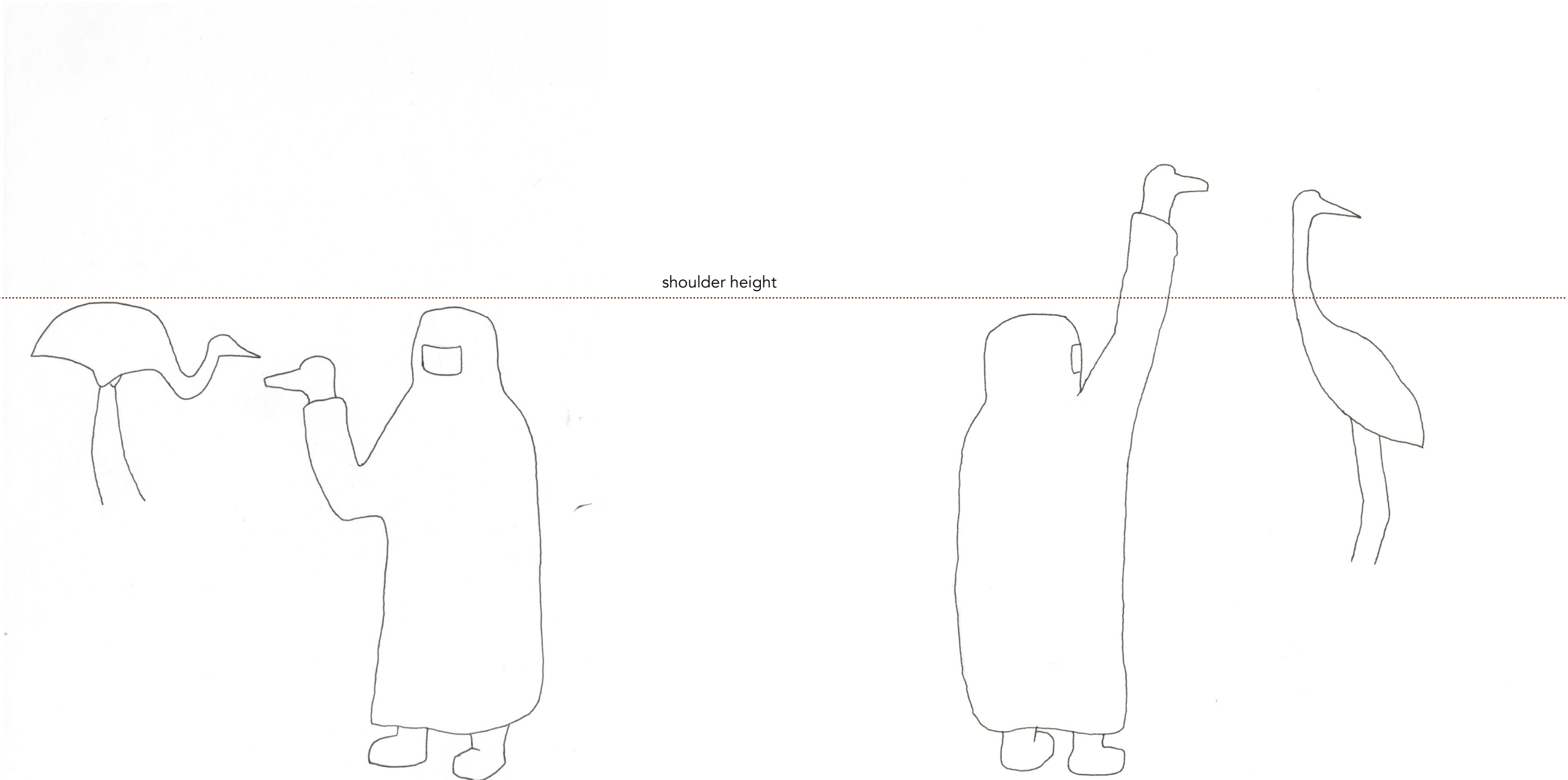
Things Cranes and Costumes do

- preening
- foraging
- traveling
- pecking
- digging
- yanking
- eating
- watching
- looking
- following
- catching up
- venturing
- checking on things
- run-flapping
- stretching wings
- destroying
- bathing
- sitting
- snoozing
- fighting
- taking
- catching cues
- sizing up
- looking big
- ignoring
- wandering
- being absorbed

How to have two heads

One of these heads is actually a shoulder. When your head is above your shoulder you can see a lot better. For both costume and crane, the body must extend to make contact with the world.

Cranes don't express with their faces like humans do. Instead they have expressive silhouettes.

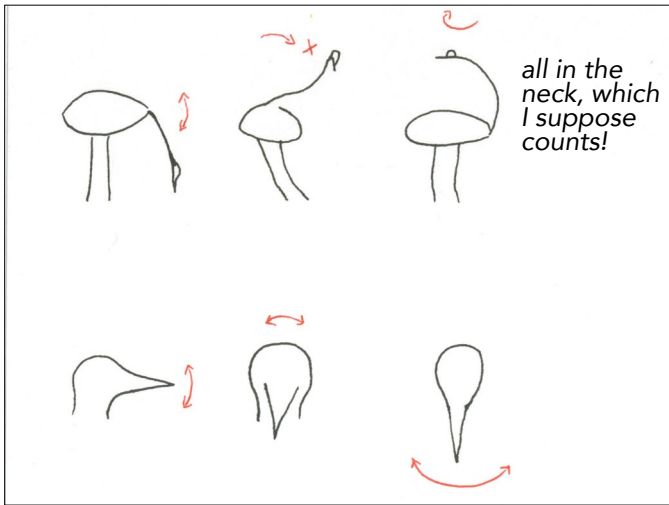


Crane and costume kinespheres

The kinesphere matters as a sign of how far off balance a body can deviate. It measures strength, constitution, character, and comfort.

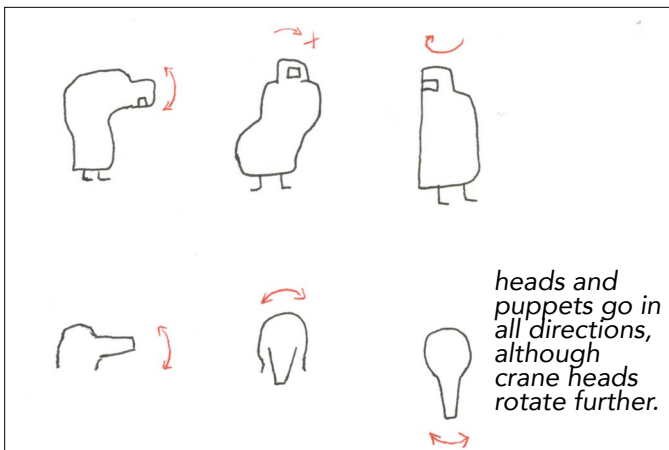
Dimensions of movement

Axes of movement generally overlap between cranes and costumes on the ground. It's not like trying to approximate a goat or a spider. The whole body doesn't use the lateral dimension for crane or costume.

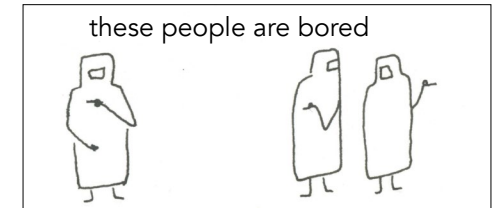
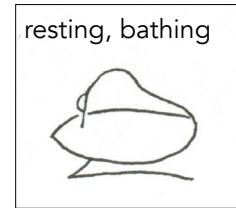


Long-necked birds can reach their heads anywhere, and they use this range fully. Bathing and watching involve envious amounts of carving, while eating, stabbing, flying, etc involve emphasized arcs and spokes. Costumes rarely copied these movements faithfully. Birds bob their heads when walking, which can be broken down into head-tail and possibly cross lateral connectivities, given how bobbing relates to their steps. However, I had trouble seeing Bartineff forms in this case study overall. Birds strike me as having different kinds of axes and different ways of using the space around them.

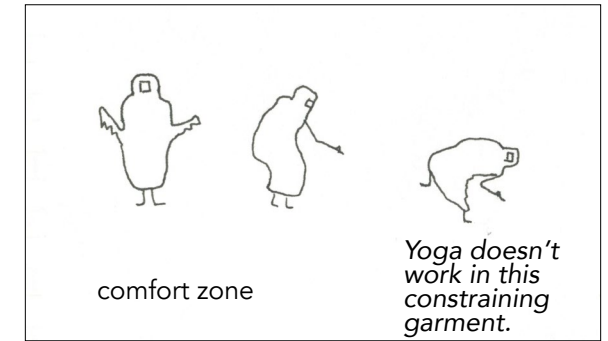
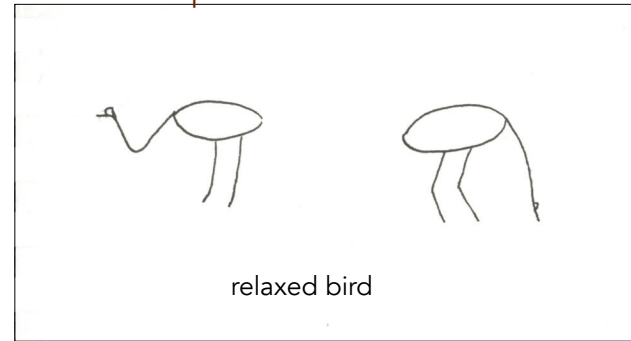
vertical lateral sagittal



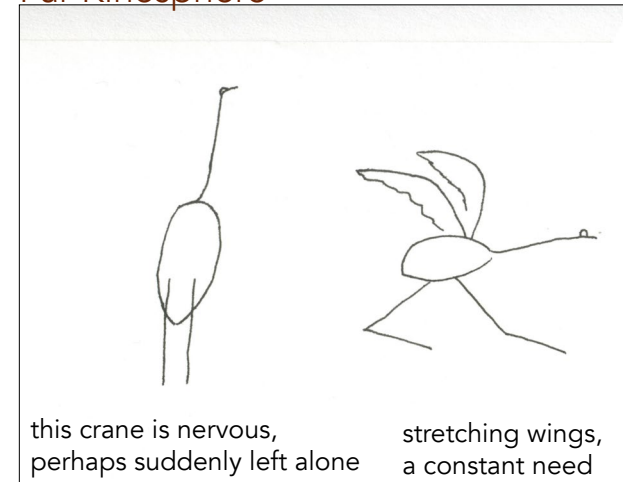
Near Kinesphere



Mid Kinesphere

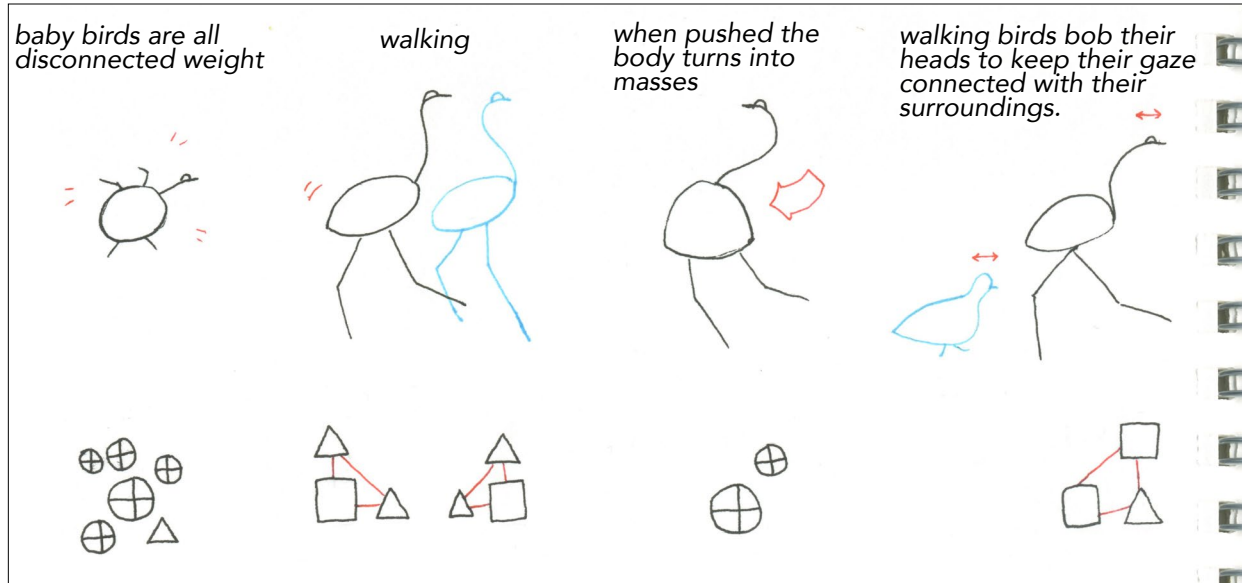


Far Kinesphere

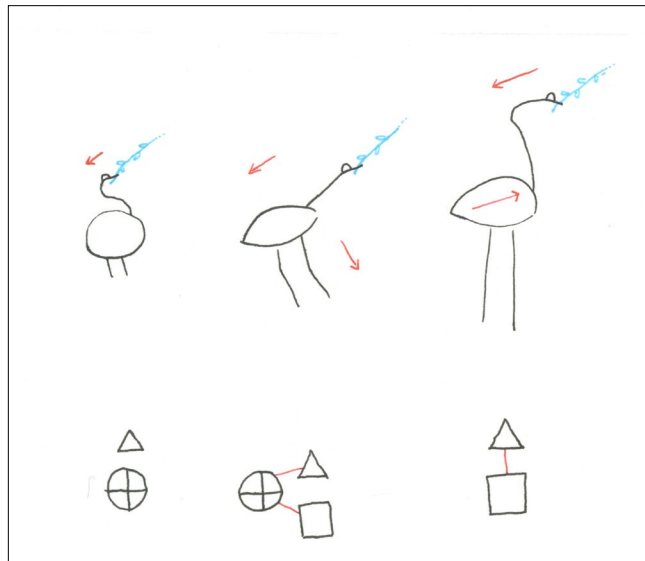


Crane connectivities

In a connectivity, one part of the body provides stability so that another part can become mobile.



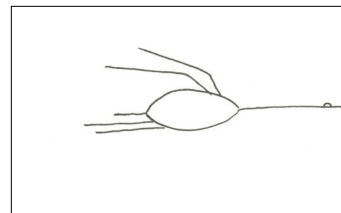
Tugging develops with maturity



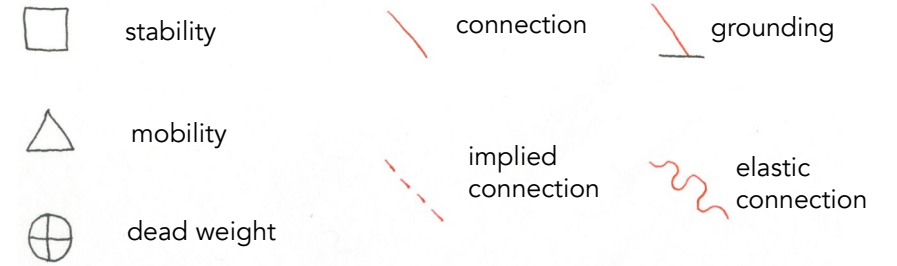
Baby birds have no coordination to tug with.

A young crane will throw its body weight into the tug, relying on connections through the neck and legs to the ground.

Adult cranes use the strength in their neck to tug.

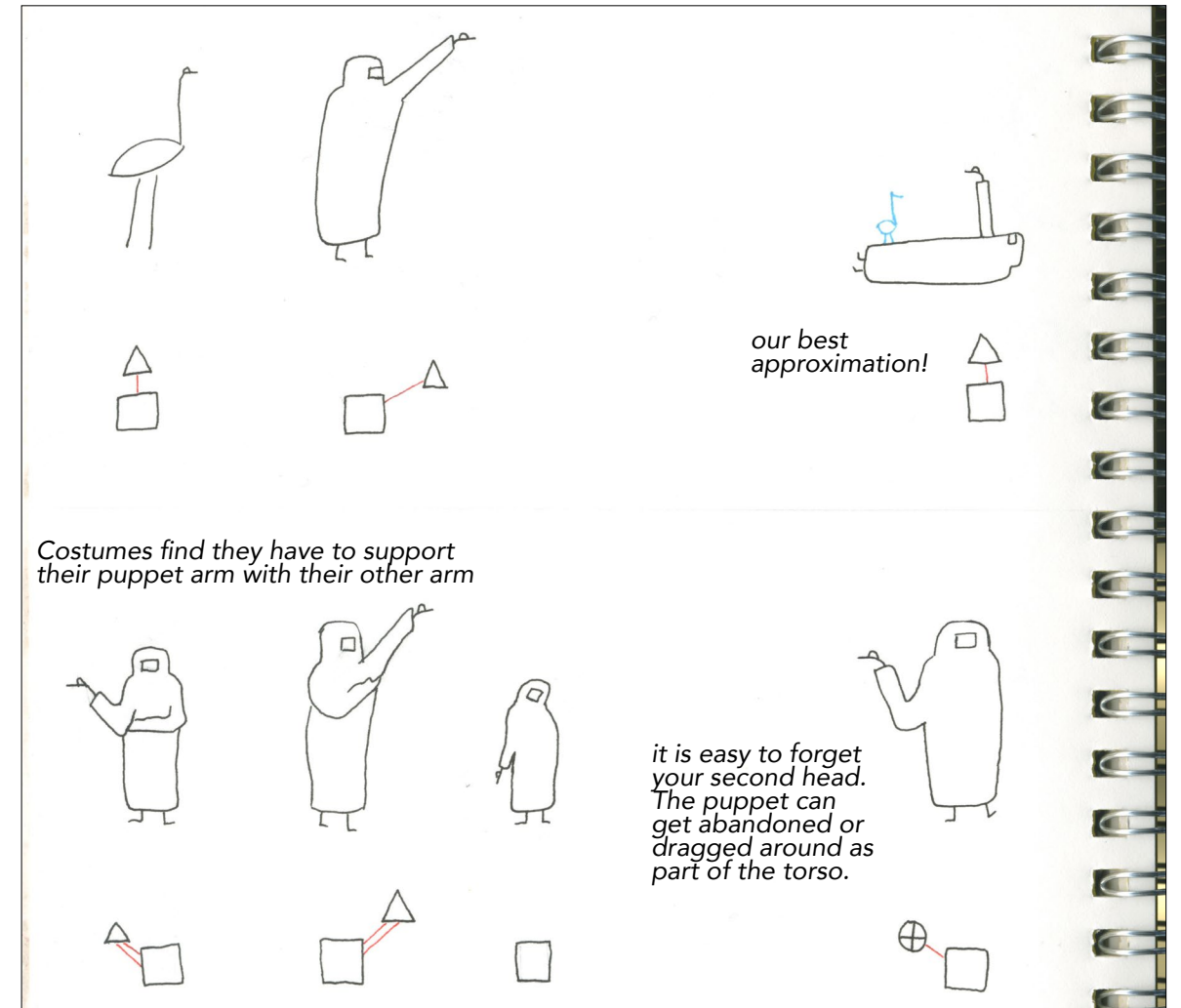


flying birds are really foreign



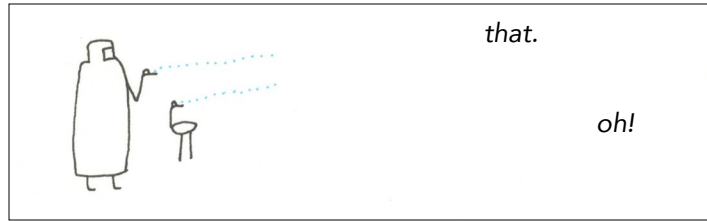
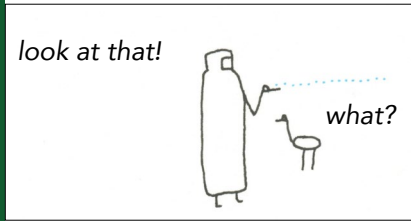
Costume connectivities

Costumes and birds have similar structures, but gravity gets in the way sometimes.



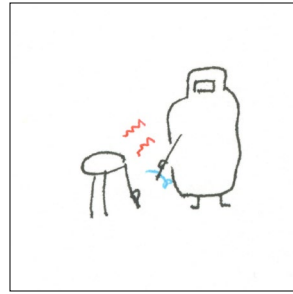
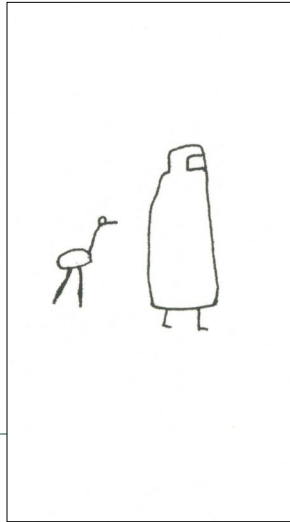
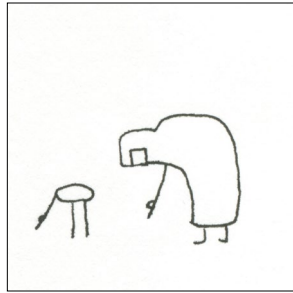
If cranes were more like us

Pointing

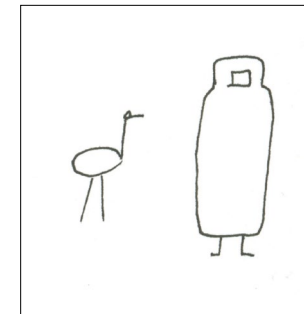
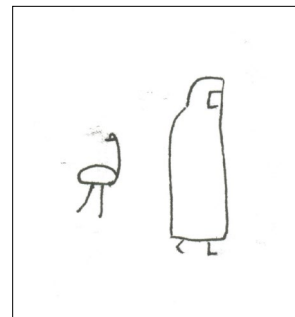


But... cranes don't follow pointed puppets. Instead, they check on your attentiveness to the world generally through the puppet's movements. As a result, costumes spend a lot of time trying to get their attention.

Getting attention

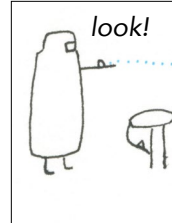


Boredom



Since they aren't

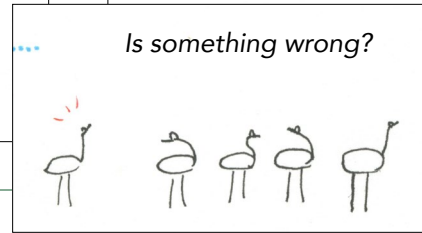
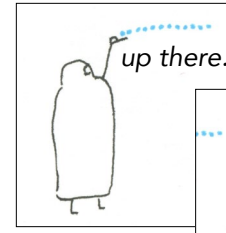
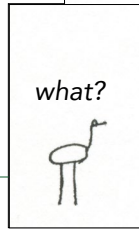
look at that.



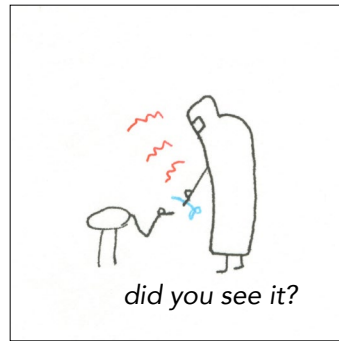
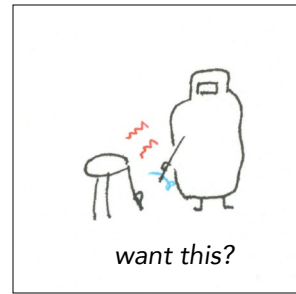
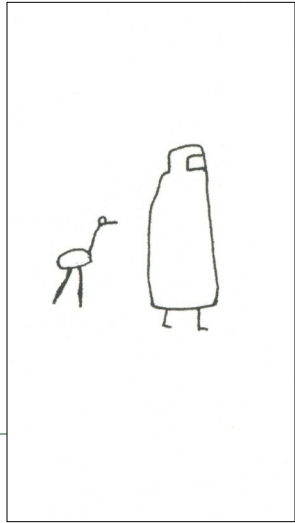
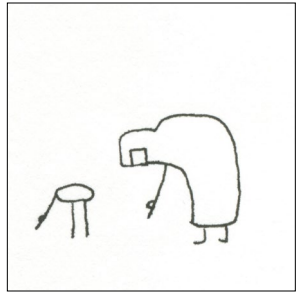
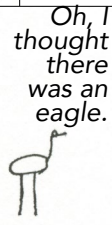
hang on



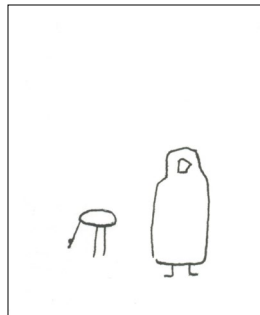
over here, look.



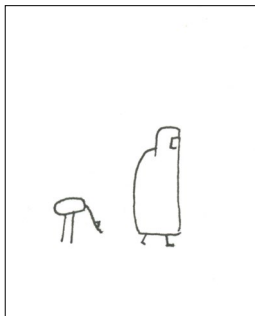
No, it's just a flower.



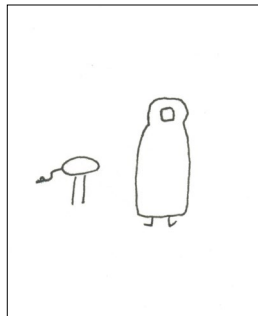
Humans reliably target certain effort qualities to get attention. Otherwise the kind of effort they put into a given movement varies from instance to instance.



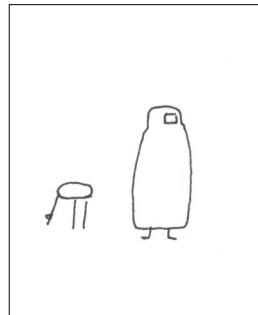
this is delicious



and this



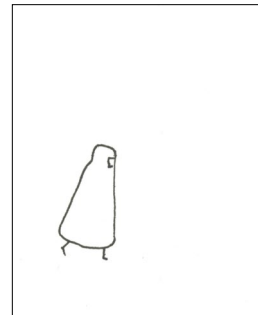
maybe there's more over there



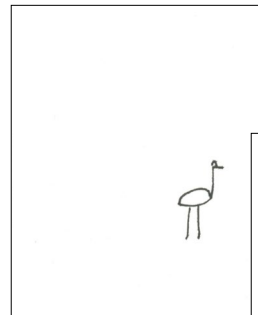
found another



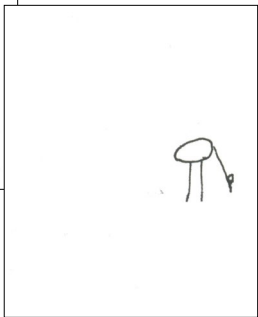
tasty!



time to go.

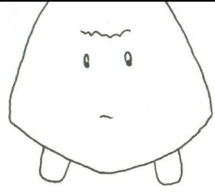


what?

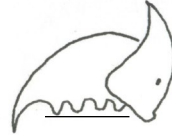


A zoologist may not enter the umwelt of a bird, making them out of sync.

Humanness and Birdness



Gosh, they just folded their arms. How... human.



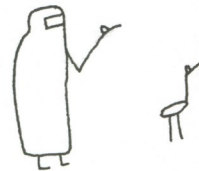
This person likes to bend at the waist. The last person liked to squat. I wonder if it matters.



Costumes never move backwards voluntarily. The space behind them is unavailable. It's like it doesn't exist.



This costume is driving me nuts. They don't hold their puppet level! A bird would have to be insane to do that.



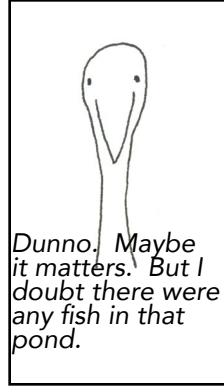
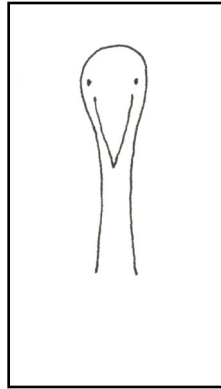
Fishing wrong



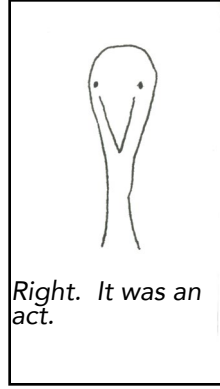
So, Dustin, What about when the costume pretended to fish?



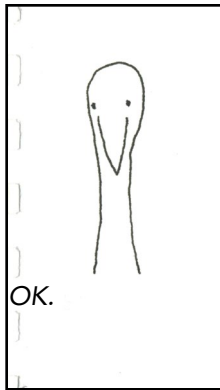
The costume used the puppet's eye to track the fish and then stabbed at it.



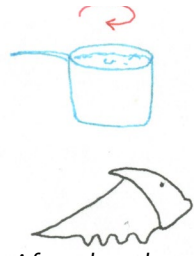
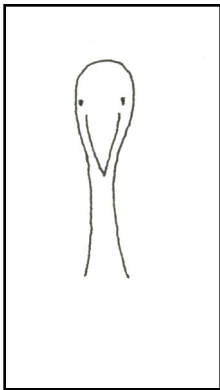
Dunno. Maybe it matters. But I doubt there were any fish in that pond.



Right. It was an act.



OK.



After that they stopped. They fished like they were stirring a pot of soup.



Yeah, I can't say I've ever swished soup. I usually use a fishing rod..



Realistic bird fishing requires 3 motion factors. Swishing only 1.



I think I see what you're saying..



Do you think it matters, to birds, which one it is?.



I have no idea..



Does it matter to you?.



I suppose not. Well, maybe.



But suppose I really thought there were fish in that pond, because of the act, and then there weren't?

But suppose for weeks of your impressionable youth, you never saw how someone stabs a fish?



Crane and Costume Effort Qualities

Crane chicks weigh only a few pounds. They have almost no weight to throw around, but that doesn't keep them from using it. Bathing, for example, has an intricate play of weight as they rattle their heads over their backs (strong weight, sudden time, indirect space) and plunge their bodies in and out of the water (alternating weight). Weight use changes dramatically as chicks age. A young bird will tug using all their body weight, whereas an older one will be able to bind up their flow to gain leverage on the plant. Weight shows up when cranes are working with things in the world around them, including their own body surfaces.

Life mostly unfolds in space and time, particularly sudden time. Walking, watching, looking, foraging, eating, preening, and sitting down are all articulated in zips, snaps, stabs, flicks, shakes, plops, and pauses. This puts crane chicks firmly in awake state. Costumes follow their lead. Most costumes abandon weight and flow in their torsos entirely. Their intricate, gentle puppetry is still mostly space and time, but light weight can also play role. Free flow shows up briefly when the puppet rebounds from grasping a plant. But a costume letting their whole flow loose or using a lot of weight could have disastrous effects. And it is more than restraint keeping them away from half of their bodily potential. It is more like they've forgotten how much of a body they have. That means what while costumes' movements slip into vision drive or action drive from time to time, they do so less than the cranes do, making them even more wedded to awake state.

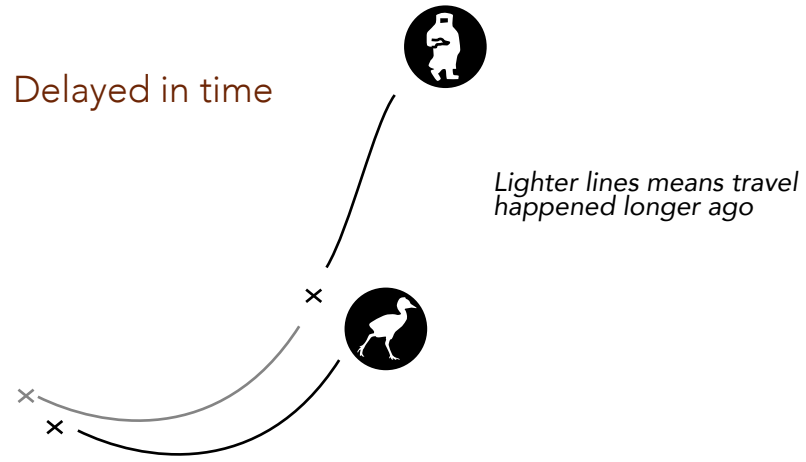
Cranes use flow at interesting times. The littlest birds run and flap at the same time in a headlong rush (free flow). They never seem to end up where they intended to go. They gain a stiffness in their wings as their muscles develop and they gain balance (bound flow). Cranes like to be careful about where they put their feet when walking. A slow walk will involve a bound steadiness as the foot comes down, as if they're always ready to retract it.

Interacting with other birds also brings out action drive, but with a caveat. The young cranes can see an adult crane in the next pen. At a certain age, they size each other up through the fencing. This involves standing nose to nose gazing straight at each other and moving one's head in emphatic curly carvings, staying mostly in line with the opposite crane. This is a combination of strong weight, sustained time, and direct space. However, the lack of flow in this interaction seems a bit odd as it is not a practical activity. Skirmishing requires similar efforts. A crane will target another crane's beak with sustained urgency and all their thrust. Action drive is also peculiar here. While flow is neither obviously binding or freeing up, it doesn't seem to be absent. It may be worth considering the presence of all four efforts in these interactions and in cranes in general.

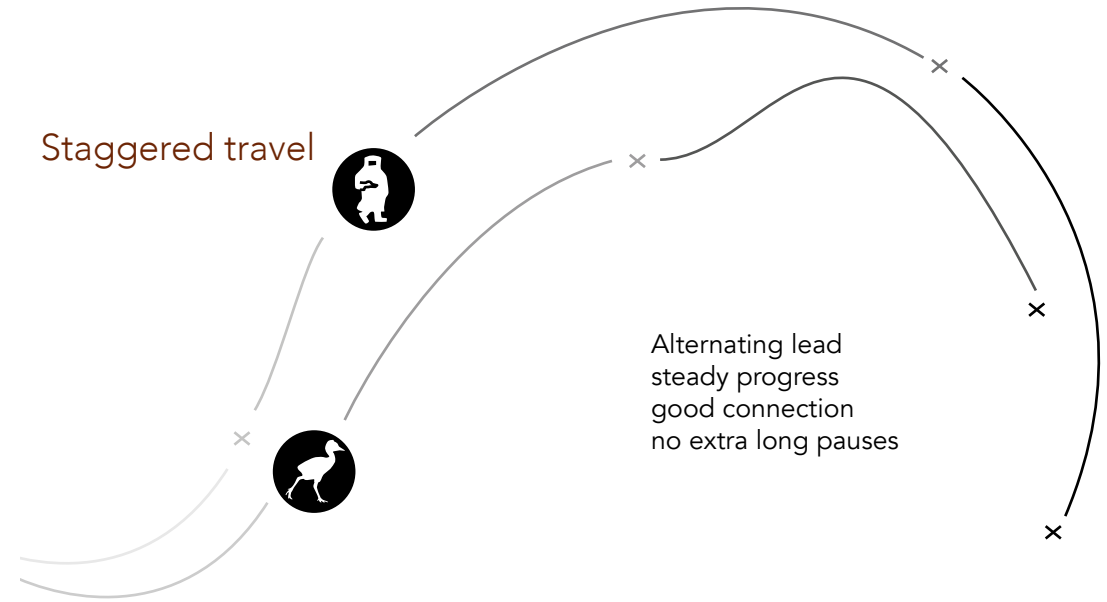
Cranes have an interesting relationship to other crane faces. Costumes will offer food, which, when the cranes are younger, is enthusiastically taken. The crane will be foraging, will pause with the puppet in view, and will in one direct movement take the food. It has a latching on quality. Some costumes use this moment to encourage the crane to follow them by moving the puppet away. This can work for a few steps. It reveals that faces have a glue-like quality that doesn't withstand strain. Some costumes use shaking motions to prompt a hand off, but it doesn't work. The bird fails to notice, focus and pause.

Connections through Space and Time

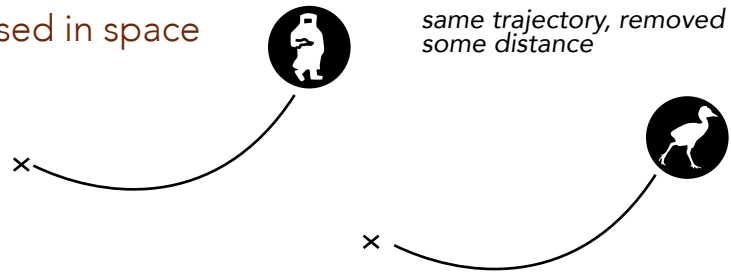
Delayed in time



Staggered travel

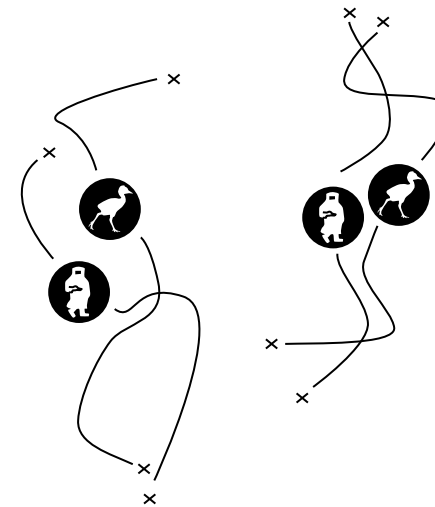


Transposed in space

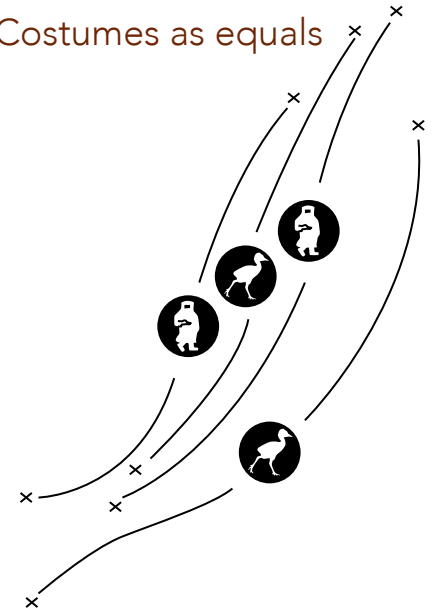


Following two costumes

Costumes as guards



Costumes as equals



Abbreviated or

exaggerated in space

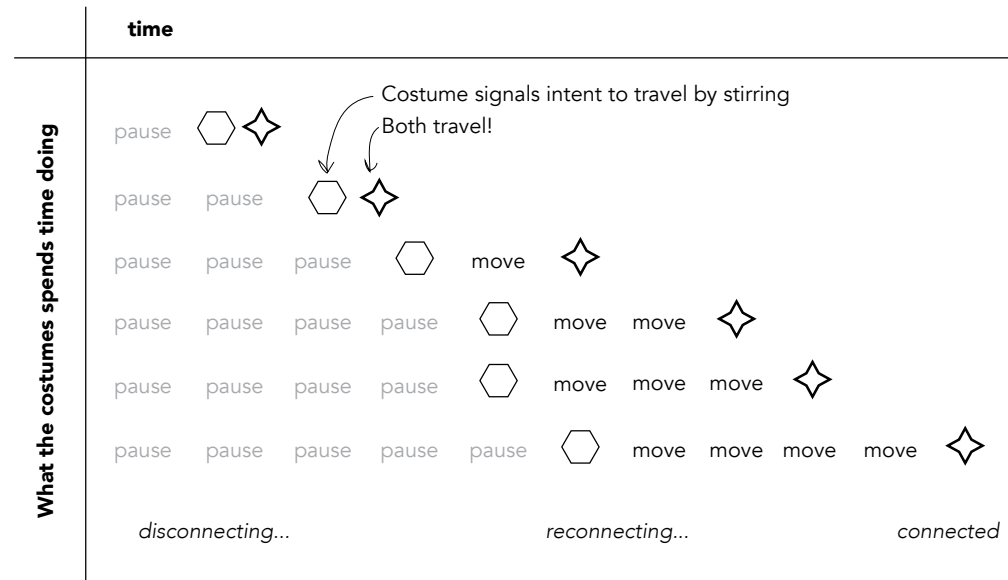


Here the costumes track the birds to keep them apart from one another. This means the birds are left to motivate travel, something they may not be invested in.

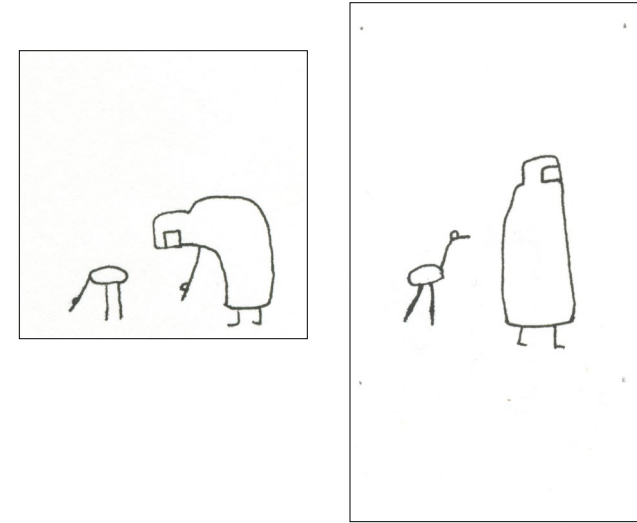
Costumes switching lead creates momentum that carries the others along. The birds need to be mature enough not to attack each other.

Rhythms of connection and disconnection

Being Sedentary

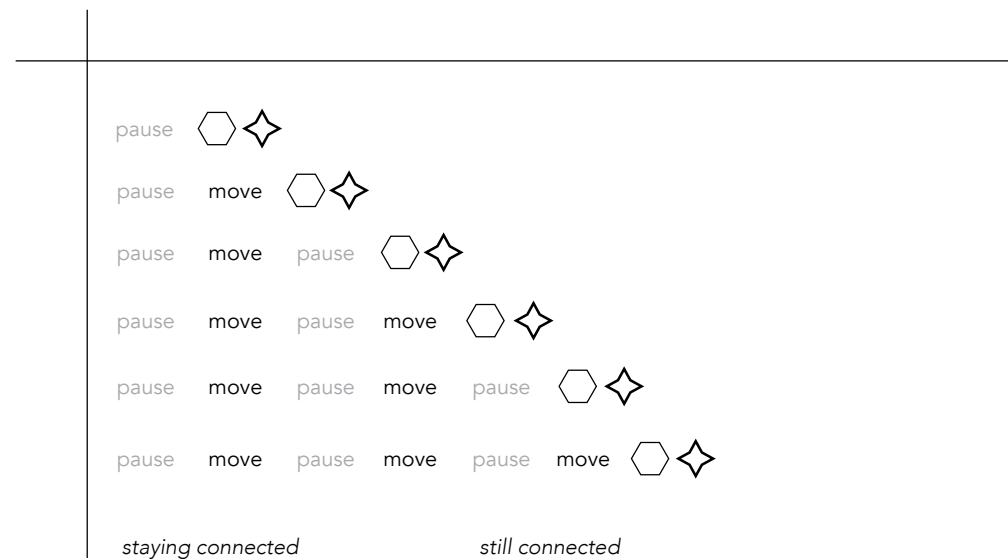


Many costumes make the mistake of being too sedentary, which makes getting the bird moving again much harder. They are probably bringing habits formed in human landscapes (i.e. classrooms, cars, and offices) into the yard with them. It might be wise to give them step counters.



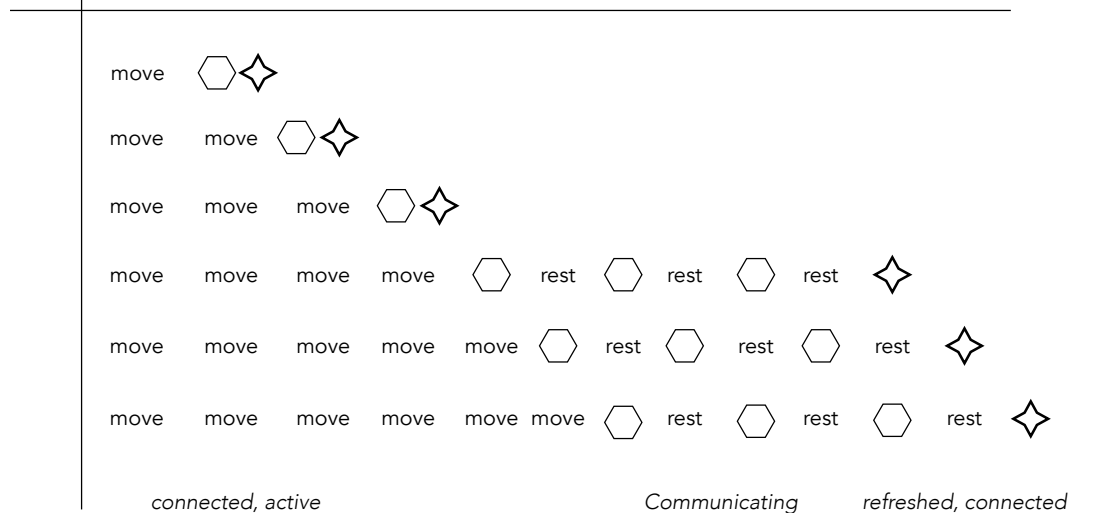
Moving regularly

This option is the best insurance that you'll be able to move along when you're ready too.



Pushing each other

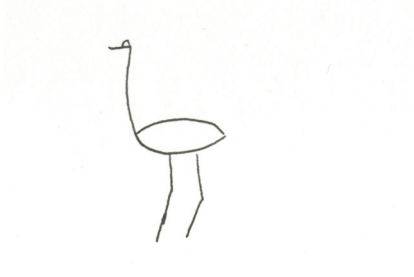
This was rare to see in the yard. If you maintain higher activity generally, your rests are deeper, but not especially long.



Assumptions about one other implied in movement

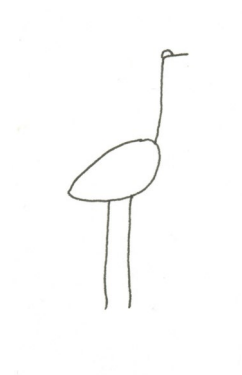
The uncanny valley in cranes

actual crane



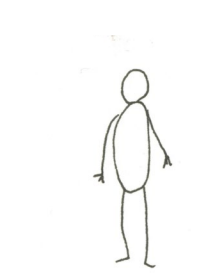
attracted to bugs
communicates desires to group
checks on world regularly
likes poking around

What humans think cranes are like



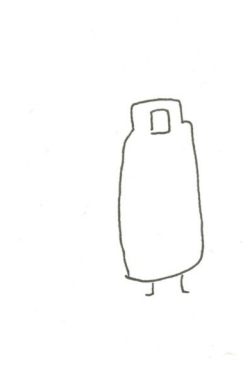
video cam pan (described later)
social and collaborative
waiting around a lot
following trajectories
passing the time
responding to urgency
attracted to quick time
following pointed beaks

actual human



well, you know

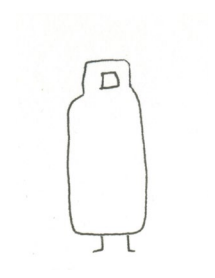
What humans think costumes are like



spends time in wet places
fiddly
hobbled
quiet
socially isolated
walks a lot
some parts of body abandoned
impoverished environment (no media! i.e. bored)
has no face
inexpressive
seeks nature

What a crane may sense around a costume

1. The usual machine



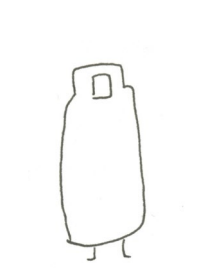
passing through
unmotivated actions
suddenness, vibrating, racing
inarticulate body
out of sync
deaf, blind, not present
interrupting
too calm
doesn't extend
never alarmed
nothing new

2. The echoer



nearby
has no needs or
limits
mimics
uninformative
poor eyesight
hard of hearing
stale tone of voice

3. The explorer

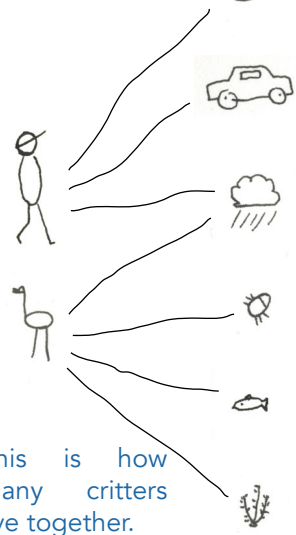


self motivated
driven
active
involved
curious
responsive
alert to world
knows how to take a break
separate from me

Sharing Umwelts

Person and crane build separate umwelts in the same space

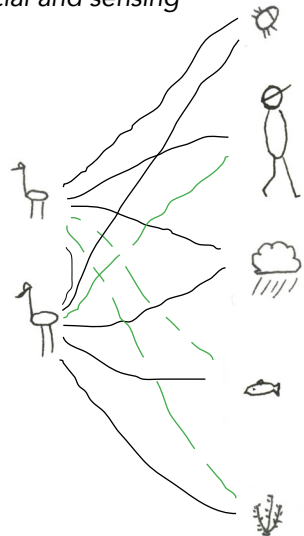
asocial and sensing



This is how many critters live together.

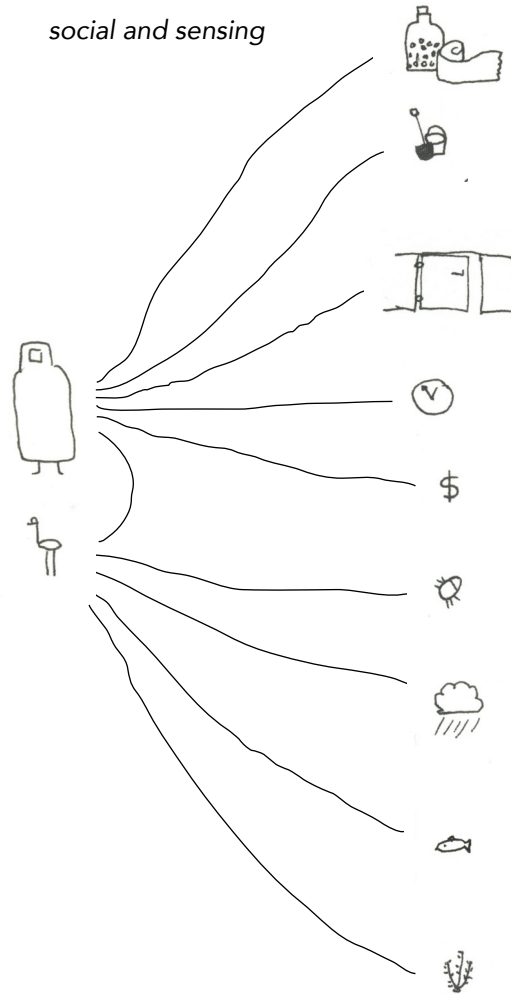
Each crane contributes to total available umwelt

social and sensing



Costume and crane share still separate umwelts

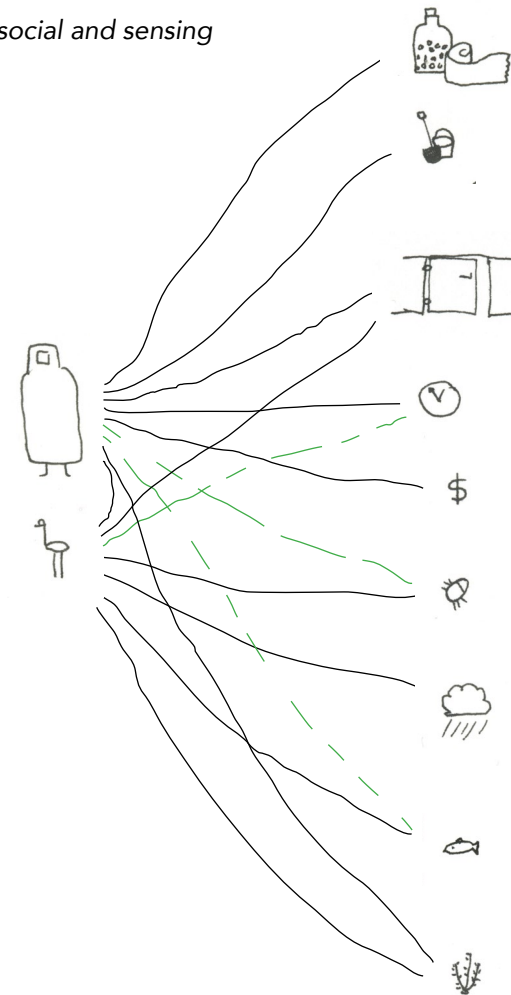
social and sensing



This happens if the two have no overlapping senses, or, more likely here, the two fail to take cues from each other.

Costume and crane contribute to total available umwelt

social and sensing

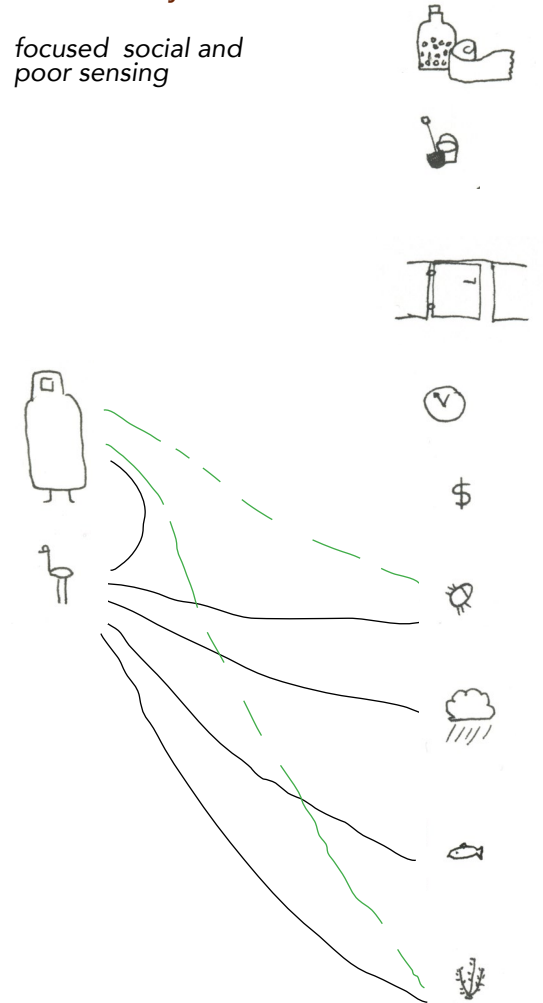


Both live in somewhat overlapping worlds. They can become stronger in this hybrid arrangement since they can draw on more resources than alone.

--- Indirect perceptual access
 _____ Direct perceptual access

Costume follows cues from bird exclusively

focused social and poor sensing



Result here is that the costume is quite birdlike, but doesn't live in a world and can't provide that knowledge to the bird. (Overly direct spatial focus.)

How we see things

All seeing

In our unexamined experience, it seems as if we see can see everything in our view all at once. [Noe \(2006\)](#) argues that this sensation of completeness is actually an encounter with the virtual. Our feeling of completeness is actually the availability of the things in our view to be better seen. In our next glance, we can fill in the details that at first we presumed were there. Noe's argument is compelling, but the sensation of being all seeing misleads us as we imitate others.

Panning

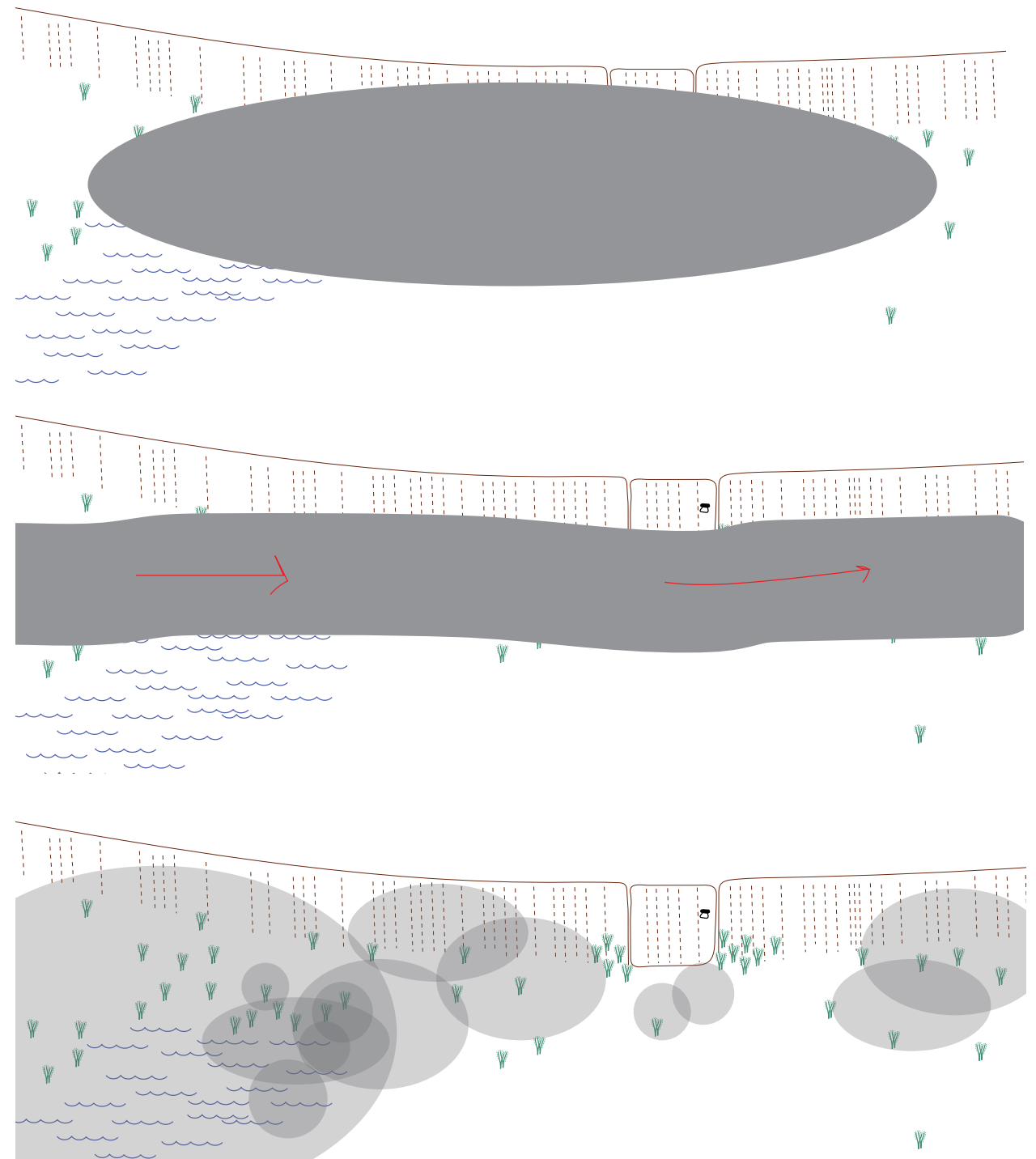
Costumes imitating cranes will sometimes arc their puppets around the way a video camera might pan. This uses sustained time and arcing. Sometimes the space is used directly. Other times, the torso is dragging the puppet along distractedly, which makes for a total absence of space.

Overall it breaks the motion relationship with the environment through the gaze. It comes off as if as long as the eye scans the whole horizon, everything will be taken in. The movements of the head and gaze are connected to an abstract notion of what sight is like rather than corresponding to details in the world. If a human used this technique to see the world with their usual head, their view would be blurry.

Looking and studying

When birds look at things, it becomes clear that they see best when their heads are still and that it takes many glances to absorb things. They place their head, then gaze, then carve and swivel their heads to a different position, and then gaze again. They do this in sets, alternating with other activities. It involves sudden time, direct spatial focus, and carving.

Humans also require stillness and multiple glances to see the world. They don't have to move their heads so much because their eyes swivel more.



What are these bodies? Summary portraits

Crane chicks seem a little eccentric if exuberant, stubborn, and even companionable. They don't respond to beckoning or urgency as humans express them. They easily become absorbed in picking at whatever they notice, ignoring social cues, and yet they will become quite nervous if left alone. Nevertheless, if you maintain a rhythm with them over long periods of time, they will stick with you and keep track of your activities. They are happy to share the lead if you bother to take note and hold up your end of the bargain. They change extremely quickly, are genetically fragile, situationally disadvantaged, and have to be introduced to the world step by step.

They come into their bodies, first in total disarray, and then with greater poise. As bipeds, they offer a kinesphere and connectivity pattern fairly similar to humans. However, their effort repertoires are too rich for a human in a naive human to cope with. This manifests both in terms of the human abandoning part of their embodied potential and in failing to copy common behaviors faithfully.

The overall impression the costumed zoologists give then is of being a bit limited or blind to the world, but typically present and engaged. They are helpful fools. They benefit from kinespheres and connectivities that generally match the birds', although using them to a greater extent would be better. Their reticence at using their bodies fully may be related to their lives outside the arena, or to the exhausting nature of the work.

It seems inappropriate to suggest that the birds have remained somehow untouched by human presence. The costumes, while apparently effective at preventing imprinting and at raising fully fledged adults, bring a fair amount of uncrane-like movements into the yard with them. However, these movements are out of context in the chickering yard. The cranes eat, forage, bath, fly, travel and so on in apparently crane-like fashion; this represents a substantial part of their lives. But, they suffer from problems that wild cranes typically do not, such as limb weakness, twisted growth, and problems "thriving" that are addressed with medical interventions. The cranes that are released into the wild migrate and get shot like other cranes. Yet they start out naive to highways, farming, and human settlements. They also are unlucky in reproduction so far. All in all, the cranes are not exactly like their wild brethren, but not particularly human either.

The zoologists, meanwhile, adjust to varying degrees to their fenced in enclosures. Humans are known for the personal nature of their movement repertoires. They bring those and concerns inextricable from their human body (like how to deal with heat) along with them, making them distinctive from the cranes they're imitating. However, they are divested of hands, faces, social contexts, interior design, and entertainment. Their humanness is also therefore not exactly obvious in movement, although some more than others. The costumes that enliven their surroundings by exploring, absorbing, and signaling about them in ways that cranes notice and fall into sync with seem most alive, most adapted, and therefore, in a sense, most cranelike.

What these birds are like

- quickly changing (maturing)
- always connected except when young
- don't respond to human urgency
- respond to and cohabit energy and rhythm over time and space
- co-leadership
- they attend to the costumes, but not always as desired by the costumes
- inbred (by necessity)

Humans becoming birdlike

- redefining shoulder height and gaze behaviors
- matching kinespheres and connectivities
- using mostly space and time too
- syncing up with crane rhythms
- co-foraging and co-leading

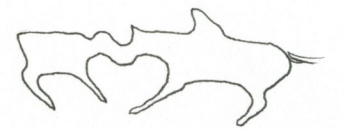
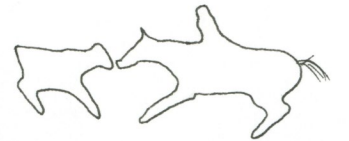
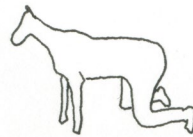
Are these birds 'wild'?

- yes, they're not imprinting as humans
- yes, they eat, forage, bath, go in water, fly, follow
- no, they don't breed
- no, they've never been in a farm field, on a highway, near a town (naive)
- yes, they migrate and get shot
- no, they have unusual medical histories and experiences

Usually missed bird traits

- bobbing head walk
- looking around with stations of the head
- total physical presence (humans abandon limbs)
- embeddedness in environment
- effort richness
- energy patterns (too sedentary)







Cutting!

Horse, rider, and cow in a mirroring dance.

This is the pinnacle moment in this sport. The horse is blocking the cow's return to the herd without the cow running away.

A lot more than simple positioning goes into matching everything up.

It is similar to Marx Brother's mirror sequence. Groucho and Harpo must stay in perfect alignment for the illusion of a mirror to work.

The sport is called cutting because one "cuts" the cow out of the herd.

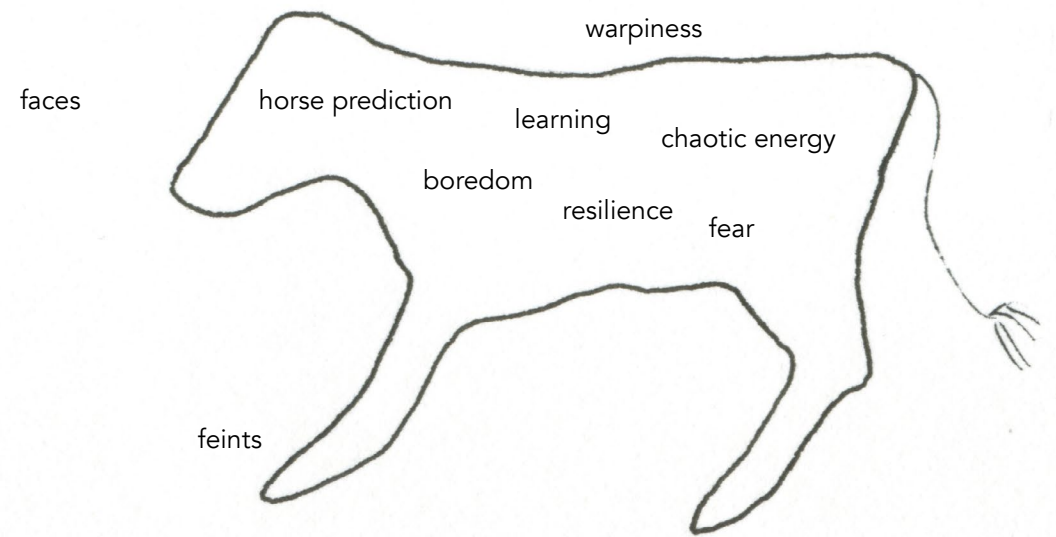
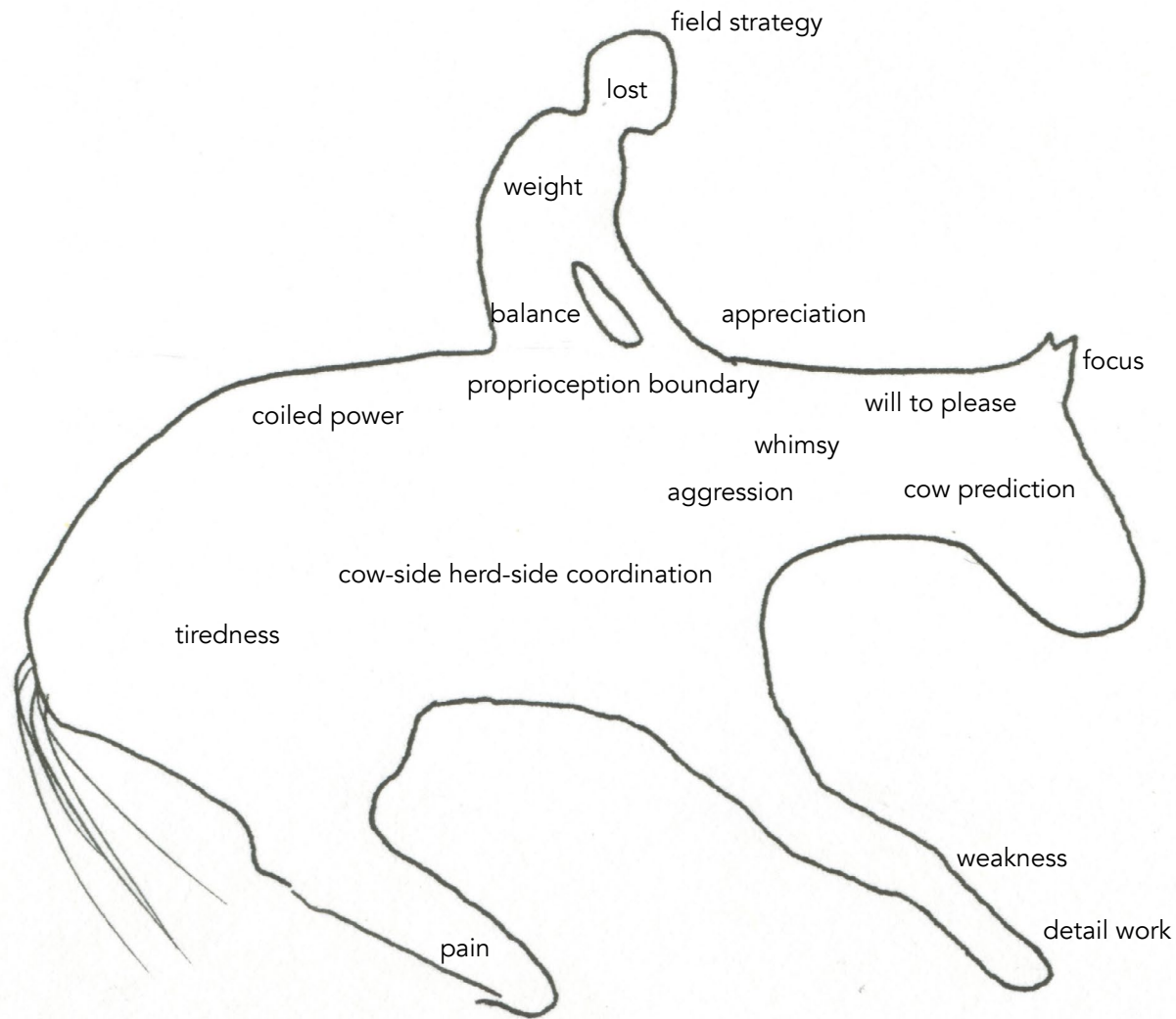
Things horses, riders, and cows do

- turns
- settling cattle
- herd work (sorting)
- approaching the herd
- pressuring
- watching settling
- loping
- prepping horse with backwards circles
- waltz pivots
- the pause
- bouncing off the wall
- rushing
- squeezing
- waiting
- lunging
- chugging
- twitching
- cattle changes
- cheating
- running
- throwing
- losing hats
- looking one's best
- following rules
- reading the judges
- flushing out
- funneling

Movement Themes

- connectivities
- weight
- faces
- technique (future modulation)
- preparation
- the field





How to share three heads



Videos to check out

Special Nu Baby and Matt Gaines, at the 2015 Murcuria/NCHA World Series of Cutting Open

Timely Addition and Michelle Barnes, at the Denver NCHA Westner Nationals, in 2016

Timely Addition and Michelle Barnes, at the 2015 NCHA World Finals



2016 Clint Allen Cutting Horses

Horses that are cats?

Cutting horses are often named after cats. They move like cats—smooth, low, focused, and responsive. They follow the cow as a predator would, and stand ready to spring. One even called her horse a landshark. There are famous horses named after cats, such as Metallic Cat and Auspicious Cat, whose names get passed down as parts of their children's names.

This similarity is justified, since these horses have been trained to be unlike other horses. But the end result of this chase is not carnage but something different. To the left is a depiction of the cow's experience of a good cutting horse. The horse's head is always there, moving smoothly with the cow, looking at it.

This is Swiss Cat Pepto ridden by Clint Allen

Some names of registered cutting horses starting with the letter A (for brevity, there are thousands total) that include the word "cat." By comparison, only one horse starting with A is named after a dog and none after a bird. Other naming themes are puns, lineage, cultural references, remixings, breeder names, character references, and for cuteness.

- Alanos Little Cat
- Alexa's Cat
- Alittle Sophisticatt
- All About cat
- All That cat
- That n cat
- Alleecat
- Alley Cat
- Alleycat Squall
- All Cats
- Almost a Cat
- Alpine Cat
- Amafoxy Cat
- Amalfi Cat
- Amandalenacat
- Amandas Kit Catt
- Amorous Cat
- An Otay Puddy Cat
- Angelicat
- Angels Cat o Lena
- Ann Orenas Cat
- Annabella Cat
- Annie Peppy Cat
- Annie the Firecat
- Annies Cat
- Annies Lil Cat
- Annies Starlight Cat
- Anniversary Cat
- Ans Mokie Cat
- Antebellum Cat
- Another Great Cat
- Anzac Cat

How cutting moves

Transitioning from watching crane chicks to watching livestock is shocking. Livestock weigh thousands of pounds. The sport of cutting is about managing that weight as it moves around chaotically. The horse uses light weight to work with cows. In the herd the horse will lightly nudge a group of cows into the arena and carefully thread through them to select one. The rider is gentle on the reins for these maneuvers. Once a cow is singled out, small footwork and a smooth floating demeanor will keep the cow facing the horse. Later, during the pause, weight becomes absent.

Strong weight is often paired with quick changes for horses and riders. Stopping short, and stern reining are both strong weight. But, a bounding cow and horse will share strong weight and free flow as they cross the arena. Technical mistakes, like lunging and chugging, involve throwing one's weight around and then suffering the consequences.

Flow is also richly expressed in cutting. Panicking cows use flow, either free and bound, but not necessarily both, as they bounce around the arena. Riders use a play of flows in their pelvis, spine and arms to stay with their horses. Their flow erases their weight during the cut. Horses use bound flow in the herd and free flow at play.

While crane movements oscillate freely in time and space, livestock oscillate in weight and flow. Time and space show up here and there as definitive and useful efforts, rather than repertoires that one slips and slides around in constantly. Indeed, one could go on to say that articulations in pace and time in cutting often originate in the rider, since the rider is giving instructions about where to be and when to do things.

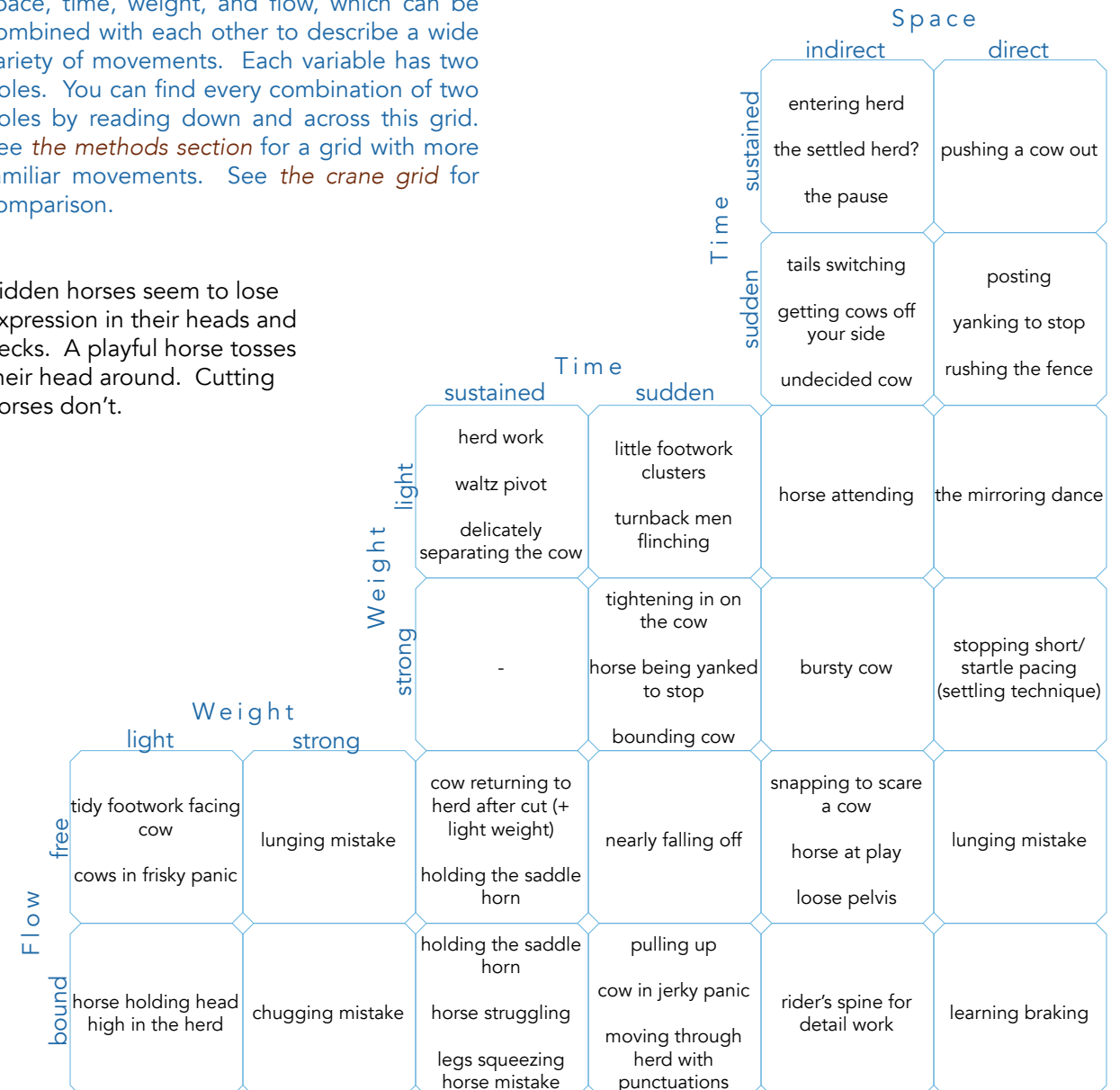
Two movements with livestock that stand out from that generalization are how horses attend to riders when everyone is standing around (light weight, indirect space, sustained time), and how cows show indecision. A cow being cut off by the horse at every turn can develop a blank feel (indirect space, sudden time). They turn and run but they don't seem to have a plan for where to go.

Many movements in cutting can be done with emphasis on any motion factor. For example, when riders want to be "soft," or "easy" it means some combination of free flow, light weight, sustained time and indirect space. Similarly, the lunging mistake can come off as overly direct space, overly free flow, too much strong weight, or a series of sudden events. Which set of factors are actually expressed depend on the participants and the moment itself. Riders, horses, and cows display affinities.

Cutting horses, cows, and riders mapped into Laban's quality grid

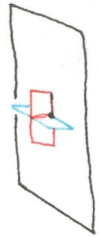
Recall that Laban's system has four variables, space, time, weight, and flow, which can be combined with each other to describe a wide variety of movements. Each variable has two poles. You can find every combination of two poles by reading down and across this grid. See [the methods section](#) for a grid with more familiar movements. See [the crane grid](#) for comparison.

Ridden horses seem to lose expression in their heads and necks. A playful horse tosses their head around. Cutting horses don't.

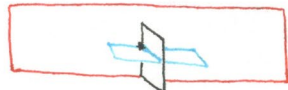


Horse kinespheres: post-equine? Cutting horses transform their kinespheres to a surprising degree

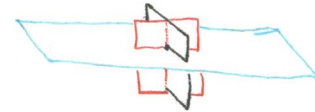
Kinesphere of a cutting horse



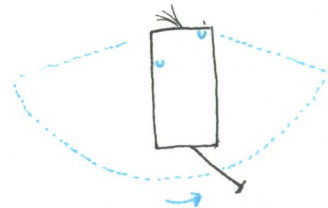
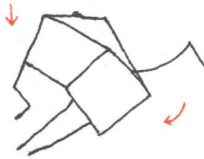
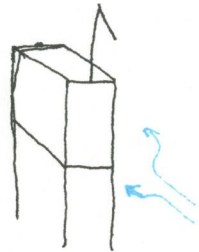
a nice turn is low and splays wide. The torso twists (cross-lateral).



cutting horses have small turning radii, even at high speed. They use planted back hooves as a pivot point.

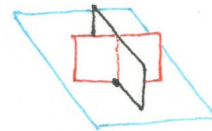
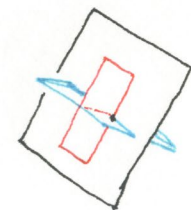
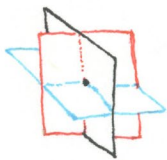


Notice that the cutting horse can stretch its kinesphere more than the untrained horse. In spite of this, a small cow can move through the horse's kinesphere by ducking under their chin. This ability underscores that a kinesphere is a potential space of movement, not an actual one. A horse can make that potential space more or less real by occupying it.



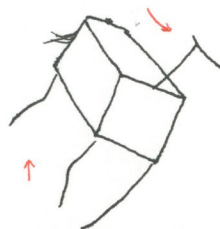
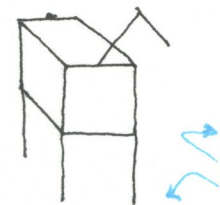
cows flow past this horse

Kinesphere of an untrained quarter horse



a turning horse gets some air

turning in a normal run requires space ahead



cows bounce off



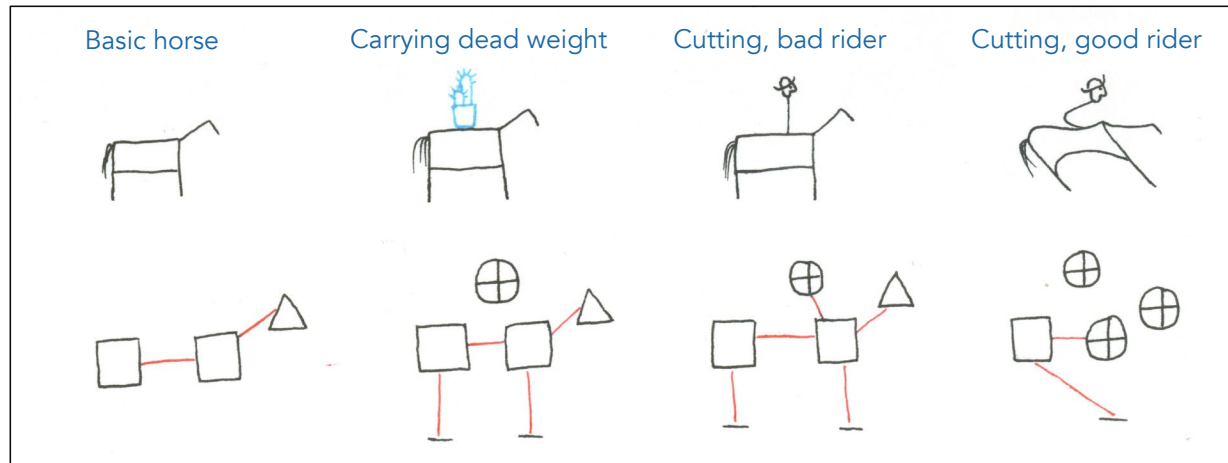
Animality and constant bodily presence

These horses are always thinking about their rider. Always. They never forget that there's something on their back. A horse can look totally zoned out, but one ear is cocked back to the rider.

This attentiveness is mutual and changes the human considerably. I only saw a human forget that they were riding once. This human let their presence in their own body slip away for an instant. They wobbled on their horse----you might say they began the process of falling off. No one else, even when they're looking at their phones, showed any hint of bodily inattention. The humans I know, including myself, relax and release their presence from parts of their bodies on and off all the time. It is as though we can retreat somewhere. Riders, and their horses, by contrast, are always there.

Horse and rider connectivities

Riders transform their bodies to manage cutting's chaotic ride

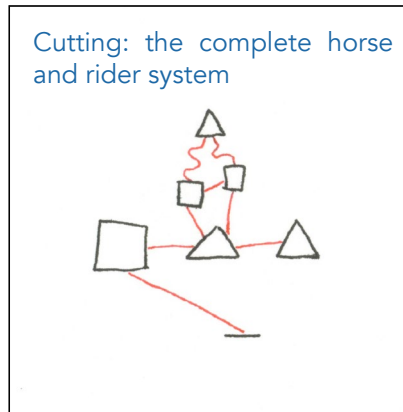
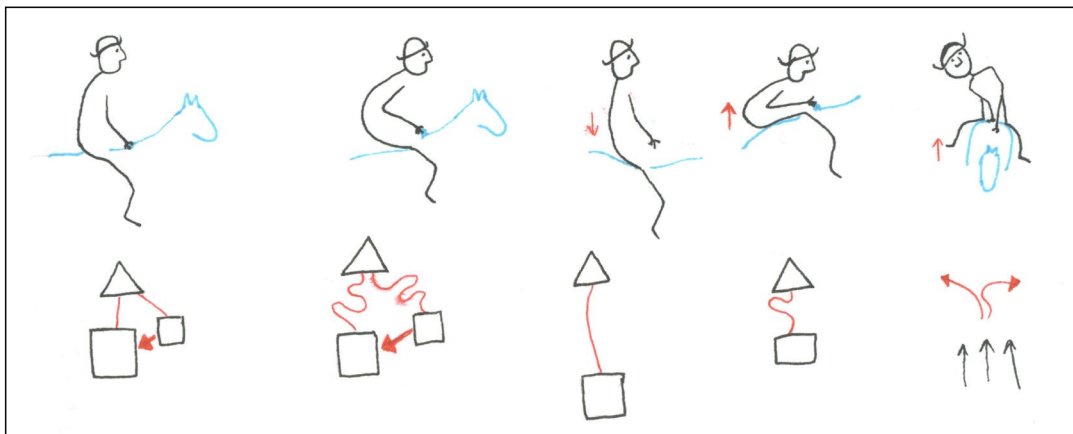


Consider carrying a potted plant or a sack of flour on your head. A horse carrying an unskilled rider is in a similar position.

It's like being monoplegic. The horse has a limb that is missing proprioception, sensation, motor control, feedback control, coordination, balance, volition, and reaction sequences.

A good rider makes up for this by turning into a mobility point. They sit hunched so there is play in their spine and arms, and they deflect energy that would throw them. This is called "sitting on your pockets."

How to stay on a cutting horse

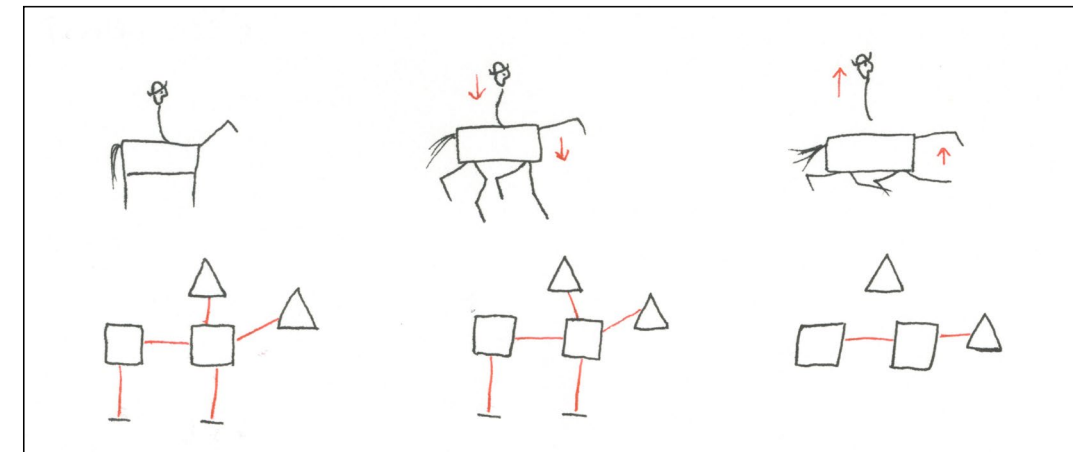


In trotting, riders can "post" with the horse's stride, meaning they bounce up and down with the horse, making their grounded and floating moments match up.

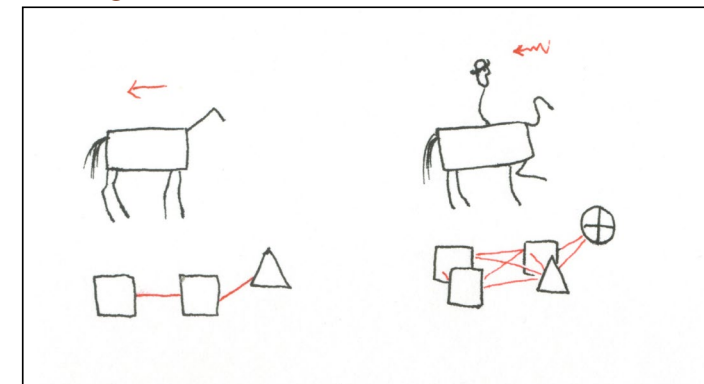
Cutting is unusual because there is no set rhythm to how the horse moves. The rider has no grounding most of the time.



Trotting



Going backwards



A horse can back up smoothly of its own accord. A horse instructed to back up (through losing control of its head) may resist, causing each limb to operate independently.

Basic technique: how to stop for a turn and stay together

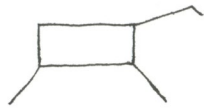
This is an example of future modulation of the course of seconds. In other words, "if you do this bit better, the next part will be easier."

These stops have different names. Here, uphill and downhill refer to the angle of the horse's body as it skids to a stop. Angling uphill is a much more successful strategy, but also more foreign to the horse. It's also called "stop n' draw." The downhill stop is also called a bicycle turn.

Uphill stop: smooth

Both the rider and the horse have to be warmed up to accomplish an uphill stop. It takes strength and flexibility to float this way. Well trained horses are more mobile because they can commit to a movement without throwing all of their weight into it.

1. Traveling

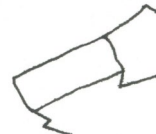


2. Stopping



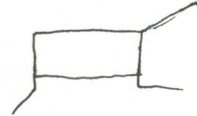
weight thrown
behind back feet

3. Preparing

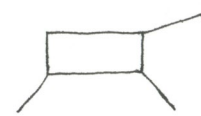


power collected
in hindquarters

4. Leap



5. Traveling



head stays high the whole time

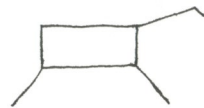
low carriage possible

Step 4 is a key moment for the rider because it's when spurring will help the horse stay up with the cow. Spurring too early or too late relative to this leap means the horse loses ground.

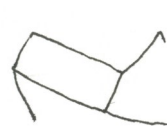
Downhill stop: jumbled and slow

A horse doing a downhill stop is struggling with itself. Their focus goes internal and they lose track of how the cow in front of them is landing their leap. They are also less prepared for new instructions from the rider. This stop can be done with heavier weight in a lunge or pounce, or with lighter weight in a more airy, leaping fashion. In any case it looks messy each part of the horse is thrown around separately. Adding a rider makes it more chaotic..

1. Traveling

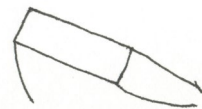


2a. Stopping



weight thrown
low behind
front feet

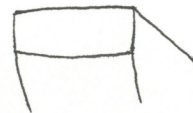
2b. Head and rider
recoil from the drop



no
power
here

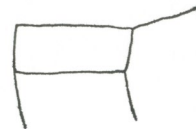
straining

2c. Stuck

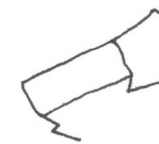


feet
unraisable
while head is
down

2d. Recovered



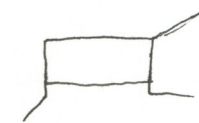
3. Preparing



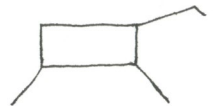
tucking for
power

finally free

4. Leap



5. Traveling





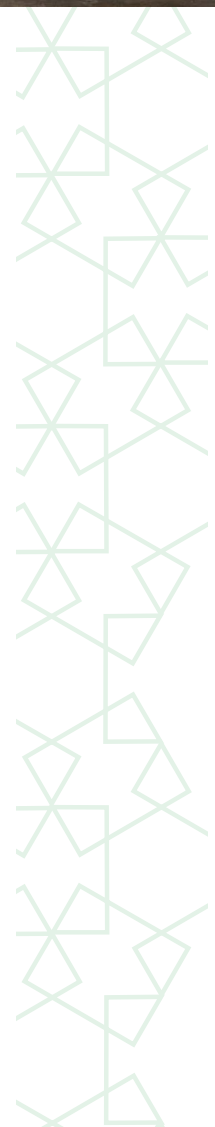
"Wild Horses" by Frank Mechau (1936)

Some uphill and downhill stops

The rider's kinesphere

The rider's kinesphere is only important during herd work, where the rider uses the reins to guide the horse. Reining uses the mid and near kinesphere. Far kinesphere reining is looked down upon. The rider's also grow tall in the herd along with their horses. Reining moves cross-laterally.

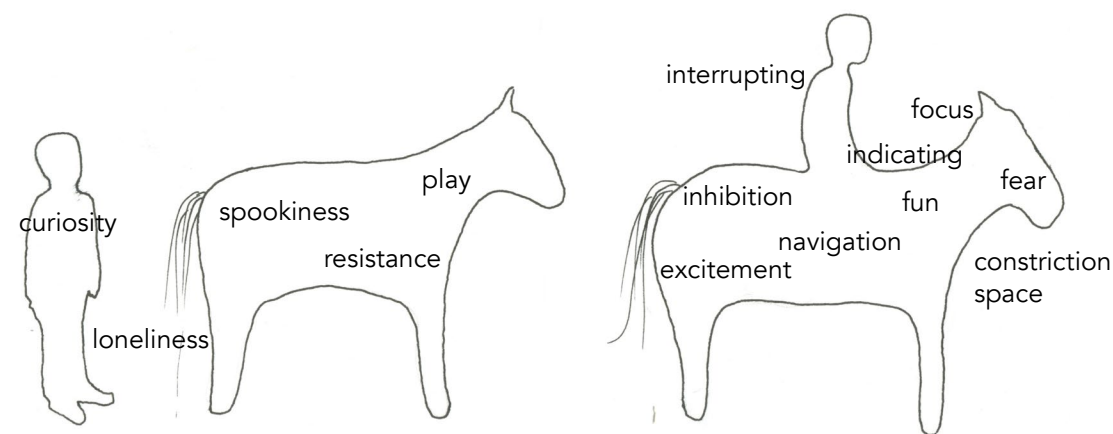
When cutting the rider's kinesphere becomes unimportant as the nature of the rider's body changes to cope with the ride.



Suggestions of violence: being seated on a horse

Following a pointed finger, saying "turn left," or nudging your friend leftward on the sidewalk are innocuous indications of direction, or, they are at least when compared with indicating direction to a horse. Humans tell horses where to go using symbols that are based in threats. A rein touches the horse on the side of their neck, a touch that in an unaccustomed horse causes them to sidle away. Similarly, being nudged in the ribs recalls being spurred or kicked in the ribs, and the horse moves away from imminent destruction. Horses get similar shocks through their bits. The NCHA forbids destructive and painful bits. A sharp pull on a bit forces a horse to go backwards, away from the bit, although if the pull lasts, the horse can't actually escape from it. Horses pulled sharply back often struggle. They become bound up and reveal the connections in their bodies as each limb takes on a life of its own.

Apparently horses come to terms with reining and spurring on some level. Perhaps there is a transition of the embodied suggestion into an abstract symbol.



The rider and the horse: what is it?

Cutting is unusual among equestrian sports because the rider must drop the reins during the cut. For new cutters, putting them down and leaving them down is hard because one feels lost without that key line of communication to the horse. Putting the reins down does not really mean the rider cannot communicate with their horse though. One leans and muscles tense and loosen through the butt, thighs, knees and feet. These signals change the tendency of the entire horse-rider system, making a given move the answer that harmonizes the group. I saw one rider essentially “parallel park” his horse this way.

Cutters are proud of putting the reins down because, they say, it gives the horse the attitude to track the cow. A training mantra is “the cow turns, the horse turns, then you turn.” It’s not clear to me what goes wrong if the rider jumps the gun. Perhaps they turn too slowly, or the horse’s and the rider’s decisions muddle each other. In any case, rather incongruously, the rider must watch the cow, not the horse, to stay in sync with the turn. While these details need to be worked out in another study, it is clear that riders discipline themselves to follow the horse and cow.

The reason to give the horse its head is because the horse reads the cow better than the rider does. This does not mean the rider is divested of all responsibility. The rider’s job is to keep track of the formal game (such as time left on the clock), to deal with timing and strategy (such as when to quit a cow or how deep into the herd to cut), and manage the horse’s location in the arena vis-a-vis the cow. The latter two have interesting ramifications for the human-horse cooperation.

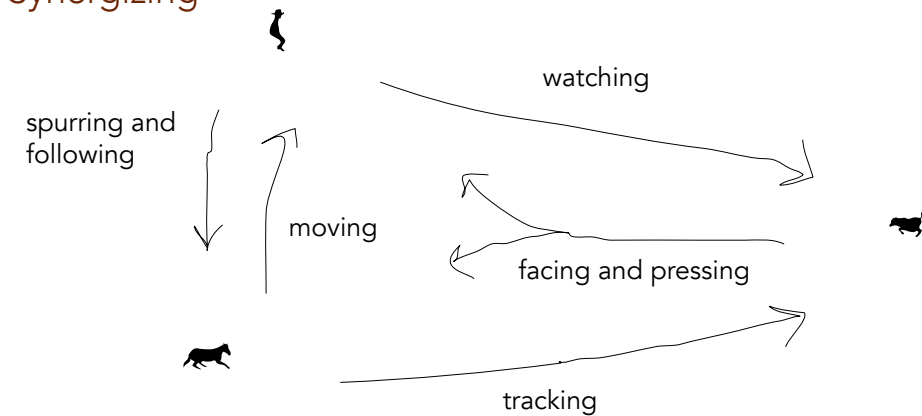
First, when a horse is working a herd, the rider is making decisions about which cow to cut and how to approach that cow. Those decisions are communicated to the horse through reining. You can’t see the decisions in the rider’s body outside of where they move their arms. But the decisions are loud and clear in the horse’s body. Bound flow and sudden time show up in little shudders and adjustments through the horse’s body as the horse sorts the cows. This makes it look like the horse owns the decision, even though they share it.

And second, cutting techniques cause horses to unintentionally “fade” back towards the herd. Back there, they might flush the herd, but they also lose buffer space for maneuvering and the intense eye-to-eye position with the cow. The horse counts on the rider to spur at a key moment in the turn to prevent fading. Knowing when and which spur to use requires practice. Techniques like these are involved in managing a variety of other spatial issues in the arena. These divisions of labor makes the horse-rider body look like an interesting hybrid.

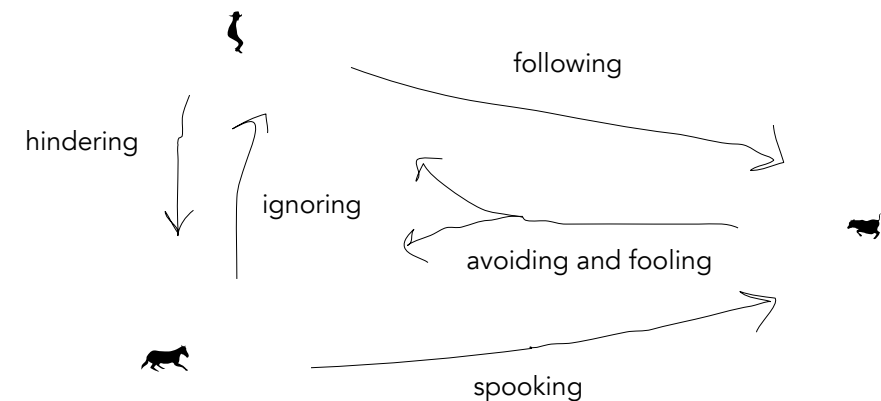
Professional cutters have a more intense relationship with their horses. Often, before and after a session, one sees them repeating a backwards turn. Other riders will also do this, but the professionals are more showy and severe (strong weight, bound flow, quick time). This move is probably priming the horse for staying low in the game, but it also highlights how each participant is potentially choosing between cooperation and resistance with some other member of the group. Poor riders surrender themselves to the skill or whim of their horses. Willful horses can rebel against their riders. Willful riders can push their horses around. A baffled cow surrenders to the horse for a few stretches. These dynamics are visible in movement, and they show that the horse-rider-cow grouping, while able to synergize, has not coalesced completely.

Divisions of labor in merging bodies

Synergizing



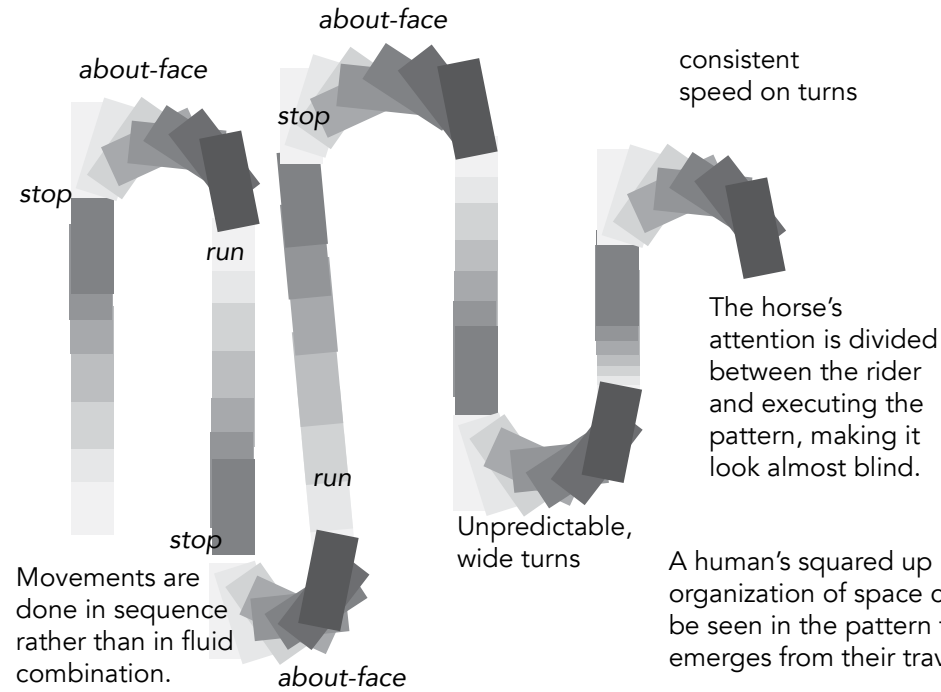
Interfering



This is a simplification certainly, since these relationships also involve pleasing, trusting, learning, growing, hurting, cheating, and so much more.

Using space in cutting

Horse in training

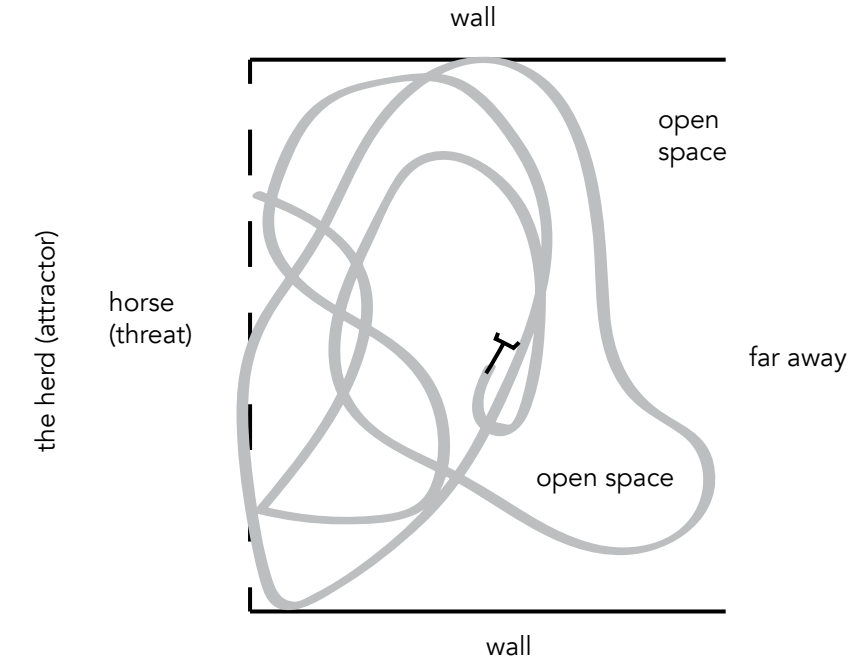


This horse has not yet learned to follow the cow. It is following the rider's indications about when to turn, stop, and run.

An older experienced horse that knows it has an incompetent rider will also travel this way on the arena. The horse has lost interest in the game and simply carries out the motions.

Children in the saddle also take on a look of rehearsed movement pieced together.

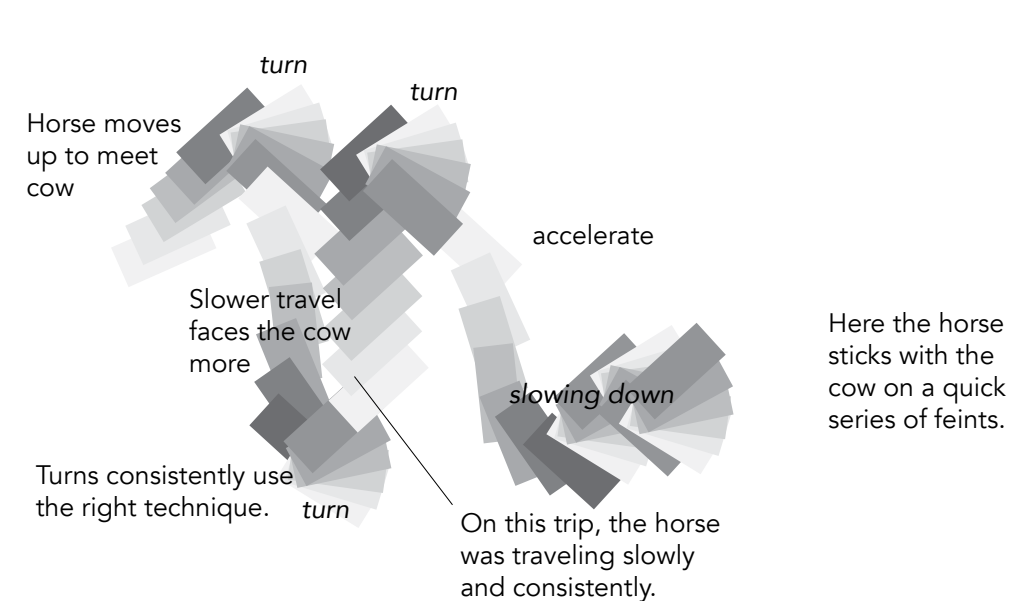
The cow's response to training



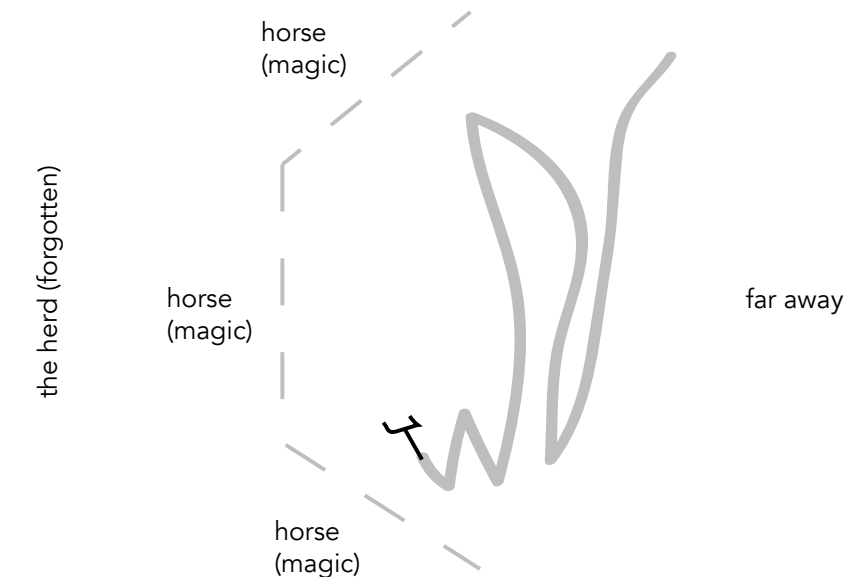
Meanwhile, the cow is also moving across the field, but it is also moving and down the field, and is confined as much by the walls as by the horse and rider. In a contest, the herdholders would prevent the cow from moving this way.

A horse can keep a cow away from the herd for a while this way, so if this were the only goal, and the game always took place in fenced arenas, the game would be easy. However, without fences, this cow would long gone.

The mature game



The cow's response to a mature game



The mature game takes on a lens shape within the arena rather than filling the square of the arena.

Cows

The indistinguishability of cows is part of cow magic



Kinespheres appear around cows when they're with other cows.

1. Near kinesphere

Taking a hint from Temple Grandin, a cow's near kinesphere might be best spotted when cows are between cows with their heads low, going 'under the radar,' so to speak.

2. Mid kinesphere

In between is when cows are watching things. The white and black cows on the left could be said to be using their mid kinesphere.

3. Far kinesphere

See that white cow with its chin up?

This cow is about to push its head down between the two brown cows ahead of it allowing it to get deeper into the herd. This is a rare use of the cow's far kinesphere and of carving.

Is there such a thing as a cow?

Not in movement. Cows lack dimensions of movement when they're in the herd, dimensions that don't necessarily appear when they are separated, either. It is easier to think of lone cows as abandoned limbs and the herd as the body.

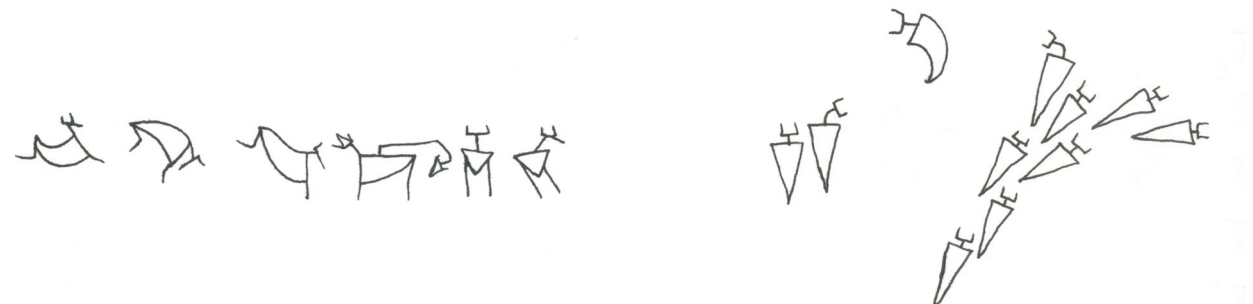
But, lone cows develop personalities

Lone cows have a completely different movement identity from cows in the herd, and that identity can vary considerably from cow to cow, moment to moment. This variation makes the game. The herd, by contrast, is erratic and flowing.

- urgent
- likes to run
- reactive
- circler
- stays facing horse
- bursty
- pressing
- runs to the back
- comes back hot (fast)
- stumped
- tired
- enchanted

Cows that have been separated from the herd move with reference to axes, not planes like our other study participants. A fresh cow will express panic and urgency through warping their spine. This energy can be passed into the herd if the cow makes it back moving this way. Unconcerned or stumped cows won't put the effort in to achieve these movements. Cows retained in the herd keep their spines straight.

Surprised lone cows take on a stiff rubberiness when they warp their bodies. They spew movement in all directions. It seems like an evasion and surprise technique.

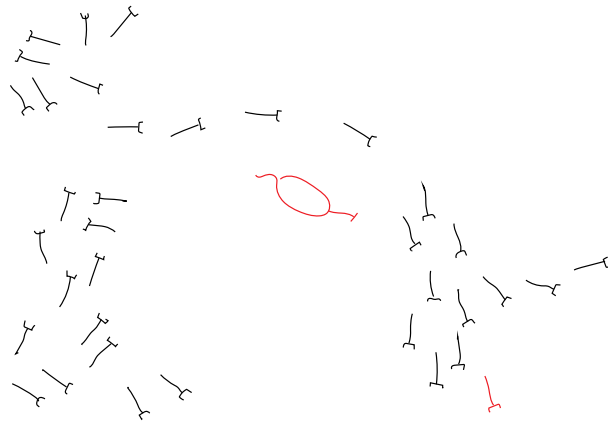


What's the herd body?

Herd work, the herd body, and cutting shape

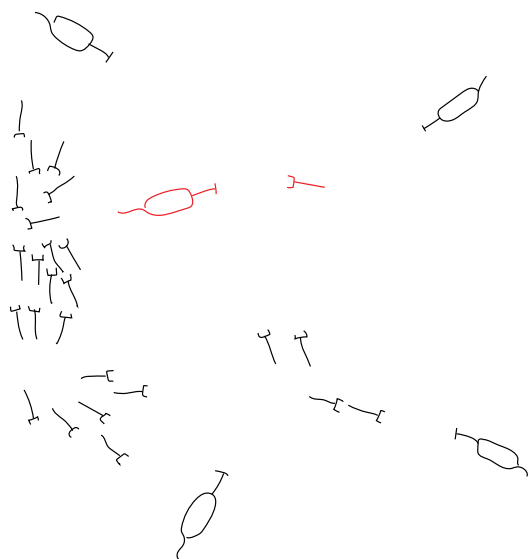
The herd has many guises. Any part of it can pop out and move in its own way. Cows switch between being leaders and followers. This makes the herd unpredictable. It has the power of everywhere. It doesn't have a face.

The herd body = the core + extensions + potential individuals



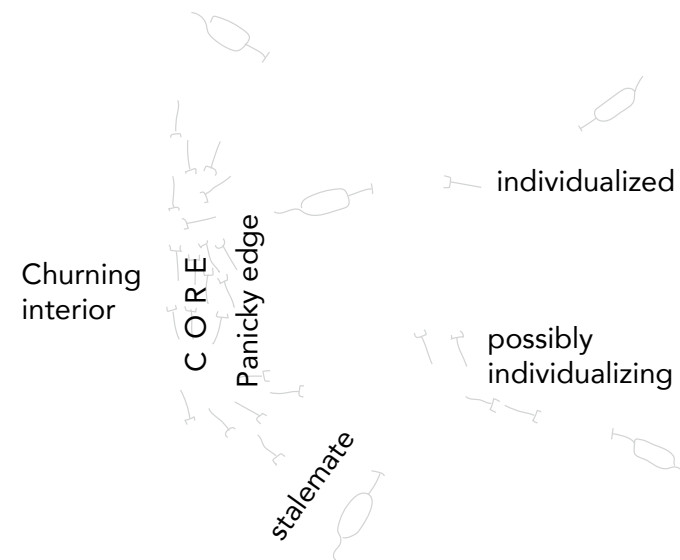
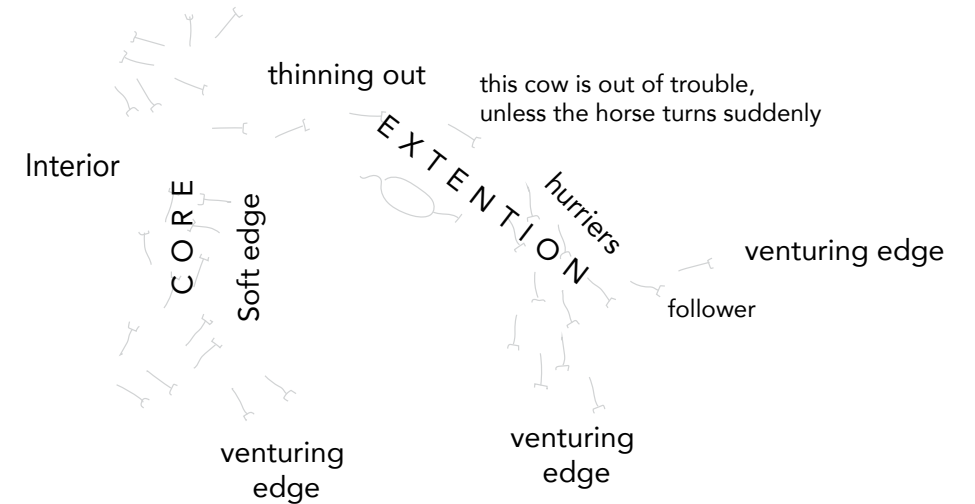
Being 'soft'

This cutter is sorting the herd well. Most of the herd is untouched, standing loosely near the wall. A clutch of cows are moving slowly forward, pushing the few at the front onwards. If finessed, the cow out front will remain naive of the horse's presence until all its companions have peeled off and begun returning to the herd.



A tense situation

The cutting horse has "faded" into the herd, pressuring them into the wall and the herdholders. Some cows may soon take a run for it. A turnback man is startling the few cows that the cutter left in the field so they run back to the herd. They may arrive too crazily, causing others to run. The second turnback man is pressuring the chosen cow to get moving, which can have sudden consequences too.



Telling herds apart

Grooming the herd for cutting

The herd has too much energy in it initially to start cutting right away. If you cut a jumpy herd, the cows don't respect the horses. They turn around a lot and bolt.

A good horse can move through a calm herd in such a way that the cows that are being pushed out to the front don't realize it. A cow may even single itself out. That cow is a good cow to cut.



These cows are ready to be cut

These cows are more used to the arena and the horses. They're spread out, looking around, and they're moving without concern.



These cows are not

These cows are bunched up and wary, holding their ground as a group. Individuals are skittish and rushing.



Studying cows

Some cows are shy.

Some cows are bold.

Some cows are from feedlots.

Some cows are from the open range.

Some cows are herded by mounted riders. They're clever and watchful.

They know horses.

Some cows are jumpy. They haven't been settled well.

Some cows are fresh. They've never been cut before.

Some cows have seen this before. They refuse to play the game.

Some cows are indistinguishable, even to the pros.

Can you memorize each cow?

Picking out the cows that will best show off your horse is a major part of the game. As the cattle are settled, everyone studies the cows. Often, the cows are mostly the same color. They look for any distinguishing characteristic---fur patterns, behavior, ear habits, size, muddiness. A good cutter will memorize and prioritize all thirty-some cows in the arena. Many ask their trainers to do this for them while they lope their horse. Then, as the round progresses, one must make sure that the cows one wants to cut aren't being cut by others so they remain fresh. A cow that has been cut before is lethargic and unimpressed with the game, and can ruin a cutter's chances.

Mechanical cows?

Yep, it's a machine that moves a little flag or a stuffed animal back and forth along a wire. They're often used for practice because fresh cattle are hard to come by.

The machine calls into question whether you need a real body to be truly surprising. The machine does not strategize, feint, or react the way a cow can.

Some mechanical cows are remotely operated by the rider.

Some cows look like stuffed animals, like this one, but others are simply flags. The advantage of stuffed animals is that they give a sense of which way the machine is facing (they rotate). It's not clear to me if horses take that into account or follow the raw direction of movement.

Teaching a horse to follow is a large part of cutting training. The mechanical cow probably covers the early stages of that skill set. You then turn to real cows to get the finer points and interactive dynamics.

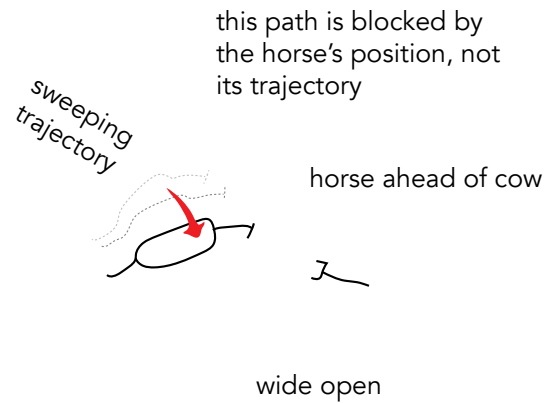


hannahbecker

Finessing the turn: horse magic

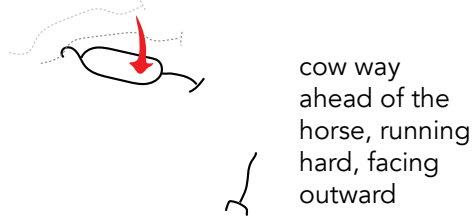
How to boost chaotic energy

Pushing with the edge of your body



this path is blocked by the horse's position, not its trajectory

Followed with a downhill turn...

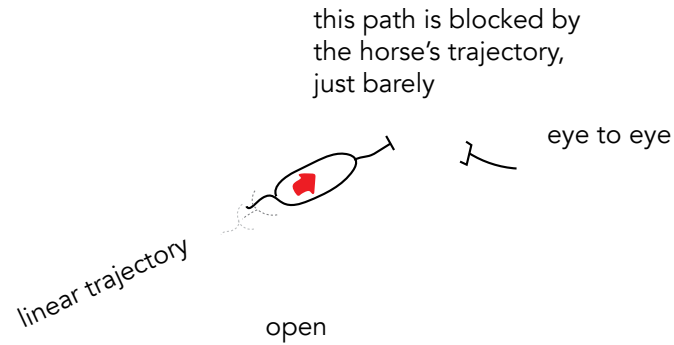


Here, the horse's momentum both detains it and spooks the cow into running harder. The horse can catch up, and again pass the cow to catch it, but this system is fragile and risky.

The distinction between using the body as a point (pushing linearly) or an edge (sweeping) is also important in herd work, where calmness is a necessity.

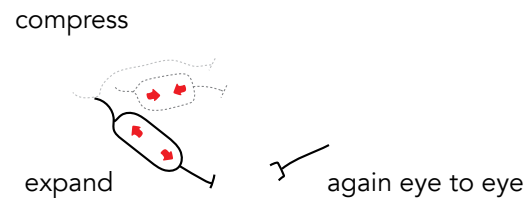
How to manage smooth energy

Pushing with the point of your body



this path is blocked by the horse's trajectory, just barely

Followed with an uphill turn...



The horse's trajectory here is not indicative of where it will be next. The horse can reveal a false passage to the cow and then suddenly appear in that space. This is the equivalent of horse magic.

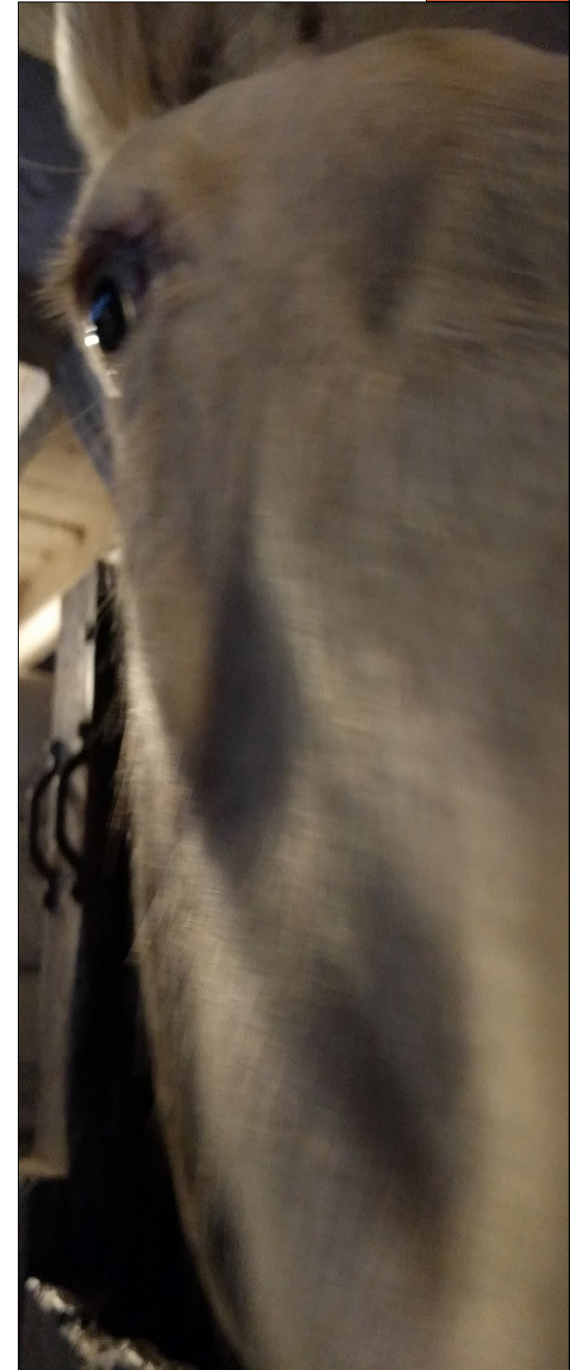
Playing the edge of the game

Totally stumping a cow early in the game will be the end of the cut. The cow needs to see opportunity on one side or the other of the horse. Such a cow will be pressing in. Cutters talk about this in terms of "being in their eye" or "being on their neck." Otherwise, you're "going long" or "going short." Sometime later, once the group has settled into a rhythm, it's hard to tell who is turning whom.

The more a cow presses, the more difficult the game becomes. Professional cutters want to walk the line of barely preventing the cow's escape. You often see cows dramatically out of control in the pro rounds.

The question of who is turning whom is more than a pleasant fantasy. The horse is supposed to turn when the cow turns, but the cow is going to turn off the horse. It becomes a circle when all goes well.

Children play the edge of the game in a different way. Youth make their decisions more slowly, and once they've made them, they execute a rehearsed movement. They look more mechanical. This edge is the edge of the unknown, rather than the edge of possibility.



Connection and space

Occlusion and the horse's shadow...

Sometimes, the draw of the herd motivates the cow most

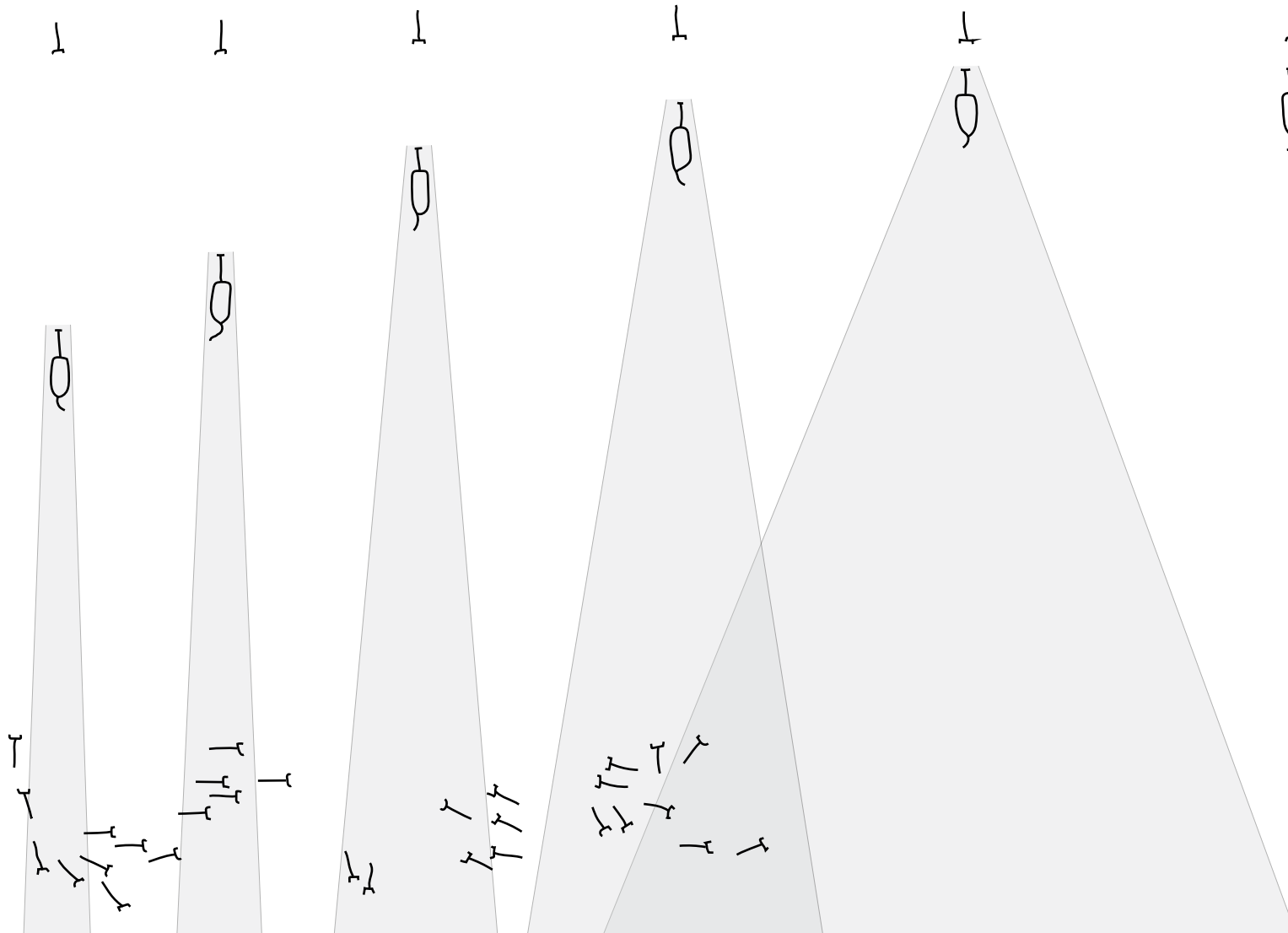
If the horse is closer to the cow, the cow can't see the herd

And if the horse is really smooth, the cow will forget about the herd entirely.

... Faces and mesmerization

And focus exclusively on the horse.

The faces of the cow and the horse fill each other's vision, still in an otherwise turbulent landscape.



Human faces are nodes of expression. The polite American smile-grimace is a canned facial expression that sends a specific message. Other times, human faces show unexpected expressions. Animal faces tend to be less immediately meaningful to humans.

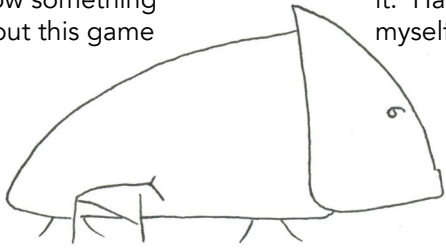
It might be more useful to think of these animal faces as taking action rather than as being expressive.

The two animal faces in cutting mesmerize each other. They are drawn together. Through the faces, another more timeless space opens up. It's like being in the eye of a hurricane.

The cow's options

I've heard you know something about this game

I've been studying it. Haven't tried it myself.



I think I just lost. I don't understand how I can win.

You know I won't get another chance. They say I'm not fresh anymore. The game is stacked against us.

Mostly, yes.

But would you say that you're being dominated?



No. Why?

That's how some of them describe it. They think they're telling you when to turn and where to by being exactly in your way.

You just have to run around the horse!

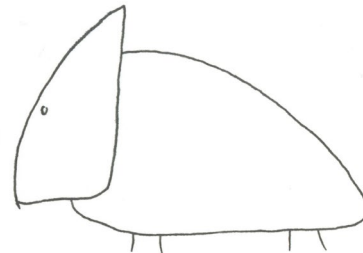
You're being cruel.

So what am I supposed to do? It's humiliating.

Yes. That was a good horse.



Well, they can only play the game if you run.



They are in the way!



But I can get around them.

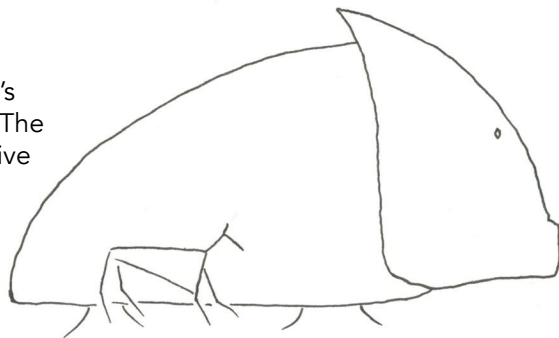
How?



I misled them once. I fainted. I can do it again.

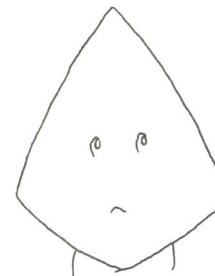
What do you mean?

If you stand still, there's nothing they can do. The game dies and they give up on you.



That's what happened to Charlene. But they put so much pressure on you. It's hard to keep cool. And then suddenly it's over.

Yes, although it gets easier. If you get another chance.

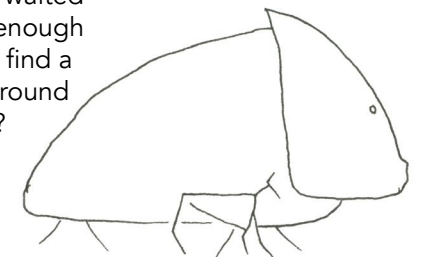


But what about when they really had you dancing, just now?



No, I wasn't dominated. I was biding my time, waiting for a window to open up.

Do you think if you waited long enough you'd find a way around them?



Yeah! They can't keep it up forever. That's why they keep the game so short. And if I get tired, I'll just stop.

The power trip

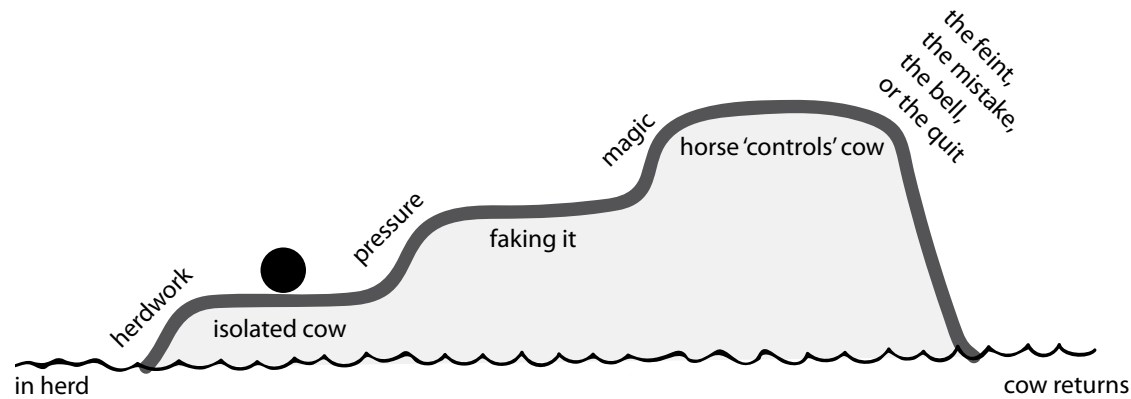
Laszlo, why do you think cutters think they're controlling me?



It's because of all the effort they're... we're... putting in. They're evaluating the game based on what they've done, not what's coming next.

What do you mean?

Have you ever played one of those games where you have to get the marble on a little platform and balance it there?



Cutting is like that. The cow is the marble, and advancing the game to the next stage means pushing the marble up a ramp. One can always fumble and the marble slides back down.

In this game, the first stage is getting the cow out of the herd. The second is setting up the back and forth pattern. And the third is mesmerizing the cow.

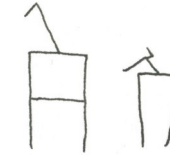
So here the marble slides back and I win?

Yes. And see how high we have to push the marble? That's where the power trip is produced. They've beat the odds and they think they deserve it.



You're saying that the rider feels powerful because of what they've accomplished?

Yes, it's not because they're in control. They're not.



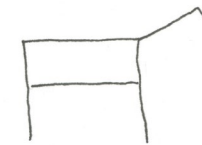
How do you know this?

Because I've done this my whole life. No one is in control.



'ou're not in control?

I'm not looking for it either. I'm looking for something else to take over between us. I'm waiting for it to become easy to stick with you.



They always name you horses after cats. You are like cats. Predators, following every move. Smooth and sneaky. Are you really like that?



Yes, in part. Horses always have a reaction to cows. Whatever the reaction is---aversion, fear, fascination, aggression---a cow always means something to a horse. That reaction can be molded into an attraction. Cutting horses will cut cows when no one is riding them. They'll track the cow from the sidelines. Or they'll latch onto cows when working the herd. I can see how that attraction could be construed as predatory.

But not always?



No. The game makes the cow attractive. Without the game, the other meanings of the cow are also present. If the other elements of the game don't appear, like the rider's spurs and the fencing, the urge to cut transforms and moves on. The predator disappears.

Latching on and the quit

Connection and disconnection in cutting

Latching on and pulling out

Cutting horses latch onto cows all the time. You'll see it while they're settling a herd. They'll have 30 cows milling around them, they'll pick one and follow it. Their attention goes from indirect space to direct. The transition is subtle and only takes a moment. But, to get the horse off the cow, the rider uses sudden time and indirect space with the reins. Usually a dramatic yank is needed to pull the horse out of their fascination. This yank is important during the game if the horse chooses the wrong cow to cut.

Staying out

To prevent a horse from latching on, a rider needs to keep the horse's attention by giving them regular instructions. These horses look focused on the rider and the task of following, an almost internal focus akin to vision drive. They stop reacting to and managing their own space.

What's a hot quit?

A hot quit is when the horse lets go of (quits) the cow while the cow is still trying to get by the horse. To avoid this, the horse must either turn the cow away from the herd and quit it or bring the facing cow to a stop and quit it. The cow must not lift a leg for a moment for it to count as a full stop. If the cow moves, it's a hot quit. The cow is still "hot." The rider is supposed to signal to the horse that it's time to quit by lifting the reins. A hot quit comes about if the rider was mistaken about the cow or the horse quit a hot cow of its own choice.

Moving through the quit

One of the most interesting moments in cutting is the facing quit. The rushing stops, everyone pauses, and then everyone relaxes. A good quit has distinctive effort transitions that everyone does in sync. During the pause the direct space connecting the horse and cow evaporates. Time goes from sudden to sustained. The bound flow in the horse's neck changes to free flow. Weight isn't involved. All of this is happening, but from the outside, it seems as though nothing is happening. Vision drive!

Timing is important. If the pause is rushed, the horse has to haul itself out of the link with the cow. This can appear as spatial confusion (disorientation) and heavy weight in the horse. If the pause is out of sync, the cow may not follow the rider and horse into it, a risky position. On the other kind of quit, where the cow has turned away, the depth and clarity of this pause is absent.

The relaxation step after the pause is visible in each member. The horse slowly leaves its low crouch. The rider will come alive working with the reins. Together they take a few steps loose, uneven steps

backwards (indirect space, light weight, sudden time). The rider grows in their saddle. The cow, meanwhile, seems to have realized that all the pressure is off, and will trot unhurriedly back to the herd. The trot is some combination of indirect space, and light weight, and free flow, and sustained time.

It should be noted that these moves are more obvious in better riders and horses. They also vary from practitioner to practitioner. It may be that some cutters want there to be a clear transition for their horse between cutting and herd work, which require mutually exclusive effort types. It is also probable that cutters play to their and the horse's strengths in these moments.

The horse becoming a cow?

Sometimes the cutting horse doesn't latch on to a specific cow.

The power of the herd can be so strong as to pull the horse in too. The cutting horse can be drawn into the momentum, following the herd as if they were one of them. It's ironic because their presence in the herd as a horse will still push the herd away from them, so they are joining a flow that is a reaction to them. This kind of following doesn't look like a latching on (indirect space).

What are these bodies like? Summary portraits

Cutting riders become unidentifiable during a cut, but it's not as if they disappear. A good cutter becomes an insensate but synchronized limb of the horse. They adjust their spine, their weight and flow, and their grounding to move as if the horse was moving them. It should be emphasized how bizarre this is. This embodiment is not one of the usual whole mammal who requires support and volitional mobility. Riders delegate important tasks to the horse: traveling, following the cow, turning correctly, and being big and smooth. And they stay purposely blind to the cow's movements, even though they are watching the cow carefully. In They are performing an active role in sifting, channeling, answering, and using the movements they are embroiled in. This gives them the ability to become part of the horse.

One might wonder if the rider is a necessary part of the game. Racing camels in some countries are now ridden by robots. But in cutting, the rider has several unique responsibilities. They manage timing, field positioning, and strategy. In particular, they display decisiveness in choosing the cow, pulling the horse off of cows, managing the quit, and spurring. It's easy to consider all this as playing a more mental role in the game, having delegated much of their physical goals to the horse. However, working with a horse is a sophisticated performance of embodied communication. A horse is pleased by reliable, clear signals, helpfulness, and just use of force. Pulling those characteristics out of a body that is being thrown around in the context of murky choices takes more than cognition.

Of the animals in this study most similar to humans, it would have to be the cutting horse. Cutting horses are extraordinary athletes. They learn new challenging embodiments for handling corners and cows. Their spatial flexibility is astounding for their bodies. They display affinities for certain effort types. These are things usually seen in humans (although studies haven't really been done for animals), and sometimes only seen in trained humans. The horses themselves are a little hard to evaluate because it seems as though horses as a whole are a widely varying group. It's hard to know if this is 'normal' for horses.

Cows are interesting because the herd is better identified as a single entity than each cow. The herd body has a core and extensions that together make a coherent affective space. Cows work to maintain this space through their limited kinespheres. Humans also work to set the tone of that space by settling the herd. Once separated, cows transform completely. They lose their kinesphere and gain a flashy and confusing effort repertoire. It is interesting to see an animal with two distinctive and exclusive embodied repertoires.

During a cut, the horse, cow, and rider can either interfere with each other or synergize. Synchronizing is difficult and rare. While it happens, the participants share travel, timing, weight shifts, energy expenditure, and so on. They enter a focused space only they share and the sense of time shifts from sudden to sustained. In this moment, it is possible to say that the three of them have become one cooperating unit, more similar to each other and engaged with each other than they are with the outside world.

The next book explores how this might unfold.

Humans transforming and adjusting

- constant bodily presence
- uneven grounding
- flexible spine, floating body
- loss of mobility
- loss of kinesphere
- delegated embodied expression

Horses transforming horsiness

- spatial flexibility
- cow sense (cat like)
- turning and footwork skills
- weight management
- using embodied space to push and pull

Cows: from herd to singleton

- loss of everywhere-ness
- loss of kinesphere
- rubbery, jerky, bursty panic
- gain of uniqueness

Humans' contributions to the group

- managing the quit
- game strategy (choosing cows)
- pulling the horse off a cow (decisions, decisiveness)
- regulating field position
- youths' unsynthesized movement
- energy management (loping, settling)

Facing destruction

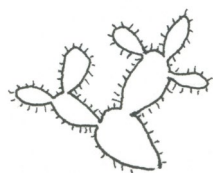
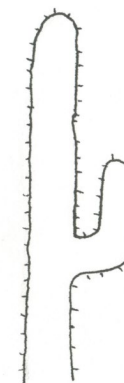
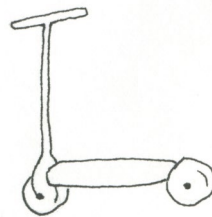
- bad weight and flow management
- compounding movement chaos
- poor timing
- horse not loped enough

Fading away

- horse and cow don't engage
- not a fresh cow
- rider doesn't assert self
- old horse

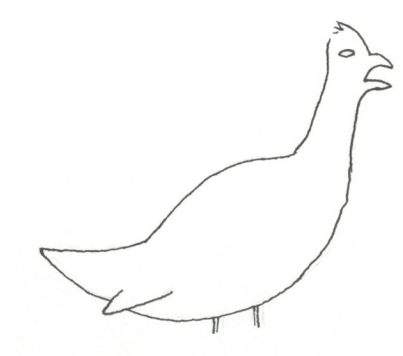
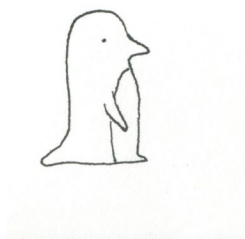
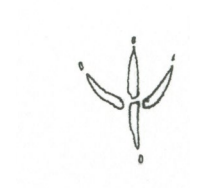
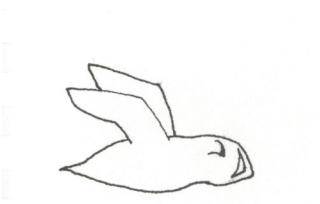
Synergizing

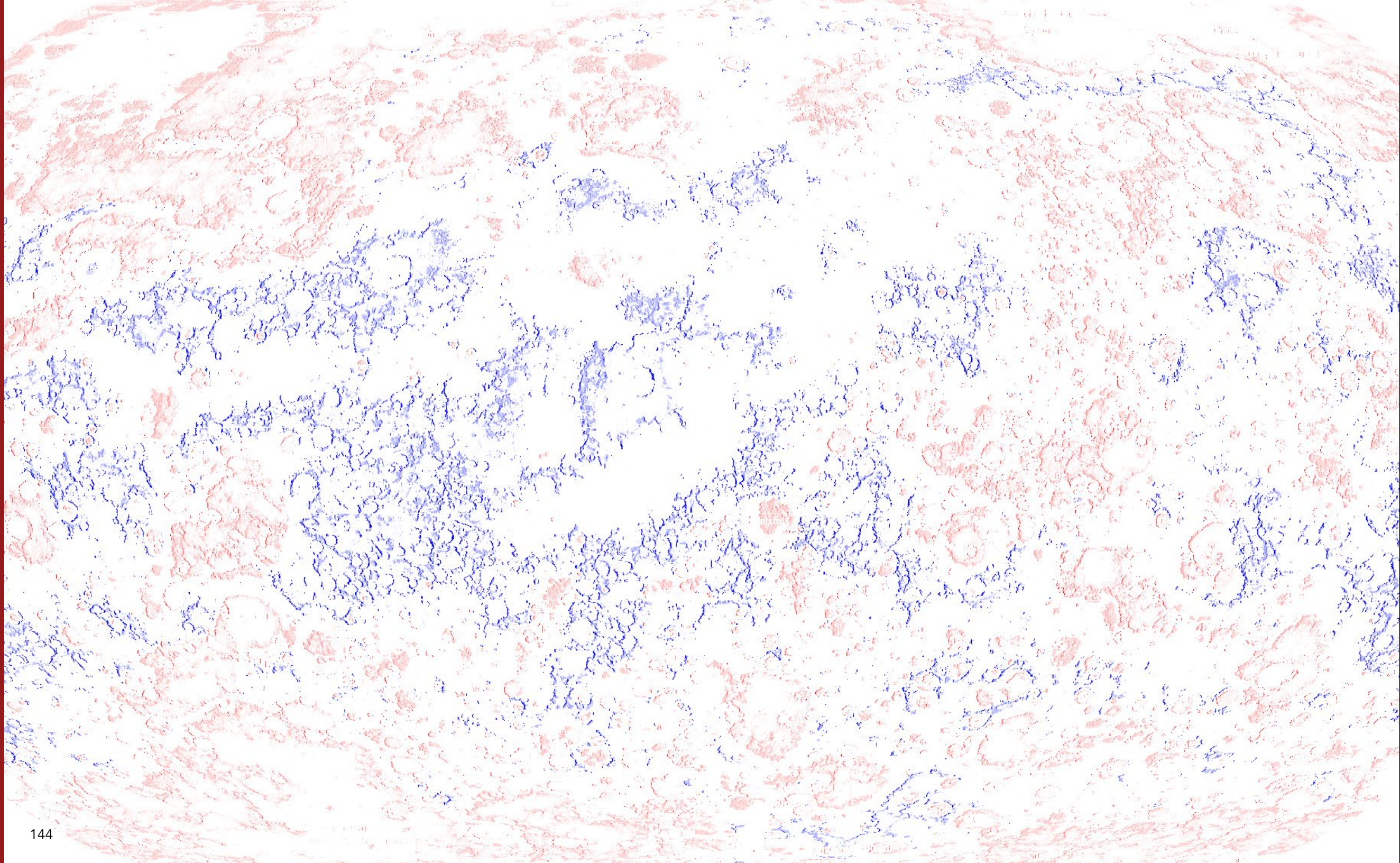
- facial mesmerization
- direct space, sustained time
- easy to slip out of but hard to haul oneself out of





BOOK 3: GEOGRAPHY AND MAPS





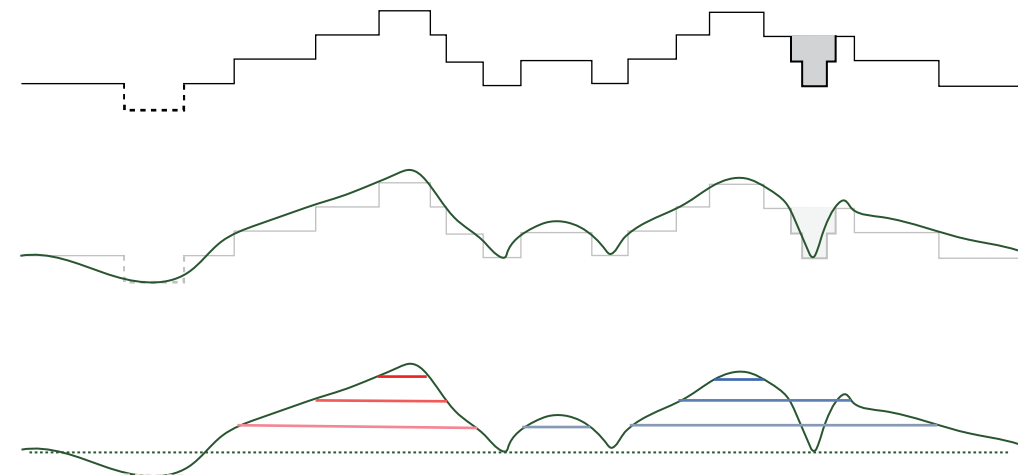
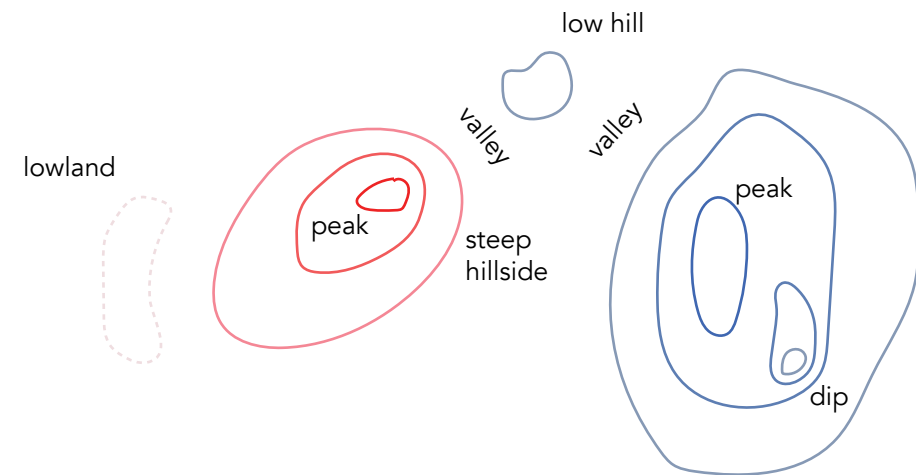
The spaces of shapeshifting bodies

The moment has come for landsharks to shine. This is when the landshark shovels out a river valley and sifts through a sand dune in the rock of the planets of our bodies. When the landshark shrugs, ridges appear.

This section synthesizes the details explored in the previous results sections into more concrete stories of how relational spaces change through embodiment. The goal is to grasp more firmly our own co-constitution and situatedness with regards to others. Each story has three parts: the embodied story, told as a true narrative; an interpretation of the map surface as if it was a landscape, and a digestion of the spatial dynamics in terms of assemblage theory.

Isoline mapping may be familiar to you from weather maps that show the temperature or from topographic maps that show elevation (for example, [these mapped landforms](#) collected by [Slaymaker No date](#)). The lines mark places with the same temperature or elevation. Circles within circles show peaks and valleys. Isoline mapping comes into play here as a way to explore affective space as a continuous fluctuating volume that we produce around ourselves. These maps will make it possible to see ourselves in real time, where we begin and end, what is inside and outside, how we come and go, and how many pieces make us up.

On an isoline map, a line of a given color means the terrain passed through that elevation. The same applies here. I assigned three positive elevations for hills that are coming out of the paper towards the reader and two negative ones for dips that go back behind the paper. It gets tricky when you have a hill with a dip at the top. The dip won't be deep enough to incur a negative value, so how do you know it's going away from you? Sometimes I exaggerated the dip. Other times I excluded the dip if it wasn't relevant. If it was important to leave as is, it is shown as an isoline of the same color as the one encircling it, as it would be on a topographic map. To avoid this problem, one could use a relative coding system, where any surface approaching the reader gets a solid line and any surface falling away gets a dotted one. It might be easier to see ups and downs, but it would be much harder to compare elevations across separate hills.



Mapping FAQ

how do isoline maps work cartographically?

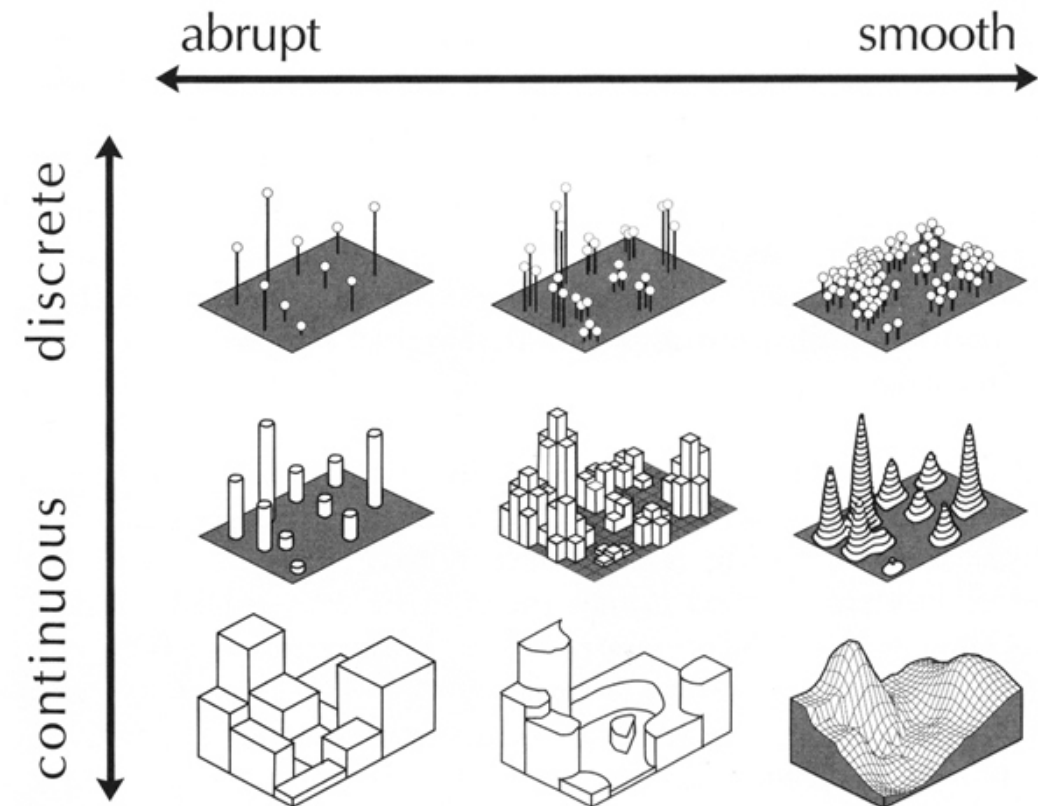
- phenomena occur on the earth in a couple of ways. you can have one event that is separated by space from the next event, such as car accidents. these are spatially discrete. they are different from things that occur everywhere, like temperature, which we consider to be spatially continuous.
- some phenomena change gradually, such as tree density. they are called smooth. others change suddenly, such as laws when you cross a border.
- isoline maps are used to map things that change gradually and are spatially continuous, like weather and terrain. the data from this study is assumed to fit into this group

why the terrain metaphor?

- this step helped connect the traditional uses of isolines with this application. it helps substantiate affective space as a continuous fluctuating surface, much the way a landscape makes up space. even though the variables affecting landscape (glaciers, volcanoes etc) are different from those creating affective space, it is useful to think in terms of a different set of them to build associations about these spaces. these maps might be more convincing as terrain if I added more vertical exaggeration
- analyzing the space as if it was terrain was also an important step for ensuring that I drew the isolines in the most expressive manner. I returned to my maps to refine the linework a number of times. however, sometimes the maps departed from traditional topographic maps. in particular, there is a lack of large slopes or large scale unifying patterns. I found myself wishing I could include an alluvial fan or parallel dunes, but these scenarios were not regular enough to produce those patterns. thus the reliance on glacial topography and bedrock variation. however, larger organizing patterns may appear at the scale of a city block or larger if one were to map bodies there

How things occur in space

(from MacEachran 1992)



why are you calling the movement scenario an embodied story?

- Other posthumanist authors (Lorimer 2006) have used stories to animate what they found. My data has temporal and spatial organization like first person experience, although what I'm offering is not necessarily a phenomenological viewpoint.

what are the colors about?

- I chose a few colors (red, yellow, blue, grey) to keep the maps looking good and to avoid red having red and green together for colorblind people
- the colors show similarities in space. red spaces are more similar to other red spaces. it shows the territorial reach of a body
- I needed a color to show territories that were shared by different bodies, so I chose grey
- colors can push through other colors. a grey space can have a red blob appear in it, if, say, a body briefly departed from the shared repertoire
- I switched which colors stood for which characters from map to map because I didn't want the reader thinking that "blue always means cows" or something like that. the point is that they lose their labels.

what are the shapes about?

- the shapes also show similarity in space, but they are more about resonance across different territories

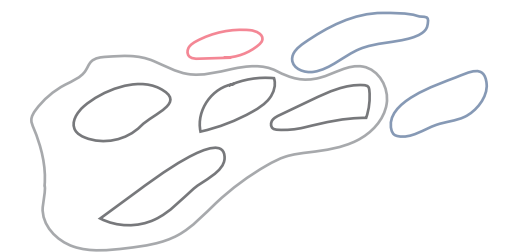
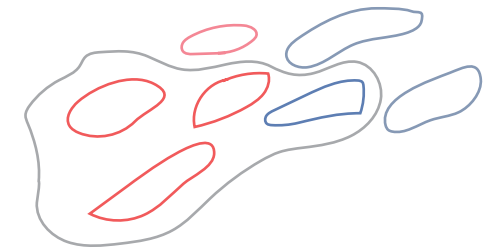
what does elevation show?

- elevation is the strength or effort expressed. very high or very low elevation means that space is more definitively defined than the space around it

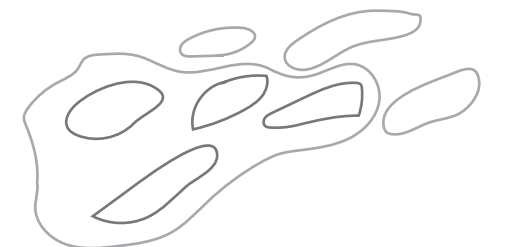
isn't scale changing from map to map? how to the isolines change?

- both scale and point of view (from above, from the side, or from a body) are changing from map to map
- scale is tricky in movement studies because there is some movement at all scales, and at each scale, it is having an impact on the resolution of bodies. here I chose the scale most conducive to understanding the movements and identities I found in my case studies. Those scales varied from what was happening at a few feet (inside and outside the limbs) to some yards (the cutting arena)
- I chose the same range of isoline values for each map because I couldn't imagine that one scale was somehow "noisier" (more fluctuating) than another scale
- the tightness of the isolines (which communicates slope) should be understood with regard to the scale of the map, not to absolute space. For example, a tense cutting sequence needs steep slopes, so the lines are as close together as they can fit on the map. If you compared that raw number of lines with a map of a bird and costume co-foraging, you would probably find steeper slopes in the co-foraging map because it has a closer view of the action. If the cutting map could be done at the same scale as the co-foraging map and fit on the page, one would find

Most different



Most similar



tighter lines on it than on the co-foraging map

where is the strata?

- the strata is most easily seen in the bodies drawn as we would recognize them (bird, cow...). it's the black ink that then gets taken out of the map
- strata is what we think of as being the concrete material world. I took it out of the later maps so you could see the other, less visible aspects of the material world
- to more completely answer this question, there are strata integrated in how the lines stick around through movement sequences. the cow will carry jagged shapes around with it for a few passes. that persistence of a quality is in part because of strata

how did you making visual sense of affect?

This method is inherently interpretive. While I know there's a projection of affect, I may not know exactly how far it reaches or how it interacts with other affect. In order to clarify how this method works, let's start with some interpretive structures:

- movement opposites clash (i.e. Laban's binaries apply)
- similar movements resonate
- movement is stronger near its origin
- there is such a thing as empty, unmanaged space
- expending more effort means more visual energy
- the known realms of the kinesphere can be used to place affect in space relative to each other
- affect marked as belonging to a territory or assemblage should look different from affect marked as belonging to another one
- layers of affect can be added up as net positive and net negative
- interactions can be partly interpreted based on their outcomes
- the map can slice through 3D space along any plane, and can be designed to imply volume or perspective on either side of the surface
- the visual variables affecting the concept of assemblage are color, shape, proximity, and elevation

what do these maps show?

Looking back at these maps, I've found that they show affect (energy) in apersonal ways:

- cooperative vs competitive energy
- collisions and overlaps in energy
- levels of energy (high, low)
- quality of energy
- reach of energy

- precipitousness of energy (slope)
- energy laying in through time

how did you use artistic license?

These maps are made through a qualitative process, so I've made many decisions as an artist and author that another might make differently. Here are some examples of those decisions.

- the shapes of lines: sharp or smooth
- how lines reflect the curves of their neighbors
- how high or low a given hill or dip goes in the surface
- I found certain absences to be unimportant to the map story (like space behind a body) and didn't always include them so they wouldn't distract
- whether and how to incorporate allusions to other visual phenomena in the shapes
- using smears to show travel or gaze
- deciding the relative visual weight of affective events
- exaggerating the dips so you can see them hit negative values (otherwise it's hard to tell a dip from a hill)

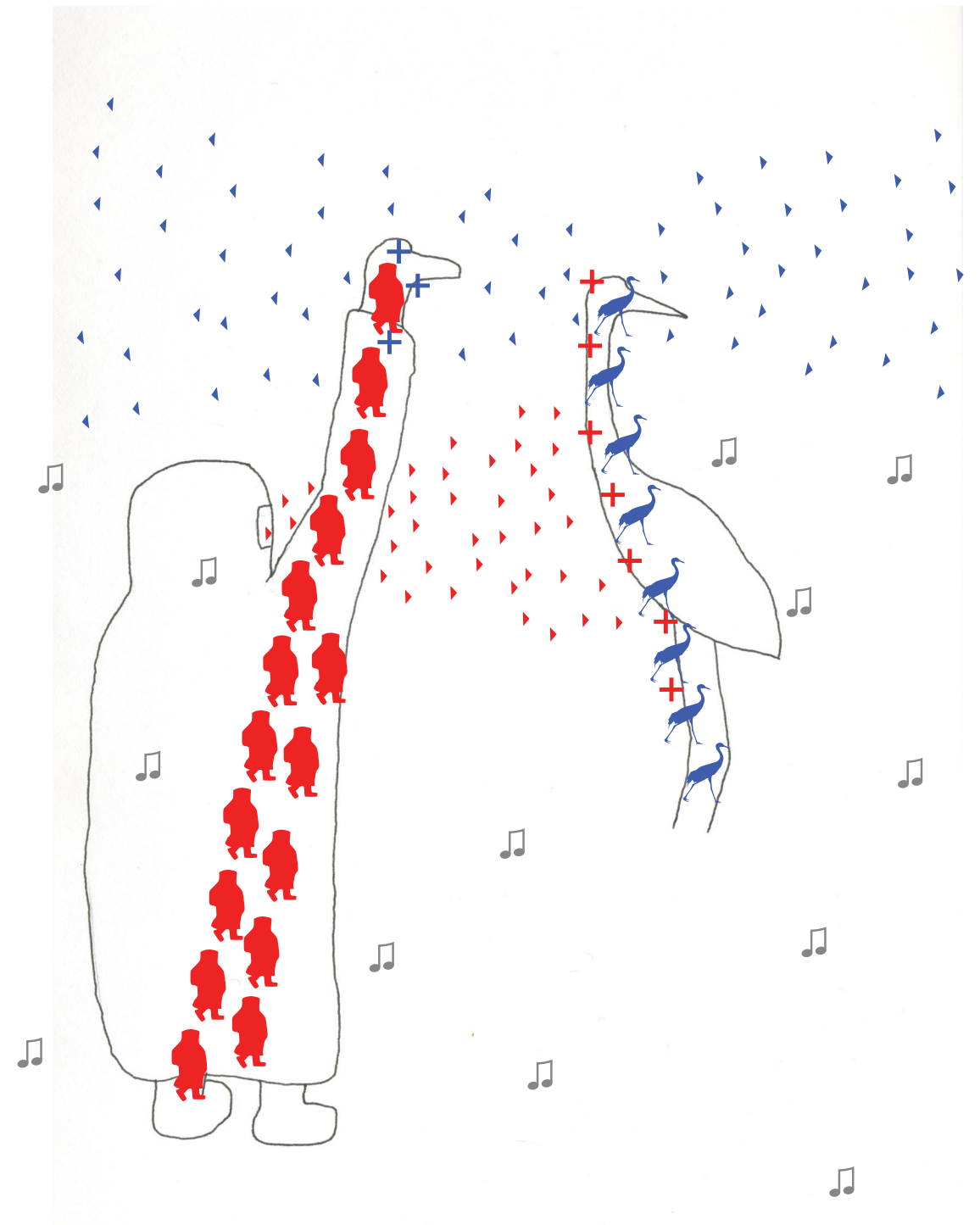
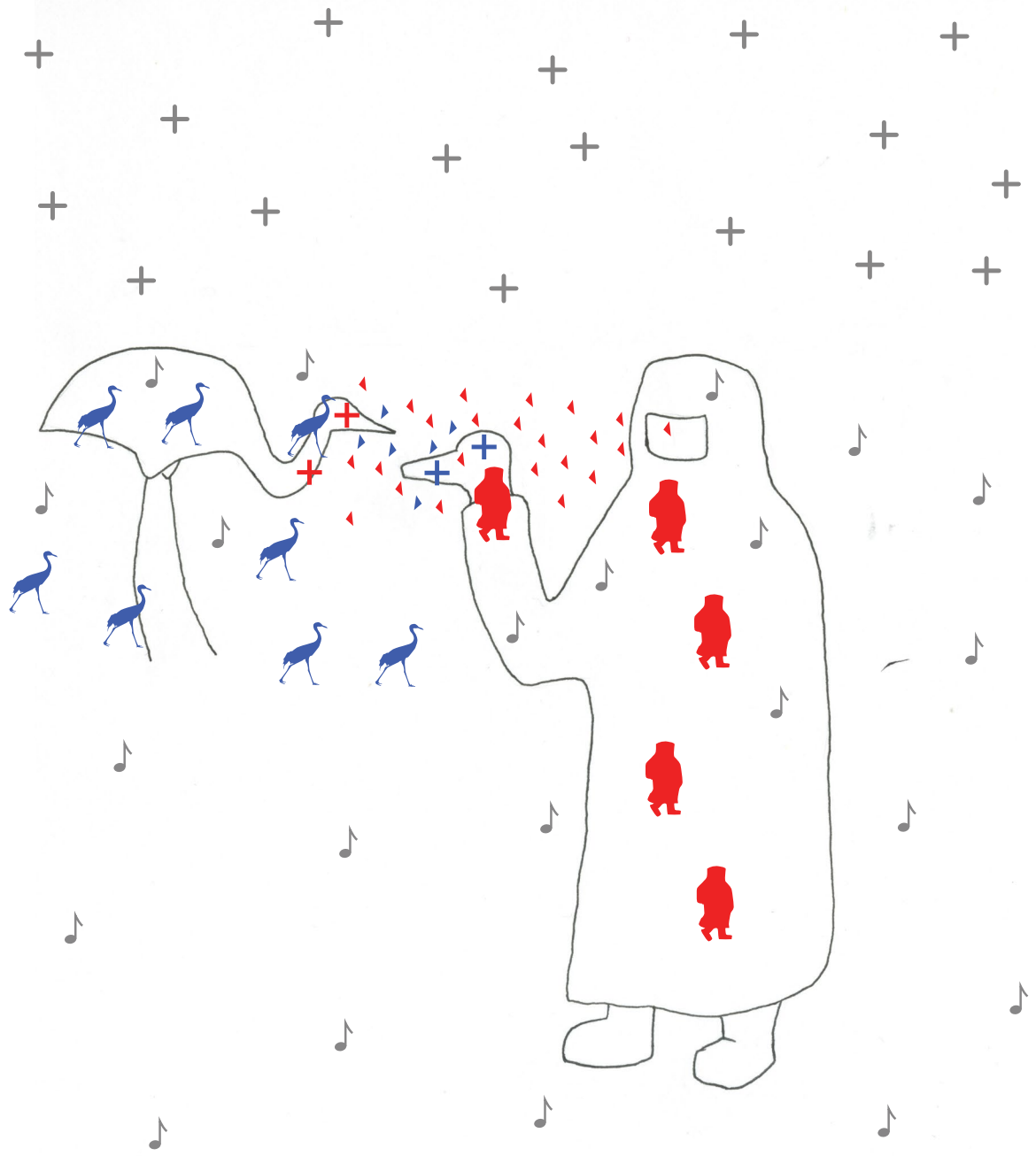
what limitations are there for this method?

- currently it must all be done by hand. perhaps this work will inspire someone to create digital tools that could do batches of quantitative movement data
- if there were many participants who should remain distinct, one could end up with too many colors
- these maps probably don't mean the same thing to everyone.
- these maps are also probably not very accessible. most people won't understand them on first glance.
- it's not clear how these maps handle time. it would be awesome to see them come alive as animations. as it is, time is handled through the idea of "now" being something that extends slightly backwards and forwards in time. "now" varies according to the events that are unfolding. if a lot is happening, now shrinks to a few seconds. if not, perhaps it is minutes long. these maps are snapshots that pull that period into one image, much as [Bergson \(2004\)](#) imagined.
- it's ocularcentric. in western culture, we construct identities based on what we see more than on other senses. this underpins racism, for example. Here, these maps seem more true simply because they are visual. Instead, one could make convincing arguments about these spaces in workshops without being ocularcentric.

Raising cranes viewed from the side

1. Embodied story

- ♪ Natchez and Skipper share a quiet moment on a warm day.
- Natchez was happily picking bugs out of the grass, checking occasionally on Skipper's second head.
- Skipper wasn't moved to do anything much and was simply standing still, his second head wavering slightly.
- + Both well knew that if they raised certain heads up high, the other would join them in searching the horizon.
- A noise attracted Natchez' attention and she looked up.
- Skipper followed suit.
- Both stretched and balanced to improve their views, exuding a shared urgency.
- + However, Skipper first head couldn't see much anyway, given the hood he was wearing, and so he attentively watched Natchez for whatever she might express.



1.5. Another view of the embodied story

LEFT:

Skipper and Natchez share a field and a significant territory that they have established together over the preceding hours.

Their presence appears in pockets and bubbles due to its low-key feel.

Both retain spaces they call their own.

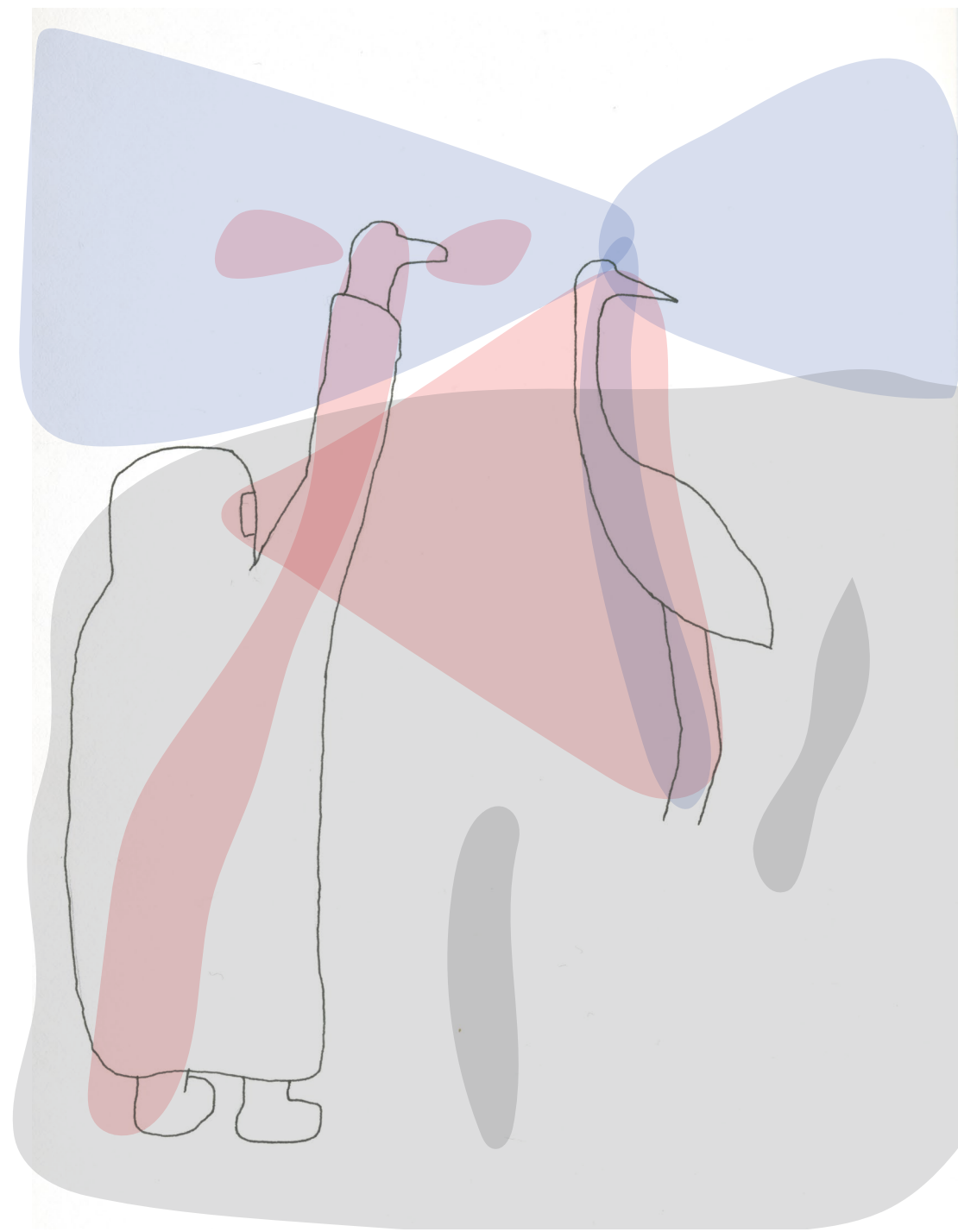
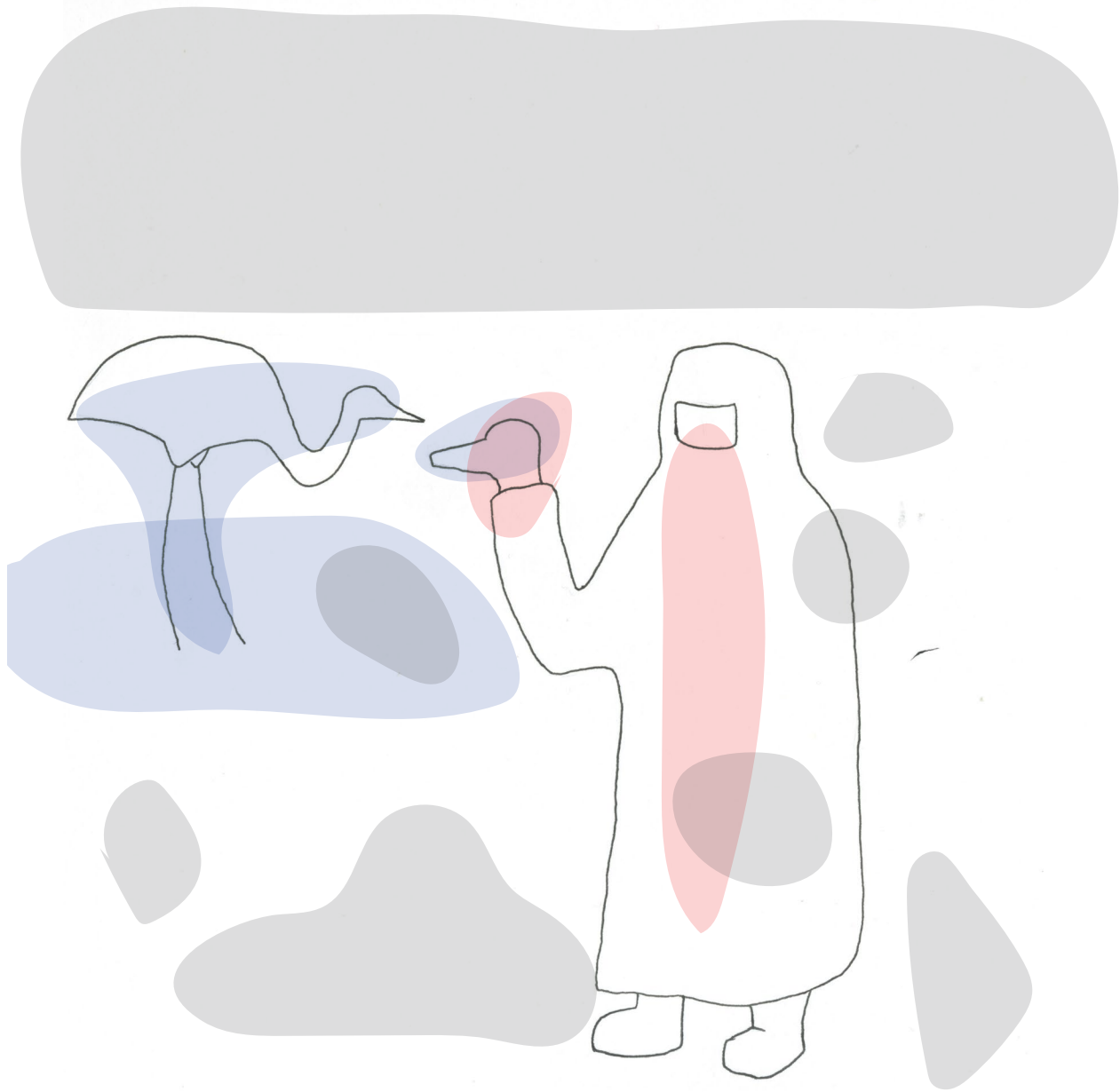
Skipper has forgotten parts of his body, as is often the case.

RIGHT:

Still sharing territories, they lead each other into a new, more vibrant affective space.

Both use their bodies more specifically, brightly holding themselves together.

Some spaces are territorialized by both without collision.



2. Translated into terrain through isolines

LEFT:

A plain dotted with hillocks and hummocks.
Perhaps karst topography.

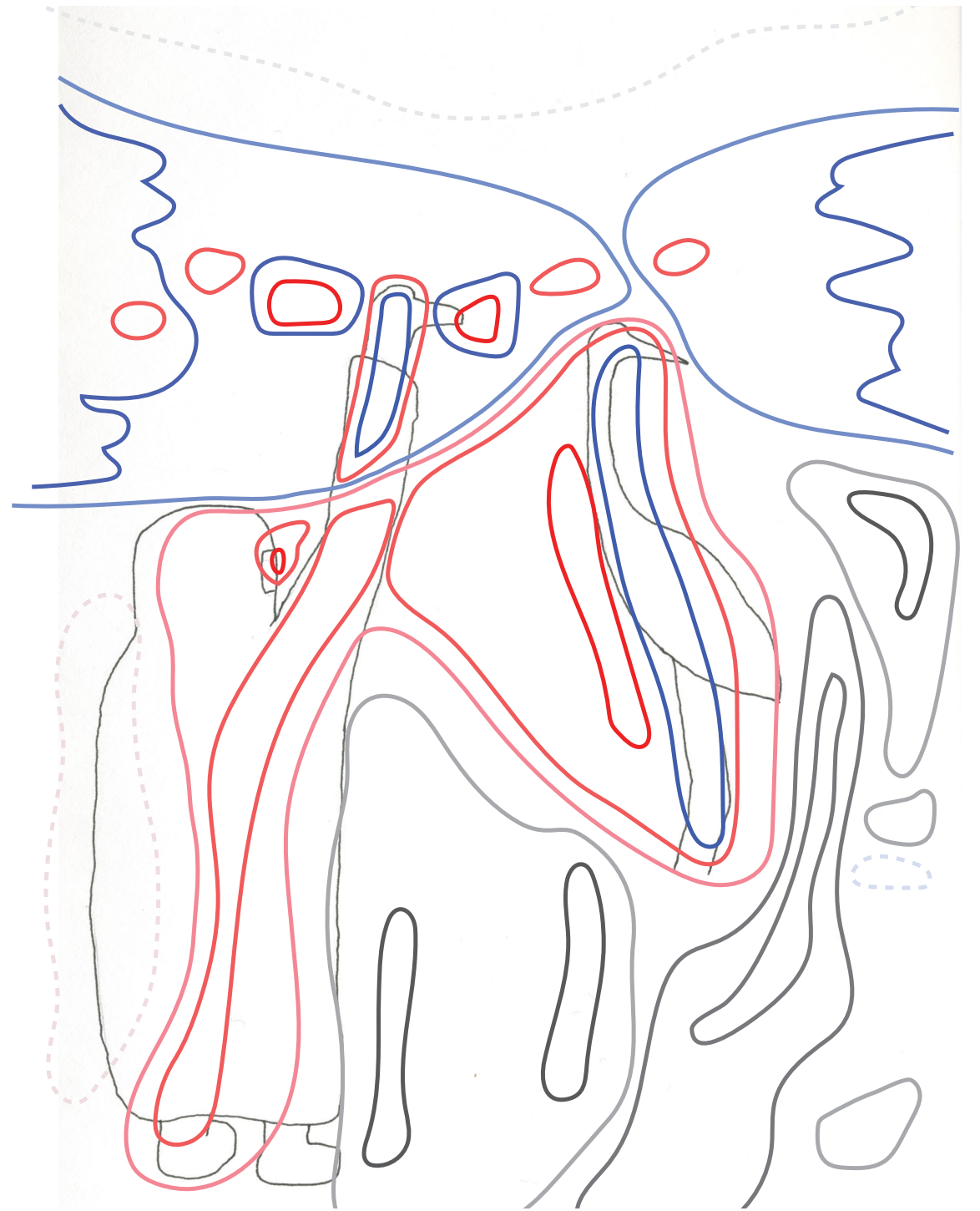
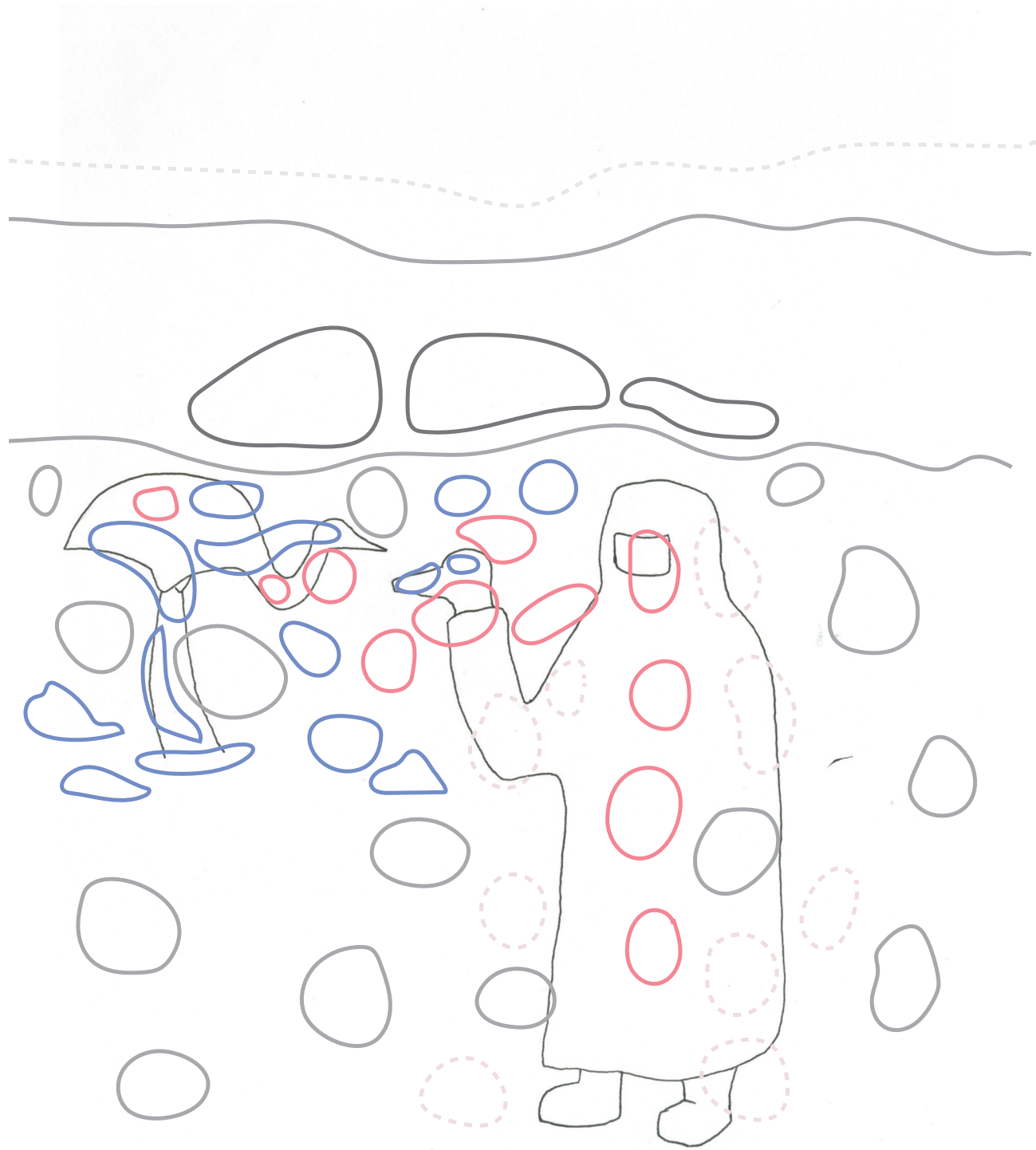
A large berm to the north.



RIGHT:

Limestone ridges with sudden drop offs.
Interspersed occasional crevasses.

An undulating floodplain dominates the
southeast. Silty.

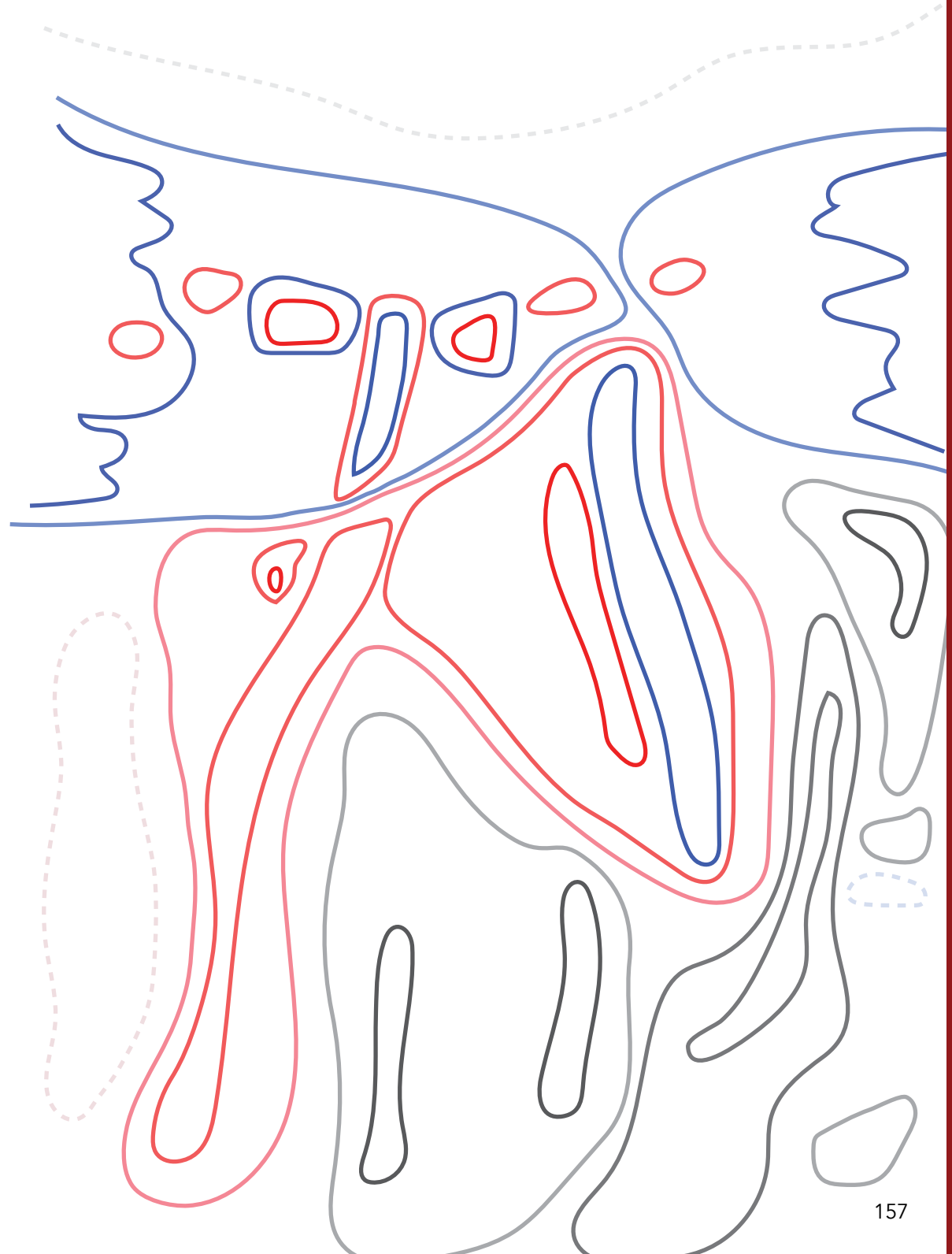
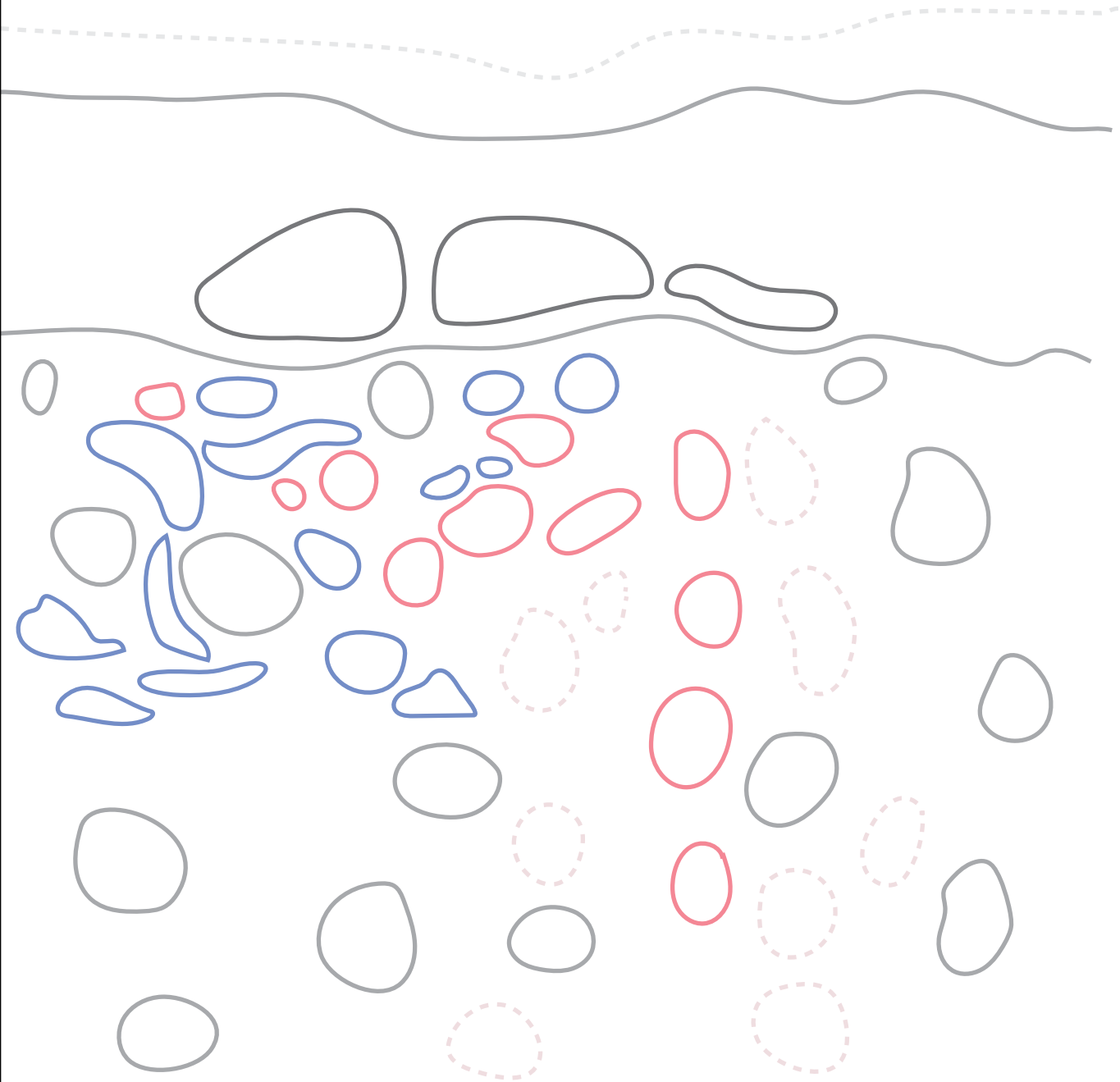




3. Spatial interpretation

This is an example of a Deleuzian field. The space above their 'shoulders' can be thought of as an attractor, a place where one can change the entire tone of the space. A pair that wasn't well connected wouldn't have as powerful a field within easy reach.

It is tempting to think that this pair has assembled. Recall that an assemblage is an interoperating group of differentiated things. However, I would consider this more similar to a set of overlapping and resonating territories. Assemblages are more glued together and more directly cooperative than territories. Here, there are two sets of dynamics that are receptive to influence and reaching into spaces beyond themselves. They are generally still separate, even from bits of themselves, but they can sometimes slip into an assemblage when they raise their heads or move off together. This will become clearer in the next maps.



Cutting viewed from the side


1. Embodied Story

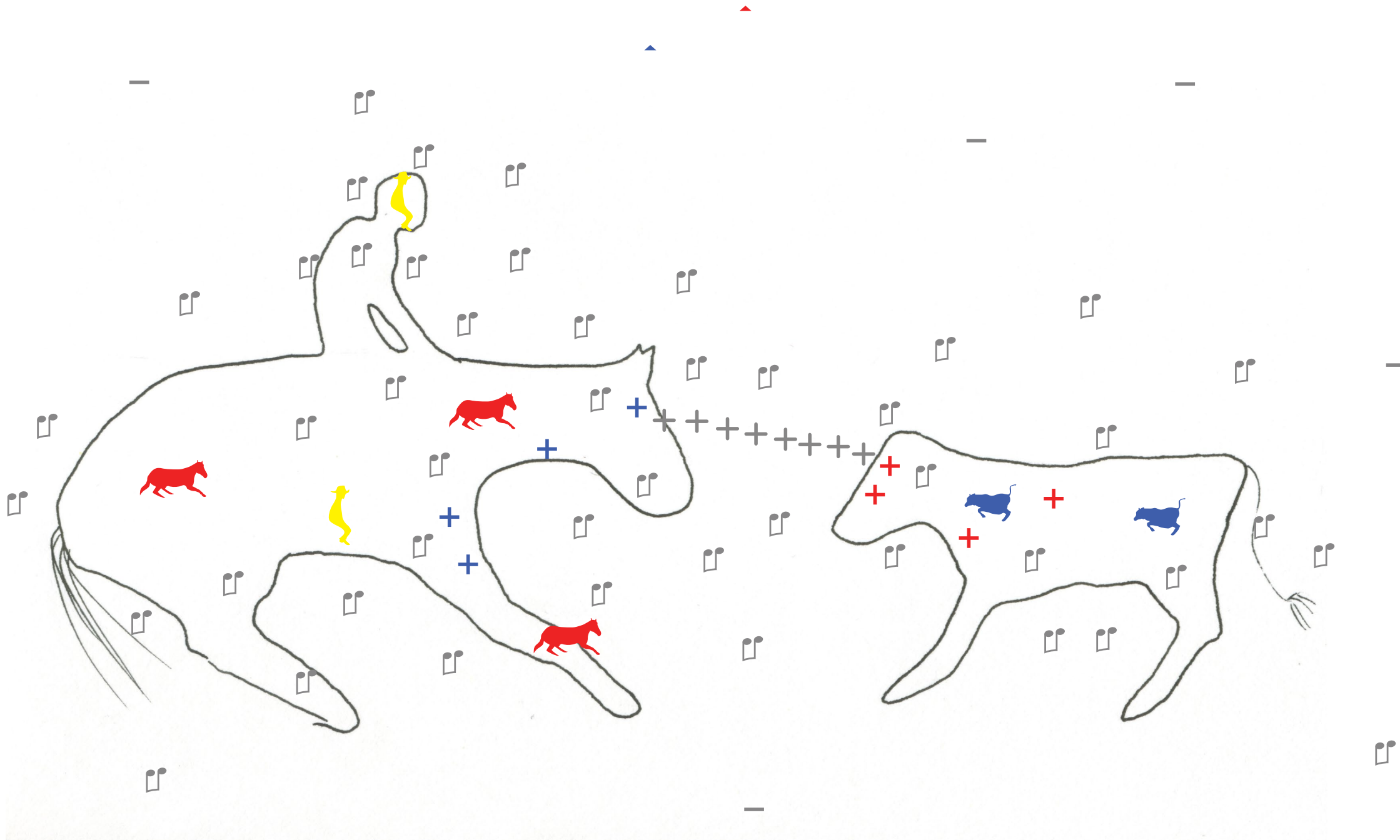
☞ Radian, Wagoner, and Tess are locked in a moment together.

– The arena has receded from view.

+ + Radian and Wagoner watch each other absently, almost forgetting that something lies in the other.

+ Each is sucked into an unknown place between them that will somehow decide everything.

 Although none are present in their usual ways, they each still contribute here and there to the event.

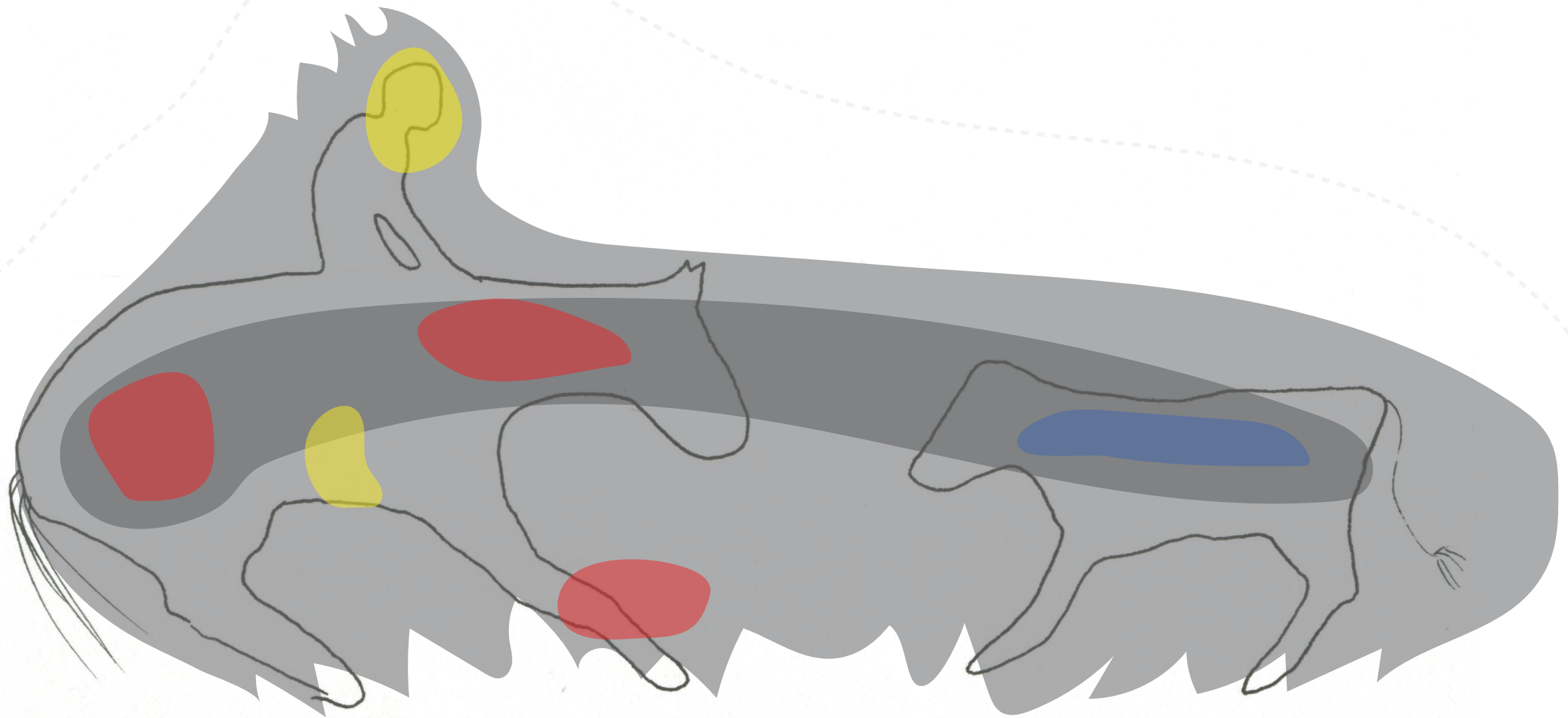


1.5. Another view of the embodied story

Radian and Wagoner form a united territory spreading widely and rising to great heights.

Their busy feet and flexing muscles contribute in their own ways and together to the thundering tone.

Tess follows suit, mostly by staying out of the way.



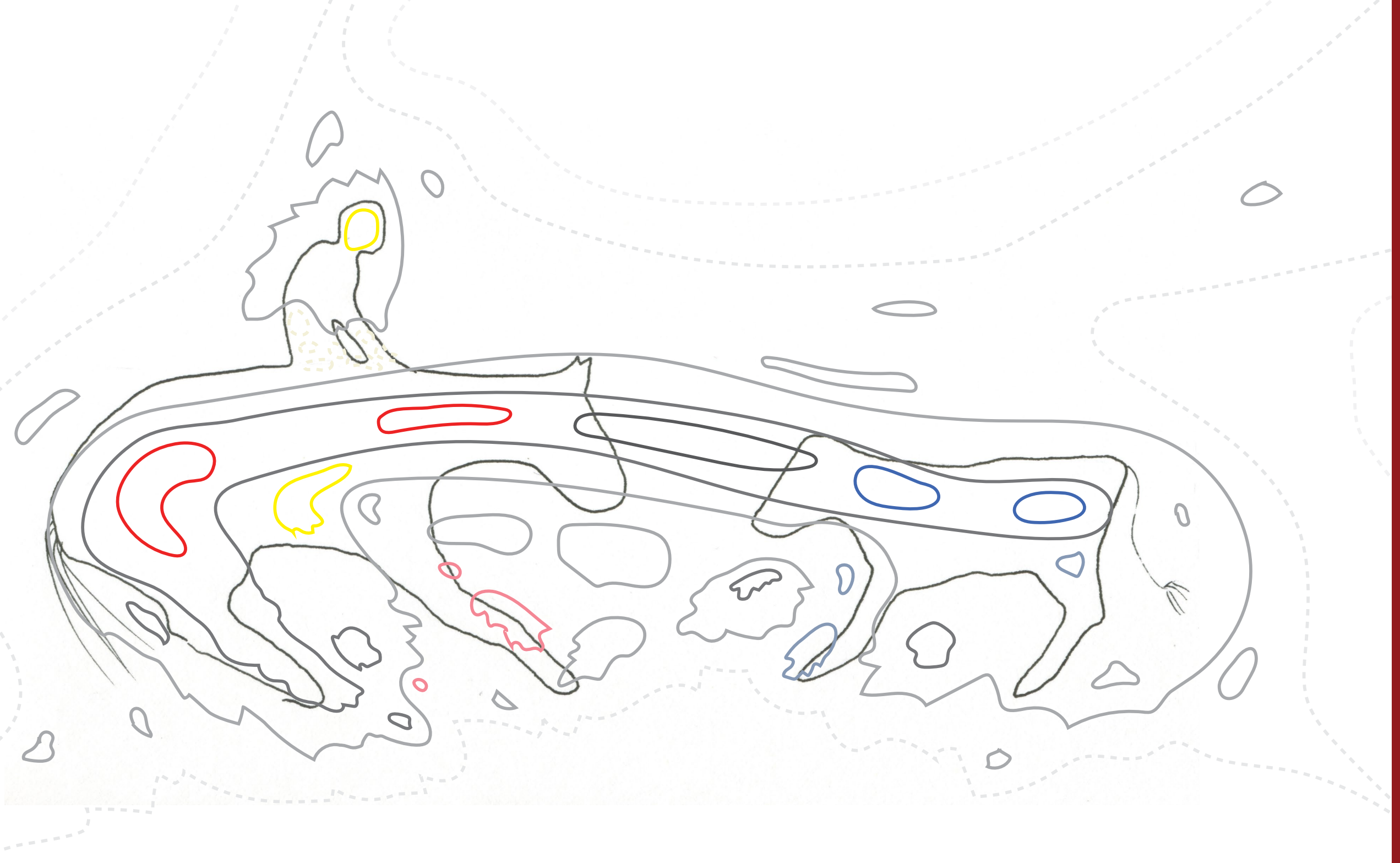
2. Translated into terrain through isolines

A line of peaks and a few foothills rise out of the land.

Some small sinkholes pock the land in one area.

Uplift has created a skirt of land extending downwards from the base of the range.



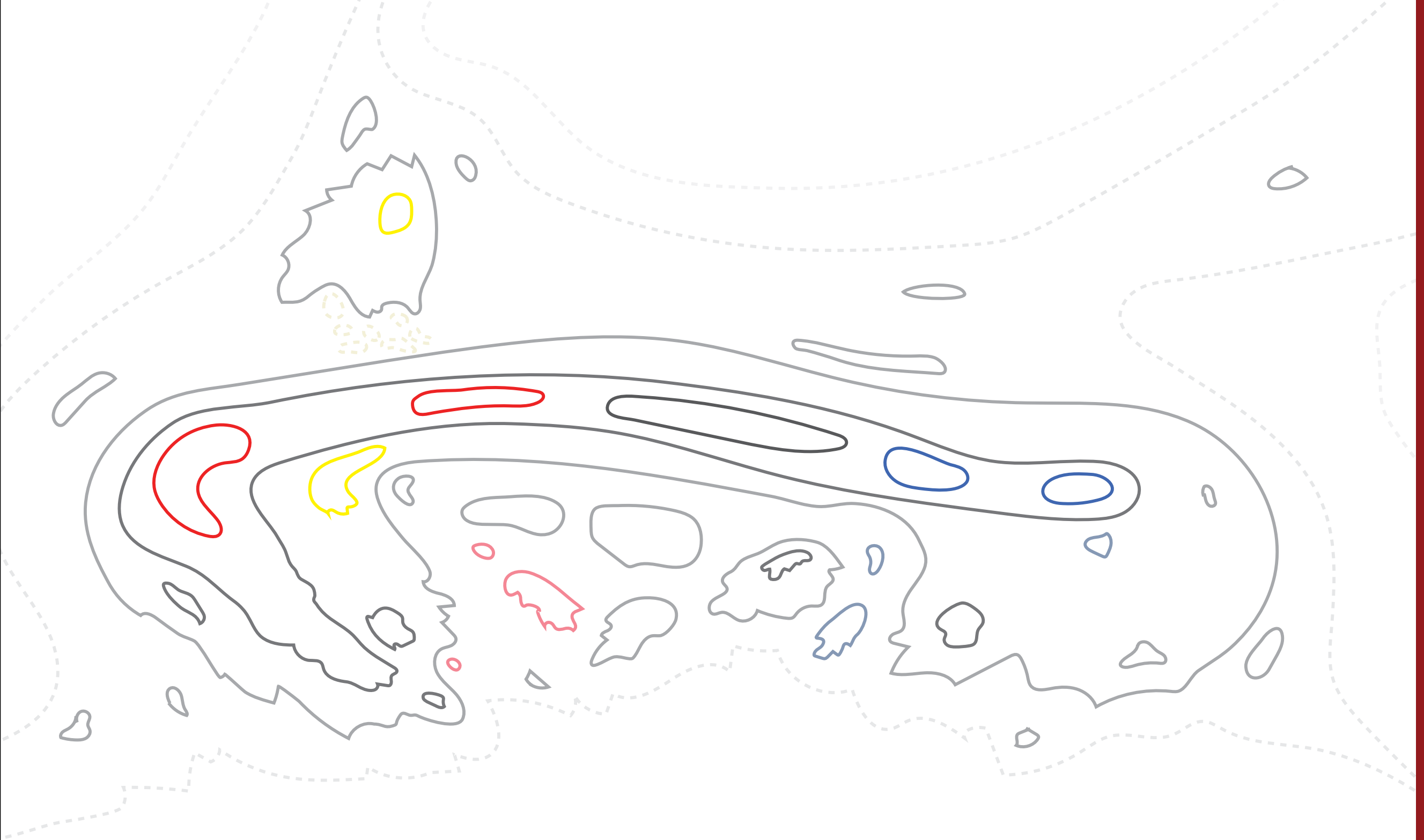




3. Spatial interpretation

This is an example of an assemblage that has come briefly into being. Here, it is unclear who is leading whom. Insides and outsides are mutually shared by everyone. Focus has moved to a central point that determines outcomes for everyone at the same time. What would happen if horse, cow, or rider joined a different set of partners? Would they play the same roles among their new partners? Not exactly. Each horse has their own proclivities, each cow individualizes differently, each rider a different set of timings. Superficially they would all still be cutting, but the details give us the story of a multiplicity.

This map also helps us understand the relationship between absence and presence. Each individual only gets a blob here and there to appear on the map as theirs. That doesn't mean that their space has been invaded by another though, since this is an assemblage, rather than shared territories. It means their affect has been recoded to build the shared space instead of their personal space. If one of them stopped putting effort in and withdrew, the whole would also lose vibrancy. Here, absence is actually an active contribution.



A rough cut viewed from above

1. Embodied story

Osseo, Vannevar, and Penny (not pictured) are out in the arena. Osseo is having a difficult time as her body seems to keep getting in her way on her turns and she falls behind. Vannevar is put off by her wild swings and resolves to get the hell out of there.

2. Terrain

The resulting landscape looks like the roiling blob of a salt dome paired with some other neighboring inclusion. For the eastern inclusion, it's as if another material pushed up through the ground and broke open. For the western one, perhaps it's an ancient chunk of granite that simply won't erode away.

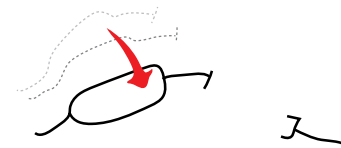
3. Space

The territories in the arena are mostly exclusionary. When the horse's strong directional energy infects the cow, that energy is transformed into the cow's exclusive resource, which the cow draws on to boost his exit. The horse territorializes here and there trying to read the cow's lead, but the cow ultimately shakes these targeted efforts off and leaves the horse confused in the dust.

Negative space plays more of a role here as the horse constrains the cow through palpable presence to the cow's right and palpable absence to the cow's left. The horse has also abandoned the space behind it, although that is less relevant to the cow. The cow, meanwhile, is projecting attractors into the landscape. They gain ground as the horse falls behind.

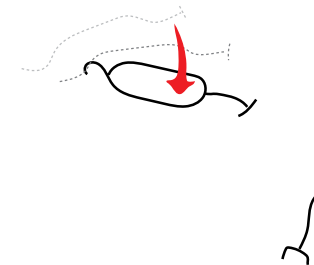
Moment 1:

Horse swings towards cow like the arm of a windmill



Moment 2:

Cow explodes





A smooth cut viewed from above

1. Embodied story

Tanglewood, Spitzer, and Jug (not pictured) are mirroring each other smoothly. This map is similar to the second scenario but seen from above. The three of them have built a common space anchored in the gaze between Tanglewood and Spitzer. Each works actively to maintain the whole. The arena around them has disappeared for them.

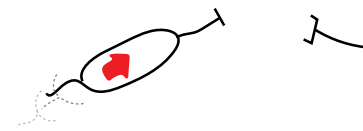
2. Terrain

This space is like an sand bar found along a broad meandering river. The river bottom has deeper pockets here and there and in the neighboring main channel. The sand bar isn't quite as flat as some. Perhaps it has been there long enough for a few groups of rushes to take hold.

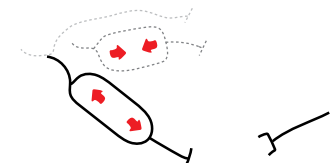
3. Space

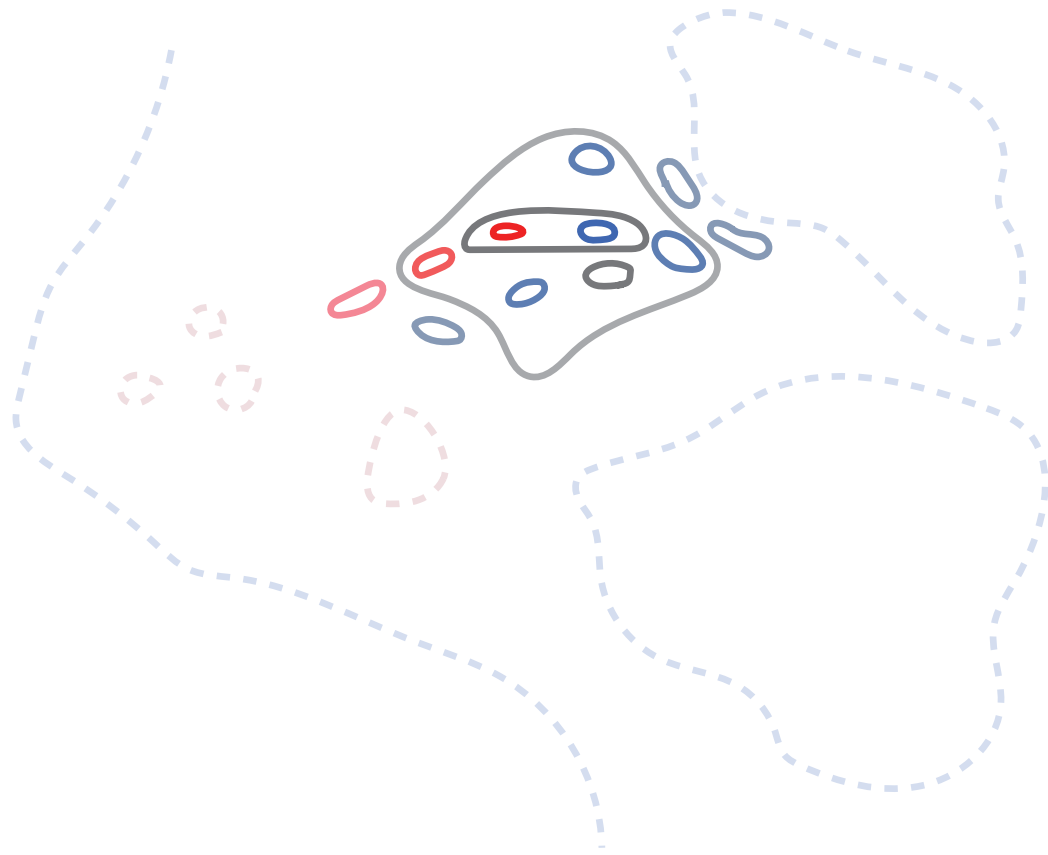
In this case, the emptiness of the surrounding area helps maintain the boundary around the assemblage as being the brightest. The affect of the cow and the horse have blended into droplets that are more similar to each other than they are to the rest of the space.

LEFT: Moment 1
Horse magically turns



RIGHT: Moment 2
Assemblage preserved





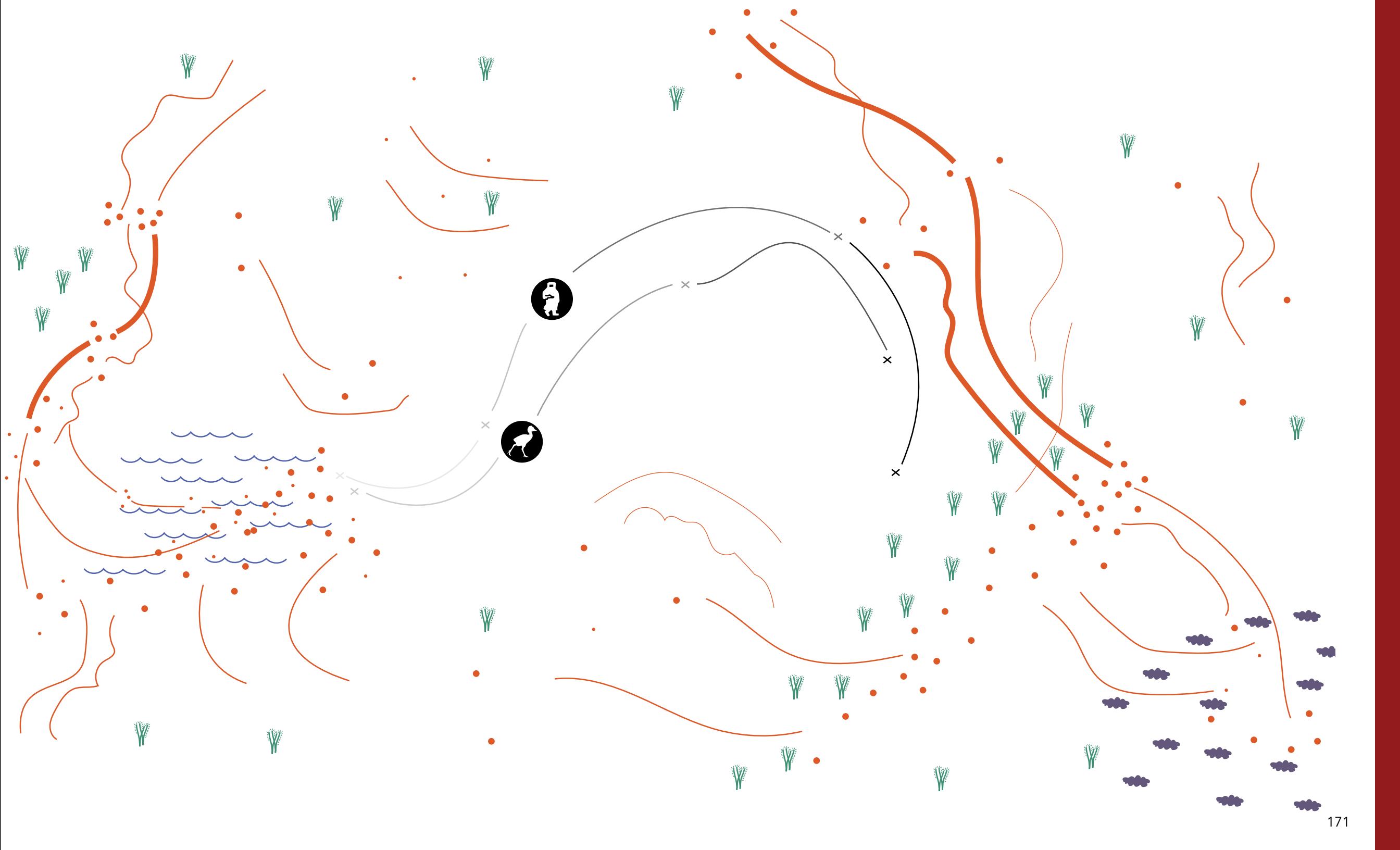
A busy hour in the chickering yard viewed from above

1. Embodied story

Babbage and Lupita have made a number of small trips now fading from memory and two energetic trips today. They both thoroughly pick through the hedge near the shade. Babbage took advantage of the pond for a bath and Lupita poked quietly around the reeds a few times but mostly hung out. Lupita was hoping Babbage wouldn't lead her through the middle of the pond. She eventually tired of waiting and moved off to spice things up a bit.

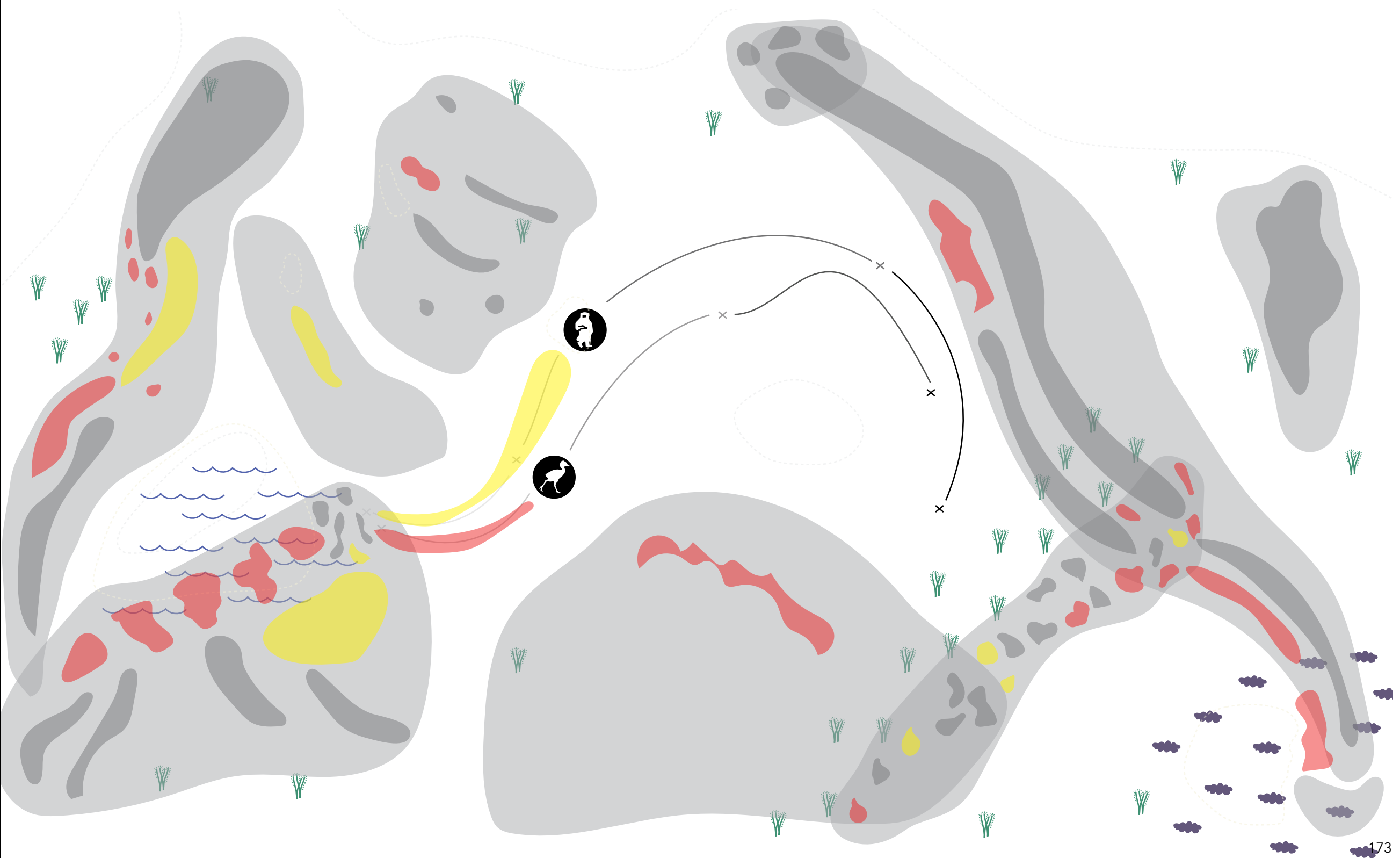
Now Lupita is partway through an arcing trip back across the yard and Babbage enthusiastically took the cue and is echoing Lupita's movement.





1.5 Another view of the embodied story

Babbage and Lupita have collaboratively inscribed their passing such that the chickering yard is full of affect for them. What was once a blank external space is now full of experiences and history. The space entices and beckons them to inscribe new layers of meaning into it.



2. Terrain

This looks like a golf course, with a greens stringing along hugged by artfully crested hills.

Alternatively, it looks like a series of Native American mounds located strategically along low rises.

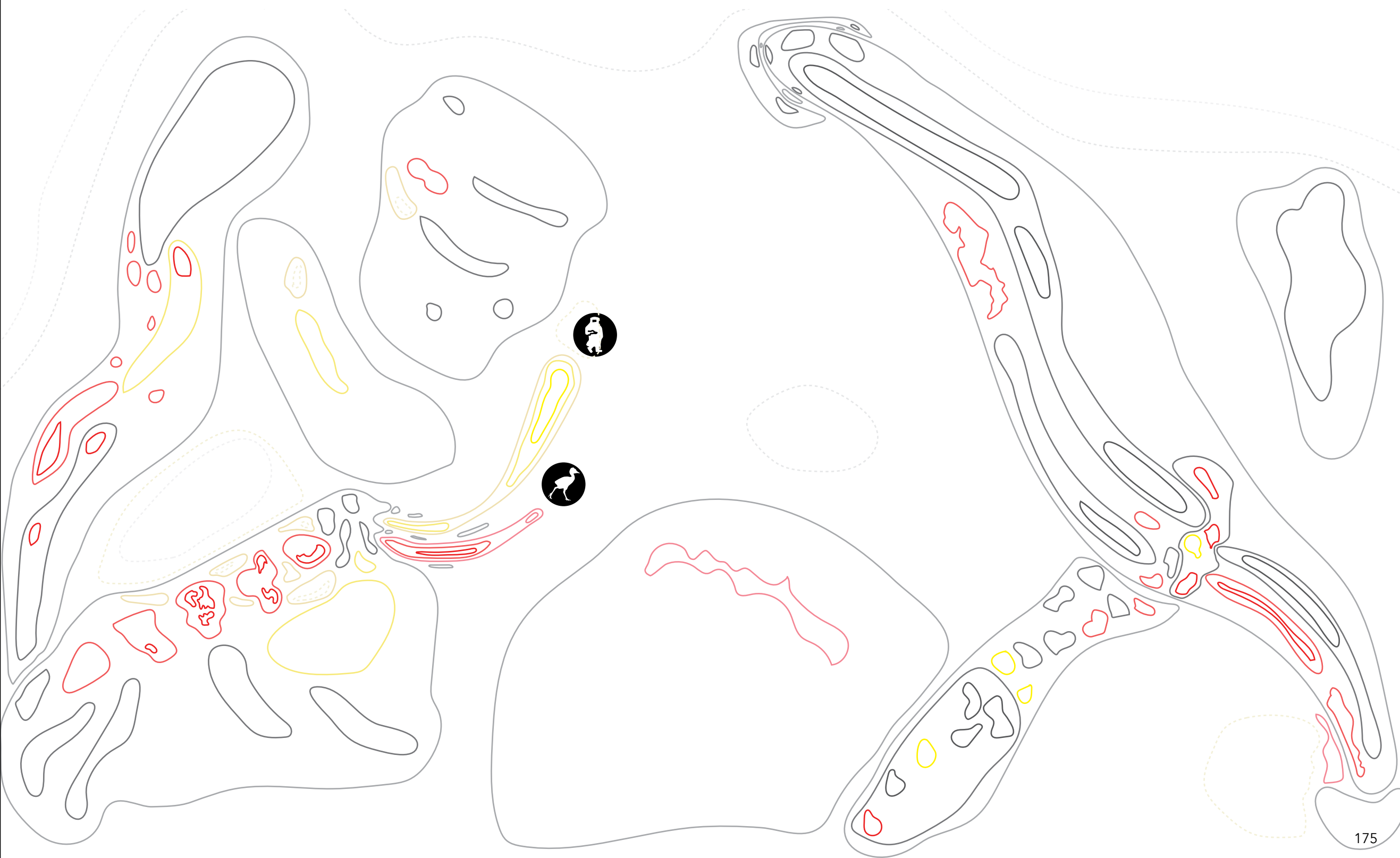
In a few places the hills get more busy, like a ground moraine.

3. Space

This pair spent the hour making the yard their territory. Only the reaches on the North side remain distant and forgotten. They characterized their space with ongoing small but sometimes bright sudden movements. Their direct arcing travel broadcasted their presence more loudly. Sometimes one of their bodies would contribute something unique to their travel, such as a flutter or a stagger.

Their older trips are still present here and there in parts. They will need to be renewed again soon since they are deterritorializing and reverting to spaces governed by others.

The overlaid history of their time together here informs their current trip. It is unified, exuberant, and timely. Each carves their own path initially, but soon they will become one shared event. Not only is the space theirs, they are their space.



A lazy hour in the chickering yard viewed from above

1. Embodied story

Wyalusing and Kuzma hung around the pond for quite a while. Both sat down and minded their own business for a while. Eventually Kuzma broke through the weight of the hour and moved off. Wyalusing failed to follow at first so Kuzma put more force into his step. Wyalusing came alert with a jump and flopped around before pulling himself together. He then summoned his inner strength and pressed himself against the space of the unknown.

2. Terrain

This space looks more like a tiny archipelago breaking through the surface atop a sea mount with long flanks falling into the deep. Perhaps it was an atoll with a lagoon before a rising sea eroded it away.

3. Space

Sometimes when bodies rest, they come back stronger. That is not the case here. These two outlasted their earlier activity, effectively erasing it from the landscape and themselves. They now have nowhere to draw resources from to get going again. They've practically estranged themselves from themselves, a form of deterritorialization.



A tricky cut viewed from above

1. Embodiment story

This is Pine, Minor, Ellen, Moshe, Pens'ke, Rufus, Tandy, Metacomet, Xylem, Ketevan, Try, Sauk, Eccles, Mia, Dustin, Leonard, Kanisha, Effie, Schwa, Mendota, Josephine, Thorp, Kirrilly, Mwanza, Nob, Emmet, Story, Hannah, Matlock, Escalante, and Check. Jem, Illullip, Nan, Hoekstra, and Lyman aren't pictured.

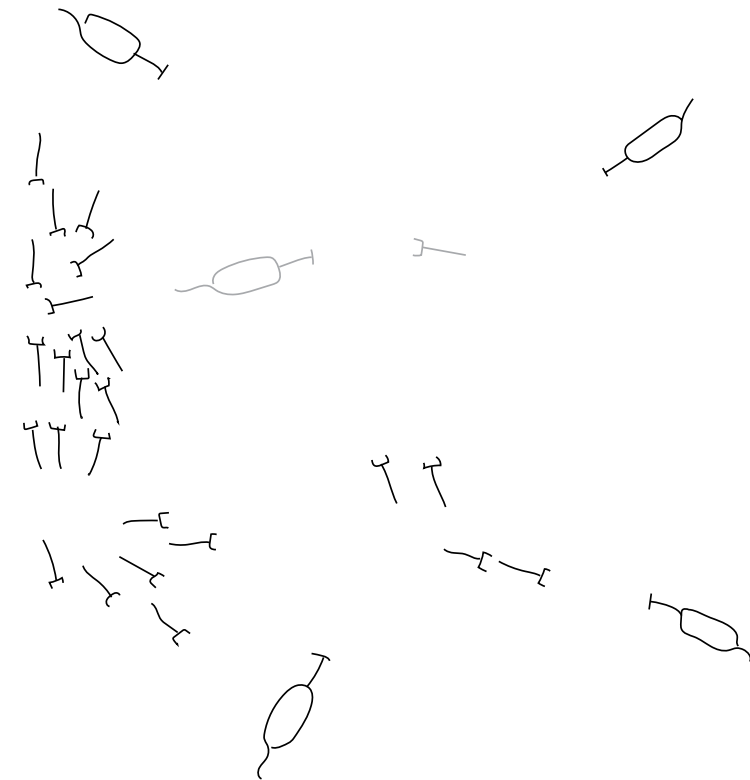
Nob, Leonard, and Emmet (not pictured) are facing off in the center. Nob is rushing much too close to the crowd behind him, his hindquarters effectively creating a wall and a moat hemming them in. Nob, Mendota, Xylem, Sauk, and Tandy are working together to hem Emmet in. Sauk, however, is chugging at Pens'ke and Rufus, who seem to have the wrong idea about where to go. Pens'ke, Rufus and others are valiantly taking some pressure off the herd by testing out the side of the arena.

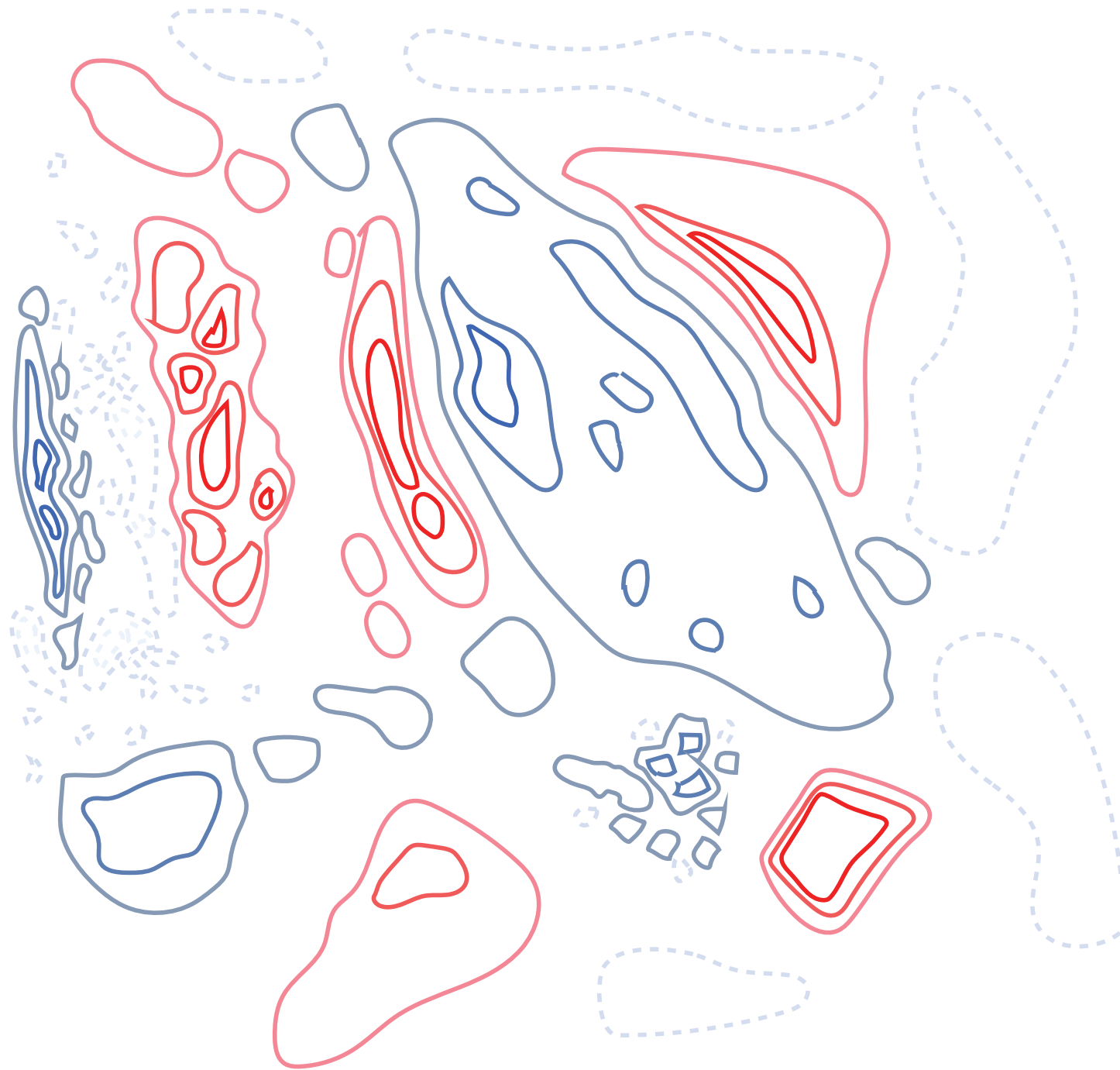
2. Terrain

This looks again rather like a mountainous area with gullies carved out by glaciers leaving lumpy linear moraines behind. Some spires are collected to the west with a crevasse between and to the south some blockier peaks. The glaciers look as if they spilled northwards and eastwards through gaps to the lowlands beyond.

3. Space

The bodies of the horses together create territories around the cows, while the cows stake out their spaces respectively. High energy and spontaneity floods the arena. This energy could appear suddenly in a place it never was, causing a cow to bolt or the rider to lose their timing.





A soft sort viewed from above

1. Embodiment scenario

This is Tori, Menno, Tipperary, Zoltan, Melody, Temer, Rye, Hedna, Savoleinen, Manu, Kigali, Sissel, Spagett, Carmen, Nawar, Deandre, Thackery, Triksy, Kindling, Yannick, Ximenez, Hamza, Derek, Aldo, Chan, Dworkin, Grog, Nessa, Sullivan, Aart, Shep, Elif, Lakhota, Waclaw, Wing, Bernd, and Paula. Nels isn't pictured.

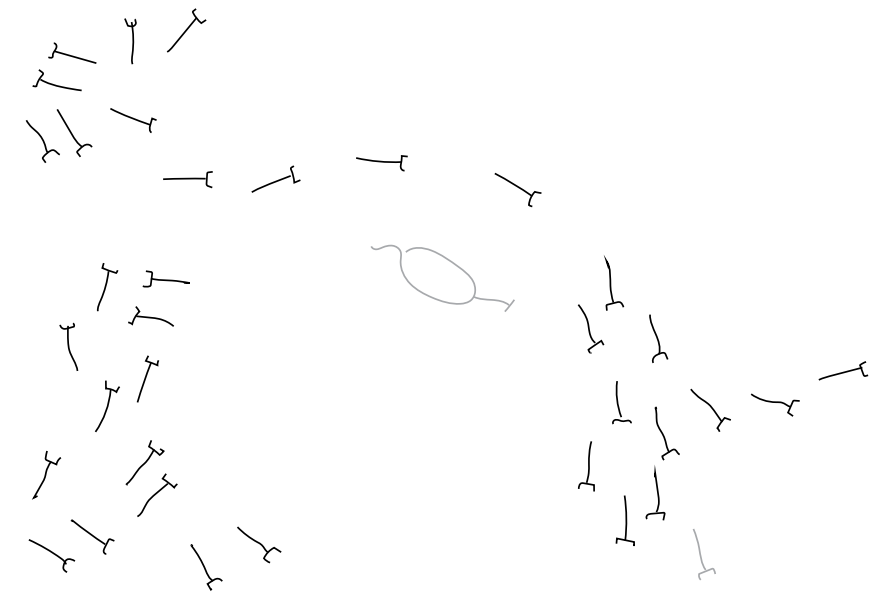
Nels is helping Tipperary nudge a group into center of the arena. Tipperary is patient and Hamza and Melody present themselves by venturing a little ahead of the others. Nels had spotted Melody earlier, and resolves to take Tipperary a touch to the right so the group follows Hamza, isolating Melody.

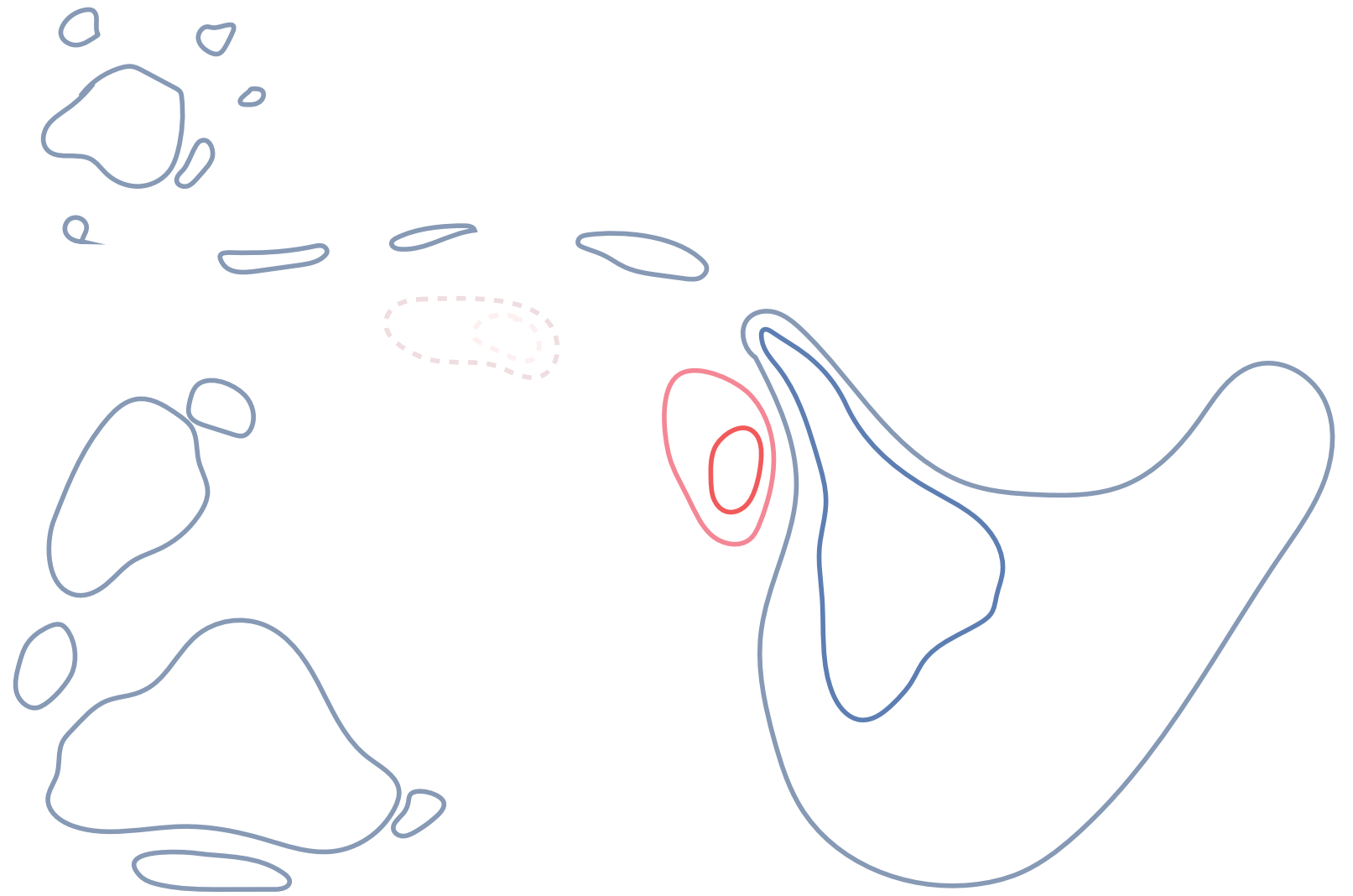
2. Terrain

Here an old coastline pops up in very low bluffs to the west. Between them a snaking ridge extends where a river deposited natural levees. The river built a new delta to the east, fanning out and depositing sand and silt for years. Overall, today, these details are barely noticeable in an otherwise flat landscape, but they tell a story of the creation of new land.

3. Spatial dynamics

The horse's soft presence urges the cows along without disrupting their internal order. Those at the front only feel their companions encouraging them along from behind. While the rider's strategy is materializing, a field has not yet materialized for the horse, who hasn't latched onto any cow in particular and is listening to the rider. Nor have the cows placed attractors into the landscape. Those in the center of the arena are assembled into a migrating space, slightly tighter than those left behind, who mostly just mark space (their territory) that could potentially congeal into another assemblage.





A crumbly constitution viewed in steps



1. Embodied story

Savva was running smoothly until she needed to stop and turn on a dime. She regretted her technique immediately as the weight of her head plummeted and her shoulders felt like they would never budge. She toiled to bring back balance and only vaguely succeeded. But eventually she tucked her feet back under her and sprung into motion.

2. (Terrain)

It might be better to think of this less as a landscape and more like a comic because it is portrayed in steps through time. Landscapes only evolve this radically over millennia. The fourth panel draws on comics in by showing the struggle of the moment in sweat marks that expand the space of the body. The second panel shows an expanding space as well, but one that is surprisingly large, imitating the "POW" of a punch.

3. Space

Since this body is isolated from its surroundings, this story is more a retelling of conscious experience than the others. Spatial politics occur in this perspective as well. The body holds itself together through the stop, but deterritorializes soon after as the sudden energy of stopping reverberates through space. The body then nearly disappears completely before stabilizing enough to reterritorialize back onto itself. Here, one could consider the embattled first person perspective to be an assemblage that has lost some of its territories (body parts). We watch it reaching out to retrieve them again.



The cows from a first person perspective

1. Embodied story

TOP:

This herd is collectively known as Eldredge and has been well settled and has a number of fresh cows among its numbers. They are loosely grouped, with Ignaz, Kasza, Dauphin, Anaximandro, Bernd, and Tokay seeing opportunities to expand or investigate.

BOTTOM:

This herd is collectively known as Orem and was herded by motor vehicles in the past. It sticks firmly together and is inhabited by terror of the illegible things going on around it.



2. Terrain

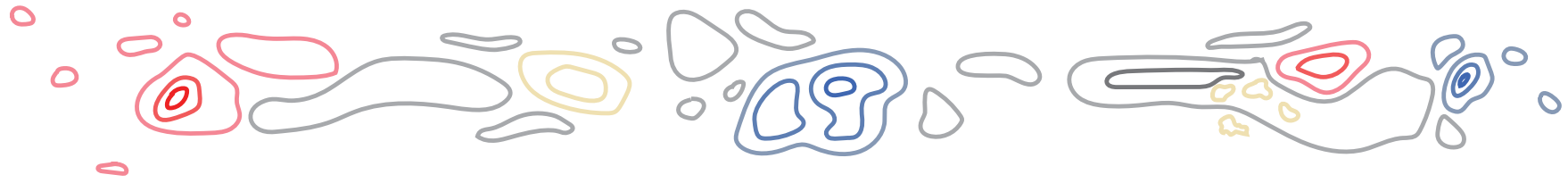
The linear extent of this terrain reminds one of an esker. Perhaps a bunch of material accumulated in the long crevasse of a glacier and eventually formed the bed for a river underneath. When the glacier melted, a long thin ridge with blobs emerged.

3. Space

These views of the cows are what a good reader of the herd might sense as they watch the herd being settled.

The first herd is carrying a loose shared identity that is separating into individual identities.

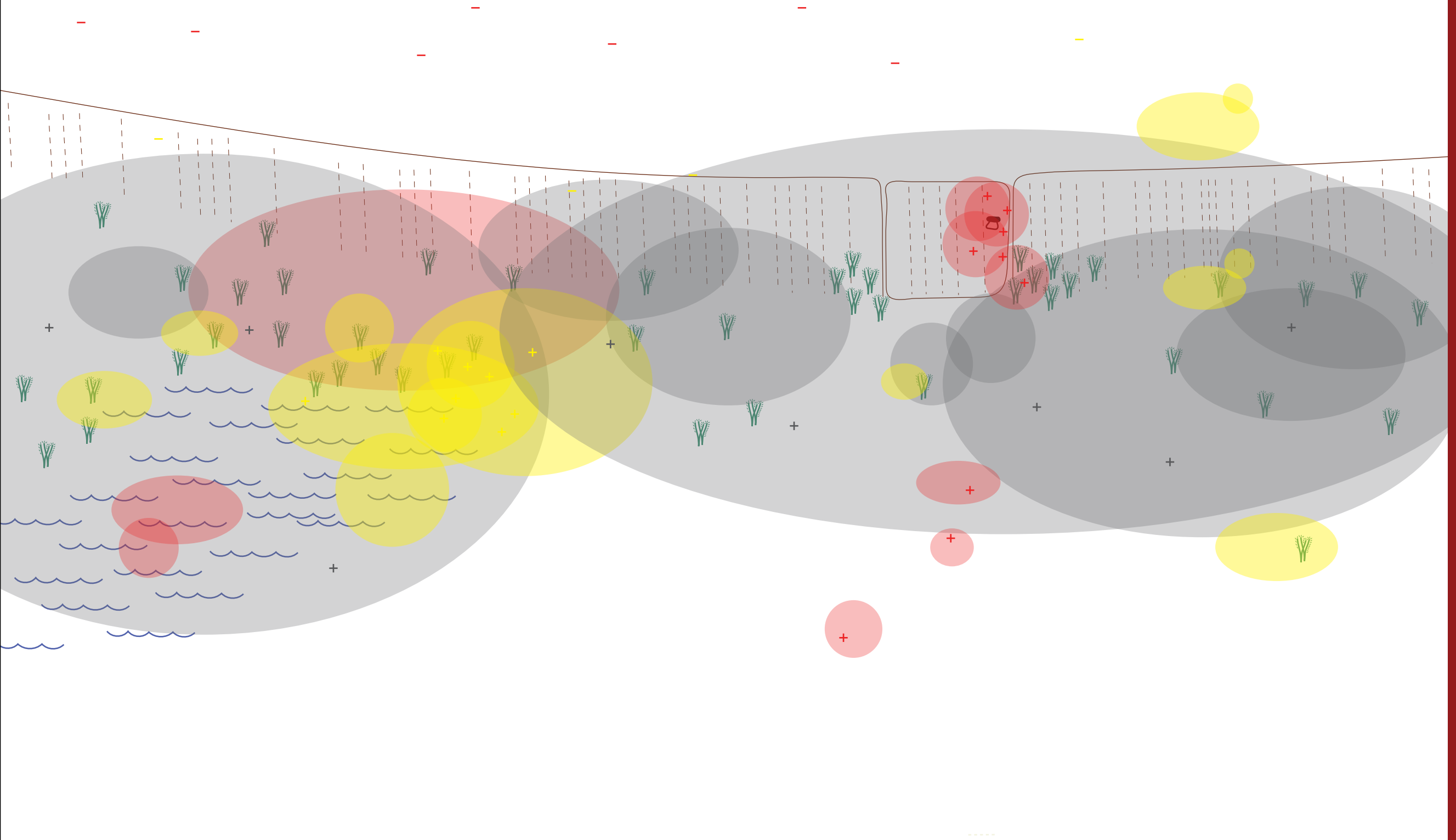
The second herd is superficially united but is carrying disruptions around that could suddenly explode. It is trying to stay assembled, but some devils have snuck into the assembly.



The chickering yard from a shared first person perspective

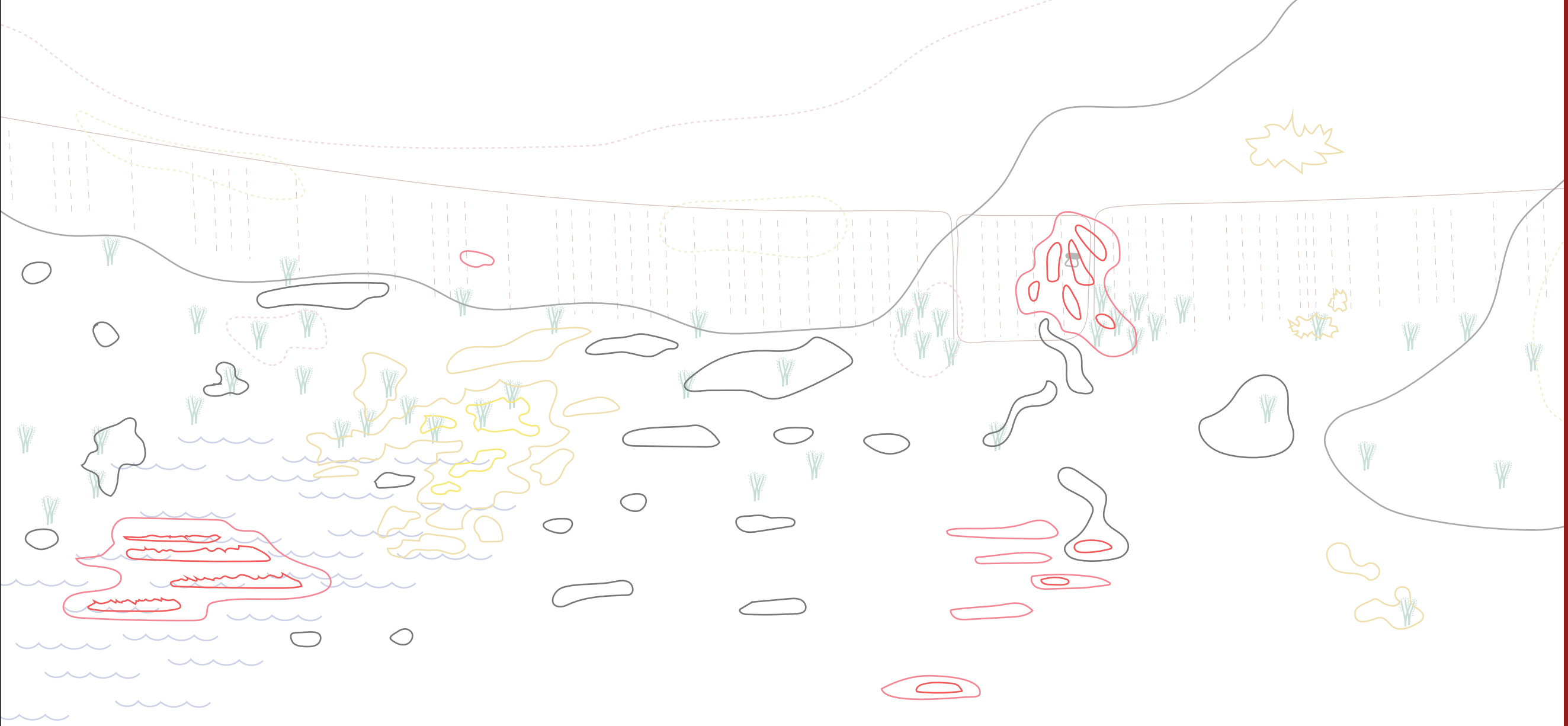
1. Embodied story

Nafla and Ypsilante just entered the yard and are beginning their day. They both survey the yard in a few broad gazes, knowing that it shouldn't have changed much. Ypsilante notices a noise beyond the fence and two rustles in the weeds to the right. She then studies the pond's bank. Nafla knows they are going out to the marsh today and glances at the gate. She also checks what Ypsilante is looking at near the pond.



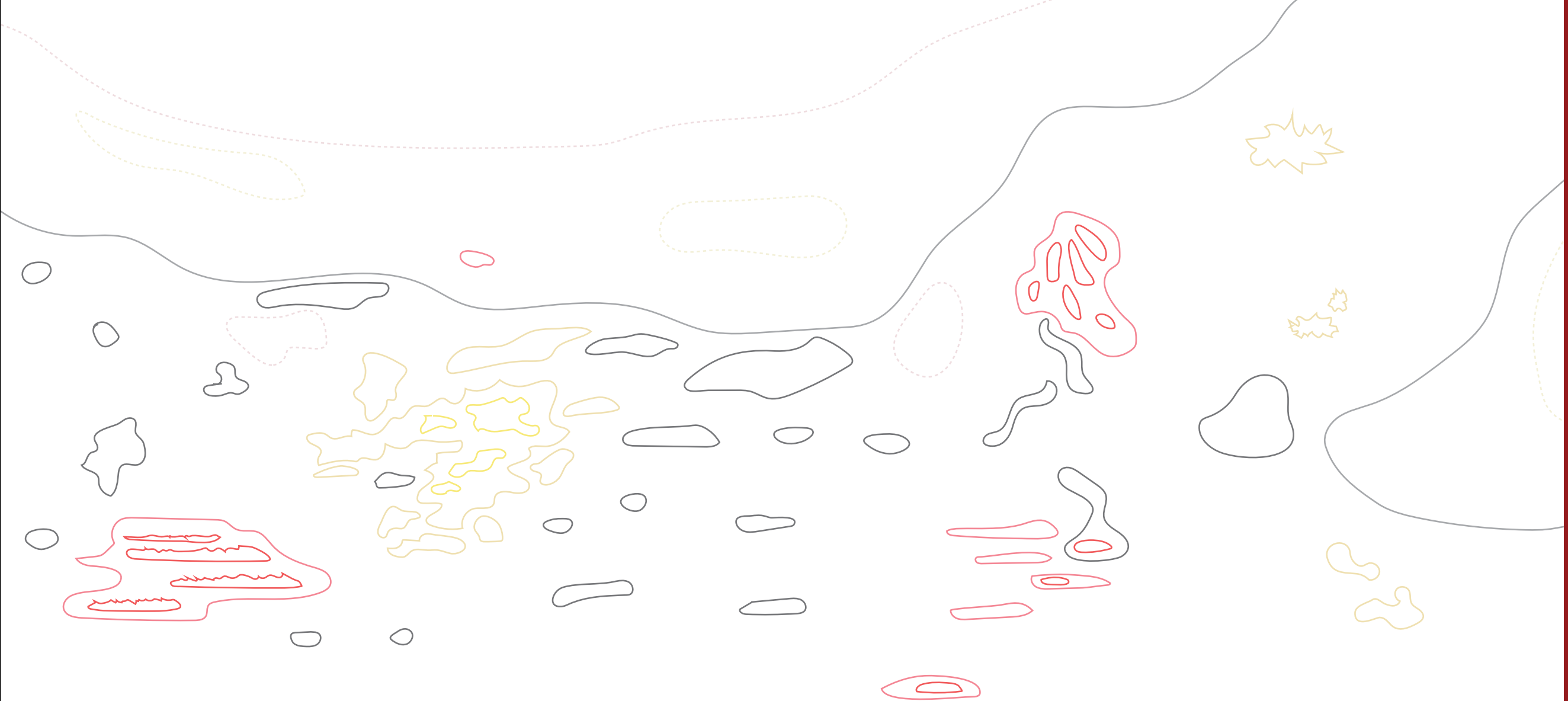
2. Terrain

A wide smooth drop off characterizes the northern regions. The hills south of it might result from downcutting or, given the east-west direction of some of them, some kind of glacial activity over a varied bedrock.

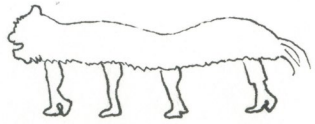


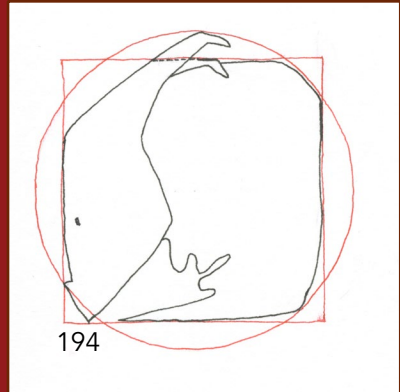
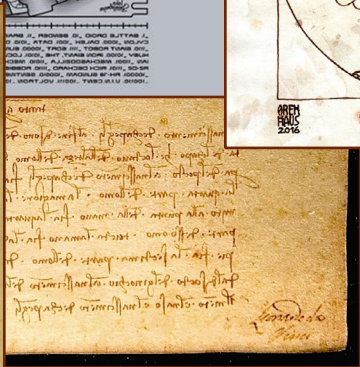
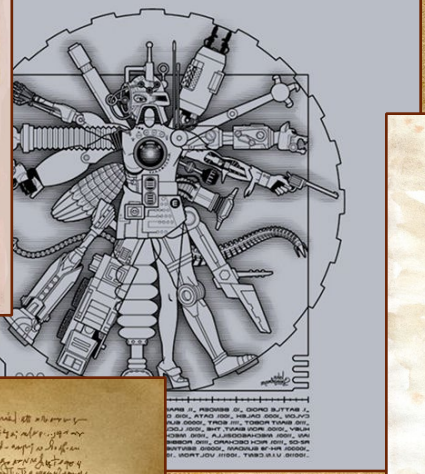
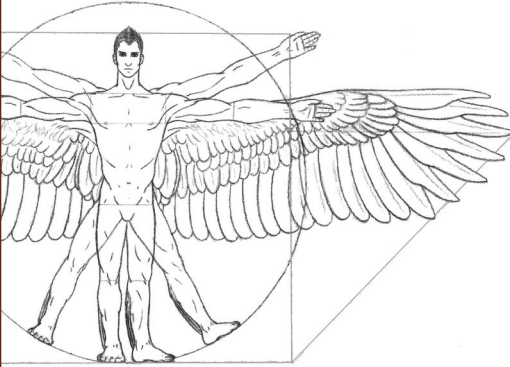
3. Space

This is an example of territories and fields emerging through perception. Attractors (affordances) like the pond and the path to the gate draw the respective bodies towards them. The gazes set up a relation between seen and seer, here seen as a marking of the things seen with the qualities found there by the seer. Meanwhile, the unnoticed areas of the landscape disappear. Neither was involved with the sky. This map shows two intersecting umwelts overlapping each other.

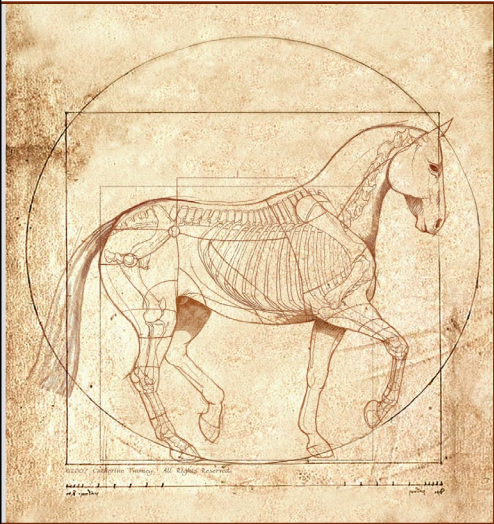








Artists: Eugene Arenhaus, Captain Ribman, Catherine Twomey, Dancing Bird Studio, Jerica 128, Sherise Seven, Adrian Jacques, Leonardo da Vinci, Unknown and Unknown.



Conclusion

Is this shapeshifting?

Recap: what is shapeshifting?

What we see in my maps isn't what most people would call shapeshifting. Shapeshifting in the popular imagination has two important aspects: 1) you become totally unidentifiable, and 2) you maintain a continuous hidden identity in spite of that.

The popular version is a transcendental understanding of shapeshifting. It posits that a superficial skin can be changed without changing the deep locus of stable identity. Becoming unidentifiable would require material interventions into the body but nothing else. And maintaining a continuous hidden identity would require sequestering that identity elsewhere meanwhile. Then, later, the body and the soul could be realigned. Certainly, a person who accomplishes this could be very deceptive indeed. It makes me think of the best moments in Shakespeare.

But we're not interested in shapeshifting for deception of others. We're interested in it because it's an opportunity to lose track of ourselves. This coincides with another popular draw of shapeshifting: to escape some aspect of ourselves. Perhaps we find ourselves intolerable, or we feel distanced from the true substance of life. And so we turn to others as examples whose way of being can be explored to enrich and humiliate ourselves. This is an excellent pursuit, but it also falls short of our goals here.

We're interested in losing our humanity so that others may be better off. This is an odd twisting of

the idea of shapeshifting that's akin to self-sacrifice. We're interested in this because we think that something about our humanity is a problem for others. We can conform to so many situations and extract value, that we seem to have limitless power. Why are we so strong? How could we throw off this curse? We're killing everything around us.

So: we've narrowed our definition of shapeshifting to two stipulations:

- 1) losing our humanity
- 2) giving way to others

Right. That's where we started on page 1.

So, is this shapeshifting?

Let's look at what we can learn from my maps. These maps show a few things. First, they show that bodies project meaningful space around them. Importantly here, bodies project their own spaces around them. They cannot project spaces marked for others. Second, bodies don't maintain singular stable presences inside their material infrastructure. Embodied presence instead surges and subsides within the material body. This is not as serious or damaging as it sounds. Third, bodies are not looking for audiences. They may be expressive, but they are not necessarily seeking engagement with that expression. In particular, this means that bodies cohabit without friction or even acknowledgment. Fourth, there are special moments when bodies work while in contact. These moments are strategically important for material ends. Lastly, the effort-spaces of bodies can be contained as a pocket or island surrounded by other spaces.

How does this measure up against losing our humanity and giving way to others? Do we pass the test?

How are we to evaluate our humanity in this context?

We defined our humanity for this study as being the embodiments that characterize the ideal man: groundedness, orderliness (elegance), directedness, strength, and isolation. These characteristics help us understand ourselves as unique, consistent, and bounded. Movements that undermine this illusion would be movements that create embodiments outside of our human ideal.

In our crane case study, we found that the costumed zoologists were not like generic humans in a few ways. They abandoned portions of the human qualitative movement spectrum in favor of using Space and Time. They did not have to change their body mechanics significantly to match up with cranes. Rather, they succeeded to varying degrees in adopting bird behaviors and rhythms that reflected broader ecological presence and attentiveness. Skilled costumes manage to move past internal drives and integrate themselves into a larger whole.

In the cutting case study, we also found that riders were not like generic humans in a few ways. They were not grounded through contact nor through rhythm, causing them to use their spine as a shock absorber. Additionally, they remained unusually present in their bodies as a way to cope with being on a horse. These characteristics reveal a mastery and comfort with being part of a greater

flowing entity. Meanwhile, skilled riders contributed some human-like intelligence to the game, including imposing decisiveness and regulating strategic position. These functions complement the specialization of the horse and they are difficult to do well.

In sum, our case studies show humans embodying non-human things. The cutters found a way to ride without grounding and orderliness. The costumes easily forgot their strength and reach. Most cutters failed to assert directness in their chaotic game, although the best did. Isolation is tricky because isolation turned out to be very easy to accomplish. The alternatives, cooperation, connection, and availability, are rare and difficult to achieve, but they did happen.

Are there better and worse ways to shapeshift?

Given that most participants showed a patchwork of embodiments, it is important to consider what such a patchwork means. We've already discussed how becoming-other is not about perfectly and completely imitating the other. We're not interested in producing exact replicas. But, if one can shed more of oneself, whatever the result, isn't that a better outcome? Or, are there parts of oneself that are more important to shed than others?

Transcendental shapeshifting

Contrast the previous maps with a transcendental understanding of shapeshifting and identity. Here, a person takes on the form of a cow. The person's real identity remains in the background directing events, but otherwise uninvolved. The cow participates in affective space as expected. The surprise is that there are three parts: the soul of the person, the organism of the cow, and the spatial relation on offer. In our earlier maps, we saw how the space implied the rest. Here it does not.



Theory suggests that the most important shift is to move from transcendental agency to agency of the assemblage. This shift returns the human to their body and divests them of perfect control. The body, however, is not a monotonic player in this game. Sometimes it throws its weight in favor of transcendentalized identity and sometimes it favors presence. Let's look at how the body supports humanism first.

We have two measures of humanism to work with: humanist absentia and the embodiment of the ideal man.

Shapeshifting and humanist absentia

Our results indicate that the human body really is a large part of the reason we can become absent. The human body, unlike animal bodies, can recede from itself. It can give up corners of itself and then come back into them later. It forgets itself. Our test, for whether animals can prevent this sort of behavior, came up both as a success and a failure. Placing a human on a horse requires them to lose this characteristic: people on horses stay in their bodies because they would fall off if they didn't. That's wonderful. Placing a human with a baby bird seems to be a recipe for encouraging absenteeism. Costumes have trouble staying active and invested in the chickering yard. Why humans are like this is unclear and whether there are other similar animals is unknown.

Human bodies also support absenteeism in a different way. They fail to connect. This isn't specific to human bodies, this seems to be an aspect of every participant in this study. Connection requires unusual and specific kinds of effort. In cutting, one must train well, pick a good cow, set up a field, and mesmerize. With cranes, one must stay active, cope with lots of guesswork, and watch for opportunities. That's just the human side of the equation. In cutting, the cow must be energetic, in the right mood and watching the horse. The horse must be warmed up nearly to exhaustion, and it must care or be made to care about the game. Cranes connect when a field materializes: an offer of food, a competitive companion, or an environmental threat. These things are rare in the chickering yard and aren't related to connecting to humans per se.

This generalized lack of connection is extremely important because it lets us all live in overlapping spaces. If animals connected with us and each other easily, they and we would constantly have to be negotiating with each other over those spaces. Our territories would become mutually exclusive or intentionally inclusive. In fact, in our attempts to connect with animals, that is exactly what we're doing. With cranes, we're trying to set up an inclusive space for leading and following, and in cutting we're setting up exclusive spaces so that we can push each other around. It is remarkable to think that in fact it is the common effortless disconnected foundation that has helped us coexist with so many animals in the long run. On the flip side, if those animals had engaged with us through embodied politics, and we had responded, we may have never spread to cover the earth. But we don't respond. Not always.

Can we undo this heritage of absenteeism? It might be possible to address with effort on some scales. However, seeing the body as the key element in this battle would be naive. The body picks its presences. Setting up situations where the human bodies were constantly forced into presence or seeking connections would be a significant imposition requiring artificial rearrangements of space

and social goals. Maintaining such a world seems implausible. Wouldn't we just opt out of it, same as we always have? Same as other animals do? It is also not really what we're looking for, because it would require relying on our wisdom to direct our bodies. The body was supposed to obviate the need for wisdom: to forcibly re-instate us in the material world. It doesn't do that. Our bodies are at least as much invested in absence as we are.

Shapeshifting to escape isolation and directedness

Dealing with the rarity of embodied connection is one thing. Dealing with our idealization of absence, to the degree that it dictates certain embodiments as better than others, is another. Our idealization of absence is folded into the embodiment of the ideal man in several ways, but, as we shall soon see, the ideal man is also a bit contradictory.

Our body lends most prominent support for humanist embodiment with the myth of isolation. This is the idea that I take action in isolation, without influence from the surroundings. The body goes both ways here. On one hand, the body is like an antenna, taking in affect from others, translating it, and rebroadcasting it back out again. We've put a lot of hope on this trait. On the other hand, the body, when it broadcasts affect, becomes the unique origin of that affect. We've seen that when a body becomes qualitatively expressive, it marks that expression, creating marked territories. Our body consistently appearing in the center of territories that it made creates the illusion of separation from others and being the origin of action.

Directedness is just as important as isolation. Directedness is the embodied counterpart to decisiveness and intentionality. It means being able to prioritize a certain possibility with the body. With cranes we see directedness in costumes as being able to attend to specific features of the environment through the puppet's gaze. A costume without this trait becomes ecologically irrelevant. In cutting, this directedness comes through in guiding the horse. The clearer the rider's indication to get off a cow, the more likely the horse will be able to break its fascination. The best cutters display sophisticated temporal articulateness.

Humanists prize directedness because they imagine that humans are the only ones able to do this. They ascribe our success at it to our transcendentalized mind. Meanwhile, losing directedness is really attractive to a posthumanist since it makes you ineffective and vulnerable. If there's a way to give way to others, this is it. A muddled rider and a bored costume are overcome by their circumstances, and others take the lead. The bird's lead is to settle in. The horse's lead is to pretend or jump the gun. The cow's lead is to take the pressure off. These leads seek disconnection: depoliticization. So shedding directedness runs counter to that other key strategy in posthumanism. Shedding directedness and seeking connection are incompatible outcomes. Additionally, because animals are also privy to directedness, shedding it doesn't make us more like them.

The questionable value of total self annihilation

It is worth focusing on how we put ourselves in a vulnerable position for a moment. It may be that such a position is therapeutic. Humanism prizes directedness and isolation, but it is impossible to achieve these all the time. Idealizing it may be a problem, even if actually embodying them isn't. If one truly wants to learn how it feels to escape oneself, particularly oneself as a source of affect and

direction, putting oneself in a situation where the animals take the lead should work. The animals will cover you in their affect and their goals. You will swim in it, in chaos, and the embodied you will disappear. Your connectivities will be disrupted, your kinesphere will collapse, your territories will fade, and the dynamics of a field will evade you. You will be gone and other things will be governing your space.

A body lacking support for any humanist trait would be:

- Territorially inexpressive. Mute. Translucent since it just moves other affects along.
- Undirected: would have an unprioritized, flat view of things
- Weak, easily collapsible
- Totally ungrounded, at all times
- Responsive to the environment, but unprepared to deal with that since they're structuring kinesphere would be gone

It is hard to understand this as a body rather than a collection of things. This is a disassembly of the body. With it, the virtual disappears. It's just material.

This is different from sitting on the couch. There, you still exist in your transcendental form, mentally teased out of your living room by the TV. Sure, your connectivities have elapsed, but they were never needed to watch the TV. The sofa is different from facing the situation that brings them to life, only to find them struggling in chaos, beaten out by some foreign force. Because at this time, you cannot escape into a transcendental space. It's the time when your vital location in your body becomes only too obvious. Is it good for us to experience this moment?

Is this the moment that we lose our humanism? When we utterly abandon the transcendental within us?

It seems to me that this is not the case. As we can see, animals are operating with the same tools at hand. If an animal were faced with such a moment, would they become less of an animal? Certainly. Just as we, too, would become less of an animal, a human animal. These moments are likely to be useful in many ways—as entertainment, as therapy, as a reminder that we are alive—but they're important to dismantling humanism specifically is dubious. Because they're citing and supporting another, opposing ideal: the body that is only a body. What is a body like that like, anyway? Animals don't seem to have that body. Why should we?

The ambivalence of strength, groundedness, and orderliness

We haven't grappled yet with the whole legacy of the ideal man's body. Our ideal man is supposed to be strong, grounded, and orderly. He is strong so that he can physically dominate whatever arena he enters. Once dominating, he can wield transcendental power. Our cutting case study shows that domination is more of an experiential artifact than an actual outcome of the sport. With cranes, using your strength directly by shoving a crane causes the crane to disappear, so domination is more

of a mistake than a goal. Nevertheless, if you don't have strength, you can't keep your puppet level. And if your horse isn't built, you can't turn effectively. So strength is undecided: it can go to support humanism or it can support other relations.

Groundedness and orderliness actually reveal some insufficiencies in the ideal man. Groundedness gives the body a lot of leverage. It helps it stay coordinated and effectual. A strong idealized body emphasizes its grounding through the impressive reach and mobility through the limbs. But, as our cutters show, there's more to grounding than that. Good riders ride without predictable grounding by portioning their body into two elastic parts. The ideal man has apparently not discovered this kind of buoyancy. The ideal man would disintegrate on a cutting horse because he would try to hold himself together.

Orderliness is interesting as well. Idealized movement usually honors the three axes of the kinesphere. It's squared up. It's elegant. However, Laban created a bunch of movement scales that move through the kinesphere at odd angles and trajectories. Transverse movements are not part of the ideal man's repertoire. However, for a costume to compellingly check for predators, they must use transverse movements, because the predators are not necessarily located along axes. Similarly, cutting only fills squared up spaces in training sessions, before the horse has learned to follow the cow. Humanism probably values orderliness because it is movement that springs from the person, who can apparently ignore their surroundings in favor of an idealized geography. If one pushes further, movement can become applied, responsive, and less orderly.

These last two aspects of movement, groundedness and orderliness, reveal an important shift. People who embrace the more advanced forms of these movements are participating in assemblages. This brings us to the next issue we need to discuss. Since we now know how the body supports humanity absentia and humanist embodiment, we must also ask, how does the body support alternatives? In other words, what does the body do that undermines humanism? How are these bodies participating in assemblages? Once we look at the assemblages in detail, we can begin to see how agency has been rearranged, and how that threatens humanism.

Assemblages, distributed agency, and perfect shapeshifts

Let's consider what sorts of assemblages we have. Both cases involve two kinds of assembly each. The danger with the cranes is that if they were raised by humans, then they may become humans through imprinting. This is a situation where one takes over the other, and while inadvertent, it still represents our fourth category of assembly, "Swallowing." To prevent this outcome, ICF rearranges things so that the costumes are part crane. This represents our third sort of assembly, "Rearrangement of parts." The cranes are arguably also part human, but since I didn't compare them to wild cranes, it's a little outside the scope of this study.

Cutting represents two other types of assembly. An incomplete mirroring where, say, a limb or locus of weight is a bit out of sync with the others, is a "Shared middle," the second type. The other portions of the assembly, the faces of the cow and horse in particular, have joined in a shared space. If the mirroring manages to become completely in sync, then the horse, rider, and cow all together form a new kind of being. This is our first type of assembly, "Something totally new."

Let's discuss when everything goes perfectly. A perfect hour with the cranes, or a perfect mirroring of the cow. This also represents an ideal, although maybe we would prefer it didn't, because chasing perfection can mean chasing an exact copy of something else. Perhaps this is a different sort of ideal, one that does not rely on transcendental evaluations of sameness to come true. Recall that a multiplicity is defined by member differentiation, relational structure, and relational flux. Suppose you could construct an ideal from that recipe? It becomes an ideal because it is a goal with a rare outcome. But when it comes true, it is very much real, in no way a fiction.

Becoming Cranes

Permanence: fleeting, temporary, **long term**, and irreversible/permanent

Completeness: shallow, **immersed/submerged**, deep, abyssal, gone

Skill by experience: **naive**, dabbler, fledgling, competent, seasoned

Demonstrated skill: inept, clumsy, **capable**, dexterous/adept, exemplary

What is happening in the most connected moment with the cranes? Let's consider the nature of the embodied changes that support that connection. One, it's long term, because once you get the habit, you can apply it in other circumstances. Two, it is neither a shallow change nor a deep one. That's because of the level of overlap between humans and cranes. The human can retain some basic human operations and still come off as a crane. Three, the practice is fairly accessible, if one has a penchant for it. ICF hires naive zoologists, some of whom quickly become functional. And four, the dexterity is required to become a convincing crane. Appropriately responding to one's environments requires advanced movement forms.

Entering a Mirroring in Cutting

Permanence: fleeting, **temporary**, long term, and irreversible/permanent

Completeness: shallow, immersed/submerged, deep, **abyssal**, gone

Skill by experience: naive, dabbler, fledgling, competent, **seasoned**

Demonstrated skill: inept, clumsy, **capable**, dexterous/adept, exemplary

And what about in cutting? What changes must occur to join in a mirroring? One, the changes are fleeting. An excellent cutter can make push them to being temporary, lasting more than a few seconds, but they also appear only very briefly due to the challenge. Two, cutting requires total concentration and presence simultaneously. This means maintaining complete outward attention without going out over the edge. Three, good cutters usually have years of experience and nearly daily practice behind them. Unlike raising cranes, it is not accessible. Four, a capable cutter can

achieve a mirroring, but it gets easier the more dexterous you are. This is good news. It means that there is more than one way to invite special moments with others. It can be either a fleeting or long term thing. It can be reasonably engaging or all encompassing. It can be accessible or require dedication. However, it seems one cannot be clumsy and still achieve connection. And, echoing earlier findings, one must not disappear completely. It is unclear if this last finding is related to how these practices don't create irreversible change. They're mutual absence co-occurs, but that may not be causal. This would be a point for more focused analysis.

By comparison, if we looked at the ideal man, we do not find an assemblage. The ideal man, since he consists of separate limbs, organs, and actions, could become an assemblage of those things. But he doesn't. He does not allow parts of himself to isolate themselves from other parts of himself, so one cannot consider how his parts add up. He also focuses his effort on shoring up his boundaries, making himself stand out as separated from the background. This makes it impossible to situate him in a relationship and determine how rooted he is in it. Also recall that the ideal man must ignore parts of the body's repertoire, and create illusions to boot, and it is easy to see that he is not a multiplicity because he is partly a fiction.

Spatial and political implications of shapeshifting

Since our case studies have given us these varied kinds of assemblages, let's review what we found out about what is happening in these connections. The maps brought to light certain behaviors of territories and assemblages. Let's take territories first. Territories appear inside, outside, and across bodies. They can be created mutually by groups of organisms or separately by single organisms, or even by only a part of an organism. Territories can appear within or on top of other territories, meaning that they are not necessarily mutually exclusive. Individual territories can bleed through mutually held territories.

There appears to be an economy to territories. A more coordinated effort can lead to a wider territory or a more cleanly delineated territory (a more sudden and clear boundary). Less effort makes territories fade out or barely manifest. Effort that doesn't congeal into a coordinated action makes territories fragment and fall away. When territories falter or wander, their absence can be palpable, especially to those nearby. It may be that a body has noticeably left the room, or it may be that an organism is watching the territory governing its own body exclude the wholeness that makes it an organism. But coordination is not the only variable in this economy. Resonance can also bring separate spaces into harmony, binding them together into a territory. Here, the apparent coordination doesn't originate with a striving organism but with the tone of events. This means that the energy available, whether within an organism or within a space, could be limited. A flatter terrain, whether it coincides with a body or not, cannot immediately create a more active terrain without resources to be found already within it.

The field displays similar behavior. It is less likely to appear in places with low energy. For example, if there is one body, one node of energy that is, that is characterizing a space, there is not necessarily going to be a set of attractors laid out around it. Introduce a second node and suddenly there may be a tension or attraction, a palpable difference between them. That is when the field forms. That same sort of announced difference can appear as an organism assesses the landscape, also laying

out a field in front of it.

Since most of us spend most of our time as organisms, and much of the time we're a node of affect, the way agency arranges itself in space of interest to us as nodes. We cannot simply determine what our affective spaces will look like. We cannot perfectly perform an identity. But we are involved; we are transducers of affect as Massumi (2002) claims. We translate external energies by marking them as our own (affecting the color on the map), but our energies can also be marked by others. We can apply our own qualities to energies, we can answer the qualities around us with contrasting qualities, or we can channel the energies coming in (affecting shape on the map). But our qualities can also be shaped by others. In this way, our identity is a give and take between us and others, whomever we and those other turn out to be.

This means that there is a specific history of movements between bodies in any given scenario. That history may involve hemming in, shoving out, slow creeps, sudden jumps, exuberant takeovers and reluctant retractions. Some will be contained, others will multiply. Boundaries will be contested and negotiated, much as they are in other social geographies. And just as with other social geographies, when it comes to embodied politics, the outcomes are not clearly in the hands of those present and easily pass for normalcy. Even at the scales of the not quite conscious and not only living, the embodied organism has an unpredictable fate.

Problems with using the body to reject humanism

How do all of these results reflect on humanism? Humanism is considered a cultural form that can be interrupted by attending to the body. These results complicate that approach. While the body gives us the tools to operate in posthumanist arenas, the body also supports humanism in both its forms. The absentee form of humanism, where the goal is complete transcendental existence, is supported by the fact that the body is not inclined to relate directly in space. It takes a lot of effort and precision to do so, making it a rare occasion, and living side by side without interaction is useful. Meanwhile, the embodied form of humanism, represented by the ideal man, comes into being through the body itself. Necessary features of being a being feed into our construction of this ideal. This means that humanism is not only a cultural construction. It is also a material construction.

In rejecting humanism there is a temptation to throw the baby out with the bathwater. We must be more careful. Posthumanists must deal more frankly with a variety of issues surrounding the body as a way to enter more inclusive relations. First and foremost, the posthumanist body is not an empty channel that redirects flows to better ends. It is an actively engaged body, filled with presence. Many have noted this responsive quality of the ideal and righteous posthumanist body, but the source of this responsiveness have remained obscure. It is easy to locate the source once again in our consciousness, where we can absorb and process our animal relations over time, but this is a mistake. The body is actively engaged in and of itself. It is simultaneously sensing and expressing. One cannot separate the body's usefulness as an antenna and selective amplifier from its existence as a node of personalized energy. And, quite frankly, one doesn't really want to. Appliances aren't terribly interesting to anybody. But isn't that node of personalized energy supporting our understanding of ourselves as powerful, separate, and privileged?

How to face ourselves head on

Certainly. But it's also necessary to relate in the first place. And if it's going to come with us into an arena full of animals, how do we know what's going to happen in that arena? What if we always win? We must ask, how does one face humanism when an essential ingredient in humanism turns out to be an essential ingredient in posthumanism, one that could potentially mess things up in just the same way?

The trick here is to remember that animals also have nodes of personalized expression. So the selfishness of existence that the body lends to humanism is also operating for them. To put it most bluntly, this quality makes us an animal too. But we cannot really remain that blunt about it, because it makes each of us an animal that is separate from each other animal. Just like for each other animal.

This means that embodied humanism must be joined by a group of other -isms: avianism; gruiformism, to be more specific for cranes; bovinism, equinism, and so on. A body in any of these groups is a combination of an energetic node with a specific embodiment. The embodiment creates and perpetuates the node and the node creates and perpetuates the embodiment. Imperfectly, and with style.

Seen this way, humanism seems less like a unique nuisance we humans bear. It is instead a tool we use to approach others as they approach us. Subsequently, posthumanism, can be understood in reference to post-bovinism, post-equinism, and post-avianism. These are related not to the local embodiments of a given animal, but to the combined embodiments of several, and the new assembled node of energy that these combined embodiments call forth. This situation makes the verbiage "post-" misleading, since it is not about bovinism, or any of the other -isms, at that point. It's about a synthesis of beings. It would also be wise to lose the -ism ending, since these are events, not cultural movements one can become allied to. Lastly, it would be wise to recognize the rarity of these events, the effort involved, so they seem less like an broadly accessible alternative to our usual way of being. Personally, I like to term skunching, as a portmanteau of scarce and bunching. But, assemblage would do just as well at this point.

The trouble with skunchings is that they don't actually solve our problems as posthumanists. We're still invested in being present for animals. Skunchings represent that, but making them happen is difficult. Being present for an animal requires what we said at the outset: an animal that makes substantial demands on us. We've found out that cranes are often not able to make such demands. Livestock are much better at forcing us out of ourselves. What this means is that our ability to attend to others is dependent on who those others are. We cannot simply control how open we are to others. Openness is relational.

Given this, we must sort out our priorities again. Because if our priority is to develop embodiments that can make it through a skunching, we can all join the sport of cutting. If our priority is rather to improve the lot of animals, we cannot rely on openness to do it. Many animals simply don't challenge us in the required ways. What's more, it isn't clear what skunching brings to animals in any case. Is the well-cut cow better off than the rest of the herd? It's dubious. It's much easier to argue

that the cow is going through the equivalent of a stressful dental procedure.

What this study shows is an opportunity and a problem for animals like us woven together in our landscape. Here animals have shown us how they relate with each other across difference, through their bodies and in space. The techniques they use are techniques that don't come naturally to all humans all the time. And these techniques have specific consequences that are different from the ones that humanism and traditional ethics value.

Letting go of humanist ethics: what are our other options?

Humanists defend materiality—bodily integrity—in order to maintain a home for the mind. In its time, the sacredness of the body and soul was a powerful idea used to counter the power of violence. It evolved into today's ethical foundation, which we now use to fairly face animals. Animals of course pose significant problems for this process, since they become mute in ethical discourse. Instead of attempting to give them voice, it may be that we need to toss out the entire foundation. To toss out the bathwater and the baby.

This is a terrifying proposition. It puts us out to sea in such a way that it seems that all the violence and injustice of the world will drown us in misery. This is a good reason not to abandon ethics all at once and really the reason no one even considers casting it off.

But what if there was another form of agency that could also defend the vulnerable? This study gestures in the direction of such an agency. Instead of valuing materiality to sustain a transcendental identity, what if we valued materiality to provoke evolving virtual identity? How would we understand animals and ourselves better? Could we both make transcendental decisions, when called for, about the lives of others, and enter embodied relations at other times?

One benefit of valuing virtual identity is in understanding death. We dislike death because it is fathomless. We also dislike suicide for the same reason. But one can reframe death as a way to honor the declining body. The declining body is losing embodiments. There is less it can offer. Its horizon has narrowed. Similarly, a suicidally depressed person has lost touch with that node of energy that would normally be caught up with them in the virtual. In a humanist framing, the body should be coaxed back to stability, because the soul (mind) is untouched. In a new framing, the relationship between the body, and what we might call a virtual soul—the node—mean that the node is also diminished. There are fewer options for liveliness, novelty, self-actuation, uniqueness, and so on. Death in such a situation is no longer horrible. It is still unfathomable and painful, but it is not horrible.

Normalizing death is scary because it brings the logics of sacrifice very near. One can easily say that the virtual horizon of so and so has narrowed, making them killable. This is the same problem as we have today, although by different ontology, so sticking with humanism doesn't get us out of it. No, the virtual is not a way to treat animals or anyone else better. Well, perhaps it is, but this study does not shed light on it. This research stops short of studying material interdependence and conflict. It would be interesting to see more development in ethics based on virtual ontologies. The virtual might help us define 'better' better.

What virtual spaces can do for ethics

It is both easy and difficult to become an animal. On one hand, we are animals, and on some level we can engage in the same embodied spaces as they do. In fact, it's not that hard, if you set up a field of attractors, a few nodes and transducers, some territories, some assemblages. It's so easy, in fact, that it's how we actually live, whether we are facing animals or not. The resulting geographies pervade our lives. From this perspective, it is difficult to picture how turning to the virtual would change outcomes. We are already deeply involved with it.

Nevertheless it does reaffirm things we can easily forget, like how we're not making our own decisions about ourselves, and that there are more dimensions in which we can change than we usually think. Does that mean that this work opens a new space for geopolitics? Will there be those who are especially talented in moving territories around? Workshops that help us build shared assemblages? Techniques that polarize embodied space? Yes, of course, you can say that we already have these things. But now we have the tools to think about them spatially.

Here is where the difficulty of becoming an animal could be lessened. Deleuze talks about animals as being outsiders, excluded nodes who operate according to different rhythms. Becoming that animal, the one that enters a space and modifies the beat, that animal is difficult to become. Imagining the waves that could be whipped up and the buttes that could be gulped, as a land shark would when forging across a lava bed, may help bring more unique, life-sustaining expressive energy to the world.

Then why aren't cranes and livestock more powerful?

What's peculiar about this research is that even though there seems to be so much political potential in these relations, the actual case studies I chose seem to be inert. This goes against Deleuze and Guattari (1987), who emphatically suggest that harnessing the virtual can cut through sedimented and transcendentalized relations. They imagine nomadic agency passing through like a comet, on its own trajectory, shredding the oppression of ideas and institutions with blades of irreverent energy. And yet the chickering facility and the cutting stadium are surrounded by regimented space. They are tiny bubbles appearing and popping every day in a translucent humanistic medium. In other words, at the end of the day, the costumes, cranes, horses, cows, and riders pick up and go home. The animals are in no better position relative to the world than they were before, and the humans appear much as always. It seems as though all the movement and fun evaporates.

Why does this happen? Did Deleuze and Guattari oversell their dream?

Not exactly. Part of this is a limitation of the study: I didn't follow everyone home. But there is another reason. The ICF raises cranes this way because it might save the cranes, but also because raising them in this way creates a good story for donors and visitors, which perpetuates the system. Someday, maybe the public will be able to encounter these birds in person, the way the costumes do now. Similarly, the mirroring moment with a horse and cow in cutting has created a system outside the arena that reproduces the arena itself. The enthralling embodiment at the center of the system changes form and translates into a desire that one can build a business and a life

around. Incongruously, this points to how Deleuze and Guattari were correct in thinking that it is the unscripted encounters with the virtual that are truly valuable. One need not value the virtual per se since it is already what is sought.

The problem of fencing

But the translation of the embodied energy into duller forms of value, especially financial and narrative value, is disheartening. Not all embodiments can overcome all sedimentations. But the hobbled nature of these encounters is still informative. If you look at the maps, politicized space stops at the fences. In both cases, the fences are key parts of the interaction. Not only do they keep material bodies in certain places, they also keep their affects in certain places. The fences around the cranes ensure that no un-costumed human potentials invade. The barriers in the cutting arena keep other horses from reacting to the herd and vice versa. The fencing at the end of the arena actually has a window in it so the herd can tell where the waiting cows are, and will stick with them instead of dispersing. Embodiment needs open space to operate politically.

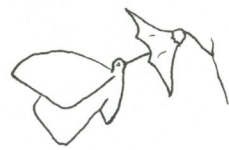
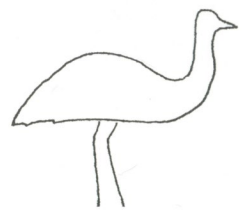
This is a surprising outcome for animal geographers. Our considerations usually involve either studying how people use space to control animals or how people can use space to give them more voice. This encourages intervening in material space in one way or another. We must arrange the fences differently if we want to hear the animals' dissent. My research is different. It says that in fact we need to abstain from arranging things in space. Because the fences are what kill embodied politics. This conclusion marks a shift from understanding the animal as a singular agentic being to understanding bodies in space as collectively empowered. Not only is this an important insight for activism, it also deeply implicates space.

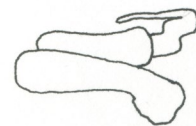
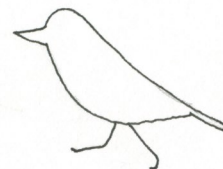
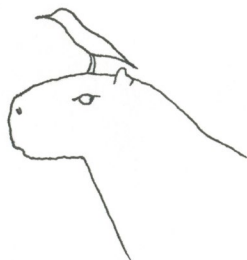
Removing fences, walls, roads, channels, and all the other man-made barriers is a surreal dream. It would, presumably, make our world more permeable to animals. It would also make our world more permeable to ourselves. While it is clear that we can return to our bodies to negotiate with other humans, our chances for doing that may be just as rare and limited as they are for animals. Our built environment diffuses and muffles significant amounts of potential embodied agency. In prehistory this agency might have been what kept us so spread out for so long. Today, we're looking at a world where walls help us live in crowded unequal conditions in a failing environment.

There is one more thing to be said about Deleuze and Guattari. They envisioned a wild and free land of roaming encounters when they wrote *A Thousand Plateaus*. If what is happening at ICF and in the cutting arena can be said to be an approximation of their vision, then one must also tone down one's expectations. And really, this is for the better, because the wildness they envision is tinged with uncanny terror when I read it, terror of becoming-gone. Because at ICF and in cutting, the politics are still there. But the context is low-key. Sure, a lot is resting on the details, but everything is going to be OK. That is not what Deleuze and Guattari were describing with assemblage theory. But it seems like bringing some empirical evidence to bear makes it more attractive as a basis for an ethical system. We just need to figure out how it works.









Writing a dissertation like this one is tricky not only because of the design, but because it relies on a series of separate systems for showing respect for the lineage of ideas. The first, a bibliography, is for verbal ideas formally vetted and published in journals and cited here. This system aims to maintain professional fairness. The second is the rules of copyright for protecting commercial monopolies on visual products while maintaining certain expressive freedoms. Paired with copyright is a private legal system of licensing and service contracts. The third is the informal system of norms that has arisen with the use of social media that often crosscuts the previous traditions. There is broad debate about the ways these systems interact and conflict with each other and what their larger impacts are on society ([Buranen and Roy 1999](#)).

This project aims to satisfy all three systems to the extent that it is respectful to credit authors with their ideas and work. While effort has been made to use formal crediting and permission systems when possible, this work also ventures into a new cultural space where ideas in 'serious' formats can flow and resonate as part of today's social medium. As such, where formal systems break down, social norms will be followed (see [Marshall and Shipman 2017](#)).

Authors, by including your work, I am hoping to honor you and bring your work into conversation with other like-minded people. I have made an effort to present it fairly.

Meanwhile, this work in its current form is not meant to be a commercially successful product. It in no way was meant to threaten the commercial viability or reputation of the copyrighted materials. I have tried to stay within the codes of fair use by either commenting on them directly or reproducing them in ways less full and grand than their originals. These materials are here to evoke non-verbal associations that guide the reader to conceiving of the world in new ways.

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Dog or muffin? A classic quandary.



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If you paint your reindeer's antlers with reflective paint, they become visible to drivers. The fact that we may have trouble seeing a large mammal reveals how limited our senses can be, and therefore our how unlikely we are to relate with them.



By Dutcher Photography



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People also use costumes with pandas
(return to start)



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How did I make this dissertation?

I was lucky enough to be able to work full time writing this dissertation for an entire year. My partner Christopher Alfeld and the Mellon Foundation supported me during that time. I'm grateful to them.

Analyzing my data, creating a complete outline of the entire dissertation, and getting to know my tools (InDesign and fountain pens) took the first summer. I already had experience with Photoshop and Illustrator.

I spent the fall writing the second book, which meant developing a process for drawing, digitizing, and labeling, as well as brainstorming and composing the visual narratives. I also moved text I had written for my proposal and exams into the InDesign document. Lastly, I collected images from my photo collection and my bookmarks and placed them in the document.

I spent the winter diving back into the larger narrative of the work and drafted a lot of text aimed at sewing it together and filling holes. This included the conclusion and some more introductory text. At this point I needed feedback from my committee on my written work, but I never got it. I was no longer able to critique my own work and I was getting tired of the document. I revised the layout and grid a couple of times during this period.

As my defense was coming up in April, I printed out copies for my committee and waited. Meanwhile, I continued to touch up the document: revising bad diagrams, taking care of things that were bugging me. Instead of presenting my research to my committee at the defense, I talked to them about the problems I was having with the narrative. They were happy to learn that I was aware of the problems and helped me pin down what this project was about.

I then tackled the maps that make up the third book, eliminated some of what I had written in January, and replaced it with another literature review. I began collecting author names and permissions for the images I used. Near the end I compiled my bibliography and checked spelling and citations. My advisor was still helping me with the literature review then.

My habit was to work on it for around six hours each weekday. I drew in the evenings. I set daily and weekly goals in my head most of the time. I set up writing groups, attended consultations on campus, and found places I liked to work.

The document still feels to me like an awkward marriage between a dissertation and a book. It is split between a popular and an academic audience. I would have rather made something entirely for a popular audience that was well informed academically, but I didn't have collaborators who could envision that possibility.

Something that would have made this project easier is to have developed a familiar work flow earlier in my schooling. I wrote a seminar paper with a large number of images one semester, but I didn't use InDesign or do my own drawings for it. Part of the challenge of generating my results was that I simultaneously had to generate a new way to work.

Another good idea is to set up a habit for collecting images that includes their origin, authors, licensing and so forth. I must have returned to the same websites dozens of times as I did each pass.

A final good idea is to make sure you don't neglect yourself. Guard your free time, stay in touch, eat and sleep well, and be active and social.

One encouraging aspect of completing this project is learning that one can pull off something this large and intimidating while enduring chronic illness. It is not easy, and while there is some understanding, there is little support, and one must make their way alone. The early parts of my graduate experience exacerbated my symptoms, so I distanced myself from it and found other, more nourishing communities elsewhere. This turned out to be extremely important. Meanwhile, my flexible schedule and bosses greatly helped me find equilibrium. I have had the space to seek medical help and learn about my condition, something I may not have had the opportunity to do in another profession. I've found that I can work around my particular disabilities (poor memory, irregular energy, bad sleep), which may mean that others can too. You may be able to tell that the ideas running through this dissertation are ideas that originated in how I specifically face the world. Your particularities let you see things others may not.

Much as I feel lucky to have been able to pursue such an off-the-wall project, and much as I still enjoy my research, I am not sure that doing this project was the best thing for my professional development. It solved my problem of being lost at a certain time in my life, and of lacking a secure ontological perspective. I've gained confidence. It also exposed me to insightful, fascinating, diverse, and engaged people. However, the PhD model of training is slow, isolating, confusing, and lacks accountability to those who have power over you. The academic model is obsolete, entrenched, and disappointingly unequal. I made sure to get training on my own from across campus, but I can also imagine spending these years in a tighter iterative loop of learning where I might have thrived and progressed more substantially as an intellectual. I still believe that academia is a place where you can do things that are difficult to do in other professions, and that this is academia's greatest strength in our society.

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List of Labels and Illustrations

1	Seeking Oblivion: The Ease and Difficulty of Becoming an Animal	38	Hybridity	56	kinesphere
1	By Sarah Bennett	38	Performativity	56	far kinesphere
1	Figure 1 Cover page presented mostly according to the rules	39	Non-representational theory and affect	56	mid kinesphere
1	Figure 2 Abstract	40	Some tidy ideal	56	somatosphere
1	Figure 3 Please turn the page	40	Today's world	56	near kinesphere
1	Abstract	40	Today's world, summarized	60	Major Alex Armstrong prepares for action
3	by Sarah Bennett	40	Today's world, in some detail	60	Driving Akira's motorcycle
3	Seeking Oblivion	40	Corporeal Understanding	60	Calvin and Hobbes, tumbling.
3	The Ease and Difficulty of Becoming an Animal	40	Being for the other	60	T'ai chi
6	About the author	40	Attending and availability to animals	61	Little Nemo and a guide
6	A landshark?	41	Human-animal geography	61	Superman
14	Traditional Understanding of the self in the body	42	How to meet someone, and then someone else... and eventually figure out who you are, maybe.	62	Parking without lines
14	An alternative understanding of the self in the body	42	A closer look at how relational differentiation happens, according to Barad	62	Parking with lines
20	Mimicry and Detection	42	The real 'temporality' of the meeting, according to Deleuze	62	Skating
20	Mimicry to frighten	43	Animals in embodied assemblages	64	Traditional Cartesian space
23	Asadata Dafora's stunning ostrich dance	45	Seeing the Invisible	65	Deleuze's virtual space
24	Views of the chickering yard through the camera at ICF, left, center, and right.	46	Aggregating affect	72	Ways to Assemble
25	Images from the field	47	Logocentrism in theory	73	Scales of Meaningful Assembly: Evocative Terms
26	Images from the field	49	Anthropomorphism	81	Body
29	Becoming animal and becoming human	49	Mapping affect	81	Effort
37	Posthumanism and Vitalism	54	Relative view	82	Weight: your body's presence. How you affect mass, yours and others'
38	Essentialism or transcendental identity	56	Exploring the somatosphere	82	Space: shape of outward focus
		56	Some places worth knowing about	82	Time: Is it time yet? Waiting and marking in time
		56	perisphere	82	Flow: relationship to control
				82	Space

82	Shape	91	Feb 26-27 2016	97	And we have three heads
83	Laban's effort system: evocative examples	91	Weekend Show	98	Weekend NCHA Cutting events in North America, January - June 2016
84	Training	91	NCHA Western Nationals	98	where does cutting happen?
84	Activities at Observation Sessions	91	Denver, Colorado	98	where does this sport come from?
84	Data Reliability: Exposure to Movement	91	April 27 - May 6th	98	where do the cows come from and why does that matter?
84	Participants	91	Finals for the 2015 award year	98	what else do cutting horses do besides cut?
84	Note-Taking	93	what is the International Crane Foundation (ICF)?	98	what's a day at the rodeo like?
84	Processing Notes	93	what's a whooping crane?	98	what's a day at the rodeo like?
85	Laban's Analytical Systems	93	why Cranes?	99	what are the goals? what are the rules?
85	Why only movement?	93	I have two heads	99	what's a bad sign to the judges?
85	Jungian interpretation of Laban's effort factors.	93	how is ICF funded?	99	what do the scores mean?
85	Effort drives: three of the four efforts combined	94	who has the most contact with the cranes?	99	who is in the arena?
85	A Relational Movement Framework	94	what is on the grounds of ICF?	99	The Cutting Arena
86	Note taking formats (the right-hand one shows only half the page)	94	what is a chickering facility?	100	what else is near the arena?
87	LMA and Foreign Anatomy	94	what gets tracked by ICF?	100	these cows all look the same. How do you tell cows apart?
87	Animal Efforts	94	how does ICF change the way they manage the crane's day as they grow up?	100	why do you lope your horse? Why do you settle the cattle?
87	Methodological Invisibles	94	what about wild cranes?	100	how do you use the reins?
87	Problems	94	what did I do while I was at the Crane Foundation?	101	how are scores calculated?
88	Movement fundamentals for ungulates: guided imagery.	95	what am I doing for ICF?	104	Themes:
89	Fun crane words	95	what medical interventions does ICF perform?	104	Things Cranes and Costumes do
89	Fun cutting words	95	what about bird calls? are the costumes mute?	106	Dimensions of movement
90	2012	95	The Chickering Yard	106	vertical
90	2013	97	what is cutting?	106	lateral
91	UCHA	97	how does cutting work?	106	sagittal
91	Spanish Fork, Utah	97	who is involved in cutting?		

106	Near Kinesphere	116	What humans think costumes are like	126	Animality and constant bodily presence
106	Mid Kinesphere	116	What a crane may sense around a costume	127	Riders transform their bodies to manage cutting's chaotic ride
106	Far Kinesphere	116	1. The usual machine	127	How to stay on a cutting horse
107	Tugging develops with maturity	116	2. The echoer	127	Trotting
108	Getting attention	116	3. The explorer	127	Going backwards
108	Pointing	117	Person and crane build separate umwelts in the same space	128	Uphill stop: smooth
108	Boredom	117	Each crane contributes to total available umwelt	128	Downhill stop: jumbled and slow
111	START: The crane's head is down, foraging or something. Get their attention.	117	Costume and crane share still separate umwelts	129	The rider's kinesphere
112	Fishing wrong	117	Costume and crane contribute to total available umwelt	129	Suggestions of violence: being seated on a horse
113	Crane movements mapped into Laban's quality grid	117	Costume follows cues from bird exclusively	130	Divisions of labor in merging bodies
114	Delayed in time	118	All seeing	130	Synergizing
114	Abbreviated or	118	Panning	130	Interfering
114	Transposed in space	118	Looking and studying	131	Horse in training
114	exaggerated in space	119	What these birds are like	131	The mature game
114	Staggered travel	119	Are these birds 'wild'?	131	The cow's response
114	Following two costumes	119	Humans becoming birdlike	131	The cow's Responsr
114	Costumes as guards	119	Usually missed bird traits	132	The indistinguishability of cows is part of cow magic
114	Costumes as equals	122	Movement Themes	132	1. Near kinesphere
115	Being Sedentary	122	Things horses, riders, and cows do	132	2. Mid kinesphere
115	Moving regularly	123	Videos to check out	132	3. Far kinesphere
115	Pushing each other	125	Cutting horses, cows, and riders mapped into Laban's quality grid	132	Is there such a thing as a cow?
116	The uncanny valley in cranes	126	Kinesphere of a cutting horse	132	But, lone cows develop personalities
116	actual crane	126	Kinesphere of an untrained quarter horse	133	Herd work, the herd body, and cutting shape
116	actual human	126	Cutting horses transform their kinespheres to a surprising degree	133	Being 'soft'
116	What humans think cranes are like			133	A tense situation

134	Grooming the herd for cutting	148	Most similar	166	3. Space
134	These cows are ready to be cut	148	why are you calling the movement scenario an embodied story?	166	Moment 1:
134	These cows are not	148	what are the colors about?	166	Moment 2:
135	Studying cows	148	what are the shapes about?	168	1. Embodied story
135	Can you memorize each cow?	148	what does elevation show?	168	2. Terrain
135	Mechanical cows?	148	isn't scale changing from map to map? how to the isolines change?	168	3. Space
136	How to boost chaotic energy	149	where is the strata?	168	LEFT: Moment 1
136	How to manage smooth energy	149	how did you making visual sense of affect?	168	Horse magically turns
136	Playing the edge of the game	149	what do these maps show?	168	RIGHT: Moment 2
137	Occlusion and the horse's shadow...	149	how did you use artistic license?	168	Assemblage preserved
137	... Faces and mesmerization	149	what limitations are there for this method?	170	1. Embodied story
140	Connection and disconnection in cutting	150	1. Embodied story	172	1.5 Another view of the embodied story
140	Latching on and pulling out	152	1.5. Another view of the embodied story	174	2. Terrain
140	Staying out	152	LEFT:	174	3. Space
140	What's a hot quit?	152	RIGHT:	176	1. Embodied story
141	Humans transforming and adjusting	154	2. Translated into terrain through isolines	176	2. Terrain
141	Horses transforming horsiness	154	LEFT:	176	3. Space
141	Cows: from herd to singleton	154	RIGHT:	178	1. Embodiment story
141	Humans' contributions to the group	156	3. Spatial interpretation	178	2. Terrain
141	Facing destruction	158	1. Embodied Story	178	3. Space
141	Fading away	160	1.5. Another view of the embodied story	180	A soft sort viewed from above
141	Synergizing	162	2. Translated into terrain through isolines	180	1. Embodiment scenario
147	how do isoline maps work cartographically?	164	3. Spatial interpretation	180	2. Terrain
147	why the terrain metaphor?	166	1. Embodied story	180	3. Spatial dynamics
147	How things occur in space	166	2. Terrain	182	1. Embodied story
148	Most different			182	2. (Terrain)

182	3. Space
184	1. Embodied story
184	TOP:
184	2. Terrain
184	3. Space
184	BOTTOM:
186	1. Embodied story
188	2. Terrain
190	3. Space
195	Recap: what is shapeshifting?
195	So, is this shapeshifting?
196	Transcendental shapeshifting
196	Are there better and worse ways to shapeshift?
196	Shapeshifting and humanist absentia
197	Shapeshifting to escape isolation and directedness
197	The questionable value of total self annihilation
197	The ambivalence of strength, groundedness, and orderliness
198	Assemblages, distributed agency, and perfect shapeshifts
199	Spatial and political implications of shapeshifting
199	Problems with using the body to reject humanism
200	How to face ourselves head on
200	Letting go of humanist ethics: what are our other options?
201	What virtual spaces can do for ethics
201	Then why aren't cranes and livestock more powerful?

201	The problem of fencing
214	How did I make this dissertation?
220	Parable 8

Parable 8

Babe Ruth the landshark went out to encounter his environment. He knew that there was an surfeit of slime molds in the area. He however did not really know how to relate to the surfeit slime mold. He was also under the impression that he was separate from the starfish. This turned out to be a mistake.

Gazing at the piles of starfish, he felt vaguely threatened. Perhaps someday those slime molds would be a problem. (Babe Ruth did not realize that the slime molds had already eaten every fungus in the understory. That did not matter anyway.) Babe Ruth thought. If the slime molds could be a problem, they would be. So he must take preemptive action. Slime molds are always threatening.

Unfortunately for Babe Ruth, the slime molds had long ago operationalized the logics of preemptive action. They had also realized that the boundary between him and them could be blurred in the semiotic moment of alert! The slime molds begin wobbling en masse. Babe Ruth's hair stood on end. Babe Ruth wobbled too.

The boundaries between Babe Ruth and the slime molds blurred. Babe Ruth encountered his environment. If Babe Ruth could have become a slime mold, he would have.

