GYMNASTICS AND THE PHILOSOPHY OF ANTI-PLANETARY PRACTICE

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ABSTRACT: This is a paper about gymnastics and a primordial form of geological knowledge. It pursues an interpretation of gymnastics, broadly defined, as a philosophy that interrogates what the Earth is. The goal is to reconstruct the epistemic implications of gymnastic practice in order to understand the evolution of animal motility as a prototypical form of geological knowledge. Since gravity is a global medium through which planets act on their creatures, vectors that are diametrically opposed to Earth's exertion of gravity contain an epistemic quality. Vertical movements test what the Earth is by opposing it, forming what might accurately be called a negative geology in contrast to the positive knowledge created by the Earth sciences. By reconstructing the imaginative geography at the root of the gymnast's anti-planetary practice, a whole range of other human and animal behaviors are brought into the fold of a single struggle against the Earth which comprises an ongoing process of discovery.

KEYWORDS: Planetarity; Friedrich Nietzsche; Spirit of gravity; Biological autonomy; Posture

INTRODUCTION

Let a gymnast be someone who applies their body in a deliberate effort against the Earth's gravity. The foundation of their effort is an obsessive fixation that contains a well-hidden secret. Under analysis, the gymnast's essential obsession opens onto a wider realm of behaviors because the gymnast is someone who struggles with moving freely against the Earth. The gymnast's worldview is a kind of Earth-encompassing 'imaginative geography'[1] created by deliberate

[1] A term that is first used by Edward W. Said throughout his exposition of the workings of European orientalism. Edward W. Said, *Orientalism*, London, Routledge/Kegan Paul Ltd, 1978. In general, an imaginative geography can be taken to refer to how specific spaces and places are produced through the

abstraction; held by no one in particular yet there to be discovered in the concrete practices of gymnasts via careful examination. Upon discovery, it turns out that gymnastics is a way of responding to the Earth or even a genre of applied geological knowledge. Gymnastics is an anti-planetary practice.

The topic of this paper is to explain what this means. By delving into and reconstructing gymnastic thought, I hope to take it to its conclusion, not necessarily to subject it to moral judgment but as a means to uncover the problem that sustains it. It can be said that my interest in gymnastics is methodological. Specifically, I wager that the gymnasts' imagination is one response to the problem of moving on Earth such that the problem itself can be illuminated by working backwards from a single solution.

Over the last two decades the massive success of the Anthropocene concept has allowed humanities scholars to view humans as part of the Earth but there is still room to connect 'inward' looking ecological theory and 'outward' looking perspectives on 'Earth as planet' as Valerie Olson and Lisa Messeri put it.[2] The proliferation of what might be called a geological self-understanding could also be expanded to a wider range of dispositions that treat the Earth outside the remit of geology and ecology[3][4] – some of which may even go beyond conceptual knowledge altogether. Meditating on gymnastics will enable me to tell a proto-epistemic story about how animal life finds itself disposed toward its planetary context in virtue of physiology and mechanics.

One way to understand gymnasts' imagination is to consider the heuristics they apply to reach their goals: It is not uncommon to hear of people frequenting gyms to activate movement patterns that are supposedly natural. You might have

concrete imaginaries and practices of a social group – often with direct consequences for those who live there. See also Derek Gregory, 'Imaginative geographies', *Progress in Human Geography*, vol. 19, no. 4, 1995, pp. 447-85.

[2] Valerie Olson and Lisa Messeri, 'Beyond the Anthropocene: Un-Earthing an Epoch', *Environment and Society*, vol. 6, 2015, p. 36.

[3] For instance, Kathryn Yusoff draws attention to the different temporalities and scales that must intersect to think life and Earth: 'thinking these two things together requires a multiple ontology that can hold contradicting states, temporalities, and 'bodies' of matter together while recognizing their differentiated spacing in the constitution of time' Kathryn Yusoff, 'Anthropogenesis: Origins and Endings in the Anthropocene', *Theory, Culture & Society*, vol. 33, no. 2, 2016, p. 21.

[4] Eva, Lövbrand, Silke Beck, Jason Chilvers, Tim Forsyth, Johan Hedrén, Mike Hulme, Rolf Lidskog and Eleftheria Vasileiadou. 'Who Speaks for the Future of Earth? How Critical Social Science Can Extend the Conversation on the Anthropocene', *Global Environmental Change*, vol. *3*, 2015, pp. 211-18.

heard them either refer to some distant, vaguely apelike, ancestor that used to swing in trees or else appeal to a 'functional' training modality. Philosophers will quickly dismiss the former as an informal fallacy, seeing the gymnast is appealing to nature by vainly wanting to return to a lost past where 'we' swung from canopy to canopy. The latter case is equally hopeless since a function without a defined end is no function at all. When combined, however, the gymnast's two mistakes amount to an atavistic wish to restore a set of capabilities alleged to have been lost in the course of the evolution of the human lineage. This atavistic desire is the key to reconstructing the goals of gymnastic theory and practice. The philosophical core of gymnastics is not an appeal to nature but a direct response to the fact of living on Earth *qua* planet.

Gymnasts' desire to restore the past follows from their recognition that the forces that act on the human body have changed due to the unrelenting march of cultural and technological history. These forces appear to have become overwhelming if not outright unnatural, diminishing human freedom by literally dragging us down toward the Earth below. It is by connecting their struggle to the modern condition that the gymnasts' invocation of a lost past can be unmasked as a particular episode in a long history of learning by escape that spans from animal life's first discovery of the planet to its initial breach of the Kármán line[5] that separates Earth from space and beyond.

The course of the paper can be outlined via the following five points:

1) What is the historical context of the gymnasts' struggle – what sort of freedom do they seek? The answer is contained in the concept of posture, understood broadly as a kinematic index of how the body is disposed toward its environment. Put briefly, gymnasts seek to improve their own posture.
2) If a gymnast responds to a spirit of gravity this is to say that they respond to their planet *qua* planet. The Earth is the opposing force that constitutes the gymnast's historical struggle. The history of human posture must be understood in the historical context of life's tendency to assert itself against the Earth. The gymnast tries to restore a type of posture that has been lost.

[5] The line is defined at 100 kilometres above mean sea level and named after the Hungarian-American mathematician and engineer Theodore von Kármán.

3) Their method is a special type of philosophical life that accords to nature, but since nature contains many things the gymnast elects to understand what is natural as the anti-terrestrial trend. They engage in an empiricist program that is intended to force their body to adapt in response to repeated trauma in the hope of increasing freedom.
4) It can thus be said that the context of the gymnasts' imagination is an instance of calibrating freedom as a product of environment and body. The gymnast poses a conservative, even atavistic solution rooted in a lost past. It is not too far-fetched to say that the gymnast's dream of recreating a past lifestyle is an ontogenetic and cultural recapitulation of the cetacean return to the sea.
5) There is an entire field of freedom-from-the-planet that can be used to interpret a wide array of animal interactions. This idea may have little to no biological utility, but that is because it does not belong to the study of life-on-its-own-terms. It is a geographical term of art that belongs to the study of life-in-relation. The idea can even be extended to technological modifications of the environment. In the final analysis, the gymnast's imagination reveals a concept that enforces a radical immanence of high jumps to space flight, all belonging to a proto-epistemic interrogation of what the Earth is: a genre of negative geology antedating the positive knowledge created by the earth sciences.

AUTONOMY AND POSTURAL MODERNITY

There is an old idea in biology that evolution proceeds in a definitive direction. Although so-called 'orthogenesis'[6] is rooted in anthropocentric and religious ideas that wanted to place humans on top, it is hard to resist the idea that life forms have become more complex, diverse, or large over the billions of years life has existed on Earth.

Recent work in the philosophy of biology has revisited the concept of freedom, autonomy or self-legislation as a potential answer to the problem of apparent directionality in evolution.[7] For example, Bernd Rosslenbroich uses the

[6] Orthogenesis is a broadly neo-Lamarckian term coined by Wilhelm Haacke in 1893. Wilhelm Haacke, *Gestalt und Vererbung. Eine Entwickelungsmechanik der Organismen*, Leipzig, T.O. Weigel Nachfolger, 1893. See also Georgy S. Levit and Lennart Olsson.'Evolution on Rails: Mechanisms and Levels of Orthogenesis', Annals of the History and Philosophy of Biology, vol. 11, 2006, pp. 97-136 for a discussion of the concept's history.

[7] The concept of biological autonomy has complex origins that stretch back to second-order cybernetics and Humberto Maturana and Francisco Varela's work on autopoiesis such as Humberto R. Maturana and

term autonomy to describe an organism's emancipation from the environment in a way that includes a passive dimension like its physical isolation and an active dimension such as the flexibility of its behaviours.[8] Importantly, the concept of autonomy acknowledges that 'each organism is deeply embedded in the systems of its environment.'[9] But the depth of their embedding differs between organisms. They can be subject to 'physical and chemical influences that are more direct' or, alternatively, they can possess organs for interacting with the environment in ways 'that are more emancipated'.[10] Since organisms are dependent on acquiring nutrients from their environment, autonomy is always relative. Autonomy may describe how an organism interacts but since it is always dependent on a metabolic exchange to sustain itself, no organism can be wholly independent. Biological autonomy cannot be a question of freedom in an absolute sense, only about an ongoing negotiation between the organism and its environment that reaches a final equilibrium when the organism dies.

An organism's freedom is controlled by its 'organ[s] of autonomy'[11] which may have diverse functions such as membranes, sensory apparatus, circulatory systems, breathing organs, kidneys, nervous systems, and more ethereal tools like play, self-awareness, language, and empathy. Such specialized organs constitute and augment the autonomy of the organisms that possess them. From the perspective of autonomy, eyes are not really for seeing as an end in itself; instead, the function of sight is first of all to circumscribe organisms from their environments.[12] The concept of autonomy makes it possible to focus on what is negotiated in the interaction between a living being and its environment in a quantifiable and multidimensional manner. Autonomy can be subdivided along numerous axes, each with its own particular set of limits and navigable boundaries. Different needs, like procreation, ingestion of nutrients, and

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Francisco J. Varela, 1980, Autopoiesis and Cognition: The Realization of the Living, Dordrecht, Netherlands, D. Reidel Publishing Company. Another notable influence comes from developmental systems theory, for instance through the work of Susan Oyama. See Susan Oyama, *The ontogeny of information: developmental systems and evolution*, Durham, NC, Duke University Press, 2000.

[8] Bernd Rosslenbroich, *On the Origin of Autonomy: A New Look at the Major Transitions in Evolution*, Cham, Switzerland, Springer, 2014.

[9] Rosslenbroich. *On the Origin of Autonomy*, p. 37.

[10] Rosslenbroich. *On the Origin of Autonomy*, p. 37.

[11] Rosslenbroich. *On the Origin of Autonomy*, p. 120.

[12] Michael F. Land and Dan-Eric Nilsson, *Animal Eyes*, Oxford, UK: Oxford University Press, 2012.

excretion of waste products provide different constraints that can be navigated to increase or decrease autonomy. In the abstract, an 'environment' consists of multiple variables that an organism can interact with in pursuit of freedom, like a manifold of partially connected ladders that can be climbed up and down. An organism's position on a given ladder corresponds to its degree of autonomy in that distinctive dimension.

Because the concept of autonomy is multidimensional in at least two ways – encompassing both physical separation and behavioural flexibility, each of which has several dimensions – it is difficult to measure autonomy reliably. Questions like whether a coral is more autonomous than a sea slug cannot easily be answered.[13] Despite the difficulty of measuring autonomy, it is possible to suggest that the course of evolutionary history has pushed the frontiers of autonomy in the process of life's colonization of new environments. Comparisons are easier within a given dimension or as long as one keeps the comparison to a single environment or even focuses on an individual organism: Am I more or less mobile today than I was yesterday? Can I jump higher than my (great- great-…) grandparents? For how long can I move in water compared to a fish?

Alvaro Moreno and Matteo Mossio go so far as treating autonomy as the defining feature of living organisms, understanding the concept in terms of a 'closure of constraints'[14]. Basically, a constraint is understood with the image of a pipe that enables a stream of water to flow through it[15], which is to say as a condition that is not partaking in the process it supports. Organisms consist of more or less complicated closed networks of constraints that support each other and facilitate a degree of system-level independence from the caprice of the surrounding world. An organism must traverse its environment in search of objectives like nutrition to maintain and reproduce the closed circuit – a breakdown in the closure quickly leads to the death of the organism. In other

[13] Thomas Moynihan, 'Can Intelligence Escape its Terrestrial Past?: Anticipations of Existential Catastrophe & Existential Hope from Haldane to Ćirković.' *Cosmos and History: The Journal of Natural and Social Philosophy*, vol. 16, no. 1, 2020, pp. 71-101.

[14] Alvaro Moreno and Matteo Mossio, *Biological Autonomy*, Dordrecht: Springer, 2015. See also Maël Montévil and Matteo Mossio. 'Biological Organisation as Closure of Constraints', *Journal of Theoretical Biology*, vol. 372, 2015, pp. 179-91.

[15] Leonardo Bich, 'Organisational Teleology 2.0: Grounding Biological Purposiveness in Regulatory Control', *Ratio*, vol. 37, 2024, pp. 327-40.

words, an organism is alive as long as it can perpetuate the constraints that constitute it and control its interactions with the environment in a way that supports its conditions. The interactive dimension of autonomy is therefore an essential component of what it means for an organism to be alive. Life is a disposition to its outside. It is a vector of escape from that which it is not, even if, as we have seen, liberation can only be partial.

Posture is a peculiar aspect of autonomy which can be measured as robustness against deformation by the standard conditions of the environment. It involves a series of dimensions that describe the position of parts of a body relative to themselves under a set of parameters ('ladders') that have been defined as 'normal', which, in the human case, is usually understood to be the conditions that obtain on or close to the surface of the Earth (atmospheric composition and pressure, diurnal cycle, magnetic field, etc). Posture concerns how the body is disposed toward the outside: a difference in posture is a difference in how freely the body carries itself. As always when autonomy is concerned, it is difficult to directly compare the postures of anatomically disparate species, but one can make comparisons between closely related reproductive communities and, even more so, between members of the same species. It does not seem particularly absurd to propose that a species like *Homo sapiens* has a history of posture that could include one or more significant cultural transitions. The concept of posture has in fact been intimately connected to the question of hominization since 1764 when 'Louis Daubenton published a paper on "the position of the occipital foramen in humans and in animals"',[16] examining the unusual spatial arrangement of the human skull and spine. Since then it has become clear that the requirements of bipedal motion have affected many aspects of human physiology.[17]

To understand the gymnast's thinking, it is necessary to synthesize the grand scope of physiological factors with more recent factors within the history of

[16] André Leroi-Gourhan, *Gesture and Speech*, trans. A. Bostock Berger, Cambridge, MA: MIT Press, 1993, p. 7.

[17] Slobodan Sekulic, Jelena Podgorac, Goran Kekovic, Marija Zarkov and Aleksandar Kopitovic, 'Significance of Adequate Postural Control in the Appearance of Habitual Upright Bipedal Locomotion', *Med Hypotheses*, vol. 79, no. 5, 2012, pp. 564-71.

technology and culture so as to say something about the changing 'stature'[18] of the human being from physiological, kinematic, and other biomechanical perspectives. A history of this sort obviously risks serious whiggishness, as though it would proceed toward a divinely ordained goal. It cannot be assumed that all gymnasts escape the lure of teleology, but it can be remembered that the advent of new tendencies with a large-scale impact on posture do not eliminate preceding postural dispositions in the near term or at all. Reality harbors a multiplicity of postures. Although the average composition of mechanical forces acting on the human body has changed radically over the millennia, things are not so clear cut as to admit the image of a straight path. The advent of the agricultural lifestyle did not lead to the widespread elimination of hunter-gatherers until many millennia had passed. The first agricultural revolution is indeed a good example because it is likely to be one of the major moments in any tentative summary of the history of posture:

- The history of posture likely stretches backwards, beyond even the first appearance of hominins, itself an aftereffect of our ancestors leaving their arboreal abodes to lead the majority of their bipedal lives on solid ground. The latter was a precipitous event, creating a catastrophic acceleration in the evolution of behavioral flexibility by allowing the upright animal to use its forelimbs to manipulate tools rather than branches.[19] The same process led to a distinctive loss of strength in favor of endurance, facilitating the cultural developments that were to come. Hominins are not primarily characterized by their loss of climbing prowess but by the opening of the field of horizontal locomotion owing to a series of anatomical changes in the foot, forelimb, and neck. *This* would drive the cultural tendency to abandon arboreal lifestyles.
- Some 12,000 years ago the first agricultural revolution increasingly had human beings turn their eyes from the horizon toward the ground. The radically different way of life that was created by our self-domestication implied a proportionate transformation of the demands placed on the human body and therefore of its skeletal muscles and sinews.

[18] Hannah Arendt, 'The Conquest of Space and the Stature of Man', *The New Atlantis*, vol. 18, 2007, pp. 43-55.

[19] André Leroi-Gourhan notably theorized that the development of a highly integrated 'anterior field' constituted by the liberated forelimb and the sensory organs of the face precipitated tool use antedates the evolution of anthropic intelligence. See André Leroi-Gourhan, *Gesture and Speech*, p. 31-6.

- The simultaneous occurrences of the second agricultural revolution and its industrial counterpart since the 18th century radically transformed which forces act on the human body by attaching workers to their machines, subjecting them to standardized, repetitive movement patterns in extremely harsh conditions.
- Ongoing processes of deindustrialization have once again begun changing the composition of forces once again. The leisure class and the white-collar workers who find themselves continuously seated at their desks have given rise to a new range of postures. The rise of 'nerd necks' and slouching shoulders has only sped up since the pandemic of the early 2020s.

This very rudimentary summary suggests that the human animal is advancing toward a kind of *postural modernity* with an uncertain onset, which is more like a process than a state. Postural modernity is a key concept in the gymnast's imagination since posture is the mediation between the aspects of body and environment that gymnastics acts upon. Postural modernity encompasses the physical forces that bind the body in a certain way and the growing historical consciousness of posture as an aspect of being human. The fundamental contradiction of postural modernity is that it stands for an idiosyncratic set of values that privileges uprightness while creating a distribution of forces that increasingly bends the body forward and down toward the soil.

The process through which posture became a concern went hand in hand with a transformation of the bouquet of forces that act on the body to twist it this way or that. As a trend in the composition of mechanical forces that act on the human body, postural modernity is not evenly distributed and is by all means differentially applicable to any given human based on structural differences that include a range of social markers, with transitional compositions being the domain of only a select few. Postures are unevenly distributed among the population, and so is the prospect of taking one's posture in one's own hands. There is no denying that gymnastics, when taken to its extreme, is an essentially aristocratic project of self-transformation. Gymnastics should above all be understood in terms of a lived critique of postural modernity. It is a type of hyperfixation that aims to complete the modern condition by changing the physiological situation that constitutes it materially. The gymnast's imagination is formally modern because it is fixated on posture and materially postmodern

because it turns against the facts of the modern condition.

A historical discussion of posture cannot avoid addressing the legacy of racism and tropes like the noble savage (not to mention even more extreme racist tropes). The racism built into the understanding of posture is evident in the history of gymnastic philosophy and thought. Georges Hébert, a pioneer of physical education and one of the early visionaries of what would become known as *parkour* allegedly drew inspiration from the indigenous population of Martinique, perhaps thinking that Europeans had become decadent and lost their ability to move as freely as they once had.[20] The trope of noble savages – people uncorrupted by civilization – is as well-worn as it is simplistic. There can be little doubt that it has colored many gymnasts' imagination even though nothing inherent about gymnastics concerns moving closer to primitive 'nature' in any general sense.

Because the rise of modern culture and the proliferation of increasingly complex technologies really have had uneven effects at a population level in terms of the forces that act on bodies different groups have faced different effects. Gymnasts, being essentially aristocratic figures, are primarily interested in liberating themselves in relation to the predominant forces of their lives and sometimes this means looking at others for inspiration. Doing so raises ethical questions that often go unanswered.

There is nothing that is inherently or objectively desirable about any one posture. In general, one desires a particular posture like one desires a long beard or a muscular physique (which is to say, arbitrarily) – attaching other qualities to any given posture is a philosophical mistake of a piece with defining 'apple' with reference to a single color. Posture can only be deemed 'good' within specific cultural contexts, which is to say extrinsically. So why and under what beliefs do modern gymnasts perceive postural modernity as a failure? What is the gymnast's deepest motivation for contesting the prevailing trend? Behind the anthropological curiosity that is the preference that some cultures and thinkers have had for certain postural configurations stands a more profound interpretation of the intrinsic nature of postural modernity as the latest phase of a total war of the animal body against the Earth.

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[20] David Thomson, 'Jump City: Parkour and the Traces', *South Atlantic Quarterly*, vol. 107, no. 2, 2008, p. 254.

LIFE AGAINST EARTH

Gymnastics is a direct reply to the material conditions of postural modernity and the distinctive 'spirit of gravity'[21] it stands for. It is along this recognizably Nietzschean philosophical route that Peter Sloterdijk has developed an analysis that places the gymnast as the archetypal model of human self-perfection and drive to improve.[22] However, Sloterdijk neglects the problem of posture and the significance of the gymnast's literal traversals of the vertical axis that runs perpendicular to the surface of the Earth. The foundation of the problem is forgotten for the sake of an extended examination of the metaphorical equation between higher and better that has come to mark philosophical thought and confound popular discourse. It is therefore worth revisiting the gravity-defying movements of gymnastics from the point of view of the fundamental situation that underwrites posture. This situation is nothing else than the planet Earth *as such*.

After all, what is a planet? Several philosophers have recently taken an interest in ways of talking about planets that come from astronomy.[23][24] A planet comes with many distinctive properties besides the mosaic of landscapes and ecosystems it contains. For example, there are relational properties like the duration it takes for it to orbit its local star and the amount of radiation it receives. There are also other absolute properties like its chemical composition, geodynamic status, and strength of its magnetic field. All of these properties set global pathways for any potential life that evolves on the planet. These constraints apply, in one form or another, to all of the planet's landscapes. Few, if any of them are more fundamental than the planet's mass.

A part of the basic definition of a planet is that it is a spheroid of aggregated matter that falls inward toward a center, and this definition implies that the gravitational influence of a planet is constitutive. A planet is not 'held together'

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[21] Friedrich W. Nietzsche, *Thus Spoke Zarathustra*, trans. A. Del Caro. Cambridge, UK, Cambridge University Press, 2006, p. 153.

[22] Peter Sloterdijk, *You Must Change Your Life: On Anthropotechnics*, trans. W. Hoban, Cambridge, UK, Polity Press, 2013.

[23] Lukáš Likavčan, 'Another Earth: An Astronomical Concept of the Planet for the Environmental Humanities', *Distinktion: Journal of Social Theory*, vol. 25, no. 1, 2024, pp. 17-36.

[24] Bronislaw Szerszynski, 'Planetary Alterity, Solar Cosmopolitics and the Parliament of Planets,' in C. Bonelli and A. Walford (eds.) *Environmental Alterities*, 2021, pp. 204-26.

by gravity in any direct sense. In truth, a planet *is* its influence on the force of gravity. It is a mass meaningfully acting on itself. This applies to the Earth too. Gravity is the medium of *planetarity*[25] and therefore the means by which the Earth holds itself together. And if, as it was for Marshall McLuhan, 'the medium is the message'[26], the gymnast is aware that gravity is simply the medium of planetarity. If a slow rebellion against the Earth's gravity is in the cards for life, it is clear that the condition of postural modernity – the bleeding edge of our embodied sensation of the planet – is tantamount to folding humanity's hand.

The failure of postural modernity to augment human autonomy on the planet appears especially monumental in light of how long the history of anti-planetary practice is. Life is an escape vector. As organisms increased in mass, complexity, and size over the past several billion years, while ascending farther and farther from depths of the oceans, life was destined to traverse a predetermined problem-gradient set by the Earth. Differently sized bodies came with different challenges since different forces predominated at different scales. Microorganisms and very small animals were less concerned with gravity than even the smallest vertebrate but instead, their locomotion was constrained by other factors like the effects of surface tension and the electrostatic force. As animals grew bigger and colonized new environments, some literally outgrew those forces, rendering them irrelevant as limiting factors on locomotion. Instead, the larger organisms came to cross another threshold, at which point the planet *as* planet took note of their presence. It did not easily let go.

The members of several phyla that managed to extricate themselves from the forces predominating at smaller scales discovered how thoroughly they are subjected to a tyrannical interaction between Earth's gravity, ground reaction forces, and Galileo's square-cube law. When we touch its surface, ground reaction forces are Earth's way of asserting itself or pushing back. These forces are then dissipated through the body. The planet pushes back and the animal's body has

[25] This term was first coined by Gayatri Chakravorty Spivak to distinguish the planet from the imaginaries of globalization. For Spivak, planetarity operates as a call to ethical responsibility through Earth's irreducible otherness ('I cannot offer a formulaic access to planetarity. No one can.') whereas the globe is hopelessly tied to its commodification. The term has since been taken up in the literature in other ways, but the emphasis on indirect access and difference remains unchanged. See Gayatri C. Spivak, 'Planetarity', in *Death of a Discipline*, New York, Columbia University Press, 2003, p. 78.

[26] Marshall McLuhan, *Understanding Media: The Extensions of Man*, Cambridge, MA, MIT Press, 1994, p. 7.

to be able to stand up to the forces it encounters from below. Of course, the magnitudes of these ground reaction forces are dependent on an animal's mass, and therefore, in practice, on its size. The square cube law poses an intractable problem in the battle with the spirit of gravity. A fundamental consequence of three-dimensional space, the square-cube law is formulated as the fact that the volume of a shape increases faster than its surface area whenever it undergoes a proportional growth in size.[27] What works at one size may not work at another, and soon after discovering the planet, animals came to encounter increasingly rigorous limitations that made sheer strength an untenable strategy for increasing their freedom from the Earth.

Large animals tend to become more complex because they have to. Animals scale allometrically, with scaffolding structures such as bone and cartilage increasing in mass faster than muscles because the alternative of symmetric scaling would rapidly lead to a structural breakdown or complete bondage to the surface of the lithosphere. Systems do not always scale indefinitely (in fact, few do) and a working solution at one size range may not transfer to another. Oxygen diffusion works for insects because they are small in an absolute sense, but larger animals like mammals require a dedicated transport system for aerating their bodies. A proportional hundred-foot giant would collapse under its own weight or would at the very least be immobile since the muscular volume required to move such an enormous body would be too heavy to support itself.

Strength, at least as far as humans are concerned, is normally understood as the product of the cross-sectional area of a working muscle and the degree of neuromuscular activation or the neurological connections that recruit muscle fibers to work. Were it not for the square-cube law and the strain created by long moment arms, it would have been likely that larger gymnasts would dominate elite competitions. But as it were, small-framed gymnasts are generally superior when it comes to relative strength compared to their taller colleagues. Being tall is generally bad for the vertical motions of climbing since common techniques rely on keeping one's centre of gravity close to the tree or cliff.[28] Since our battle

[27] Hence J. B. S. Haldane could explain why big animals do not resemble small animals. John B. S. Haldane, 'On Being the Right Size', *Harper's magazine*, vol. 152, 1926, pp. 424-27.

[28] Thomas S. Kraft, Vivek V. Venkataraman and Nathaniel J. Dominy, 'A Natural History of Human Tree Climbing', *Journal of Human Evolution*, vol. 71, 2014, pp. 105-18.

with the Earth is defined in terms that are relative to the gymnast's body, and powers of locomotion are size-specific, shorter gymnasts have a direct advantage because they require less muscle mass to move their bodies in both absolute and relative terms. They can negotiate with the tyranny of the square-cube law while the taller gymnast faces a less extreme version of the same bind as the giant: their total mass increases faster than the cross-sectional area of their muscles.

Some of the most accomplished anti-planetary practitioners can be found among competitive gymnasts. The framework of competition, with its need for formalized rules, does a remarkable job of measuring the efficacy of anti-planetary activity. At the highest level, men's and women's artistic gymnastics are governed by their respective codes of points[29] which are issued by the international governing body of gymnastics, the International Gymnastics Federation (FIG or *Fédération Internationale de Gymnastique*). The code of points governs which sort of elements have to be included in a routine and contains exhaustive tables describing and illustrating different elements for the purposes of scoring. Although it is by no means perfect, the Code of Points is effectively an attempt to rigorously describe what turning against the Earth means in practice, subject to intermittent revision and rarefaction.

For example, on the still rings in men's artistic gymnastics, a so-called 'cross' is considered a C-level strength element in the most recent Code.[30] To perform a cross, the gymnast lowers or raises himself into a cruciform position and holds it for at least two seconds on the still rings to perform a kind of automatic crucifixion of the human body on itself as if to mock the Earth. A more distinctive example can be found in women's artistic gymnastics, which by the early 1970s had gone from a ballet-inspired discipline to a far more acrobatic sport involving younger athletes and significantly higher risks.[31][32] In 1972, the Belarusian gymnast Olga

[29]The official Codes for each discipline can be found on FIG's website. Fédération Internationale de Gymnastique, *Rules*, available at: https://www.gymnastics.sport/site/rules/ (accessed June 7, 2025).

[30]Fédération Internationale de Gymnastique, *Men's Artistic Gymnastics Code of Points 2025-2028*, 2025, p. 67. The 2025-2028 Code of Points upgraded the skill from B-level to C-level.

[31] Natalie Barker-Ruchti, 'Ballerinas and Pixies: A Genealogy of the Changing Female Gymnastics Body', *The International Journal of the History of Sport*, vol. 26, no. 1, 2008, pp. 45–62.

[32] Georgia Cervin, 'Gymnasts Are Not Merely Circus Phenomena: Influences on the Development of Women's Artistic Gymnastics During the 1970s', *The International Journal of the History of Sport*, vol. 32, no. 16. 2015, pp. 1929–46.

Korbut came onto the Olympic stage to perform her routine on the uneven bars. A few seconds into her routine, Korbut swung upwards and came to stand on top of the high bar. Then she performed a backflip and grabbed the bar again – mid-flight – to proceed into a high-momentum swing to the lower bar. Nothing of the kind had ever been seen at that point, meaning that Korbut's innovation was not only received with standing ovations but also pushed the discipline in an increasingly acrobatic direction. The 'Korbut flip', as the move came to be called, was later prohibited as a part of a ban on standing on the high bar and removed from the code of points. Although one reason for its removal was its danger, another was a decision to emphasize pure swinging motions on the uneven bars, essentially turning the apparatus into a test of a narrower suite of capabilities – a lasting result of the Earth-defying style pioneered by Korbut and others in the early 1970s.

GYMNASTICS AS AN ANTI-PLANETARY PRACTICE

Even though the high-level movements recorded in the FIG's codes of points will never be performed by the vast majority of human beings, anti-planetary practices are available to most if not all. Anyone can be an anti-planetary aspirant. But how should the project of swinging from the trees like an ape be understood in the context of the very long history that has led to the mutual interpellation of the Earth and its life?

What first masked as an egregious appeal to nature – often seen as a philosophical sin of cardinal magnitude[33] – can be reimagined as a wish to act in line with the dictates of nature that is reminiscent of the Scythian sages and Cynic philosophers who ridiculed culture and advocated philosophical lives according to the natural world.[34] Gymnasts also practice a philosophy that lets them live in accordance with nature. The more philosophically minded among them seek to reverse the historical process of postural modernity that has made a deepening

[33] Compare Moore's account of the naturalistic fallacy as an illicit reduction of normative to natural content. Gerald E. Moore, *Principia Ethica: Revised Edition*, Cambridge, UK. Cambridge University Press, 1993.

[34] It is notable that the Athenians had their own preoccupation with the noble savage. The apocryphal letters of Anacharsis, a Scythian prince, are good examples that demonstrate the barbarian's role as a truth speaker (*parrhesiastes*). See James Romm, 'Dog Heads and Noble Savages', in R. Bracht Branham and M-O. Goulet-Cazé (eds.) *The Cynics: The Cynic Movement in Antiquity and Its Legacy*, Berkeley, University of California Press, 1996, pp. 121-135.

resignation to life in the dirt seem natural.

Acting in accordance with nature can mean any number of things. Nature contains many variables and acting in accordance with one can entail directly renouncing one or several others. Liberty and acquiescence to nature can only be defined in relation to a particular context. The gymnast's goal is to turn the human animal back to the bleeding edge of independence from the Earth that their phylum reached in the past, even if it is only done piecemeal, as a small refuge against postural modernity. If the trend toward postural autonomy from the planet peaked with our tree-dwelling ancestors, it has since turned and we are – by and large – creeping our way back to a state of relatively unfree movement. The gymnast responds by promising to transform the human being into an anti-planetary aspirant for the Earth to reckon with. Gymnastics – in the broad sense as opposition to the planet – is an area of research at the nexus of philosophy, geography and deep biological history.

Gymnasts can only pursue the highest freedom within the bounds of the constraints provided by the human body as it has evolved from its ancestral environment. They give themselves to a series of carefully calibrated exercises meant to build a body that is capable of increasing their degree of freedom relative to their environment. Any controlled upward motion is liberating. They play at self-making in the strictest imaginable way.

Animal bodies are malleable. They adapt to experiences. Gymnasts seek freedom by way of an uncompromising doctrine of empiricism, which they exercise by acquiring skills and constructing and reconstructing their bodies through implementing a programmatic approach to training. A training program is instituted as a dialogue between the body and the external world by a process of careful selection and rarefaction of encounters that engender specific adaptation, provided that adequate recovery takes place. A trainee can suspend themselves in all manner of apparatuses reminiscent of medieval instruments of torture to stimulate their skeletal muscles in the hope of increasing their size and learning to activate them correctly.

When it comes to learning motor skills, one of the fundamental principles says that the imposition of any given demand leads to a specific adaption – often called

the SAID principle.[35] An enormous number of our everyday activities depend on the fact that motor training works. We all take for granted that frequent jumping leads to higher jumps and that manipulating heavy weights increases the tractability of yet heavier weights. The reason behind these increases in performance can be traced to muscular and direct and indirect neurological adaptations. In a simplified scenario, an aspiring runner becomes faster over time through a combination of muscular hypertrophy, improved capacity to recruit relevant muscle groups efficiently, and conscious control over their gait. It is as if the body is the entrenchment of past stimuli, a palimpsest of markings on a textured slate.

A second indispensable principle of training is known as progressive overload.[36] Athletes progress by making their way through increasingly challenging exercises through one of several means, for example by increasing the weight of a lift, the number of repetitions or durations of a movement. It is also possible to move from a lighter variation of an exercise to one that is more challenging. Take the example of the front lever, an isometric hold that involves hanging chest-up from a horizontal bar or pair of rings with the body parallel to the ground: in training for a full front lever hold it is common that the athlete progresses through several regressed versions with reduced leverage, such as keeping the legs tucked or in a straddle position to allow muscles, tendons, and ligaments to adapt to the demands of the skill. In this way, the athlete finds a means to force specific adaptations by progressively increasing the strain that is placed on their body.

In practice, several additional variables need to be considered to create and implement a training program. Prime among these are the concepts of volume, intensity and frequency that must at all times be weighed against accumulating fatigue. Volume can be defined as 'the sum of work performed during a training session or phase'[37] such as a week. Volume, at least when it comes to strength training, is often straightforward to increase and decrease by adding or

[35]Matthew C. Morrissey, Everett A. Harman and Michael J. Johnson, 'Resistance Training Modes: Specificity and Effectiveness', *Medicine & Science in Sports & Exercise*, vol. 27, no. 5, 1995, pp. 648-60.

[36] William J. Kraemer, Nicholas A. Ratamess and Duncan N. French, 'Resistance Training for Health and Performance', *Current sports medicine reports*, vol. 1, no. 3, 2002, pp. 165-71.

[37] Tudor O. Bompa and Carlo Buzzichelli, *Periodization: Theory and Methodology of Training*, 6th ed., Champaign, IL, Human kinetics, 2019, p. 71.

subtracting the time under tension, the number of repetitions in a set, or the number of sets.

Intensity is the qualitative aspect of the work performed during a training session.[38] In strength training with free weights, intensity can easily be changed by varying the weight that is moved. For bodyweight athletes, intensity can instead be added or removed by manipulating leverages or performing progressions consisting of similar movements. Finally, frequency refers to the interval between training sessions. If volume is measured in work per week, frequency can be varied in order to aid recovery and allow for undulations of different intensities and volumes of work during an intraweekly training cycle.

Many strength training programs are focused on compound movements that utilize several muscle groups to move a weight through space. A load can either be external to the body, for example, a barbell, dumbbells or a cable machine or it can be created with the gymnast's body by careful manipulation of leverages, such as in variations of the push-up.[39] Even when it comes to manipulating external weights, many exercises involve moving weights directly against gravity, simulating the work that has to be performed in gymnastics (and in the case of bodyweight movements, being variations thereof). Irrespective of how the load is created, most complete strength training programs will include the following directions of movement to cover the majority of the skeletal musculature: Horizontal and vertical pull-type movements (e.g. row and pull-up), horizontal and vertical push-type movements (e.g. push-up and overhead press), squat-type movements (e.g. high bar squat) and hinge-type movements (e.g. deadlift). These basic patterns can be supplemented with various movements intended to isolate or prehabilitate specific muscles or muscle groups.

Like so many other craftspeople, gymnasts follow a path of ever-increasing specialization. Increasingly extreme rigors must be imposed on the body to enhance its capabilities once the novice period of rapid progress has been overcome. Every forward step is not only harder than the last but must be more

[38] Bompa and Buzzichelli. *Periodization*, p. 73.

[39] An example of a practical manual for bodyweight strength training is Steven Low's aptly named Overcoming Gravity which outlines the principles required for constructing an anti-planetary training program at a range of different levels of skill and physical preparedness. Steven Low, *Overcoming Gravity: A Systematic Approach to Gymnastics and Bodyweight Strength*, 2nd ed., Battle Ground Creative, 2016.

precisely guided as if taken on an ever-narrowing tightrope to the exclusion of other alternatives.

Having briefly considered some of the basic elements of training for everyday gymnastic performance, it is difficult to avoid concluding that the means at a gymnast's disposal are fundamentally associated with physical trauma. Although structural damage is no longer considered to be a primary factor for causing adaptations,[40] the point is that adaptation will almost invariably coincide with some degree of damage to the muscles that are worked. The fundamental principle of all physical conditioning entails that repeated violence forces tissue to gradually adapt to withstand more violence. Even in the best case, gymnasts are committed to a programmatic conduct of low-grade infliction of trauma onto themselves (which can lead to a veritable ethical morass when a training program is determined by a coach). In their desire to carve their way through postural modernity, trauma serves as the foundation of their anti-planetary practice.

APES AND WORMS

If trauma is the path to freedom, the gymnast's fundamental dictum holds that 'trauma is imposition'. Gymnasts' conduct involves a twofold imposition, a twofold trauma: first, the repeated practice of inflicting injury on the body to force it to adapt in a desired manner. This is covered by the fundamental principles of training. Things get weirder with respect to the second trauma, as the metaphorical power of 'verticality' returns from the abyss. Behind the iterative infliction of trauma without which there would be no programmatic training, there is a deeper imposition that puts the gymnast in direct contact with the history of life's struggle for freedom from the Earth. Gymnasts recapitulate old ways of life through their bodies' phenotypic plasticity.

There is no such thing as turning evolution backwards. Instead, gymnasts opt for a second best. They aim for a sort of re-enactment of the past in the present as a sort of poietic conduct. No one becomes an ape by performing pull-ups, but one can perhaps perceive a truly simian autonomy when looking at a skilled gymnast performing a high-level routine. A grandmother jokingly calling her

[40] Brad J. Schoenfeld, The Mechanisms of Muscle Hypertrophy and Their Application to Resistance Training, *The Journal of Strength & Conditioning Research*, vol. 24, no. 10, 2010, pp. 2857-2872.

tree-climbing grandchild a little monkey testifies to the same wish to re-enact the past. The child is never a crane and never a tortoise, but always something that belongs to their own evolutionary history, as though they recapitulate a select moment from a distant past. Birds are illegitimate models. The distinctively *intra*phyletic theory of recapitulation is therefore fundamentally different from the *inter*phyletic mimesis of, for example, some Chinese martial arts that borrow nominal inspiration from the movements of animals. (The gymnast's theory of recapitulation also has nothing to do with sayings that describe acting 'like' a bull in a china shop: the situations are irreconcilably different from the point of view of recapitulative or restorative conduct).

Anatomical constraints on conduct can only be partially overcome, which is why the proper approach is through the pre-history of the lineage. It is easier to become an ape than a bird, even though the practitioner must accept allometric modifications to the behavior they seek to recreate. The gymnast's theory of recapitulation pertains to the rules and principles according to which one might tap into the past. One will never literally crawl like a worm or climb in the trees like an early primatomorph. In recapitulating forms from the past, the word 'form' has a particular double meaning. In one sense, the object of recapitulation is the capacities that belonged to a physiologically 'archived' species from which the gymnast has already diverged to a more or less significant extent. As Michel Serres put it, gymnastics 'is a practice for going back in time'.[41] Thus, in restoring the tree-climbing prowess of an imagined ancestor, there is a reference to a set of physiological adaptations or 'forms' that can be approximated but never truly recreated as facsimiles due to evolved constraints, such as the loss of grasping feet and prehensile tails.

Closer to us, it is difficult to ascertain how our early hominin ancestors led their lives based on archaeological evidence. While it is clear that a horizontally focused lifestyle gradually became viable, it is not at all clear that its onset coincided with an abandonment of arboreal motion. The existence of highly proficient human climbers, particularly in present day hunter-gatherer societies, is proof of concept that none of the anatomical adaptations of the hominin lineage

[41] Michel Serres, *Genesis*, trans. G. James and J. Nielson. Ann Arbor: University of Michigan Press, 1995, p. 35.

have been truly detrimental to spending significant time climbing and perching in trees. It is practically impossible to determine at what point in time our ancestors abandoned the trees on a large scale.[42] Because the physiological capacity for ontogenetic adaptations to tree climbing has not been lost, postural modernity is an inherently cultural process. In their attempt to revoke it in practice, gymnasts rely on the falsity of the 'arboreal-terrestrial'[43] dichotomy. How 'deep' into time their target form can be found is an open question that accepts a continuity of answers.

But in another sense, there is the 'formal' means of implementing these references to the past. Here, form is used as it is understood in martial arts, dance and other physical disciplines including men's and women's artistic gymnastics, as a determinate postural relationship between the body's different parts and the surface of the Earth. Through careful practice, the athlete's body is held in a designated static or dynamic position or sequence of positions corresponding to a conceptual rule that, in the case of competitive gymnasts, is taken directly from a code of points. The relationship between the two senses of form is that the first is realized in the second on terms that are anatomically possible for a given human body. ('Which movement complex is most apelike?')[44] Practicing these forms is the best that can be done when it comes to facilitating greater liberty than what most humans have today. Form recapitulates moments of phylogenetic history. Nietzsche's Zarathustra puts this point quite well when he tells the people at the edge of the forest that 'You have evolved from worm to man, but much within you is still worm. Once you were apes, yet even now man is more of an ape than any of the apes'.[45] In contrast to Zarathustra for whom the people are apes because they would rather return to animals than overcome their humanity, the gymnast sees striving toward an ancestral form as the appropriate method for passing through postural modernity. The gymnast inverts the meaning of the prophet's denouncement and celebrates a propitious moment in the past as the

[42] George H. Perry and Nathaniel J. Dominy, 'Evolution of the Human Pygmy Phenotype', *Trends in Ecology & Evolution*, vol. 24, no. 4, 2009, pp. 218-25.

[43] Kraft, Venkataraman and Dominy, 'A Natural History of Human Tree Climbing', pp. 105-18.

[44] Since hominins were never chimpanzees, gymnasts must refer to common ancestors of humans and great apes. Any apeward becoming is a turn of phrase rather than an accurate representation of the gymnast's goals.

[45] Nietzsche, *Thus Spoke Zarathustra*, p. 6.

way forward.

Their recapitulation of the past also occurs on two levels at once, each with its distinctive relationship to time: It happens on the level of the gymnast's body such that it has actually inherited the past in the form of a genome. It happens on the level of conduct such that the body is put on the task of mimicking the past. For the aspiring gymnast who has been drawn to the theory of recapitulation and wants to swing from the trees like their faraway ancestors, two pasts must be married, and therefore two sides of the present are to be conjugated in the quest to augment future freedom. The theory of recapitulation treats the essence of postural modernity as a tractable condition of failing to respond to the grand challenge posed by the terrestrial condition *as* terrestrial condition.

If the present exists as an echo of the past, the gymnast concludes that we currently live in a present dominated by a horizontal plane of self-locomotion. It is in this sense that postural modernity is an age of human worms – a recapitulation of a far more ancestral type of bilateria. On the philosophically minded gymnast's part, this is no derisory moral judgment but a reflection of the brute fact that everyman is a living sausage or worm in the terrestrial setting. Worms move perpendicular to gravity. They slide and crawl in general alignment with the strata of the Earth: in the water, through the soil, and at the very bottom of the atmosphere.

For the gymnast who is not like a worm, the goal is to recapitulate a slice of the past in the present to shape the future. The goal of the project can be rooted in philosophical speculations about an 'ancestral' memory that survives, functionally intact, through changes to the genome. Evolution is additive. This explains vestigial features which were salient in the past like furry coats, long tails, well-developed mammarian lines, and snarling throats. For some, these features can be the objects of real desires and re-enacted in the present even if only via detours.

Since organisms only exist by interacting with a nurturing environment, there is a sense in which genomes also preserve ancestral environments in a vital reversal of the phenomenon of fossilization.[46] Rather than remnants of an

[46] The early psychoanalyst Sándor Ferenczi refers to a '*perigenetic supplement*' as an environmental doubling of the law of recapitulation whereby past environments are retained in embryological development. For the gymnast, recapitulation could be theorized in terms that belong to a genetic memory in the fully developed

organism being imprinted on a sufficiently stable surface to be preserved for millions of years, traces of the environment are slowly and fortuitously inscribed in the viable offspring of the organisms that inhabit it. An animal's body does not simply respond to the environment, it also contains an imprint of its ancestors' environments: a dynamic-kinetic record of the world itself that is articulated in generic media such as fascia, cuticle, or bone – capable of supporting a range of postures on Earth.

Here, 'environment' is a catch-all term for the specific constraints that contribute to shaping an organism, which, naturally, includes the local power of a universal force like gravity. Tapping into ancestral memories is a way to redraw the circuit of constraints that is constitutive of human autonomy by simulating ancestor-environment complexes that are associated with different behaviours, appearances, or sets of capabilities. What enables this practice is essentially a thoroughgoing conviction that the human organism contains an imprint of its past which can be the object of atavistic desire and re-enactment.

Under these conditions of automatic archiving, the primary practical question is how anyone, in their absolute and rigorous determination by layers of intractable corporeal and environmental constraints (past and present) can transform themselves. The gymnastic appeal to the past amounts to searching for and recuperating images that allow the mind to engage in a conduct of freedom, so as to make the body stand in a relatively emancipated relationship to its gravitational environment that *is* the Earth. The basic plan of the therian body contains a determinate set of capacities for anti-planetary praxis. As the gymnast cannot literally turn into an ape or earlier primatomorph, their practice is a kind of live-action role-play of regression that relies on carefully curated encounters with weights, rings, pull-up bars, pommel horses and other instruments of training.

In order to recreate the past, the gymnast performs a philosophical trick to guide the activation of the body. Their desire to 'move like an ape' creates an image which, when pursued, is intended to give them liberty over themselves and power over the planet. They retrieve vertical mobility by appealing to a state of

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adult. Sándor Ferenczi, *Thalassa: A Theory of Genitality*, trans. H. A. Bunker. New York, W. W. Norton and Company, 1968, p. 47.

nature that has lost its actuality in the present, one that was characterized by the simian attributes that the gymnast desires. It is thus a conjugation of biomechanical principles, physiological know-how and philosophical motifs that guide gymnasts' transformations into an anti-planetary aspiration. Their appeals to the past are a means to enact what they understand as the purpose of deep anti-planetary history as it is recorded in the body.

The very, very long view of the deep history of what became the human species reveals a trend toward increasing freedom. Our ancestors worked upward, away from Earth's center of mass along a predetermined gradient of problems, shaping themselves to survive in new environments, each with its distinctive compositions of forces. Once the planet was encountered *as* gravity, it did not let go. The battle has continued for billions of years: first in the oceans and then in the significantly harsher (less buoyant) conditions on land. Over the past several million years, however, the most basic environmental variables that concern us have remained relatively fixed, but our freedom from planetarity appears to have diminished as a result of cultural evolution. We have regressed on the problem gradient ever since we set our feet on the ground. Human history has been the story of a downward trajectory in the sense that it has made us look down toward the ground. It is according to this assumption that the process of postural modernity is a time of human worms: a time that is maximally concerned with an upright posture while also being characterized by a large-scale resignation to the forces of the Earth. Gymnasts respond by carrying the concern for posture into the domain of practical philosophy. Acting on the belief that increasing freedom from the Earth is the natural goal of life, they aim to recreate the highest point of the long-term trend that postural modernity appears to have abandoned.

THE FREEDOM CALCULUS

Gymnastics belongs to a class of activities that augment life's autonomy from the planet. But there are in principle two strategies for changing the conditions for interactive autonomy (although they are not mutually exclusive). One can either change the body so that it gains leverage over the current environment, or one can move to an environment that is easier to traverse. In the context of anti-planetary practices, a meaningful change in the environment makes the effects of

Earth's gravity more or less significant. The interaction between a given organism and its environment in the historical struggle for liberty is a veritable calculus of freedom.

Any colonization of a new environment is a wager in the deep history of freedom. It is rarely known in advance if the new environment will provide the organism with the means for a more or less dignified life than the old did. The transition that brought animal life onto land meant that previously free bodies had to recreate the conditions for autonomous behavior in their new, dry and low-buoyancy surroundings. For example, the migration onto dry land was possible only because of the evolution of increasingly efficacious barriers against fluctuating levels of salinity and variable access to water. Before impermeable skins and increasingly advanced systems to regulate osmolarity (not to mention lungs!), animals were consigned to wander the swampy interstices between land and sea.

If a new environment seems unforgiving, one option, available on evolutionary time scales, is to attempt to reverse the transition and return to an ancestral environment. Wormlike bodies, so free in comparatively dense aquatic conditions, where they are effectively hidden from recognition by the Earth (buoyancy is anti-planetary camouflage), were initially relegated to crawling in the mud. The cetacean solution is an extraordinarily beautiful compromise that amounts to changing the rules of the game. Instead of continuing the fight against the new environment that weighed them down, the ancestors of modern whales, dolphins and porpoises eventually chose what might be considered the obvious alternative of diving headlong into the past and thereby selecting an ancestral form adapted to a high-buoyancy environment. A similarly regressive option was examined by Kurt Vonnegut in his example of a dolphinlike people in *Galápagos*[47]. In return for freedom of movement in the oceans, with relatively little regard for gravity, the size of Vonnegut's post-human descendants' brains diminished (as a byproduct of a literal streamlining of the skull) and, like whales, they lost the ability to traverse land in the manner of their immediate ancestors.

Of course, the ocean is a flawed guarantor of freedom, not only because it is an 'easier' environment than land. Many crustaceans and demersal fish like

[47] Kurt Vonnegut, *Galápagos*, Delacorte Press/Seymour Lawrence, 1985.

flounders live on and near the sea floor with almost two-dimensional bodies that are ill-suited for movement throughout the vertical range of the water column. As a result of their acquiescence to the ocean floor, these animals get to thrive in a niche that few of their 'higher-swimming' kin are adapted to excel in. It may not be better to be a salmon than a flounder or an ape than a worm, but each comes with their distinctive bundles of autonomy in their respective environments. The gymnasts' preference for land has a venerable history, extending at least to Anacharsis' lampoon of the sea-faring Greeks.[48]

Neither can gymnastics hope to truly solve the problem of the planet. Gymnasts are truly '*faithful to the earth*'[49] in its enmity. They do not believe those who peddle 'extraterrestrial hopes'.[50] The interminable struggle is *here*. Gymnastics only goes so far up the problem gradient that faces life on Earth. Earth's gravity poses a problem that so far can only be overcome by technology, even though insects and other creatures capable of flight have had some limited success where the air is sufficiently dense close above the uppermost reaches of the lithosphere. It is here that the heuristic value of seeing gymnastics as an anti-planetary practice becomes clear. The analysis serves to situate modern technologies of vertical mobility like flight and rocketry in the history of life's search for autonomy from the Earth. The International Space Station is a good case in point. It may even be supposed that gymnastics is a missing link between life's gradual reckoning with its planetary condition and modern anti-planetary technologies. Gymnastics, it can be said, is the highest point of anti-planetary conduct when it accepts the terrestrial condition as our lineage's terminal domain.

In contrast to gymnasts, engineers modify the environmental conditions that govern the game of autonomy, for instance by intervening in the effects that the Earth has on the human body or by outright removing human beings from their planetary constraints. The latter alternative amounts to a change of the conditions under which we can aspire to autonomy, much like what happened when our far-off ancestors made the transition from sea to land. Although the propulsion of human life higher into the higher reaches of the atmosphere and beyond may not have been the conscious idea behind technological innovation,

[48] Romm, 'Dog Heads and Noble Savages', pp. 130-1.
[49] Nietzsche, Thus Spoke Zarathustra, p. 6.
[50] Nietzsche, Thus Spoke Zarathustra, p. 6.

looking at the history of technology from the perspective of anti-planetary practice shows that technology achieves a completely new solution to the calculus of escape. Technological innovation marks the beginning of a break in the history of freedom from the planet that may also be of a comparable magnitude what happened during the ascent of animal life from the seas – including diminutions in other dimensions of autonomy.[51] Whereas the gymnast reaches for past images to complete postural modernity, the competent engineer steps sideways to change the rules of the game for a set that is more amenable to life's planet-defying ambitions. Even worms find freedom in the void. From this perspective, the present may be likened to the situation of ancient pelagic life forms that could neither swim freely in the oceans nor endure the dry conditions on land. As a technological process, postural modernity is a giant wager in the history of anti-planetary practice, one that gymnasts bet against.

Just like how Tom never stops chasing Jerry, gymnasts strive upward only to fall flat on the ground without any hope of success. No matter how strong and skilled they become relative to their bodies, or how adept they become at executing their movements, physiology comes with its real constraints that cannot be exceeded. Nevertheless, it must be said that gymnasts and engineers play the same game. Acrobats, *traceurs*, climbers, high jumpers, and pole dancers are, in essence, doing the same sort of thing that billionaire-sponsored attempts to reach escape velocity.

It is within the domain of anti-planetary practice that the gymnastic response to the planetary problem echoes the cetacean option because it aims to recreate a soon-to-be ancestral niche by adapting to and recuperating an ancient environment and the 'forms' that made it traversable. In contrast to the ancestors of whales, gymnasts are simply impatient. They want to reclaim their freedom now. Their battles against the planet transpire over the course of individual lives. If the environment, considered from the perspective of its density (etc), is fixed, the gymnast opens the archive in search of 'memories' of forgotten ways of life and behavioral complexes that would maximize autonomy in their present set of conditions. Under these circumstances, there can be no question of turning

[51] Katherine G. Sammler, 'Intimate Outer Space: Towards a Politics of Gravity, Waste, and the Spatial Orientation of Bodies', *GeoHumanities*, vol. 10, no. 1, 2024, pp. 171-91.

against what the gymnast sees as the archetype of postural modernity: the limbless, spineless worm. But with regard to their opposition to postural modernity, there is a risk that the analysis of the gymnast's imagination goes horribly wrong. It is all too easy to assume that they perceive freedom in moral terms, as the Good in its own right rather than as an epistemological problem to be investigated. When this mistake is allowed to take hold it will seem that their denunciation of postural modernity is primary whereas, in fact, it is simply their characteristic means to a proto-epistemic end. This mistake will render the essence of the gymnast's imagination into an appeal to nature that obscures what is done in the doing of the gymnast's deed. So what do gymnasts do? Simply, they interrogate the Earth.

It should come as no surprise that – here, at the heart of things – the figure of the tree-climbing ape, construed correctly as an epistemic figure or sage, makes for an attractive object for a gymnastic theory of practical recapitulation. According to the gymnast, making it to the other side of postural modernity can only mean rediscovering powers that have been overwritten by the accrual of years and generations; to make apes where there are only worms. Practicing gymnastics simply means to test these powers in opposition to a planet that would drag us all down by virtue of its constitution.

CONCLUSION: NEGATIVE GEOLOGY IS FIRST GEOLOGY

Reconstructing the gymnasts' imagination has opened a path to saying something about how life came to know the Earth. In the final analysis, the gymnast's moralistic cooptation of the freedom calculus gives way to a deeper proto-epistemological problem. By rendering the gymnast's imagination explicit, it has been possible to dig into what amounts to a secret history of how the Earth was first discovered and the multifarious ways it has been known since then. All that I have said in this paper belongs to a genre of apophatic or *negative geology*, wherein the Earth is not laid bare by objective knowledge as in the positive methods of the earth sciences but by way of active negation, as mechanical work against its mass. The Earth is the agonist of life. Negative geology naturally deserves to be called first geology because it antedates any positive understanding of what the Earth is. While secondary forms may have come to accompany first geology, its primacy will see no end so long as there is living movement on the Earth. If 'we can say that Earth itself has become conscious of its fate through

man', this is only a twist to the last portion of an old story.[52]

In an opaque note written near the end of his life, Maurice Merleau-Ponty introduced the term 'transcendental geology' to describe the '*Ur-Arche'* of a planet that touches itself.[53] What could better describe the biogeological freedom calculus than a transcendental field that is retroactively discovered by those to whom it applies? It is not, however, only that our planet creates knowledge about itself by self-differentiating. [54] It is more accurate to say that it creates the conditions under which it can be known negatively through opposed action. In this regard the Earth truly serves a transcendental role. It performs something like a Fichtean '*Tathandlung*'[55] or a self-enacting fact of pulling itself apart through its animals. Negative knowledge just is what is created in-between these animals' actions and the Earth's mass. This includes; *a fortiori*, various forms of anti-planetarity expressed in human culture. There is no need to enter into the sort of sociological explanations that show *why* gymnasts try to push through postural modernity – what matters is that they do. When the life-and-Earth historical view is taken into consideration, the aristocratic tinge of the gymnast's imagination fades and their atavistic urge starts to resemble a rodent's need to escape a housecat's prowls.

The neo-Ptolemaic placement of the Earth at the centre of these concerns in the position of an ultimate subject is merely intended to dehumanize the engine of the anti-planetary trend. The Earth knows nothing. Shrouded in mystique, it is an idiot and an enemy. The negative determination of its constitution follows from the need of life to survive: knowledge comes from the ongoing desperate search for new niches to inhabit. Knowledge is created via life's differentiation and proliferation through terrestrial space and only by necessity does the living sing the glory of their Earth.

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[52] Nicolay Fedorov, 'The Common Task' in R. Mackay and A. Avanessian (eds.) *#ACCELERATE" The Accelerationist Reader*, Falmouth Falmouth, UK/Berlin: Urbanomic/Merve, 2014, p. 86.

[53] Maurice Merleau-Ponty, *The Visible and the Invisible*, trans. A. Lingis, Evanston, Northwestern University Press, 1968, p. 258-9.

[54] Or 'self-othering' as Clark and Szerszynski put it. Nigel Clark and Bronislaw Szerszynski, 'What can a planet do?', *cultural geographies*, vol. 0, no. 0 (online first), 2025, p. 8.

[55] Johann Gottlieb Fichte, *Foundation of the Entire Wissenschaftslehre and Related Writings (1794–95)*, trans. D. Breazeale, Oxford, Oxford University Press, 2021, p. 200.

REFERENCES

Arendt, Hannah, 'The Conquest of Space and the Stature of Man', *The New Atlantis*, vol. 18, 2007, pp. 43-55.

Barker-Ruchti, Natalie, 'Ballerinas and Pixies: A Genealogy of the Changing Female Gymnastics Body', *The International Journal of the History of Sport*, vol. 26, no. 1, 2008, pp. 45–62.

Bompa, Tudor O. and Carlo Buzzichelli, *Periodization: Theory and Methodology of Training*, 6th ed., Champaign, IL, Human kinetics, 2019.

Bich, Leonardo, 'Organisational Teleology 2.0: Grounding Biological Purposiveness in Regulatory Control', *Ratio*, vol. 37, 2024, pp. 327-40.

Cervin, Georgia, 'Gymnasts Are Not Merely Circus Phenomena: Influences on the Development of Women's Artistic Gymnastics During the 1970s', *The International Journal of the History of Sport*, vol. 32, no. 16. 2015, pp. 1929–46.

Clark, Nigel and Bronislaw Szerszynski, 'What can a planet do?', *cultural geographies*, vol. 0, no. 0 (online first), 2025.

Fédération Internationale de Gymnastique, *Men's Artistic Gymnastics Code of Points 2025-2028*, 2025.

Fédération Internationale de Gymnastique, *Rules*, available at: https://www.gymnastics.sport/site/rules/ (accessed June 7, 2025).

Fedorov, Nicolay, 'The Common Task' in R. Mackay and A. Avanessian (eds.) *#ACCELERATE" The Accelerationist Reader*, Falmouth Falmouth, UK/Berlin: Urbanomic/Merve, 2014, pp. 83-90.

Ferenczi, Sándor, *Thalassa: A Theory of Genitality*, trans. H. A. Bunker. New York, W. W. Norton and Company, 196..

Fichte, Johann Gottlieb, *Foundation of the Entire Wissenschaftslehre and Related Writings (1794–95)*, trans. D. Breazeale, Oxford, Oxford University Press, 2021

Gregory, Derek, 'Imaginative geographies', *Progress in Human Geography*, vol. 19, no. 4, 1995, pp. 447-85.

Haacke, Wilhelm, *Gestalt und Vererbung. Eine Entwickelungsmechanik der Organismen*, Leipzig, T.O. Weigel Nachfolger, 1893.

Haldane, John B. S., 'On Being the Right Size', *Harper's magazine*, vol. 152, 1926, pp. 424-27.

Kraemer, William J., Nicholas A. Ratamess and Duncan N. French, 'Resistance Training for Health and Performance', *Current sports medicine reports*, vol. 1, no. 3, 2002, pp. 165-71.

Kraft, Thomas S., Vivek V. Venkataraman and Nathaniel J. Dominy, 'A Natural History of Human Tree Climbing', *Journal of Human Evolution*, vol. 71, 2014, pp. 105-18.

Land, Michael F. and Dan-Eric Nilsson, *Animal Eyes*, Oxford, UK: Oxford University Press, 2012.

Leroi-Gourhan, André, *Gesture and Speech*, trans. A. Bostock Berger, Cambridge, MA: MIT Press, 1993.

Levit, Georgy S. and Lennart Olsson.'Evolution on Rails: Mechanisms and Levels of Orthogenesis', Annals of the History and Philosophy of Biology, vol. 11, 2006, pp. 97-136.

Likavčan, Lukáš, 'Another Earth: An Astronomical Concept of the Planet for the Environmental Humanities', *Distinktion: Journal of Social Theory*, vol. 25, no. 1, 2024, pp. 17-36.

Low, Steven, *Overcoming Gravity: A Systematic Approach to Gymnastics and Bodyweight Strength*, 2nd ed., Battle Ground Creative, 2016.

Lövbrand, Eva, Silke Beck, Jason Chilvers, Tim Forsyth, Johan Hedrén, Mike Hulme, Rolf Lidskog and Eleftheria Vasileiadou. 'Who Speaks for the Future of Earth? How Critical Social Science Can Extend the Conversation on the Anthropocene', *Global* Environmental Change, vol. 3, 2015, pp. 211-18.

Maturana, Humberto R. and Francisco J. Varela, *Autopoiesis and Cognition: The Realization of the Living*, Dordrecht, Netherlands, D. Reidel Publishing Company, 1980.

McLuhan, Marshall *Understanding Media: The Extensions of Man*, Cambridge, MA, MIT Press, 1994.

Merleau-Ponty, Maurice, *The Visible and the Invisible*, trans. A. Lingis, Evanston, Northwestern University Press, 1968.

Montévil, Maël and Matteo Mossio. 'Biological Organisation as Closure of Constraints', *Journal of Theoretical Biology*, vol. 372, 2015, pp. 179-91

Moore, Gerald E., *Principia Ethica: Revised Edition*, Cambridge, UK. Cambridge University Press, 1993.

Moreno, Alvaro and Matteo Mossio, *Biological Autonomy*, Dordrecht: Springer, 2015.

Morrissey, Matthew C., Everett A. Harman and Michael J. Johnson, 'Resistance Training Modes: Specificity and Effectiveness', *Medicine & Science in Sports & Exercise*, vol. 27, no. 5, 1995, pp. 648-60.

Moynihan, Thomas, 'Can Intelligence Escape its Terrestrial Past?: Anticipations of Existential Catastrophe & Existential Hope from Haldane to Ćirković.' *Cosmos and History: The Journal of Natural and Social Philosophy*, vol. 16, no. 1, 2020, pp. 71-101.

Nietzsche, Friedrich W., *Thus Spoke Zarathustra*, trans. A. Del Caro. Cambridge, UK, Cambridge University Press, 2006.

Olson, Valerie and Lisa Messeri, 'Beyond the Anthropocene: Un-Earthing an

Epoch', *Environment and Society*, vol. 6, 2015, pp. 28-47

Oyama, Susan, *The ontogeny of information: developmental systems and evolution*, Durham, NC, Duke University Press, 2000.

Perry, George H. and Nathaniel J. Dominy, 'Evolution of the Human Pygmy Phenotype' *Trends in Ecology & Evolution*, vol. 24, no. 4, 2009, pp. 218-25.

Romm, James, 'Dog Heads and Noble Savages', in R. Bracht Branham and M-O. Goulet-Cazé (eds.) *The Cynics: The Cynic Movement in Antiquity and Its Legacy*, Berkeley, University of California Press, 1996, pp. 121-135.

Rosslenbroich, Bernd, On the Origin of Autonomy: A New Look at the Major Transitions in Evolution, Cham, Switzerland, Springer, 2014.

Said, Edward W., *Orientalism*, London, Routledge/Kegan Paul Ltd, 1978.

Sammler, Katherine G., 'Intimate Outer Space: Towards a Politics of Gravity, Waste, and the Spatial Orientation of Bodies', *GeoHumanities*, vol. 10, no. 1, 2024, pp. 171-91.

Schoenfeld, Brad J., The Mechanisms of Muscle Hypertrophy and Their Application to Resistance Training, *The Journal of Strength & Conditioning Research*, vol. 24, no. 10, 2010, pp. 2857-2872.

Sekulic, Slobodan, Jelena Podgorac, Goran Kekovic, Marija Zarkov and Aleksandar Kopitovic, 'Significance of Adequate Postural Control in the Appearance of Habitual Upright Bipedal Locomotion', *Med Hypotheses*, vol. 79, no. 5, 2012, pp. 564-71.

Serres, Michel, *Genesis*, trans. G. James and J. Nielson. Ann Arbor: University of Michigan Press, 1995.

Sloterdijk, Peter, *You Must Change Your Life: On Anthropotechnics*, trans. W. Hoban, Cambridge, UK, Polity Press, 2013.

Spivak, Gayatri C., 'Planetarity', in *Death of a Discipline*, New York, Columbia University Press, 2003.

Szerszynski, Bronislaw, 'Planetary Alterity, Solar Cosmopolitics and the Parliament of Planets,' in C. Bonelli and A. Walford (eds.) *Environmental Alterities*, 2021, pp. 204-26.

Thomson, David, 'Jump City: Parkour and the Traces', *South Atlantic Quarterly*, vol. 107, no. 2, 2008, pp. 251-63.

Vonnegut, Kurt, *Galápagos*, Delacorte Press/Seymour Lawrence, 1985.

Yusoff, Kathryn, 'Anthropogenesis: Origins and Endings in the Anthropocene', *Theory, Culture & Society*, vol. 33, no. 2, 2016, pp. 3-28.