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Stratton Coffman

## Three Degrees Of Squeeze

A squeeze: multiple coterminous vectors of force gather around the squeezed, swaddling it, while the squeezed gives in, allowing itself to be compressed. Such an embrace challenges the conditions that give form to personhood. In its grasp, the borders of the subject are redrawn, kindling agency in inertness.

### Squeeze Chute

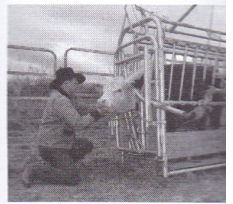
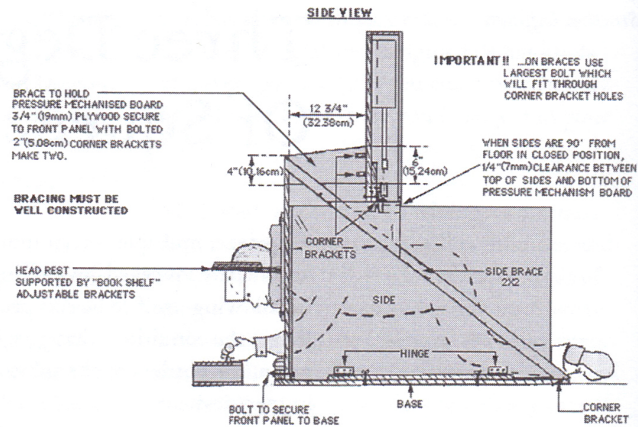
A chute, a hulking box sculpted from bundled sinews of piping, circuits curving vertically in two planes, lengthwise. Invented to hold cattle in place, the squeeze chute has bilateral symmetry modeled on the life-form it squeezes. As the hydraulics are activated, the barred sides press in on the sides of the cow, hugging it evenly in a deep touch that coaxes it into docility. If the chute is activated too hurriedly, the animal inside gets spooked and riled up. When all goes according to plan, the transition between squeeze and rest occurs seamlessly, preparing the cow for branding. The squeeze, counter-intuitively, distances the cow from its sensory field, dulling any sense of potential danger or discomfort.

In the 1960s, the lulling mechanics of the squeeze chute drew in another subject. Autist, writer, and activist Temple Grandin felt an empathic tug when visiting her aunt's farm as a teenager. She observed the "wild-eyed and nervous calves," seeing, manifested in them, her own difficulties; bearing witness to the squeeze, Grandin "experience[d] a greater underlying connection between herself and other life forms."<sup>1</sup> Accounts like this, of Grandin and other autists, enumerate the many strategies autists have developed for coping with hypersensitivity to environmental stimulation akin to the squeeze chute — "rolling up in a gym mat" or "a mummy sleeping bag," wrapping "elastic bandages" or "foam-padded splints on the arms," "sleeping under many blankets," or even "getting under mattresses."<sup>2</sup> These makeshift applications of what Grandin terms deep touch "interrupt the circuitry of the individual's overwhelmed nervous system" to relieve "touch sensitivity, hypersensitive hearing, and visual processing problems."<sup>3</sup>

Seeking a more robust and systematic regimen for deep

1. Maria Almanza, "Temple Grandin's Squeeze Machine as Prosthesis," *Journal of Modern Literature* 39 (Summer 2016): 165.  
2. Temple Grandin, "Calming Effects of Deep Touch Pressure in Patients with Autistic Disorder, College Students, and Animals," *Journal of Child and Adolescent Psychopharmacology* 2 (Spring 1992): 63–72.  
3. Almanza, "Temple Grandin's Squeeze Machine," 167.

Temple Grandin, schematic detail of squeeze machine, final construction and assembly (side view), 1992.



Entomologist Elmer Ahrens and animal caretaker Adolfo inspect a squeezed cow for cat ticks. Photo: Scott Bauer. Courtesy: US Department of Agriculture, Agricultural Research Service

touch, Grandin developed a prototype of a squeeze chute for humans. As a built enclosure for autists and others to find rest in the world, the squeeze machine posits a mode of inhabitation through deep touch that has implications for architecture and architectural thought. Grandin's squeeze machine positions the user between "two padded side boards" – in early iterations, "two air mattresses surrounded by a canvas wrap connected to a pulley" – that are "hinged at the bottom to form a V-shape," a fold beckoning a body.<sup>4</sup> To enter, one kneels before the opening to ensure a snug fit and, after making any necessary adjustments, crawls into the main crevice, pushing head and neck through the resting pads at the other end. Getting out is an awkward affair of blindly backing out on one's knees. The machine tilts conventional relations of base and structure, room and roof, figure and ground, so that the body faces down instead of forward, in a lateral orientation resembling a mammalian pose.

Like the cattle chute, "the contoured padding provides an even pressure across the entire lateral aspects of the body without generating specific pressure points."<sup>5</sup> The pressing advances at a uniform rate, making the increase in pressure imperceptible to the user. Deep touch passes into the nervous system's blind spot, inducing an all-body synaptic fatigue. What results is a kind of dedifferentiation, wherein regions of the body habituated to certain types of touch, such as the flat spread of the seat on the ass or a tap on the shoulder, all receive the same treatment. So thorough is the swaddle that even the neck is gripped with the same pressure, "enhanc[ing] the feeling of being surrounded and contained by the embrace of the deep touch pressure squeeze."<sup>6</sup>

Such touching is avoided in the discipline of architecture,

7. "For instance, in her book *Thinking in Pictures*, Grandin writes, 'Through the machine, I reached out and held the animal. . . . Body boundaries seem to disappear, and I had no awareness of the lever . . . the parts of the machine that held the animal felt as if the extension of my own body, similar to the phantom limb effect.'" Almanza, 8. Temple Grandin and Catherine Johnson, *Animals in Translation: Using the Insights of Autism to Decode Animal Behavior* (New York: Scribner, 2005), 74.

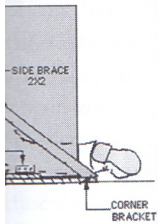
4. Grandin, 64–65.

5. *Ibid.*, 65.

6. *Ibid.*

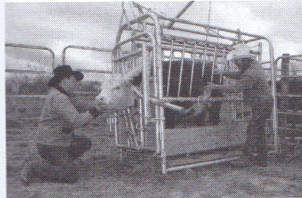
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Entomologist Elmer Ahrens (left) and animal caretaker Adolfo Pena inspect a squeezed cow for cattle fever ticks. Photo: Scott Bauer. Courtesy US Department of Agriculture, Agricultural Research Service.

7. "For instance, in her book *Thinking in Pictures*, Grandin writes, "Through the machine, I reached out and held the animal. . . . Body boundaries seemed to disappear, and I had no awareness of pushing the lever . . . the parts of the apparatus that held the animal felt as if they were an extension of my own body, similar to the phantom limb effect." Almanza, 166.  
8. Temple Grandin and Catherine Johnson, *Animals in Translation: Using the Mysteries of Autism to Decode Animal Behavior* (New York: Scribner, 2005), 74.

which generally understands this degree of contact between subjects and buildings as a potentially catastrophic liability, risking physical harm or psychological distress, as in cases of claustrophobia. Grandin's experiment with the chute challenged the conventions of distance between subjects and objects that govern architectural thought and its built edifices. We trust architecture to shelter us from dangerous kinds of touching, which, given the heft of buildings measured against our relatively soft, delicate animality, could do serious damage. This fear, codified in building regulations and entrenched in heavy materials industries, predetermines forms of shelter and closeness that come with their own proclivities for contact. In the squeeze machine, a person voluntarily gives up a wide range of possible movement, assuming a docile pose of vulnerability that reorders the boundaries of the self through disabling closeness.

Deep touch confounds the metrics that define self and other, near and far by opening an unfelt, subliminal buffer between a body and its surroundings. The relaxed body is compelled to absorb the mechanized flaps as extensions of itself. Grandin's initial encounter with the cattle chute, touching the cows' warm sides and feeling a kinship with them, and her subsequent fabrication of a chute for herself all led her "to reimagine her bodily boundaries."<sup>7</sup> In doing so, "[she] learned [her] sensory problems weren't the result of [her] weakness or lack of character," but rather were produced through narrow, normative patterns of behavior relating to touch and other agents of stimulation.<sup>8</sup>

### Squeeze Room

A magnesium flare washes a small room in blinding light, imprinting a negative with the squinting faces – made temporarily visible by the flash – of a huddle of humans. In the late 19th century, Jacob Riis, a Danish immigrant turned proto-photo journalist, performed such ambushes with a handheld camera and flash powder gun, bursting unannounced into the private quarters of New York City tenements. His aim was to expose the deleterious living conditions of tenement residents, particularly their extreme proximity to one another, which seemed, to Riis, to threaten their integrity as individuals, to squeeze the person out of personhood.

This excessive density was born of the imposition of Manhattan's gridiron in 1811 by the city's commissioners, led by Gouverneur Morris, whose plan carved up the island into blocks of 28 lots, each 25 by 100 feet. In the document

9. William Bridges, *Map of the City of New York and Island of Manhattan with Explanatory Remarks and References* (New York: William Bridges, 1811), 24.

10. Richard Plunz, *A History of Housing in New York City* (New York: Columbia University Press, 2016), 13.

11. *Ibid.*, 15.

12. *Ibid.*, 13.

submitted to the state legislature, the plan's drafters admitted that "they could not but bear in mind . . . that strait sided, and right angled houses are the most cheap to build and the most convenient to live in."<sup>9</sup> The city's composition was tailored to a strategy of building best suited for the city's developers and speculators, governed by the pursuit of profit by unbridled cost-cutting. The constraints of the grid produced the housing type that came to be known as the tenement, the size of which was determined by "the maximum spans of wooden floor joists, and by the prevalent practice of building only in single-lot increments."<sup>10</sup>

Pre-grid housing, adapted to these standardized lots, filled only half of their allotted areas, leaving an open yard in the back. Common floor plans included two chambers separated by a water closet, which, following the illogic of developers, could be converted into four small bedrooms jutting into the rooms on either side, now designated as living rooms. A landlord could then opt to construct a secondary structure crammed at the far end of the backyard or extend the back of the building. As housing historian Richard Plunz has noted, "The practice of back building [led] to absurd results, such as the notorious Rookery on Mott Street. . . . Three parallel rows of housing were built on five small lots, with total street frontage of 90 feet. The inner and middle rows had only a foot of air space between them. The windows of one faced the brick wall of the other. The space between the outer and middle rows of housing was 6 feet wide, and filled with privies. In 1865 the Rookery housed 352 persons, at an extremely high density of 23 square feet per person."<sup>11</sup>

At the peak of this back building craze, floors often carried as many as 18 rooms organized like compartments on a train, hence the expression "railroad flats."<sup>12</sup> Only the two outermost rooms received daylight and some ventilation, if the building faced south. Otherwise, the interior rapidly lost effective illumination as one passed further into its recesses. In their compactness, tenement buildings staged an experience of rambling indeterminacy, a dense interiority wherein short distances could be folded into overwrought passages and sequences feeling much longer, even roomier.

This compression of interior space – enfilades of rooms behind rooms, dead-ending in yet more rooms – aroused the intrigue and disgust of reformers. The *World*, a Democratic newspaper, gave voice to this sentiment, declaring in print, "Of all the diabolical, horrid, atrocious, fiendish, and even hellish systems of money-making ever invented by the mind

Jacob Riis, Plan of a Type of the Competition in the Model Tenements. From *Battle with the Slum*, 19

13. Cited in Edwin G. Burrows and Wallace,  *Gotham: A History of New York City to 1898* (Oxford: Oxford University Press, 1999), 921.

14. Jacob Riis, *How the Other Half Lives: Studies Among the Tenements of New York* (New York: Penguin, 1997), 15.

15. Cited in Plunz, 15.

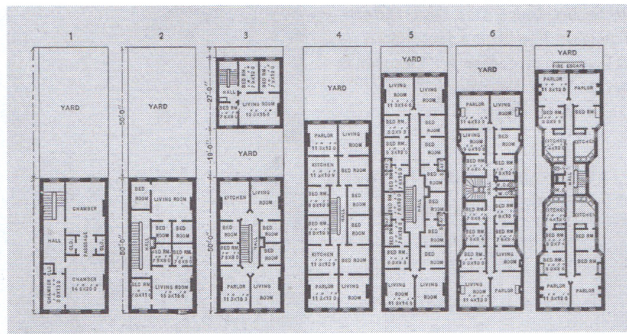
16. Riis, 67.

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Jacob Riis, Plan of a Typical Floor of the Competition in the C.O.S. Plans of Model Tenements. From Jacob Riis, *Battle with the Slum*, 1902.



- 13. Cited in Edwin G. Burrows and Mike Wallace, *Gotham: A History of New York City to 1898* (Oxford: Oxford University Press, 1999), 921.
- 14. Jacob Riis, *How the Other Half Lives: Studies Among the Tenements of New York* (New York: Penguin, 1997), 22.
- 15. Cited in Plunz, 15.
- 16. Riis, 67.

of man, the tenement-house system of [New York City], is the most horrible."<sup>13</sup> Jacob Riis, expressing a similar distaste, lamented, "Where have they gone to, the old inhabitants? . . . They are not here. In their place has come this queer conglomerate mass of heterogeneous elements."<sup>14</sup> In these mannered tirades, indices of identity, such as race and ethnicity, undergo a double merger, first melding into monolithic and reductive ethnic blocks, and then into the faceless, foreign "hordes," swarming beyond the limits of humanness. In this operation, the tenement residents were at once internally unassimilable – "heterogeneous" – and externally ungovernable – homogenous; they became, as a journalist for the *New York Daily Tribune* wrote in 1882, "a class by themselves."<sup>15</sup> The obscene closeness of the residents to one another engendered this threatening, alien – "queer" – class of inhabitants.

The architecture of these mangled labyrinthine spaces made such species reclassifications easier, and confounded reformist efforts to regulate the conditions of tenement housing. The redundancy of walls, the scarcity of windows, and the tangling of passageways obstructed the reformists' project to assess the nature and scope of the overcrowding and determine tenement resident populations. In one notoriously packed tenement district, "the Bend," Riis observed, "The sanitary reformer gives up the task [of counting] in despair. Of its vast homeless crowds, the census takes no account. It is their instinct to shun the light, and they cannot be corralled in one place long enough to be counted."<sup>16</sup> Riis gives an account of one officer's attempt to gather evidence of illegal overcrowding:

*The doors are opened unwillingly enough. . . . In a room not thirteen feet either way slept twelve men and women, two or three in bunks set in a sort of alcove, the rest on the floor. A kerosene lamp burned dimly in the fearful atmosphere, probably to guide other and*

Jacob Riis, *Lodgers in a Bayard Street Tenement, Five Cents a Spot*, 1889.  
© Museum of Modern Art. Licensed by Art Resource, New York.



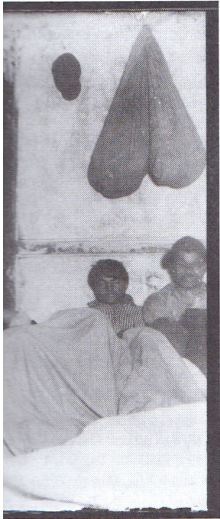
later arrivals to their “beds”, for it was only just past midnight. A baby’s fretful wail came from an adjoining hall-room, where, in the semi-darkness, three recumbent figures could be made out. The “apartment” was one of three in two adjoining buildings we had found, within half an hour, similarly crowded. Most of the men were lodgers, who slept there for five cents a spot.<sup>17</sup>

17. Ibid.  
18. Ibid. Emphasis added.

The reformist gaze failed to identify architecture as the reason for this difficulty amidst the dimmed interiors. The counters, wielding the authoritative power of illumination and measurement, produced only muddled results: “in a room *not* thirteen feet either way,” “two or three bunks,” “a sort of alcove,” a lamp “*probably* to guide” latecomers.<sup>18</sup> Looking for precise figures, Riis and his attendant reformists found a tenebrous jumble of objects, indeterminate in number, function, role, position, as well as proportion and scale. The architectural closeness bred uncertainty and overwhelmed the tools used by Riis and the other statisticians. The conditions these residents were embedded within, along with their belongings – the hanging blankets, bundles of clothing, and dish racks – all confounded the means by which the state formulates and addresses its subjects spatially. Unlike the willful surrender necessary for Grandin’s chute, the residents’ agency arose in spite of their entanglement.

A mattress, raised on lumber crossbeams, sags under the load of two bodies, one feet first, soles, instead of face, facing the camera, a hand elevated mid-gesture. Another man sits upright next to him. The mattress peeks out below its upholding frame, warping up and around the resting bodies. The

19. Bjarke Ingels, “Bjarke Ingels’ Human Zoo in Denmark,” *Icon*, Decen 3, 2015, <https://www.iconeye.com/architecture/features/item/1-bjarke-ingels-s-human-zoo-in-denmark>  
20. Ibid.  
21. Ibid.



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room hosts other kinds and degrees of holding. The wooden shelves to the left, secured to the wall, keep the men’s various bowls, dishes, and other vessels together, stacked and accessible for use. To the other side, sagging blanket bundles hang from some fastener out of view.

In this photograph, taken by Riis in 1889 and titled *Lodgers in a Bayard Street Tenement, Five Cents a Spot*, the untidiness of the nest and the infolding of tired residents and their personal effects make visible the impossibility of the indexical objectives of both photography and counting. Closeness, while intensifying conditions of discomfort and struggle, is also that which, here, obstructs the state’s attempt to define and identify governable subjects. The intrusive photograph, rather than laying bare, with a kind of natural facticity, the brutalized, unbearable, and irreducible lives of these laborers, exposes the vulnerability of these indexical tools even when wielded by sympathetic hands.

### Squeeze Pod

A mirrored orb is pictured hovering over a swath of tall grass. From the exterior, no signs of presence can ensure the pod’s occupancy. From within the orb, one might catch a glimpse of one of the token exotic creatures from the virtual menagerie curated by the Bjarke Ingels Group for Zootopia, their 2014 proposal for a head-to-toe remodel of a zoo in Givskud, Denmark.

In the renderings circulated by the firm, enclosures make no or impossibly slight appearances. Ingels expounded his vision in *Icon*, stating, “The job was to create a zoo that was designed on the animals’ terms, and . . . undo the visual evidence that you are in a manmade environment full of walls, fences, moats and small caretaker buildings.”<sup>19</sup> To this end, all exclusively human affairs are gathered in a sunken central common – “the arrival crater” – encircled by a swath of fabricated wild. The concentricity of the plan regurgitates the radial composition of one of the earliest proto-zoos, the Versailles Menagerie, designed by Louis Le Vau in 1664. But here the center sinks below grade, buffeted on all sides by embankments that house service and other auxiliary programs. The landmasses tilt, blocking panoramic surveillance outward and challenging viewers’ expectations for visibility. The surrounding park is unveiled gradually, as one embarks from the plaza and enters into the neo-Jurassic terrain.

The project’s diagrammatic axons, in typical BIG style, present paths labeled “hikes,” branching from the central

19. Bjarke Ingels, “Bjarke Ingels’ human zoo in Denmark,” *Icon*, December 3, 2015, <https://www.iconeye.com/architecture/features/item/11665-bjarke-ingels-s-human-zoo-in-denmark>.  
20. *Ibid.*  
21. *Ibid.*

BIG, proposal for Zootopia, viewers observe roaming animals from inside various pods, 2014.



BIG, Zootopia, arrival entrances into the l

plaza into the surrounding “wilderness.” Though Ingels cited the Dutch pastime of biking as the inspiration for the circulation plan, the hikes do not appear in the renderings as paths inscribed on the earth’s surface by human footfall or tire treads.<sup>20</sup> In place of worn grooves, levitating pods with seamless mirrored coating carry visitors along guided circuitry, populating the gentle curves of generic grasslands. Hovering just above ground level, they leave no trace.

The quadrants that compose the zoo’s grounds swell the abstracted biozones to new heights of generality. The taglines for these “loops” or megaregions (based on continents) have the imploring yet flat pitch of vacation packages sold to the bored population of the global north: “Sailing through Asia,” “Bicycling in Africa,” “Flying through America.” The pods drift through these supposedly distinct zones, along supposedly marked paths. Traditional zoo barriers (cages, berms, glass curtains) are reduced to a human-scaled sphere with an impenetrable surface, invisible from the interior, that promises immersion without intimacy, nearness without touch.

The integration of containment systems and the use of individually operated pods sell the project as a win for active, wholesome engagement with that endangered and hot commodity, *nature*. Ingels notes with curt satisfaction, “It’s not like you are just being dumped on a train – you actually move around autonomously within certain guidelines.”<sup>21</sup> A vague notion of autonomy underlies BIG’s maxim: “To ensure an interesting experience [zoo visitors] need to be more than just the passive [consumers] of a premeditated experience”; in the private interior of the pod, Zootopia “becomes a more individual experience.”<sup>22</sup> Like the consensual closeness of the squeeze chute, the Zootopia pods are meant to entertain an individually initiated proximity to otherness, in this case not to mechanized prosthetic matter but to groups of “wild”

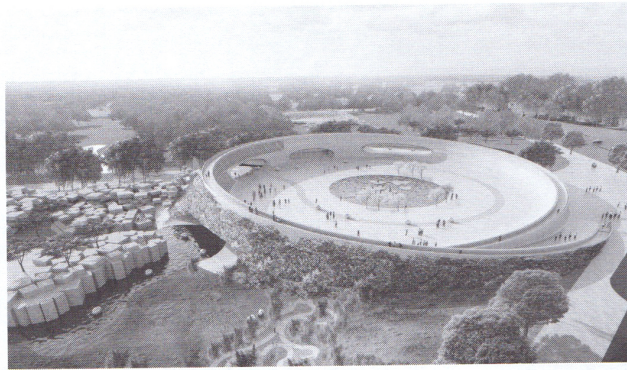
22. Ibid.

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BIG, Zootopia, arrival crater with its three entrances into the landscape, 2014.



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animals. While the pods enable a performance of agency for inhabitants, they dictate their entire experience – when to approach, hesitate, and withdraw. From the outset, the pods prevent visitors from overstepping into something wilder, from being touched and touching in boundary-defying ways. To be squeezed within the pod is to hover within the confines of acceptable closeness without ever traversing into alterity with architectural or animalian matter.

If we dissociate wilderness from BIG’s branding of terrain, of unpopulated, exotic expanses of nature, “wild” might come to designate the space for encounters with nonhuman others that destabilize human subjects and their tributaries of touch, their channels of relating. The squeeze chute and the tenements, through different models of inhabitation and agency, conjure wilds of a very different nature, wilds that rub against the the logistical worlds designed for normative subjects. Within the chute, autists give up personal space, the kind codified in the pod, and in return receive comfort. The sheer density that resulted from early speculative development defied attempts to index and subjectify resident populations. These squeezes dispense with the features of the contrived wilds in Zootopia, its roaming mobility hinged on a free-market conception of free will. Whether consensual or the outcome of structural conditions, these architectures of closeness stage a kind of living defined by its illegibility, along with the serious existential risks and pleasures therein.

Stratton Coffman is a Master of Architecture candidate at the Massachusetts Institute of Technology.