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Jean Painlevé's Surrealism, Marine Life and Non-Ocular Modes of Sensing

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Abstract

The obsessive representation of and violence against the eye is inescapable in surrealist art, with works like *Un Chien andalou* and *Histoire de l'oeil* being the most renowned for their depictions of acts of ocular defilement. Over the years, scholars have questioned these artists' intentions and have even gone so far as to position them as anti-ocular. Compromising the physical integrity of the eye is not necessarily an outright rejection of vision, as Martin Jay claims. Instead, it questions the hierarchy of the senses and promotes an enrichment of different sensory modes. The use of marine animals in surrealism seen in works by artists like Jean Painlevé represents beings which rely on other modes of sensing, thus navigating their worlds without visual primacy. I argue they are not anti-ocular but anti-ocularcentristic. Surrealism's depictions of marine life reflect an interest in alternative sensory regimes and rejects the primacy of vision above other senses. These representations express a desire to move beyond the eye to expand perception and explore faculties of perception denied to the human eye. Moreover, these works also challenge other concepts such as gender roles, anthropocentrism/the human-animal boundary and C.P. Snow's Two Cultures Theory.

Keywords: surrealism, marine biology, modernism, anthropocentrism, Jean Painlevé

Introduction

Materialism, the biological sciences and the marine within surrealism are under-examined concepts in the scholarship of the avant-garde. In a similarly under-researched vein, there is the work of French filmmaker and marine biologist Jean Painlevé (1902-1989), known for his surreal and pioneering underwater documentary films, and whose place within surrealism as a whole is also rather murky. The underexplored nature of these subjects – marine fauna and surrealism – provides an opening to discover a side of popular science and art in a new way in order to

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consider the implications that materialist – as opposed to metaphysical – science may have had on surrealism and surrealist artists. The root cause of this lack of *a priori* understanding is due to the excessive attention given to metaphysical theory and Freudian psychology in the canonical study of surrealism. This article seeks to change this narrow focus by widening the scope in a discussion of Jean Painlevé and three of his films. In addition to his touching portrayal of underwater sea creatures, what is remarkable about Painlevé's work is his use of the camera as an extension of the human eye. He was one of the first to capture images underwater, giving us a clearer vision than what the eye would normally have had in that medium. He uses new cinematic technologies adored by surrealists like microscopy, acceleration and deceleration to capture what the naked eye cannot. Painlevé and his work also appear to have embodied another typically surrealist pastime, "a magical and creative rebellion" against contemporary civilization and the status quo (Solarik 7). Specifically by taking a critical look at Painlevé's place in this artistic movement, it is also possible to interpret these films as a revolt and a questioning of hierarchies, whether it be related to the human senses, anthropocentrism or patriarchal gender roles.

In his book *Downcast Eyes*, Martin Jay argues that surrealist artists reject ocularism, or the dominance of eyesight above the other senses. He cites myriad reasons including the experience of trench warfare during World War I, where the scope of vision was severely limited and often obscured by blinding light and poisonous gas. Jay argues that works such as Salvador Dalí and Luis Buñuel's 1929 short film *Un Chien andalou* and the 1928 novella written by Georges Bataille *Histoire de l'oeil* depict extreme ophthalmic violence which attacks Cartesian subjectivity and the primacy of vision. He uses two main examples for his argument: the graphic depiction of the slitting of a woman's eye in the beginning of *Un Chien andalou* and the enucleation of a priest and the subsequent defilement of the removed eye in *Histoire de l'oeil*. Jay argues that these representations, along with other works in which the integrity of the eye is compromised, show an anti-ocular position amongst surrealist artists. He states that "in certain cases, the crisis of visual primacy expressed itself in direct terms; in others, it produced compensatory vindications of an alternative scopic order to replace the one that seemed lost" (212). This paper aims to take Jay's position further, focusing on that "alternative scopic order" he evokes and to argue that surrealist artists, by use of marine fauna, were not anti-ocular and that nothing had been lost, but rather they had become anti-ocularcentristic due to both wartime trauma and advances in science and technology. To be ocularcentristic means to be in favor of continuing in the dominance of vision above the other senses despite, in this case, recent wartime violence, whereas the

anti-ocular position implies a need to destroy vision altogether. So, the stance of anti-ocularcentrism – where vision does not reign above the other senses: touch, hearing, smell and taste – assumed by the rebellious surrealists would not only allow for the senses to be used in different ways as a method of going beyond what is typically sensed by the human body and mind but also serve as a way to process this trauma. In addition, I aim to explore how the use of marine fauna in surrealist art exemplifies a desire to go beyond western subjectivity, reflects an interest in alternative sensory regimes, and displays a need to question the primacy of vision. Moreover, I address how surrealist art – especially the interwar cinematic work of Jean Painlevé – supports this notion. Lastly, there is the question of how this expresses a desire to move beyond the natural, unenhanced human eye to expand the senses and challenge the primacy of the human, bringing us to blur the human-animal boundary within the question of anthropocentrism. This will be done in two parts: first, a discussion about the materialist science and the marine found in surrealism and second, a look at three early Painlevé films: *The Sea Urchins, The Octopus* and *The Seahorse*.

Materialist Science and the Marine in Surrealism

The interest in going beyond normal human vision as the primary mode of sensing is seen in the rapid advances in technology of the early 20th century and in the development and use of prosthetics at this time. Modernist scholar Tim Armstrong in his book *Modernism, Technology, and the Body* discusses both of these at length and shows how they were used to expand the normal sensorial capacities originally accorded to the human. Telescopes, microscopes, remote listening devices, radio, telegraph, aerial photography, surveillance systems, prosthetic limbs, and plastic surgery were all new ways in which humankind was now able to go beyond itself and its own corporeal limitations. These expansions directly resulting from scientific progress from the First World War may have led artists of the time to question the limitations of the human body. As Margaret Cohen states in "Underwater Optics as Symbolic Form," "Technologies enable new modes of perception, which transform the imagination and inspire the arts" (1). Regardless of who was on the frontlines, these technologies soon became commonplace in Western society, thereby coming to the forefront of the minds of everyone, including artists and other avant-garde minds.

Many surrealists of the time were known to have read popular science journals, which were full of updates on the advances and discoveries in science and were written simply to appeal to the general public (Morrisson

77). Surrealist publications, such as *Documents* and *Surréalisme*, were also publishing science-adjacent articles with the former also featuring images of various scientific subjects. Even the formatting of the journal *La Révolution surréaliste* which belonged to the official founder of surrealism, André Breton, was based not on the layout of a classic literary revue but rather based on the widely read scientific periodical, *La Nature*. This gave indisputable legitimacy to Breton's place and his publication within the new avant-garde movement. "'Irony,' wrote one historian, but also a desire, as in hard-science periodicals, to offer proofs: Surrealism exists'" (Polizzotti 201-202). Moreover, surrealist artists like Roberto Matta and Wolfgang Paalen were also creating works influenced by phenomena such as magnetic fields and quantum mechanics. There has been so far a rich and thoughtfully presented scholarly examination of this period's interest in the hard sciences, particularly when it comes to physics, mathematics and technology. Gavin Parkinson's examination of surrealism, and Linda Dalrymple Henderson's focus on Marcel Duchamp in particular, are both excellent examples of this. Furthermore, the topics of ecology and animal studies and surrealism have also been addressed by scholars such as Kristoffer Noheden and Donna Roberts for the former and Kirsten Strom for the latter. What is not discussed, however, is the interface between surrealism and the domain of the biological science as a whole, marine or otherwise. This gap in scholarship is an opportunity to witness another facet of the scientific world and place it within the context of Modernism. James Leo Cahill's recent monograph *Zoological Surrealism* touches on the lacuna by going in depth specifically on the subject of Painlevé and his cinematic career, and while it leaves no stone unturned, there is still much to explore regarding the overlap of the marine, surrealism and materialist science.[23]

The use of marine fauna, with many of them possessing primary sensory modes other than ocular vision, in surrealist art demonstrates a desire to experience and navigate the world in different ways in order to gain new perspectives. Artists such as Jean Painlevé, Man Ray, Robert Desnos and Eileen Agar featured sea creatures and references to materialist science in their work.[24] Between the representations in *Un Chien andalou* and *Histoire de l'oeil* and the works by the aforementioned artists, there

23 In addition to the authors cited here, authors of note who have contributed to this subject include Eva Hayward and the article "OctoEyes" as well as Belinda Smaill's "Encountering Animals: Reviewing the Work of Jean Painlevé," and Scott MacDonald's "Up Close and Political."

24 As several works by Jean Painlevé will be discussed in this article, other examples of surrealist works which also fit this description include but are not limited to: Man Ray and Robert Desnos' *Etoile de mer*, Eileen Agar's *Ceremonial Hat for Eating Bouillabaisse*, *Marine Object* as well as her writings housed at the Tate Archives which feature references to anatomical and cellular bodies.

is evidence of a desire to explore that which is beyond visual in order to expand perception and to challenge the established order. My position is that it was more than what Martin Jay calls an "impoverishment of normal visual experience," but rather an *enrichment* of the senses by an expansion of perception and a desire to explore alternative sensory modes (215), thus bringing us to what he called an "alternative scopic order" (212). The study of these marine creatures may have led these artists to question visual primacy and to question western subjectivity, but they did not seek to destroy ocularity outright. While Martin Jay does highlight the sensorial trauma experienced during the Great War, it is possible to take this discussion further by going beyond ocular violence and looking at marine fauna as a way of reshuffling the hierarchies found within the status quo, a surrealist act in itself.

While this paper focuses specifically on three cinematic works by Jean Painlevé, a similar argument could be made for the other artists previously mentioned in order to demonstrate a simultaneous engagement in art and science – thereby also defying C.P. Snow's Two-Culture Theory – as well as a challenging of western subjectivity and human primacy.[25] The use and depictions of marine life also demonstrate a desire to explore what was beyond human perception. Some of these artists worked together at times, and despite sometimes being in different geographical regions, they all were likely to have crossed paths at some point in time. This would have been either at a social event, a political demonstration or at any one of the group exhibitions featuring the relatively small circle of surrealist artists in the 1920s and 1930s. Painlevé's own involvement with surrealist cinematic circles even extends to being credited as the "Chief Ant Handler" for *Un Chien andalou*, which further demonstrates how osmotic these artistic circles really were at this time (Hughes 111). What is particular to Jean Painlevé's work, however, is that it was so scientific in nature that its surrealist quality was likely to have been secondary or even unintentional, at least initially. His dedication to cinema while it was still in its infancy is also something that sets him apart, as opposed to many of the other artists who used other media to create surrealist works in addition to cinematography. Ultimately, though, his natural ability to capture the surreal in his scientific observations is what has made his work so singularly fascinating to behold.

25 In his 1959 lecture and subsequent publication, C.P. Snow claimed that there was a bifurcation in knowledge, with the arts and science as distinct and separate intellectual activities, though he did make the appeal to bridge them.

The Interwar Works of Jean Painlevé

Painlevé enrolled at the Sorbonne in the fall of 1921 in pre-medical studies but changed to comparative anatomy in his second year where he studied under Paul Wintrebert, an embryologist specialized in fish and amphibians. He also studied at the Roscoff Biological Station in Brittany, which at the time was directed by Charles Pérez, an insects and marine invertebrates specialist. Cahill points out that the era in which Painlevé begins creating his other-worldly scientific films coincides with changes in the study of the natural sciences at the Sorbonne (34). In addition to the new technology which allowed for new ways of observation, there was a renaming of the title of Painlevé's program from the Laboratory of Comparative Anatomy and Physiology to the Laboratory of Comparative Anatomy and Histology. This discrete change from the study of the function of organisms to the study of microanatomy indicated a shift in scale as well as the emergence of the focus on cell theory in the life sciences. During this time there was also the influence of neo-Lamarckian-style research, which – amongst other things – emphasized the importance of observation in the wild and pushed scientists to leave their armchairs and laboratories (Cahill 39). While not all of Painlevé's documentaries were filmed at the sea, some were at least in part. For the ones filmed at his studio in Paris, he did go to great lengths to create settings which did not affect the animals' behavior too negatively, especially with regards to the environment, which required a delicate balance to allow the animals to behave as they would outside of captivity and even posed a fatal risk if warmed to dangerously high temperatures by the lights (Painlevé 131-133).

During the time of his studies, Painlevé, by way of his own engagement with a Communist student club and with his friend and avant-gardist Jacques Boiffard, would soon go on to meet other avant-garde minds such as Jacques Prévert and later Ivan Goll who would give him his first opportunity to contribute to the Surrealist movement with a written work of his own titled "neo-zoological drama." The essay appeared in Goll's first and only issue of *Surréalisme*, in October 1924, published slightly before Breton's own surrealist manifesto, and was prefaced with "Mr. Jean Painlevé, who yesterday was honored by the Academy of Sciences for a very realistic body of work, reveals himself to be a Surrealist as well" (Goll). In it, he uses highly technical and scientific language and elevates jargon to something beyond where "the small turbellaria [marine flatworm] knows the embrace of their mouth" and a "sacred little crustacean with short hair … would prefer to be born of parthenogenesis than to touch

those threads of the ovoviviparous mesostoma [marine flatworm] … The Turbellarias seized it, broke into it, pierced it and sucked it; an awful scream echoes and rejoins the lapping of the luminous interferences; the cercariae [larval parasite] come out of their stagnant hymns, throw a gleam and terror encysts them" (Goll). He invokes these slime molds, marine worms, alga and other microscopic animals in a way that allows for non-scientists to experience their beauty. Heavy on descriptions and actions, he creates vignettes of the lives of these creatures, which are whimsically scientific and materialist. Cahill describes Painlevé's contribution as coupling "Latin taxonomic and anatomical vocabulary of comparative anatomy observations with a mischievous sensibility that examined the surreal aspects of scientific observation as potentially a science of disorganization and *dépaysement* that broke with received taxonomic orders" (43). Inga Pollman, in her book *Cinematic Vitalism*, compares it to a Dada sound poem, "for which the evocative power lies in the sound and rhythm of non-sensical words; yet in the case of Painlevé's text, these words do have a real denotation" (152). Painlevé successfully recontextualizes these microscopic creatures in order to bring them beyond the real and stages them for the sake of scientific surrealism. Nearly everything published in *Surréalisme*, unlike Breton's *Le Manifeste surréaliste*, featured a materialist quality. It would appear that Goll left the choice of text to those asked to contribute, sometimes not leaving them much time or say in the matter, but apparently a bit of freedom regarding the content.[26]

In the course of Jean Painlevé's interwar cinematic career, whose subjects consist primarily of marine life but also include vampire bats, pigeons and spiders, there is a rather earnest attempt to bring an intimate knowledge of these creatures to the surface. Both at the seaside and in his studio – complete with a large aquarium where he often filmed the sea creatures – he draws the viewer in by anthropomorphizing the animals, showing pain, eroticism, savagery and comedy in a way that parallels the human condition. In his narrated films, the effect is even more pronounced, as the viewer is guided both visually and aurally to understand the creature and its very nature. These relatable scenarios make it easier for the viewer to make the leap of faith in imagining that they can experience other sensations experienced by these creatures, particularly the ones normally denied to the human. The viewer develops a veritable sense of empathy towards the creature, which allows for

26 This specifically refers to the piece by Pierre Albert-Birot "my bouquet to surrealism" in which he begins "Do I have something to say on surrealism?" (Goll). This presumably appears to serve as a response to Goll instructing Albert-Birot – who had been influential on and present during Apollinaire's decision to use the term surrealism as opposed to supernaturalism – to say something on the topic.

a deeper submersion into its world where for a few brief moments the viewer becomes the marine animal, blurring the line between human and beast, bringing them closer to their own primitive nature.

Jean Painlevé had a deep reverence for sea creatures and wanted to capture them in order to share his discoveries with the general public. He was one of the first cinematographers to film underwater, after having constructed his own waterproof glass case for his camera. This then allowed him to find the beauty and elegance hidden under the surf and to project it onto a screen. According to artist and curator Marie Jager, "Painlevé's principal motivation was the pleasure he derived from creating these two-dimensional, infinitely detailed and large-scale works out of tiny sea creatures normally considered unworthy of attention" (207). This romantic desire to share a hidden world with the masses was what gave his works such poetry and allowed for incredible depictions of creatures rarely seen beforehand. The artist's ability to see what everyone else overlooked was of course aided by microscopes, which enhanced the field of vision tremendously, but it was his own artistic talent that led him to choose his subjects and film them in such a unique manner, giving a special touch to all of his works.

In addition to magnifying his subjects to show small beasts as larger than life on the big screen, another way in which the senses are put into question is the differing speeds at which Painlevé filmed and projected his works, which created an effect of contracting and expanding time. Inspired by the scientific work of Étienne-Jules Marey's chronophotography and Jean Comandon's microphotography, this gave the viewer an opportunity to observe the physiological aspects and processes of these animals in a way like never before. This manipulation of vision was part of a greater surrealist desire to use cinema to expand sight. In his book, Cahill discusses how the avant-garde director and writer Jean Epstein "called for the development of a cinema that could open human perception to perspectives and phenomena, that for reasons of speed, scale or ideological blindness, remained outside of the field of everyday perception" (21). Cahill even mentions how the art historian Henri Focillon praised cinema as early as 1935 for "potentially expanding the purview of aesthetics and aesthetic experience, which had "made so little room for other orders of life," toward a renewed curiosity regarding the more-than-human world of plants, animals, and shells'" (21). This speaks to cinema's role as an extension of vision and its value in observation. The specifically surreal quality of underwater filming is addressed by Cohen, "In the medium of air, surrealist photographers achieved such effects with highly crafted techniques, such as close-ups from unusual angles, lighting, cropping and the way they developed film. But what required an artist's skill to create in the medium of air is intrinsic to optics at depth"

(18). This acknowledgement of Painlevé's ability to translate vision from one medium to another speaks to his capacities as both a filmmaker as well as a science communicator. Chronophotography and microphotography were both instrumental in Painlevé's work. This was especially the case early in his career, with the former being a precursor to cinema and allowing for enhanced observation of subjects and their movement and the latter permitting observation of processes and details never seen before by the general public. These technologies revolutionized the domains of both science and art, leading to advances in both fields to later develop at exponential rates. Painlevé employed these new technologies and created his own techniques to produce mesmerizing documentaries about underwater sea creatures. Each film used these tools in different ways, creating film after film that was both visually distinct while remaining true to his style.

Analysis of Three Films by Jean Painlevé

Les Oursins

In observing Painlevé's 1927 silent film *The Sea Urchins* (*Les Oursins*), two different types of echinoids are presented. The first one depicted gives the viewer a brief introduction to the animal and its habitat. The second species is featured more in depth where the audience is brought up close and personal in order to see how it moves and feeds. Painlevé brings the camera to 200,000 times magnification, which on a 3 by 4-meter screen would allow the audience to see the functioning of the ends of the urchin's spines, revealing the creature's tools for both eating and locomotion, on a huge scale. The spines and tube feet contain sensory organs, which allow for both tactility and light sensing (Fox 904). In the 10-minute film Painlevé reveals a sea urchin moving upwards onto a rock, likely portrayed with the help of accelerated projection, though nevertheless a remarkable feat for the sea urchin. Without this technique of acceleration, the viewer would have continued thinking of the seemingly sedentary sea urchin as having no kind of locomotion. The film ends with microscopic images of the tube feet, jaws, and claw-like appendages all in wild motion on the surface of the sea urchin's spines, and all typically hidden from the naked eye, before panning out to an image of the whole sea urchin filling the screen. Painlevé has brought the viewer "face to face" with the animal. Cahill brings to light that "*The Sea Urchins* complicates the implicit anthropometrics of cinematography, which, for practical reasons, refers to camera setups based on the anatomy of human actors (close-up, medium shot, full short, etc.), tending to implicitly "humanize" whatever it

films" (81). This further blurs the human-animal barrier; the viewer cannot experience these sea urchins without implicit knowledge of the human body. It is the viewer's innate knowledge of their own bodies that pushes them towards feeling as the animal would have felt. As scholar Caroline Hovanec describes in her discussion on natural history films, they "do not just *reveal* the natural world via an expansion of vision; they also work to *change* viewers' affective responses to nature. They foster a love for strange, pesky, and mundane species..." (246). This connection brings us closer to the animal due to the alchemy between the filmmaker's masterful capturing of the creature's behavior and our own ability to empathize. Moreover, Hovanec continues on this topic pointing out the challenge to anthropocentrism, which she states is due in part to the "inhuman vision of the camera" (246). To further build on this point, the fact that these animals are being viewed through this machine vision annihilates the existential hierarchy between the creature observed and the human due to the fact that it is no longer a question of solely dealing with members of the animal kingdom. We are now one step removed, which levels the playing field, leaving a question of the repositioning of the human in relation to the animal in Jean Painlevé's films.

In Painlevé's 1929 article *Les Films biologiques*, he described the surface of the sea urchin as seen through microcinematography as "the strangest, most surreal decorative theme, evocative of a cataclysm, of a temple in ruins, of vanished flora, the magnifications of the spines presenting Doric columns, the pedicellaria worming their way into the optical field with spasmodic motions – in sum, a bit of a lost world" (Cahill 83). In addition, Painlevé's work as well as his play of scale and speed introduce and allow us to develop a certain intimacy with the sea urchin, which, typically motionless and unremarkable, has now suddenly become livelier and more intriguing. In the unnarrated documentary film, the viewer is given a brief introduction to the sea urchin's way of negotiating stimuli in the world. They are also given insight into the way it senses in its environment as well as the way in which it moves, all otherwise heretofore unknown to most of us terrestrials. This is all thanks to Painlevé's ability to display the animal's dynamic characteristics through magnification and close-ups. "The close-up, as the most visibly manifest technique of Surrealist facts and their discovery by means of the cinematic enlargement of comparative anatomy, may be an instrument of metamorphosis, wherein a critical regard at the different, dynamic aspects of animal life simultaneously effects a potentially transformative shift of orientation and perspective regarding humans" (Cahill 90). The filmmaker uses these shots to communicate with their viewer; the choice of the area upon which is focused is never by chance.

La Pieuvre

Painlevé's 1927 film *The Octopus* (*La Pieuvre*) is an example of a challenge of anthropocentrism. Specifically, there are two examples: first, the depiction of the animal's eye and the way in which it is described as similar to that of a human being and second, the way in which Painlevé anthropomorphizes the octopus throughout the film. It begins with an octopus sliding across a platform. Next, it is escaping out of a window like a teenager sneaking out to join its octo-pals for a party. Then the camera cuts to it quickly moving over a doll, then climbing in a tree and then again over a human skull. Cahill points out that the film "visualizes the productive contamination of zoology and comparative anatomy by its entry into spaces not traditionally associated with it" (63). This placement of the octopus out of its natural habitat and into human scenery creates a liminal space in which the octopus-human line is blurred. After a cut to a sandy beach, the octopus slithers into the surf and swims away. Next, one is shown swimming around in a tide pool, and the viewer is treated to close-ups of its closed eye where it is possible to observe its breathing as well. Then the intertitle: "Open eye, very human." After that: "Breathing" where there are valve-like gills moving in and out in a mechanism similar to that of human breathing – yet nevertheless very strange to witness – especially as the camera brings us to observe close up to the point of abstraction. The uncanny scene is perfectly described by Freud's own definition of the term, from his eponymous 1919 book which is "that species of the frightening that goes back to what was once well known and had long been familiar" (301).

Later in his discussion of the Sand-man, Freud addresses the uncanny in the difficulty to discern whether what is seen is actually animate or lifeless, human or inhuman. There is also the importance of and the anxiety around the sense of intact vision in relation to the uncanny, with Freud's discussion of the self-blinding Oedipus and the blinded-by-sand victims of The Sandman, as well as the role of vision within the concept of what is familiar. Painlevé's image of the octopus and its accompanying intertitle "Open eye, very human" fit in perfectly with Freud's discussion of the uncanny precisely because of the blurring of the human/animal distinction. Given that many surrealists were taken by Freud's findings at this time, it is no surprise that Painlevé's scientific documentaries were so revered by these artists. As Ann Elias confirms, in the early twentieth century the sea "was still surrounded by mystery" and "stood for the unknown" (5). The uncanny quality – where the viewer finds the recognizable in a creature never before seen at this proximity, the unknown being made known – of Painlevé's non-fictional films about marine fauna was what made them so exceptional and worthy of

the viewer's attention, whether it be that of a scientist or of a surrealist.

Despite the visual limitations of black and white film, Painlevé nonetheless manages to depict the octopus's ability to change color. Zoomed out, there are small changes in the grayscale on the screen, but when a highly magnified part of the octopus's skin is shown, it is possible to see the movement of the cells that result in the changing of color. Next, shown together in an aquarium, two octopuses thrash about violently until the viewer is warned by an intertitle: "Death" showing the demise of one of the cephalopods. After tagging along on a brief trip to the beach to catch more specimens, the viewer is brought back to the studio aquarium to see an agitated octopus writhing back and forth in front of the camera. Then to finish the viewer is shown two more octopuses in the tank squaring off against a crab in a fight to the death. Octopuses: 1, Crab: 0.

Compared to Painlevé's film on the sea urchins, which was made the same year, there are some differences visible in *The Octopus*. Given the different natures of these two marine animals, it was certainly easier for the artist to create a more captivating story about the cephalopod due to its mobility and curious appearance. While Painlevé did manage to create more dynamism than could have been expected in the sea urchin thanks to his use of acceleration and microcinematography, the octopus is admittedly more easily engaging to a general audience, something he purposefully sought out while also presenting scientific research before the Academy of Science, which later helped film to be considered as a legitimate tool of scientific observation. For the general public, however, Painlevé's films singularly brought out more than just the animal nature of the creatures. He demonstrated how they negotiated the world around them, and he made them relatable to humans.

The anthropomorphizing of these creatures can be seen as problematic due to what Cahill describes as typically dismissed as "a narcissistic and epistemologically lazy manner of seeing the reflection of man's image and human values in the nonhuman world" (97). On the other hand, I argue that it also has the possibility of creating a point of contact between the viewer and the animal. This potentially leads to not only a more impactful understanding of the science behind the film, but it also displays the commonalities between the human and these creatures, challenging the primacy of the human. The empathic resonance between animal and human appears to have been one of the main aims of the artist; making for a sort of gift of understanding of the marine on an affective level, or at least an introduction to a completely different world. Jean Painlevé's films were concurrently advancing the research, documentation and knowledge of marine life and were as surreally entertaining and beautiful as they were educational.

L'Hippocampe

Just like in *The Octopus, The Seahorse (L'Hippocampe)* – which was made in 1934 and was Painlevé's most commercially successful film – uses narrative to anthropomorphize the sea creatures, thereby challenging human primacy by creating a bond between the audience and the seahorses. The film depicts the male seahorse's unique trait of carrying fertilized eggs throughout gestation and later childbirth. The presentation of a reversal of biological roles in which the male seahorse gives birth instead of the female of the species was what struck the general public the most and was reflected in the press reviews after its release. As Cahill points out, "Surrealists were fascinated with the strange eroticism, zoological anomalies, and convulsive beauty of the film; certain feminists recognized in it another model for the sexual division of labor, while traditionalists and conservatives saw in it a celebration of maternity and paternity...*The Seahorse* provided a perfect sign of the "contradictory forces," to borrow Painlevé's description of the creature, at play in the film as well as in interwar France" (162). Here there is a further blurring of lines, this time displaying sexuality outside of a binary system and placing it within a spectrum upon which the being – regardless of species – is placed individually.

As opposed to his previous films mentioned earlier, which were silent with intertitles, Painlevé has finally given in to "the talkie." The auditive element is added and is used to stimulate the viewer's senses further. This time with music and narration, the world of the seahorse is demystified as the viewer is given a glimpse of Painlevé's aquarium habitat filled with dozens of seahorses. The narrator informs the viewer of the seahorse's prehensile tail, used to anchor itself to objects and attach to each other. Painlevé brings out the animals' tenderness, playfulness and affection when they interact with each other and their tails intertwine. Later Painlevé shows a male seahorse in painful contractions, while the narrator explains the birthing process with both wit and compassion, allowing for the viewer to imagine its pain and sympathize with the poor creature. In addition to the scene of the seahorse in labor, the different anatomical parts of the animal are displayed, including full-screen magnified shots of tiny structures like the eye, heart, swim bladder, dorsal fin, and respiratory organs. Further on, the film speed is slowed down so as to allow the viewer to observe the mechanism of the seahorse's beating heart. It is important to observe the similarity of presenting the way in which the seahorse breathes compared to the way in which it was portrayed for *The Octopus* six years prior. Painlevé deviated from *The Octopus*, however, in how he describes the way in which the seahorse can also change its color, leaving us to take his word for it instead of showing us first-hand in both macro- and micro-vision as he did previously.

Part of the film's success was also from the fact that viewers were seeing new worlds for the very first time. Filming coincided with technological advances in both film and underwater exploration.

> The film's primary experimental aspect – in terms of conducting research on and by film – concerned underwater filmmaking and the possibility of pushing the traditions of field research even further than the tidal pools and ship decks on which it relied...it...marked its legacy as one of the "first" films shot fully immersed underwater rather than though a glass-bottom boat, aquarium, or submerged column, as John Ernest Williamson used in the Bahamas in the 1910s (Cahill 168).

Painlevé presents full-screen images of the seahorse's eye multiple times throughout the 15-minute documentary. This brings the human to the animal, erasing the distance and allowing new channels of communication to open. He invites the viewer to see as the seahorse sees and take on underwater vision. Cohen states that "Perception beneath the water [...] would appeal to modernisms that explored an emotional palette of wonder as an antidote to bourgeois aesthetics and society [...] at once otherworldly and completely secular. Surrealism was the most famous of these movements, and a number of surrealists drew on the aquatic world to give this wonder spatial expression" (3). Underwater vision – and those who used it – is nothing like terrestrial vision. Perspective as well as light refraction are completely changed and give the viewer different abilities of sight and light sensing. Human sensory modes are at a disadvantage beneath the water and benefit greatly from adapting to those of creatures who have made the sea their home.

Painlevé interprets the seahorse's body language throughout the film, anthropomorphizing it and tells the viewer that while its eye's movement gives it a worried look, the shape of its mouth gives it more of an appearance of boredom. Comparing the appearance of the animal to a King Charles Spaniel goes beyond anthropomorphism and into what I call *trans-zoopomorphism* as an attempt to familiarize the viewer with the little-known creature. As Cahill describes, "Seahorses evoke the strange encounters, unexpected couplings, exquisite corpses, and juxtapositions that Surrealists placed at the heart of their poetic practices and that filmic montage and superimposition render concrete. Like the creature it studied, the film comprises a series of contrasting elements" (178). Breton's idea of the exquisite corpse was that of a fragmented yet unified body, be it image or text, which embodies the idea of Painlevé's film about the seahorse perfectly (Lyford 25). This emphasizes the film of the seahorse as opposed to the animal itself, as it is the lens through which Painlevé presents the image of the creature that is surreal.

Then later in the film, while the seahorse is giving birth, the narrator speaks of the anguish in the male seahorse's eyes as it breathes laboriously and writhes in pain while its belly ejects newborn seahorses – also known as fry – over the span of several hours. With image and commentary, the viewers are guided through the world of the seahorse and cannot help but to feel its pain as it holds on to a branch with its tail and goes into labor. Once again Painlevé brings the viewer to practically feel the pain of the poor sea creature as it agonizingly expresses first the fry and then later on while expelling the residual gas from its pouch after finishing childbirth. Painlevé genuinely empathized with the animals he filmed, and though he did dissect some of the creatures, he has discussed at length topics of regret, animal cruelty and his questioning of the power dynamics between animals and humans.[27] The depiction of the seahorse is not all grim, however, as the viewer is also shown a lighter side of the study of the animal with juvenile seahorses playing with each other, reminiscent of human children at a playground. To continue on the lighthearted note and in his own uncanny maneuver, Painlevé ends the film with a humorous wink while discussing the unique quality of the vertically-swimming aquatic vertebrate while seahorses frolic in the foreground and the shot reveals a televised horse race visible behind the aquarium.

Aside from the wonderfully informative yet entertaining quality of the film, Jean Painlevé's work depicting the seahorse is remarkable also because of the animal's unique quality of being one of the few animals in which sexual role reversal occurs. The transfer of the eggs from the female to the male during mating and their subsequent fertilization leaves the male seahorse saddled with gestation and childbirth. There are even Surrealist parallels to be drawn between the seahorse and the storyline of Apollinaire's *Breasts of Tirésias* in which sexual roles are reversed, and the father bears the offspring. The film and the choice of subject can be seen as a challenge to the gender role where the female human is burdened with these responsibilities. The exploration and consideration of another possibility for procreation in which the functions are reversed allows for further questioning of other previously established modes of life and the status quo. "In his photos, films, and writing, Painlevé was inspired by the way in which the denizens of the marine world thwarted Enlightenment categories, which he also allied with bourgeois morality" (Cohen 15). Additionally, though while it was not rare for women to broach the subject at this time, the fact that a male surrealist artist was exploring this theme can be seen as being even more remarkable. As Patricia Allmer

27 Cahill discusses this in citing a 1935 article (176). Painlevé also addresses the subject in a 1988 interview for the documentary *Jean Painlevé au fil de ses films*.

notes, "whilst surrealist thought radically challenged hierarchies, it often remained blind to its own gender politics, locked in a heterosexual, sometimes homophobic, patriarchal stance positioning and constructing women (and never men) as artists' muses, femmes-enfants, virgins, dolls and erotic objects" (13). More specifically, the leader of the surrealist movement, André Breton, was known for relegating women in surrealist circles to the role of muses, not equals; rarely artists of their own right deserving of respect and consideration.[28] British surrealist artist Eileen Agar confirms Breton's ideas for a woman's place within the movement recalling in her memoir, "Amongst the European Surrealists double-standards seem to have proliferated, and the women came off worst. Breton's wife, Jacqueline, was expected to behave as the great man's muse, not to have an active creative existence of her own. In fact, she was a painter of considerable ability, but Breton never mentioned her work" (120-121). As preeminent surrealism scholar Whitney Chadwick describes the condition of women at this time within surrealist circles, they were "the image of man's inspiration and his salvation" (13). Painlevé's unconventional desire to depict this role reversal shows yet another way in which he was using marine life to question established and culturally accepted norms.

In fact, Amy Lyford addresses the topic of surrealism and gender at length in her book, *Surrealist Masculinities*. Looking at the larger picture of the condition of masculinity following the carnage of the First World war is essential in order to contextualize the significance of Painlevé's documentary film which depicts the male seahorses giving birth. There was a national campaign within France to assuage fears following the war which highlighted the family unit as a way of healing from the physical and psychological trauma experienced by the masses. As she states, "The postwar society in which the surrealists lived was rife with images promoting traditional social roles for men and women: images of robust manhood and female maternity cropped up everywhere as if they were antidotes to the terrible memories evoked by the sight of veterans' wounded bodies" (4). Lyford points out that this incongruent imagery, with the lived reality of countless widows and so many mutilated bodies and the propaganda from the state featuring strong men and growing families, provoked a reaction from the surrealists who sought to rebel

28 Penelope Rosemont, in her book *Surrealist Women. An International Anthology*, however, challenges this generally accepted notion within the study of surrealism. She points out that Breton and his circle rallied against the enemies of feminism: religion, the state, family, the military, and other things she describes as other "ruling male chauvinist obsessions." She uses this to argue that their position in fact rendered them as allies to feminist ideology (xliv). My interpretation acknowledges a divide between their theoretical ideology and their everyday lives, as their stance appears to have been a rebellion against society and the status quo rather than a fight for equality amongst the sexes.

against the government's efforts and "destabilize the gender roles that had cemented traditional ideas about the family, one of the key institutional building blocks of French national identity" (5). Though she does not specify if Painlevé was particularly reactive to this notion, it nevertheless displays an ongoing theme within the zeitgeist. Looking at the work of Painlevé as a whole, the idea that he was focused on subverting or in any way promoting deviance is unlikely, but rather it appears that he has taken his surreal work one step further by subverting subversion: the male seahorse is depicted fulfilling its parental obligations with a sense of stoicism and duty. Painlevé always kept to the outskirts of surrealist circles, which allowed him to avoid obligations to create from within the confines of surrealist definitions.

Lyford also points out that at this time, "ideas about the existence of a so-called third sex and debates about the rise of an emphatically "homosexual aesthetic" became increasingly popular" (142).[29] This means that ideas beyond the binary nature of sex were already being explored to some degree in France, though it is necessary to account for the whereabouts of the discussion's place on either the academic realm or within popular society. There was also the great popularity of Barbette, a popular cabaret performer in Paris who, at the end of each performance would reveal a masculine body which had been hidden under makeup, wigs and fancy dresses. Lyford dedicates an entire chapter to Barbette and sexual metamorphosis in a discussion of "corporeal integration of social and sexual opposites – male and female" (177). The idea of sexual ambiguity was indeed on the minds of many at this time. However, the commercial success of Painlevé's film tells us that many non-scientists were implicated in observing the specific phenomenon of male childbirth for the very first time, and there was a certain amount of novelty for many spectators. Essentially, the film about these funny little fish was taking what was considered to be a simple biological fact and a basic construct within society for humans – that the females of the species are the ones who bear the offspring – and turning it on its head. This went beyond ideas of gender or a male performer in makeup: this was nature showing us that nothing is what it seems.

29 In her own footnote, Lyford includes the following references, "The growing literature on the so-called third sex in France at the time included the work of Willy (Prof. Dr. Lery-Lenz), such as *Le Troisième Sexe* (Paris: Paris-Editions, 1927) and *Encyclopédie de la Vie Sexuelle* (Paris: Aldor, 1934)" (205).

Conclusion

The cinematic work of Jean Painlevé straddles the worlds of both art and science. A talented research scientist in his own right, this son of the famous mathematician and politician Paul Painlevé was also an avid lover of cinema. When he was able to bring these two passions together, though taking neither too seriously, eschewing the label of surrealist and claiming that "science is fiction," he used his love of nature and animals to create some of the most visually marking and otherworldly images of the era (Bellows xiv). In the 1935 article "Feet in the Water," Painlevé wrote of his time as a filmmaker: "The job has its joys for those who love the sea. Wading around in water up to your ankles or navel, day and night, in all kinds of weather, even when there is no hope of finding anything; investigating everything whether it be algae or an octopus...This is the ecstasy of an addict..." (xv). His passion and dedication to his work and to marine life is visible from his many writings and interviews he gave throughout his long life.

Though his application of marine surrealism in the field of cinema is what makes him unique, the work of Jean Painlevé is but one of several examples of surrealist artists using marine animals and other biological subjects in order to explore alternative scopic regimes. Moreover, his genre of film – the documentary – is what set him apart from other surrealist filmmakers like Man Ray, Germaine Dulac, Luis Buñuel or Salvador Dalí. "Documentary surrealism occurs when the haunting presence of the referent (the model) lacerates or irrupts through the filmic signifier (the image), slitting the screen like so many eyeballs, and sparking materialist inquiry into the spectral presence of the strange creatures and estranged circumstances of global modernity" (Cahill 232). As a whole, artists using marine fauna were in search of a way to depict the challenging of western subjectivity, gender roles and human primacy as well as a way to display their engagement with materialist science. Though the questioning of vision at the top of sensorial hierarchy did not necessarily seek to place any of the other modes of sensing in a place of dominance, there was a desire to at least disrupt the primacy of vision as a way of exploring alternative modes of sensation. It was expansion in order to exploit the five senses to better negotiate the rapidly changing world. Looking to these creatures provided reassurance that post World War I society was not trapped in the dark, but that it could continue forward in this new world using other senses to interpret and make sense of all of the new stimuli around us.

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