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SENTIENT BODY

Re-liberation of Dissident Subjectivity through Skinship

ABSTRACT

By addressing the practice of contemporary scientific fieldwork through rereading Stanislaw Lem's *Solaris*, this essay investigates the ethical agency of skinship. It explores haptic experiences accompanying oceanographic research as a mode of cognition that addresses faults of distant observation mediated by vision machines (remotely operated deep-sea probes, animal-machine cyborgs, and sensors' networks). In Lem's novel, we find the situation of scientific failure that potentiates learning from undesired outcome through seeing and thinking with touch. This paper looks at Lem's intention to emphasise the importance of subjective experiences through Guattari's critique of "mythical scientific objectivity." In *Chaosmosis*, Guattari depicts the latter as a miasma, spreading the disease of subjectivity repression among thinkers. The Solarian ocean constitutes a cure to it in the form of "pathogenic psychic disturbance," reversing the separation of reason from the living body. More-than-human body-intelligence, which is

unexploitable and unable to participate in the labour of "civilized" communication, forces Lem's protagonist to proceed beyond the inherently exploitative research procedures of natural sciences. In *Solaris*, the situated and reversible experience of extreme proximity to nonhuman others appears crucial for the adequate interpretation of data and ensuring ethical use of scientific discoveries. Haptic contact opens up a surface of the scientist's body as a vulnerable *meat-canvas-sensual flesh* and inspires an appetite for connectedness with non-monetisable others. This story invites us to rethink immersive fieldwork practices traditionally aimed at extracting data to enable industrial progress. The paper looks at the subjective sensations, often undervalued by scientists, as the outcomes of liminal experience of skinship, which invokes empathy, and therefore, an ethical perspective.

KEY WORDS: ethics of care, ocean, touch, science fiction, critical environmental studies

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INTRODUCTION

We should not confuse sentience with consciousness; for the former is a far broader category than the latter. Organisms like trees, bacteria, and slime molds are probably not conscious; but they are demonstrably sentient, as they process information and respond to it in ways that are not stereotypically determined in advance.

—Steven Shaviro, *Discognition*

In *The Obsolescence of Man* (1956), reflecting on the emergence of automatic factories, Günther Anders anticipates the post-scarcity capitalism that allows elite workers to entrust their tasks to robots that *never fail*. Whereas, proletarians—“however much they want to work—wait in vain for the opportunity to be employed as *watchers*.”² This regime of non-participation imposed upon humans by industrial mass production today unfolds in various professional fields, including those creating knowledge and culture. Since Anders’ first attempt to predict the toxic effects of this phenomenon, advanced technologies have penetrated a vast range of activities—from sex work to scientific exploration. In literature, artificial neural networks take on the task of writing poetry. In healthcare, algorithms learn to smell cancer cells to enhance the efficiency of diagnostic procedures. In oceanography, autonomous sensors explore lifeforms that thrive in the deepest parts of the sea, without light and oxygen, and therefore, may be exploited as a renewable energy source if the sun goes out and oxygen disappears. In this and many other cases, it is evident that productive capacity, cost-effectiveness, and even quality of labour of the autonomous robotic systems, sensors and networks far surpass human aptitude. Rapid technological advancement and economic reasoning broaden the distance between researchers and the environment, especially its inhospitable parts. The nature perceived as a complex mesh of worn-out tissues and organs exists under constant remote monitoring—technologies are here to cure it and put at service again.

In oceanography, autonomous systems are used for various types of field research: robots and drones study migration routes of marine fauna, monitor water conditions and even investigate crimes that took place at sea. Cinebots³ disguised as turtles, tuna, puffer-fish, and squid successfully deceive other creatures into thinking they are authentic. Travelling alongside the colonies of dolphins and penguins, these machines discover and broadcast unknown patterns of their behaviour.⁴ Species-

² Günther Anders, *The Obsolescence of Man, Volume II: On the Destruction of Life in the Epoch of the Third Industrial Revolution*, January 6, 2015, *Libcom.org*, accessed October 10, 2021, <https://libcom.org/library/obsolescence-man-volume-2-g%C3%BCnther-anders>.

³ Robots with external cameras designed to produce images and video footage.

⁴ Ian Burrell, “First Penguincam, now Squidcam—and 13 other high-tech animals: BBC engineers create beasts to mimic and spy on sea creatures,” *The Independent*, September 23, 2013, <https://www.independent.co.uk/arts-entertainment/tv/news/first-penguincam-now-squidcam-and-13-other-high-tech-animals-bbc-engineers-create-beasts-to-mimic-8835455.html>.

specific tags attached to marine animals transmit data about water temperature and pH collected 6,500 feet below the sea level. Thousands of wearable sensors are being fixed on crab shells and fish scales “externally through skin anchoring, suction cups, glue, or through internal implantation,” while researchers are trying to figure out non-invasive ways to attach them.⁵ Miniature and almost transparent biohybrids made of mouth muscles of sea slugs and 3D-printed plastic skeletons search for underwater leaks of poisonous chemicals or flight data recorders.⁶ COVIS sonars⁷ monitor the turbulence of hydrothermal vents and generate three-dimensional images of hot fluxes.⁸ The remotely operated robotic mermaid Ocean One takes research samples inaccessible for human divers, proceeding with the exploration of coral reefs. The efficient use of these technologies in fieldwork might suggest that scientific reasons for using human divers are exhausted. Referring to the *Alvin* submarine, Stefan Helmreich argues that deep-sea research that used to involve students has transformed into a rare or even once-in-a-lifetime ritual of initiation through which alien ocean becomes intimate.⁹ According to this shift, *Alvin* already functions as a liminal space, a “mother whose womb births new scientists”¹⁰ rather than an instrument of scientific discovery. Probably very soon, these exciting but still risky routines¹¹ will be virtualized and finally handed over to robotic *vision machines* like many other procedures.¹²

Today, dozens of deep-sea probes, animal-machine cyborgs and networks of sensors provide uninterrupted data on marine ecosystems, significantly reducing research cost, increasing its veracity and transforming scientists into *watchers*. The latter’s soft bodies eventually tormented by the sitting disease remotely monitor and manage artificial organs, mostly eyes, less often ears, meticulously operating in alien realms. As Paul Virilio pointed out, in this transposition from subjective vision to objective visualisation, human sight is at risk of losing some of its natural velocity, sensitivity and responsiveness as a consequence of “fusion-confusion” of the eye, screen and remote camera lens.¹³ While Virilio is concerned with the degradation of

⁵ Ariella Simke, “Fish Wearing ‘Marine Skin’ Sensors Collect Information 6,500 Feet Below The Sea,” *Forbes*, March 5, 2020, <https://www.forbes.com/sites/ariellasimke/2020/03/05/fish-wearing-marine-skin-sensors-collect-information-6500-feet-below-the-sea/?sh=1cf6f963254a>.

⁶ Victoria Webster-Wood, “Biohybrid robots built from living tissue start to take shape,” *The Conversation*, August 9, 2016, <https://theconversation.com/biohybrid-robots-built-from-living-tissue-start-to-take-shape-62759>.

⁷ COVIS, or Cabled Observatory Vent Imaging Sonar, designed by the University of Washington Applied Physics Laboratory and Rutgers University Institute of Marine and Coastal Science.

⁸ Guangyu Xu, “Vehicle in the Vent Plume,” *Ocean Networks Canada*, June 4, 2014, <http://www.oceannetworks.ca/vehicle-vent-plume>.

⁹ Stefan Helmreich, *Alien Ocean: Anthropological Voyages in Microbial Seas* (Berkeley, Los Angeles, London: University of California Press, 2009), 228.

¹⁰ *Ibid.*, 231.

¹¹ For example, in 1967, during dive 202, *Alvin* was attacked by a swordfish whose nose stuck in the seams of the submarine.

¹² Paul Virilio, *The Vision Machine*, trans. Julie Rose (London: BFI Publishing, 1994), 8.

¹³ *Ibid.*, 13.

human sensory functions caused by the use of technologies, this paper attempts to analyse how the increasing distance between scientists and ecosystems affects the former's ability to empathise with nature and appreciate its creatures even if they seem useless for sustaining human well-being. To see beyond speciesist agenda focused on data that enables exploitation of nonhuman others as a source of economic growth, scientists face the necessity to overcome the separation between knowing and being-relating,¹⁴ and produce knowledge that does not “amputate the incommensurable” but calls for the recognition of nonhuman agents and appreciation of their specificity. As Karen Barad argues, such knowledge “does not come from standing at a distance and representing the world but rather from a direct material engagement with the world.”¹⁵ Thus, we face a paradox: the more intensively we use remote environmental research technologies, the more crucial the “rituals of initiation” become.

Robots, sensors and networks are mere instruments not bearing the weight of ethical decision making. As Adorno and Horkheimer put it, technology “aims to produce neither concepts nor images, nor the joy of understanding, but method, exploitation of the labour of others, capital.”¹⁶ The desire to know in order to manipulate still dominates scientific research. In oceanography, autonomous artificial systems are used to gain knowledge that translates into power—for example, deep-sea exploration enables mining enterprises that affect marine fauna. This situation calls for diversification of methods, including rehabilitation of the “cost-ineffective” field practices that involve human interaction with the environment. At the same time, it requires changes in attitude towards scientific *failures* that “allow the return of self-awareness of the thought.”¹⁷ Analysing the concept of scientific progress from the perspective of care ethics, this paper advocates for the return of subjective learning that results from *skinship*¹⁸ and contributes to extending the range of experiences rather than using just one mode of cognition.¹⁹

¹⁴ Maria Puig de la Bellacasa, *Matters of Care: Speculative Ethics in More Than Human Worlds* (Minneapolis, London: University of Minnesota Press, 2017), 114.

¹⁵ Karen Barad, *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (Durham: Duke University Press, 2007), 49.

¹⁶ Max Horkheimer and Theodor W. Adorno, *Dialectic of Enlightenment: Philosophical Fragments*, trans. Edmund Jephcott (Stanford: Stanford University Press, 2002), 2.

¹⁷ Ibid.

¹⁸ The term “skinship” is used to define a soothing touch as a form of communication common for mother-child relationships in Japanese families. In exploring touch as a social sense, Tiffany Field describes skinship as a process of constant physical contact through which a “child becomes identified as a member of a group.” In the current paper the experience of “skinship” is explored as a way of becoming kin to nonhuman others. Tiffany Field, *Touch* (Cambridge, London: The MIT Press, 2001), 20.

¹⁹ Puig de la Bellacasa, 113.

THE FANTASY OF SCIENTIFIC FAILURE

In 1961, the year of Yuri Gagarin's precarious spaceflight with a shark repellent among few supplies, Stanislaw Lem published a sci-fi novel in which the explorer's body is disregarded and reduced to a mere carrier of consciousness. In *Solaris*, a brilliant and fearless xenopsychologist²⁰ who finally reached the most mysterious planet in the universe after twelve years of remote research does not leave the station until the very last pages, when he ultimately decides to go outside not to explore, but *to acquaint* himself with the living ocean.²¹ By addressing the practice of contemporary scientific fieldwork through rereading *Solaris*, this essay examines the significance of skin-to-skin proximity to nonhuman lifeforms for inducing empathic response and desire to protect, i.e., setting the ground for the ethical use of scientific discoveries.

The plot of *Solaris* develops around a thriveless scientific mission aimed at discovering means of communication with the extraterrestrial intelligence light-years away from Earth. A liquid oscillating body of a solitary inhabitant envelops an entire planet like an ocean. Lem portrays this organism as the omnipresent and omnipotent *metamorph* engaged in the everlasting autotransformation by “generating extremely diverse formations” that resemble nothing ever seen on Earth.²² Some of these constructions are thought to be four-dimensional visualisations of unimaginably complex mathematical patterns far surpassing the achievements of human science.²³ However, the purpose of this plasmatic creativity remains obscure throughout 78 years of diligent experiments, sometimes involving up to a thousand participants and always the most sophisticated technologies. Over time, shifting from “irresistibly optimistic romanticism” of the early expeditions to *distress of failure*, the scientists label the ocean an “autistic” creature. It is unable to decipher communication cues coming from humans, and therefore appears worthless in terms of extracting knowledge.²⁴ The empirical evidence showed that the Solarian ocean is indifferent to any living matter, including humans, but over decades it proved itself to be neither aggressive nor ambitious:

It did not build cities or bridges, nor did it manufacture flying machines. It did not try to reduce distances, nor was it concerned with the conquest of space (the ultimate criterion, some people thought, of man's superiority) ... its plasmatic eddies would not swallow any but the most foolhardy explorer (not

²⁰ Xenopsychology studies of the psychologies of alien beings.

²¹ Stanislaw Lem, *Solaris*, trans. Joanna Kilmartin and Steve Cox (London: Faber and Faber, 2016), 212.

²² *Ibid.*, 23.

²³ Lem specifies that Solarian formations are “four-dimensional, for the fundamental terms of the equations use a temporal symbolism expressed in the internal changes over a given period.” *Ibid.*, 125.

²⁴ *Ibid.*, 25, 173.

including accidents resulting from mechanical failures)... the plasma [of the ocean] retreats at the speed of sound... to make way for any foreign body.²⁵

Eventually, these observations reoriented the scientists' and venturers' aspirations: if the ocean acts with no intention of violence, and therefore is utterly innocuous, there could be a way to exploit it as a planet-size power generator. After all, the Solarian ocean demonstrated extraordinary ability to originate vast amounts of energy required to maintain a stable orbit that ought to have been erratic due to the disruptive gravitational pull of two suns. Nevertheless, neither of the Solarist studies had helped earthlings to contrive a "viable method of tapping" into its energy.²⁶ All samples of plasma removed from the ocean in attempts to preserve, synthesise and exploit it as a source of power inevitably decomposed to the light metallic ash.²⁷

Gradually, "in scientific circles, the 'Solaris Affair' came to be regarded as a lost cause."²⁸ Perceiving the thinking ocean as an everlasting challenge to human genius, numerous scientists recommended an "honourable" withdrawal from the planet.²⁹ Later in the novel, through the eyes of the protagonist, Kris Kelvin, we see the "strangely deserted" Station, a "ghost ship," inhabited by two scientists—Sartorius, an astrophysicist, and Snow, a cyberneticist, both on the verge of a nervous breakdown.³⁰ The head of their research team Gibarian, Kris' mentor, committed suicide due to paranoid psychosis.³¹ The reason behind this collective despair reveals itself within the first two hours upon Kris' arrival—the crew has visitors, frighteningly believable copies of their dead relatives or lovers.

Kris' guest comes at dawn in the guise of his late wife, Rheya, who injected herself with a lethal dose of poison ten years ago when he left her. She looks and acts as the original except for several details. The skin on her feet is "soft, like that of a newborn child," as if it never was calloused by walking.³² There is no zip on her white beach dress, so she cannot get it off. Like other *phantoms*, the Solarian version of Rheya evinces an inexplicable compulsion to stay close to Kris, while his wife never "have forced her presence" on him.³³ She has no memories of her tragic death but recalls the name of Kris' friend, whom he first met three years after Rheya passed away.³⁴ She is unnaturally strong and practically immortal—her wounds heal with extraordinary rapidity. When Kris experiments with Rheya's biomaterials in the lab, her blood destroyed in a reaction with acid recreates itself "in the twinkling of an eye."³⁵

²⁵ Ibid., 24, 122.

²⁶ Ibid., 176.

²⁷ Ibid., 176-77.

²⁸ Ibid., 24.

²⁹ Ibid.

³⁰ Ibid., 131.

³¹ Ibid., 134.

³² Ibid., 49, 59.

³³ Ibid., 61.

³⁴ Ibid., 64.

³⁵ Ibid., 104.

Trying to get rid of fake Rheyra, Kris locks her in a rocket and sends her into the orbit. The next morning, a new replica deprived of any memories about this accident appears in his room. Trying to understand the nature of this phenomenon, Kris follows the cues left by Gibarian and discovers the report of André Berton, a pilot, who participated in a rescue mission many years ago. He witnessed the most bizarre manifestations of Solaris' plasmatic activity. Flying over the ocean in search of Fechner, a missing scientist, Berton saw a garden floating beneath the waves of transparent plasma—life-size trees, hedges, paths and beehives modelled from a substance resembling yellow plaster. His next discovery was an enormous child hovering above the ocean:

It was wet, or I should say glossy; its skin was shiny. I was shattered. I no longer thought it was a mirage. I could see this child so distinctly... It was more like a doll in a museum, only a living doll. It opened and closed its mouth, it made various gestures, horrible gestures... these movements had no meaning. They were performed one after another, like a series of exercises; as though someone had wanted to make a study of what this child was capable of doing with its hands, its torso, its mouth.³⁶

Anxious to preserve its authority, the scientific commission considered Berton's weird observations to be "hallucinations caused by atmospheric poisoning."³⁷ His report was regarded as a part of his "clinical history rather than that of the expedition itself."³⁸ Only one scientist had a dissenting opinion on this matter and later, according to his personal investigation and conversations with Berton, assumed that the phenomena described by the pilot were materialisations of Fechner's memories containing details of his childhood, in particular, "the topography of the place where he was brought up."³⁹ This hypothesis meant that the Solarian ocean could scan the human mind and use its findings as "a recipe or a blueprint."⁴⁰

Having discussed this idea with Snow, Kris realises that the ocean reads their minds when they sleep and discovers "psychic tumours," most traumatic memories or fantasies that resulted in guilt or shame, such as Rheyra's suicide. Then the ocean recreates people linked to these painful emotional experiences, revealing the ability to imitate complex organic tissues and fluids, such as skin, mucous membranes, saliva and blood. Examining Rheyra's blood under the microscope, Kris is impressed by the accuracy with which her erythrocytes mimic the molecular structure of human samples. However, in his studies beyond the molecular level, instead of a "quivering cloud of atoms," Kris finds nothing.⁴¹ This leads him to the only possible conclusion:

³⁶ Ibid., 87.

³⁷ Ibid., 89.

³⁸ Ibid., 42.

³⁹ Ibid., 91.

⁴⁰ Ibid., 77.

⁴¹ Ibid., 103.

“the albumen, the cell and the nucleus of the cell are nothing but camouflage.”⁴² Unlike any other matter, Rheya’s body is not made up of atoms. Kris guesses that it has a subatomic structure which he cannot see due to the limited resolution of the microscope. Thus, Kris assumes that her blood is made up of neutrinos, explosively unsteady particles requiring a strong magnetic field to hold them together.⁴³

As the story progresses, the protagonist finds himself falling in love with the Solarian version of Rheya. At the same time, her self-awareness progresses, and Snow’s assumption that the ocean created her as a tool for exploring Kris’ mind disturbs her. Unwilling to spy on her loved one Rheya attempts to commit suicide by drinking liquid oxygen, but does not succeed. “The longer it stays with you, the more human it becomes... And the longer that goes on, the more difficult it gets,”⁴⁴ warns Snow, but it is too late—after her sacrifice the alien Rheya surpasses the original in Kris’ eyes. He regrets the discovery he made: his guess about neutrinos leads Sartorius to the idea of an annihilator that can disturb the magnetic field and dissolve Rheya and other phantoms for good. While the protagonist treats the ocean and its creatures like human beings, Sartorius perceives them as monsters—his new mission is to “punish [the] ocean, hear it screaming out of all its mountains at once.”⁴⁵ Earlier in the story, Kris goes through his mentor’s notes and finds out that “visitors” began to appear after Gibarian, Sartorius and Snow exposed the oceanic plasma “to an intensive bombardment of X-rays,” even though a UN convention banned such inhumane experiments.⁴⁶ Kris understands that there is no way to stop Sartorius, as the latter proceeds with the neutrino annihilator and destroys Rheya upon her request. Visitors stop coming back. Kris decides to stay on Solaris in case if someday she returns.

In the meantime, he becomes the first human to receive messages from the ocean. In Kris’ dreams, the alien intelligence reveals to him the sensation of the creation of life. He sees how “under the caress of the hesitant... crawling of innumerable fingers” his body emerges from the void.⁴⁷ Important details of this dream as well as Lem’s conclusion that “there neither was, nor could be, any question of *contact* between mankind and any nonhuman civilisation” was cut out of the Soviet translation by censors as a misleading opinion that could sabotage the nation’s belief in scientific progress.⁴⁸ Raising questions about the limits of human cognition in *Solaris*, Lem brings to the fore the idea of scientific failure and articulates what we can learn from undesired outcomes. The evolution of Kris’ character and his

⁴² Ibid., 106.

⁴³ Ibid., 106.

⁴⁴ Ibid., 157.

⁴⁵ Ibid., 193.

⁴⁶ Ibid., 28.

⁴⁷ Ibid., 187.

⁴⁸ 2,7 million copies of *Solaris* were published in the U.S.S.R. Darko Suvin, “The Open-ended Parables of Stanislaw Lem and “Solaris,” December 20, 2017, <https://scrapsfromtheloft.com/2017/12/20/the-open-ended-parables-of-stanislaw-lem-and-solaris-by-darko-suvin/>. In new publications of *Solaris* in Russian those parts are still missing.

perception of Rheyra suggests that failure to explain and exploit allows the return of self-awareness lost in human thought in the service of pragmatism.⁴⁹ This paper argues that Lem's critique primarily focuses on the inherently anthropocentric attitude and unilateral methodology of scientific exploration. Based on logical expression,⁵⁰ statistical analysis and standardised ways of seeing, such methods ignore subjective registers of experience, such as learning through empathy, involving dialogical interactions with others.

In their criticism of instrumentalised science, Adorno and Horkheimer show that knowledge production based exclusively on rationality and guided by practical reason "contains the germ of the regression."⁵¹ The detachment of intellect "from sensuous experience in order to subjugate it... implies an impoverishment of thought no less than of experience; the separation of the two realms leaves both damaged."⁵² Inheriting the predisposition to ignore subjective sensations, we contribute to the regression of knowledge. The idea that his dreams are episodes of contact, a source of sentient knowledge, never crosses Kris' mind. Even if it did, at best, his report would be regarded as curious speculation, but never as a "true contribution"⁵³ to the scientific body, let alone a game-changer.

Let us suppose we want to reverse the destructive impulses of science resulting from the disenchantment of nature. In that case, we must consider the rehabilitation of practices by which the scientist's "body learns, evolves and becomes" in close contact with the object of research to appreciate its intrinsic value and find satisfaction in weird findings that used to be ignored.⁵⁴ Simultaneously, robots may continue their work. There is no point in trying to reverse the process of technological advancement, but it might be worth to think critically about the distance it creates and introduce some counter-practices to resist its impact on our ability to empathise and make ethical decisions.

THE OCEAN WITH SYMPTOMS OF SCHIZOPHRENIA

In his essay *The Vision Machine*, Virilio highlights that maritime metaphors provide a way around scientifically inexplicable phenomena through "the poetics of wandering, the unexpected, the shipwreck."⁵⁵ The Solarian ocean eludes subsumption, extends beyond the capitalist cult of efficiency and renounces the pattern of counter-reaction to a violent event. Its motivations escape conceptualisation from the perspective of rationalism and pragmatism. In fact, the potency of the Solarian ocean can be analysed

⁴⁹ Horkheimer and Adorno, xv.

⁵⁰ I refer to the Boolean expression that evaluates to one of two states true or false.

⁵¹ Horkheimer and Adorno, xvi.

⁵² Ibid., 28.

⁵³ Lem, 180.

⁵⁴ Puig de la Bellacasa, 113.

⁵⁵ Virilio, 28.

only as the “power of the unexplored side of the *failure* of technical knowledge.”⁵⁶ Lem’s protagonist, who ironically “falls” on the planet in the capsule called *Prometheus*,⁵⁷ is trained to challenge and conquer the unknown; instead, he gets an invitation to consider surrounding chaos as an ally⁵⁸ and *feel* the nature of the ocean by tuning into its rhythm.⁵⁹

To create a precedent for breaking free from the circle of victory and revenge, Lem renders the Solarian ocean invincible for and indifferent to human aggression. He gives this more-than-human body-intelligence the form of a hazardous substance.⁶⁰ The Solarian ocean is undividable, unexploitable, and most importantly, unable to participate in the labour of “civilised” communication. Following human criteria of inefficiency, Lem endows the alien lifeform with symptoms of neurological and mental disorders.⁶¹ They include epileptic seizures manifested in spontaneous plasmatic explosions, as well as aimless chaotic activity, attention deficit and disorganisation, typical of schizophrenia. Through the voice of the neuropsychological school of the Solarist studies, Lem compares the ocean to psychotic patients and mentions that when the publication of Kris’ doctoral thesis came out, the press labeled the alien ocean “*the despairing jelly*.”⁶²

Reflecting his work at the La Borde psychiatric clinic, Félix Guattari claims that the best way to treat such “dis-organised” patients is not trying to make sense of their actions but going beyond “semiotic regimes”⁶³ and simply coexisting with them until it feels completely natural.⁶⁴ However, this endeavour requires the change of perspective on the object—from seeing it as biocapital to recognising its intrinsic natural value.

Such a shift in perspective suggests immersion into the uncomfortable alien realm through physical touch.⁶⁵ Such practices have transformative potential, and therefore may result in the re-liberation of scientist’s “dissident subjectivity”⁶⁶ and her/his understanding that expansion and growth have their limits. The flight to

⁵⁶ Ibid.

⁵⁷ In *Solaris* Lem refers to Greek mythologies to emphasise scientists’ intentions and insights: in Hesiod’s *Theogony*, Prometheus is a culture hero who challenges omnipotent Zeus; he also describes a first expedition to Solarian orbit aboard the auxiliary craft named Laakon, referring to Laocoon, a priest who warned citizens not to allow the Trojan horse into the city.

⁵⁸ Gilles Deleuze and Félix Guattari, *What is Philosophy?*, trans. Hugh Tomlinson and Graham Burchell (New York: Columbia University Press, 1994), 181.

⁵⁹ Franco “Bifo” Berardi, *Breathing: Chaos and Poetry* (South Pasadena: Semiotext(e), 2018), 127.

⁶⁰ Solarian matter has a corrosive effect on machines and instruments. Lem, 40.

⁶¹ Ibid.

⁶² Ibid., 40, 183.

⁶³ Félix Guattari, *The Three Ecologies*, trans. Ian Pindar and Paul Sutton (London, New York: Bloomsbury Publishing, 2000), 32.

⁶⁴ *Assemblages: Félix Guattari and Machinic Animism*, directed by Angela Melitopoulos and Maurizio Lazzarato, 2011, a visual research project.

⁶⁵ Ron Broglio, *Surface Encounters: Thinking with Animals and Art* (Minneapolis: The University of Minnesota Press, 2011), 69.

⁶⁶ Guattari, 10.

Solaris appears to be Kris' "chance event"⁶⁷ that offers the possibility of inventive individuation—a mutation "beyond identity"⁶⁸ imposed upon him by capitalist values. In the semi-abandoned station, the initially fixed self-narratives of the scientists sink into haptic interactions with the enigmatic entities, emissaries of the ocean. The unintentional agency of Solarian intelligence is very precise and subversive: instead of initiating an exchange of knowledge that can enable further "progress" of humankind, the ocean initiates the revival of extremely disruptive and, therefore, potentially transformative subjective experiences, based on emotions, which are considered the "property of the body,"⁶⁹ suspended in science as a factor that causes bias.⁷⁰ During his stay on Solaris, Kris is exposed to a wide range of emotions, namely: astonishment, terror, disgust, anger, wonder, panic, fear, despair, horror, excitement, love, rage, pity, contempt, apathy, and hate. This list suggests that the subjective experience is the main engine of the story, representing a journey towards emotional maturity.

Concerning subjective experiences, the most important character in the novel is André Berton, the pilot, whose testimony was disregarded as an episode of hallucination.⁷¹ This reference to André Breton leads us to *Manifesto of Surrealism* (1924), where he criticises the modernity in which imagination was reduced to a state of slavery and "allowed to be exercised only in strict accordance with the laws of an arbitrary utility."⁷² Breton insists that the dominant realistic perspective underlying the idea of human superiority must be examined "following the case against the materialistic attitude."⁷³ In his manifesto, we find the description of "insane" people that seem to be a blueprint for the image of the Solarian ocean:

But their profound indifference to the way in which we judge them, and even to the various punishments meted out to them, allows us to suppose that they derive a great deal of comfort and consolation from their imagination, that they enjoy their madness sufficiently to endure the thought that its validity does not extend beyond themselves.⁷⁴

The living ocean, this "dumb, fluid colossus,"⁷⁵ is incessantly reinventing itself through materialising and perfecting the imaginary. In the process, Solaris creates its

⁶⁷ Ibid., 9.

⁶⁸ Erin Manning, *Politics of Touch: Sense, Movement, Sovereignty* (Minneapolis: The University of Minnesota Press, 2007), xv.

⁶⁹ Kay Milton, *Loving Nature: Towards an Ecology of Emotion* (New York: Routledge, 2002), 21.

⁷⁰ Ibid., 23.

⁷¹ Lem criticises the importance of the status for the discovery to be recognised: "If the Council disregarded Berton's testimony, it was because Berton has no scientific training, although any scientist would envy the presence of mind and the gift of observation shown by this pilot." Lem, 91.

⁷² André Breton, *Manifesto of Surrealism*, 1924, accessed March 10, 2021, <https://www.tcf.ua.edu/Classes/Jbutler/T340/SurManifesto/ManifestoOfSurrealism.htm>.

⁷³ Ibid, 4.

⁷⁴ Ibid.

⁷⁵ Lem, 213.

“cruel miracles”⁷⁶ without any agenda, especially the intention to harm people. The ocean acts like terrestrial rivers and seas that “possess agency and affect changes but do not care about what they do, do not have any attitude towards the world.”⁷⁷ Like water that finds and fills cracks in the soil, the Solarian sentient intelligence detects frustration, guilt and despair and reflects them.

This “ontologically one, formally diverse”⁷⁸ mercurial substance of interminable *becoming* corresponds to Deleuze and Guattari’s notion of a full “body without organs,”⁷⁹ a catatonic, “completely de-organ-ised” matter, a domain of pure intensities disowning any “predetermined forms, parts, or organs”⁸⁰ and therefore, constantly eluding narrativisation, categorisation, stratification and territorialisation.⁸¹ In *Thousand Plateaus: Capitalism and Schizophrenia*, the body without organs is described as “the field of immanence of desire,” a “process of production without reference to any exterior agency.”⁸² So is the Solarian ocean, a chaos indifferent to the intrusive attention of scientists “to the point of obstinately ignoring”⁸³ all external stimuli unless they arouse its curiosity. The researchers regard these rare and brief splashes of attention as unpredictable and coincidental. The vibratory vitality of Solarian matter-energy⁸⁴ is “too dense, too thick, too intense, too speedy, too fast, too much for [the human] brain to decipher.”⁸⁵ Solaris’ creative expressions, such as Rheya, are also bodies without organs—event-centred⁸⁶ constellations of “subatomic particles, pure intensities, prevital and prephysical singularities.”⁸⁷ They appear as manifestations of the presymbolic real, mediating transformation of human *beings* through corporeal experiences of *becoming-with*, during which language cedes “the central role it has in arbitrating truth”⁸⁸ to bodily sensations. Such metamorphosis, exemplified in Kris’ experience of becoming a subject that cares about alien others, cannot “avoid hallucinations, erroneous perceptions, shameless fantasies, or bad feelings.”⁸⁹

⁷⁶ Ibid, 214.

⁷⁷ Mark Fisher, *The Weird and the Eerie* (London: Repeater Books, 2016), 83.

⁷⁸ Gilles Deleuze, *Expressionism in Philosophy: Spinoza* (New York: Zone Books, 1992), 67, quoted in Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham/London: Duke University Press, 2010), xi.

⁷⁹ Deleuze and Guattari, 4.

⁸⁰ Eugene B. Young, with Gary Genosko and Janell Watson, *The Deleuze and Guattari Dictionary* (London/New York: Bloomsbury Publishing, 2013), 52.

⁸¹ Ibid, 56.

⁸² Deleuze and Guattari, 154.

⁸³ Lem, 175.

⁸⁴ Bennett, 55-56.

⁸⁵ Franco “Bifo” Berardi, *After the Future* (Edinburgh/Oakland: AK Press, 2011), 126.

⁸⁶ Guattari, 7.

⁸⁷ Deleuze and Guattari, *Thousand of Plateaus: Capitalism and Schizophrenia*, trans. Brian Massumi (London: Bloomsbury Academic: 2017), 63, 40.

⁸⁸ Kylie Message, “Body Without Organs” in *The Deleuze Dictionary*, ed. Adrian Parr (Edinburgh: Edinburgh University Press, 2005), 34.

⁸⁹ Deleuze and Guattari, *Thousand of Plateaus: Capitalism and Schizophrenia*, 314, 258.

FROM ALIEN TO INTIMATE THROUGH SKINSHIP

Unconsciously, the embodied memories of the dead ruthlessly confront the rational thoughts of the crew—uncanny creatures invade their private space repeatedly, like ocean tides, instigating intensive mind-body sensations over and over again. Coexistence with the Solarian version of Rheyra brings to the surface the unconscious of Kris’ skin memory:⁹⁰ his “body recognise[s] her body; desire[s] her,” he is attracted to her “beyond reason, beyond thought, beyond fear.”⁹¹ The protagonist, engaged in tactile exploration of the nonhuman other, starts to value his own competent materiality and gradually shifts away from symbolic digestion toward a shared physical existence-in-movement.⁹² Such a shift in values and aspirations can be seen as a process of *horizontal evolution* unfolding in psychic space.⁹³ This change in Kris’ mode of cognition revokes his initial “determination to renounce all personal feelings in order to accomplish the mission.”⁹⁴

There is a resonance between Lem’s intention to emphasise the importance of subjective experience and Guattari’s critique of “myth-ical scientific objectivity.”⁹⁵ In *Chaosmosis*, he depicts the latter as a miasma, spreading the disease of subjectivity repression among thinkers. Guattari is concerned with the ethical implications of this condition: subjective impulses and opinions resulting from a direct encounter with the object are crucial for ethical judgements; nevertheless, the intention to undervalue them is still common among academics, thus, “enables the distance which perpetuates injustice.”⁹⁶ The Solarian ocean constitutes the cure for this disease in the form of “pathogenic psychic disturbance,”⁹⁷ undoing the separation of reason from the living body.⁹⁸ In *Solaris*, Lem points beyond our culture-land, where we feel ingrained and secure,⁹⁹ to the ocean, the transgressive alien environment, in the European context associated with the “possibility of seeing anew,”¹⁰⁰ portrayed as a

⁹⁰ Jay Prosser, “Skin Memories” in *Thinking Through the Skin*, ed. Sara Ahmed and Jackie Stacey (New York: Routledge, 2004), 52.

⁹¹ Lem, 61.

⁹² Laura U. Marks, *Touch: Sensuous Theory and Multisensory Media* (Minneapolis: The University of Minnesota Press, 2002), xii.

⁹³ Initially, horizontal evolution is described by Helmreich in relation to hyperthermophiles, the microbes inhabiting hydrothermal vents and shuffling “genes back and forth with their contemporaries.” Helmreich, 82-83.

⁹⁴ Lem, 167.

⁹⁵ Félix Guattari, *Chaosmosis: An Ethico-Aesthetic Paradigm*, trans. Paul Bains and Julian Pefanis (Bloomington and Indianapolis: Indiana University Press, 1995), 133.

⁹⁶ Horkheimer and Adorno, 32.

⁹⁷ Prosser, 54.

⁹⁸ Berardi, *Breathing*, 117.

⁹⁹ Simon Grant, “Monsters and Myths: The Manifestations of Man’s Deepest Fears” in *Aquatopia: The Imaginary of the Ocean Deep*, ed. Alex Farquharson and Martin Clark (London: Nottingham Contemporary/Tate Publishing, 2013), 24.

¹⁰⁰ David Wills, *Dorsality: Thinking Back through Technology and Politics* (Minneapolis: University of Minnesota Press, 2008), 127-28.

resource of escape and transformation, a route of reinvention.¹⁰¹ Lem takes this metaphor to its extreme and initiates a shipwreck of the aspired extraterrestrial colonisation. In the 1960s, the situation of scientific failure seemed unimaginable; nevertheless, as an annoying pebble in the bathing suit, *Solaris* disturbs the capitalist imaginary. By advocating for the infant's-eye vision based on senses and instincts which precede logic of utility and progress, Lem violates the romantic fantasy of technological utopia newly promised by Gagarin with the very first "sacrificial" act of "escaping the Earth's pull."¹⁰² *Solaris* leaves us with an impression that the concept of linear progress does not apply to a pure intensity of its matter-energy. Skinship with the nonhuman other restarts Kris' temporality, pushes him into the "vibrant nowness,"¹⁰³ where he begins to feel his own fragility, animality, mutability.

The Solarian plasmatic materialities that permanently "collide, congeal, morph, evolve, and disintegrate"¹⁰⁴ appear as an epitome of Merleau-Ponty's *flesh*. In *The Visible and the Invisible*, he describes it as a connective tissue that underlies and gives rise to the subject's *lived* body that is different from the *objective* body performed publicly, according to the presupposed identity.¹⁰⁵ The flesh appears in his theory as the promise of equivalence of sensibility. The "natal secret" of the sentient body unfolds in the ability to "live" its difference from other species without contradiction¹⁰⁶ and to "respect the thickness of untranslatability" between them.¹⁰⁷ This solidarity seems possible only through the close and reversible experience—through becoming a "visible seer, audible hearer, tangible touch."¹⁰⁸ Merleau-Ponty's theory is essential in conceptualising the fieldwork as a process potentiating synchronisation of both subject and object positions in the mind-body of a scientist. During close encounters with nonhuman lifeforms, she/he still acts as a subject observing nature in order to understand it. However, at the same time, she/he is deprived of anonymity and autonomy—in the field, the scientist receives immediate feedback, becomes an *object* towards which the reaction of nonhuman others is directed. She/he feels if her/his actions cause pain or pleasure to the other, and when her/his moves are ignored or arouse curiosity. Such sensations help us to see the object as a lived body, subject to joy and suffering, calling for ethical response.

Solaris acts like magic that pursues its discoveries "through mimesis, not through an increasing distance from the object."¹⁰⁹ The ocean exposes human beings to extreme proximity, presses itself against their flesh, envelops them like water to

¹⁰¹ In his transformative 'relationship' with the ocean, Kris resembles Edmund Talbot, a protagonist in *Rites of Passage*, William Golding's first book in The Sea Trilogy.

¹⁰² Ken Hollings, *The Bright Labyrinth: Sex, Death & Design in the Digital Regime* (London: Strange Attractor Press, 2014), 258.

¹⁰³ Timothy Morton, *Humankind: Solidarity with Nonhuman People* (London: Verso, 2017), 19.

¹⁰⁴ Michel Serres quoted in Bennett, xi.

¹⁰⁵ Maurice Merleau-Ponty, *The Visible and the Invisible*, trans. Alphonso Lingis (Evanston: Northwestern University Press, 1968), liv.

¹⁰⁶ *Ibid.*, 135.

¹⁰⁷ Marks, xviii.

¹⁰⁸ *Ibid.*

¹⁰⁹ Horkheimer and Adorno, 7.

engage the whole surface area of sensorial perception. It spins the scientists into the pre-objective realm of intersubjective and non-transferable experiences primarily through the agency of touch.¹¹⁰ Introducing the plasmic matter of Solaris that is capable of impersonating other species, Lem emphasises that instead of making deductive inferences, it “presses up to the object . . . [and] takes its shape.”¹¹¹ As primordial ground of existence, the Solarian ocean in the first instance addresses corporeality, “with its sensitivity to pressure, temperature, and surface qualities, together with its kinesthesia, its pulse and motility.”¹¹² Nonhuman others “call forth the risk and messiness of touch,” they lure and infect thinkers through haptic sensations, “over and against the safe distance of looking,” categorising and appropriating associated with the act of seeing and recognising.¹¹³ Instead of ensuring insights, “thinking with touch” multiplies questions.¹¹⁴ At the end of his expedition, after his first-last direct encounter with the fleshy, translucent substance of the ocean, the protagonist confesses:

Although I had read numerous accounts of it, none of them had prepared me for the experience as I had lived it, and I felt somehow changed . . . as if I had forgiven it everything, without the slightest effort of word or thought.¹¹⁵

Kris’ physical encounter with Solaris and his dream about “hesitant . . . crawling of innumerable fingers” resembles Eva Hayward’s interaction with cup corals she studied at Long Marine Laboratory in Santa Cruz, California. She describes their way to explore non-coral others as a tentacular visuality or “fingeryeyes.”¹¹⁶ Explaining this concept, Hayward refers to Steven Connor’s understanding of senses as “ways, corridors, venues through which we experience worldliness.”¹¹⁷ These analogies give us an important insight into thinking about scientific fieldwork as a process of *moving* through the unknown, reducing the distance, separating us from the object, and going back, choosing other paths, applying different methods and competencies, paying attention to various senses and instincts.

¹¹⁰ Edith Wyschogrod, *Crossover Queries: Dwelling with Negatives, Embodying Philosophy’s Others* (New York: Fordham University Press, 2006), 158.

¹¹¹ Marks, xviii.

¹¹² Wyschogrod, 158.

¹¹³ Broglio, 27.

¹¹⁴ Puig de la Bellacasa, 96.

¹¹⁵ Lem, 212-13. Even though Tarkovsky uses Lem’s sci-fi story as a framework for developing themes that interest him most, such as the restless wandering of men, he acknowledges the importance of haptic experience for understanding Solaris. His famous film adaptation of the novel is imbued with haptic visuality. As Johnson and Petrie put it: Tarkovsky “underscores the haptic qualities of the station and the corporeality of its inhabitants and their relation to Earth, in hyperrealist shots of Kris’ ear, the camera presents his body as a tellurian landscape.” Vida T. Johnson and Graham Petrie, *The Films of Andrei Tarkovsky: A Visual Fugue* (Bloomington: Indiana University Press, 1994), 74.

¹¹⁶ Eva Hayward, “Fingeryeyes: Impressions of Cup Corals,” *Cultural Anthropology* 25, no. 4 (November 2010): 592.

¹¹⁷ Ibid.

A sequence of sensual encounters with extraterrestrial entities, an “ultimate embodiment of fear and excitement, escape and surrender,”¹¹⁸ outlines Kris’ *route* from disgust to love: vision-as-touch gradually evokes his desire to care, “to build sentimentality together again.”¹¹⁹ Exploring touch as a matter of care, María Puig de la Bellacasa emphasises that haptic sensation intensifies “the transformative character of contact.”¹²⁰ This argument affirms the importance of close encounters with nonhumans, for this mode of exploration may confuse and reframe subject-object positions, suppress the intention to exploit the other and invoke the desire to care. Relying on “physical interaction (smell, touch, and taste)” that provides subjective and often vague impressions,¹²¹ the ocean breaks down epistemological dichotomies, such as dead-alive, conscious-unconscious, tangible-intangible, human-nonhuman, alien-intimate. By challenging dualisms and antagonisms that exclude ambivalence and repress complexity, *Solaris* prevents automatic recognition and categorisation of itself and its creations. They evade evaluation and attempts to code them as either true or false, friend or foe, prize or punishment. This situation provokes Kris to respond in ways that are not determined in advance; he is forced to find new modes of comprehension instead of squeezing his own impressions into a firm grid made of objective arguments. By immersing Kris in the dense flow of haptic sensations, the ocean drives him towards “slowly and thoroughly gathered, learned, and embedded”¹²² knowledge-relation. It evokes an *oceanic feeling*, a “sensation of egoless unity” with the environment.¹²³ The ocean’s mercurial surface challenges the adopted perception of time and colour, disrupting automatic recognition from the very start. Many visual cues become irrelevant. The change between day and night on *Solaris* is determined by two suns, blue and red; the former emits rays of blinding light that drains familiar objects of colour, the latter makes the inky and oily surface of the ocean look like blood.

The ocean’s emissaries leak out to the station, excite neglected sensorial depths of the human mind-body and enable resuscitation of “plural centres for valuing, selecting, and marking/making a world”¹²⁴—in the words of Merleau-Ponty, they offer all at once, “pell-mell, both ‘subject’ and ‘object,’ both existence and essence.”¹²⁵ The “fleshy mouths” of its waves swallow the hubris of science—“the truth is no longer what *is*, but rather unfettered *becoming*.”¹²⁶ “Life is served by the ability to

¹¹⁸ Philip Hoare, “Homo Aquaticus: The Half-Known Life,” in *Aquatopia: The Imaginary of the Ocean Deep*, 21.

¹¹⁹ Stefano Harney and Fred Moten, *The Undercommons: Fugitive Planning & Black Study* (Wivenhoe, New York, Port Watson: Minor Compositions, 2013), 99.

¹²⁰ Puig de la Bellacasa, 115.

¹²¹ Erin McKenna and Andrew Light, *Animal Pragmatism: Rethinking Human-Nonhuman Relationships* (Bloomington: Indiana University Press, 2004), 234.

¹²² Steve Baker, *Artist/Animal* (Minneapolis: University of Minnesota Press, 2013), 147.

¹²³ Helmreich is paraphrasing Freud’s concept from 1930, 219.

¹²⁴ Broglio, xxxi-xxxii.

¹²⁵ Merleau-Ponty, 130.

¹²⁶ Broglio, 50.

come close, pull away, come close again,”¹²⁷ and this formula of human coexistence also works for scientific exploration: reflecting his conversations with the scientists, who participate in the fieldwork and share claustrophobic space of the *Alvin* submarine for up to eight hours, Helmreich emphasises that the unaccustomed density of bodies inside this human-machine assemblage changes the scientists’ attitude towards the nonhuman by delivering “a sense of immersion, not alienation.”¹²⁸

The rhythm of ocean tides appears to be an unbiased model for human perception and cognition. It offers a strategy for “better, profounder, more accurate vision,”¹²⁹ for recognising less appreciated insights that are often missed in the optical mode,¹³⁰ especially during the observation mediated by distant vision machines. This procedure involves the alternation of senses. The Solarian ocean eliminates its distance from the humans for a while, but then lets them pull back, “into possession of language and personhood.”¹³¹ It acts like a lover that can be “bored with a too-familiar sensation,” and whose curiosity revives as time passes.¹³² The strategy of knowing-relating textures human experiences as nuanced and multisensorial, it refracts the tendency to take a distance, enhances the distribution of intimacy and invites care.

TOWARDS SKIN-TO-SKIN LEARNING

In conclusion, it is important to emphasise that exploring nature through physical interaction with the environment can reshape scientists’ attitudes towards nonhuman others due to the specific, situated and reversible character of the contact. The combination of rational cognition and thinking with touch brings us closer to the question of our responsibility for sustaining diversity and respecting the specificity of other lifeforms. Empathic dialogue with nature within an immersive fieldwork cultivates the habit to assess ethical implications of scientific work before making decisions about how to interpret and use data. Haptic contact opens up the human body’s surface as a vulnerable “meat–canvas–sensual flesh,”¹³³ inspires an appetite for connectedness, and enables *skinship*, from which emerges compassion.¹³⁴ Laura Marks suggests considering this relationship an *empathic nonunderstanding*.¹³⁵ Tactile vision creates room for respect and care—alternative scenarios of perceiving other lifeforms and living with them. In the context of aesthetic and informational

¹²⁷ Marks, xvi.

¹²⁸ Helmreich, 226.

¹²⁹ Puig de la Bellacasa, 97.

¹³⁰ Ibid., 96.

¹³¹ Ibid., xvi.

¹³² Lem, 212.

¹³³ Broglio, 30.

¹³⁴ Wyschogrod, 159.

¹³⁵ Marks, 39.

overstimulation that results in the degeneration of vision,¹³⁶ the increasing lack of empathy and progressing anhedonia, an inability to feel pleasure, the challenge “to restore the flow between the haptic and the optical”¹³⁷ seems even more urgent. For environmental sciences, the possibility to explore nonhuman others in proximity, in their natural habitats, today seems crucial—close encounters attune our ways of thinking and feeling to the logic of solidarity. Skinship influences the emergence of new ethical concerns in the scientific enterprise regarding its contribution to industrial production (such as remotely operated mining of gold, platinum and cobalt from parts of the sea inhospitable to humans, or exploitation of marine organisms living in poisonous and oxygen-scarce environments as labourers breaking down toxic waste).¹³⁸ The transformational potential of sensorial encounters with the ocean and its inhabitants invites us to consider skinship an essential part of scientific research. The specificity of the sea makes its waters a liminal realm that has a lot to offer regarding reevaluation of human subjectivity and the possibility to shake the anthropocentric attitude, locked in the tradition of detached vision. The question of *how* we can learn to live with inapprehensible others remains open. However, it is already evident that any successful attempt to find the answer will involve keeping in touch with the very substance of the endangered environment skin-to-skin. ◻

¹³⁶ Virilio, 2.

¹³⁷ Marks, xiii.

¹³⁸ Helmreich, 99-102.

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