Human wildlife coexistence: a shark centric perspective

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Introduction

Conversations on human-wildlife interactions and encounters are central to both human animal studies (HAS) and human dimensions of wildlife (HDW). We subscribe to HAS and specifically the liberation of nonhuman animals. We eschew a conflict orientation, which is the focus of a growing literature that grew out of HDW known as humanwildlife conflict (HWC). Instead, we move toward human wildlife coexistence and in doing so focus on the work of Frank (2016) and Nyhus (2016).

Sharks, which we capitalize in this paper to emphasize their personhood, are often discussed anthropocentrically within a conflict orientation and portrayed as dangerous to humans (see for example, Hammerton and Ford 2018). To escape a human centered narrative, we offer a Shark centric perspective and position our work within an economies of life paradigm, in creating of a field of study which promotes life. This

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is in opposition to an economies of death paradigm, where killing Sharks is normalized. Moreover, we see an economy of life as creating systems and institutions where more beings are to live a natural life. This includes animals. This may be positioned under a biocentric ethic where all individual life is valued. This breaks down the hierarchy of humans as more important than nonhuman animals, and allows there to be an intrinsic worth to all species (Benjamin and Stuart 2017). Such an approach is in opposition to a dominant Western paradigm which has institutionalized the killing of animals (Nibert 2017). Such a system, we purport, supports an economy of death. Moreover, in this paper, while we articulate and define patterns, traditions, and conditioning of human relations with Sharks which are tethered to conflict, we advocate for coexistence, the interconnectedness between humans and Sharks through economies of life.

Human wildlife interactions have been positioned as a continuum ranging from conflict to coexistence (Frank 2016; Nyhus 2016). Frank (2016, 740) defines extreme negative behaviors towards wildlife, which also includes the extermination of entire species under the guise of wildlife management. Beyond Frank's continuum, Nyhus (2016, 146) offers a multidimensional framework, including frequency and intensity, as well as negative to positive experiences along a continuum of interactions. Attacks from apex carnivores, such as Sharks, are relatively uncommon, yet strong in severity, such that they lead to significant media coverage. Thus, they are high in intensity yet low in frequency. For example, in the last 218 years in Australia, there have only been 178 human fatalities from Sharks, resulting in an average of less than one per year (Nyhus 2016, 150). As Kelly and colleagues (2019) find in their account of large carnivore attacks globally, human death by nature would suggest one is more likely to be struck by lighting in one's lifetime than to be attacked by a large carnivore. See Figure 1 for our visual representation of data and theoretical concepts of Frank (2016) and Nyhus (2016) as applied to Sharks.¹

Anthropocentric Economies of Death Shark Centric Economies of Life

¹ While we include diving, photography, Shark rescuing and ambassadors of Shark sanctuaries all in the larger *superior coexistence* understanding, see further below, we only include diving and photography in the figure, as they are generators of revenue to support the economy of life and coexistence range of the spectrum. Data on Frequencies of Shark Attacks is derived from the International Shark Attack File's (ISAF) Worldwide Shark Attack Summary.



Figure 1: A Shark-Centric Interpretation of a Conflict-to-Coexistence Continuum Nested in Economies of Death and Economies of Life

Conflict and death to coexistence and life: a shark centric perspective

Extreme Conflict

Frank (2016, 740) defines the most intense form of conflict as "extreme negative attitudes/behaviors toward a species," which includes the killing of wildlife. Without question, the *intentional killing* of Sharks by humans embodies the *extreme conflict* portion of the continuum, from a Shark centric perspective. Masses of Sharks are slaughtered, for example, in the Shark finning industry for the sale of their fins. Shark finning is incredibly inhumane as the finning most often occurs when the Shark is still alive, after which the Shark is thrown back into the water to drown (Stewart 2006). The fins are then sold at a high value in Asian markets, such as Hong Kong (Shea and To 2017, 330). We believe *intentionally* and brutally killing Sharks aligns with Frank's (2016) definition of the most intense form of conflict. The practice of Shark finning is torturous, cruel (Stewart 2006) and largely underreported (Shea and To 2017, 336).

Strong Conflict

While Frank's (2016) continuum defines extreme conflict, it provides no definition for a *strong conflict*, the term we would give to *unintentional killing* of nonhuman species. In this area of the continuum Sharks are caught *unintentionally* as bycatch when fishing for other species. Our placement of *unintentionality* within the fishing economy contrasts the *intentional* killing within extreme conflict range. For example, killing Sharks unintentionally when fishing for other marine life makes it less conflict-oriented than extreme conflict.

Weak Conflict

Frank (2016) describes less extreme, yet still conflict-oriented, areas of the spectrum as behaviors that are still negative towards wildlife but less intense. Such behaviors can include *unintentional harming* of Sharks by humans, here *weak conflict*. Catch-and-release fishing of Sharks is a form of weak conflict. Fisher people release the Sharks after catching them, and while most may not *intend* to harm them, we know significant physiological stress, injury and death can still occur (Cooke et al. 2013 cited in Gallagher et al. 2017, 390). For example, a study evaluating the survival rate of Sharks in Florida after catch and release estimated 31-40% died (Hueter, Manire, Tyminski, et al. 2006, 506), and this does include data on injury, harm and distress of the Sharks involved.

Tolerance Zone

Frank defines as a *tolerance zone* the neutral area of the conflict to coexistence continuum, a region capturing neither positive nor negative behaviors towards wildlife, often characterized by a lack of conservation action, passive coexistence, or tolerance (Frank 2016, 740). This space is more complicated than simply negative, neutral, or positive. Specifically, the tolerance zone of the continuum captures significant features of acceptance, as a principle. Bruskotter and colleagues (2015) describe a lack of action or a form of passivity that surrounds people during an encounter with a wild animal. While they use the terms tolerance and acceptance, in fact they describe a situation in which people are not motivated to act for or against the wild animals (Bruskotter, Singh, Fulton, et al. 2015). We see recreational use of the ocean for board users (surfers, boogie boards, paddle boards, etc.), swimmers and waders, as well as snorkelers and free divers as people who may not be motivated to act for or against Sharks². Within these recreational spaces there may not be a strong inclination to take account of the presence of Sharks before entering the ocean (for example, by using the Ocearch application: https://www.ocearch.org/tracker/).

Coexistence

One industry connecting humans and Sharks in coexistence spaces is scuba diving. According to *The Shark Watcher's Handbook* (Carwardine and Watterson 2002), 40% of 267 shark viewing sites surveyed used a form of attractant to draw Sharks. These include chum, decoy, or bait (Carwardine and Watterson 2002 cited in Maljković and Côté 2011, 859). Along our continuum, we distinguish forms of scuba diving by the presence and absence of provisioning, which is used to attract Sharks to the dive site. We classify feeding as weak coexistence, chumming as strong coexistence, and no form of provisioning as superior coexistence. Although not depicted in Figure 1, the characteristics of reverence and sentience are another layer within our coexistence range. In such a space of veneration, we argue, scuba diving without the presence of bait with Sharks in their natural habitat, and ultimately their home, is superior coexistence. Hammerton and Ford (2018) argued that shark waters are to be decolonized by removing humans completely from leisurely activities. We argue diving without baiting and chumming constitutes decolonization. The ocean then becomes a space where it is possible for two beings to peacefully meet, share and encounter one another, and ultimately part

² Free divers, because of the nature of diving without air, are not in the water as long as scuba divers. We include them here because of the ISAF data. More work needs to be done to differentiate these divers from other Scuba divers.

ways. This form of superior coexistence allows for shared sentience (Schauer 2021a; Patterson 2021). Shared sentience is a mutual recognition of an experience with another being through the feeling body. It is an experience which is authentic to each individual being, an experience which allows for agentic interactions between two species (Schauer 2021a).

Weak Coexistence

We define *weak coexistence* as Shark diving in the presence of feeding. The term *feeding* is a more specific form of provisioning, in which pieces of fish are fed to Sharks, either by hand or by a spear (Maljković and Côté 2011, 860), which allows for very close physical proximity between Sharks and humans. Such techniques are employed to increase the chances of seeing Sharks in the global tourism industry (Maljković and Côté 2011). We characterize such experiences within the weak coexistence section of the continuum, given the impact of feeding in terms of habituated behavior that may indirectly harm Sharks as well as humans closely associated with their food source, a concept known as habituation. We consider feeding to be the most extreme type of provisioning as it directly offers chunks of food into the mouth of a Shark.

Strong Coexistence

Strong coexistence includes behaviors and practices working towards conservation goals, including perhaps, reverence, and shared sentience (Schauer 2021a; Patterson 2021). Strong coexistence hosts Shark diving in the presence of chumming, not feeding, which is a less intrusive form of provisioning. The Florida Fish and Wildlife Conservation Commission defines chum as "fish, fish parts, other animal products, or synthetic products created or intended to chemically or otherwise resemble animal products placed in the water for the purpose of attracting a marine organism" (n.d.). In chumming, fish parts are thrown into the water to attract Sharks for viewing (Hammerschlag, Gallagher, Wester, et al. 2012). Diving after chumming means there is less human contact with Sharks and it is thus a less aggressive form of provisioning. Figures 2, 3, and 4 show Sharks photographed in areas where chumming was used as an attractant. Hammerschlag and colleagues (2012, 570-571) found provisioning did not modify Tiger Shark behavior in the Bahamas. While Hammerschlag and colleagues (2012) suggest provisioning is useful as a conservation and public awareness tools for Sharks, other scholars find such mechanisms are a challenge to the Shark diving industry, especially with certain species of Sharks (Gallagher and Huveneers 2018). Because of these differences we place chumming within the strong coexistence zone of the continuum.



Figure 2: Great Hammerhead Shark. Image: Ryan Walsh, 4. 1. 2019, Tiger Beach, The Bahamas

Figure 3: Caribbean Reef Shark. Image: Ryan Walsh, 4. 1. 2019, Tiger Beach, The Bahamas



Figure 4: Tiger Shark. Image: Ryan Walsh, 4. 1. 2019, Tiger Beach, The Bahamas

Superior Coexistence

Our posited *superior coexistence* does have an element of untouchability. An idealism. An essence of allowing wild nature to be pristine. That is, we see divers, photographers, Shark rescuers and sanctuary ambassadors who practice superior coexistence as the only humans interacting with Sharks in real geophysical proximity (Schauer 2021b). In this way, it does identify with Frank's (2016) explanation emulating a kind of reverence where humans understand wild animals have intrinsic worth, while simultaneously acknowledging wild animals are agentic and need space away from human presence. Frank's sentiment is similar to Hammerton and Ford's (2018) argument for decolonization, and the push for leisurely activities to be removed from Shark waters. Specifically, Frank (2016, 740) explains of the positive range of the continuum,

[it] represents everything from full integration of and respect for wildlife within the human landscape to deep affiliation with nature and willingness to forgo one's own interests to further those of wildlife. Humans privileging wildlife needs, as in the case of strict nature reserves and wilderness areas. We invite future research to address the fundamental question: is it coexistence if Sharks are completely left without any human contact? Our coexistence sees humans as a species and Sharks as a species interacting, within some spaces, some of the time. After all, we as authors believe it is the rhythm of life for all species to cross paths and interact. Yet, in those spaces of interspecies encounters, we align with Frank (2016), as well as Hammerton and Ford (2018), in our positioning of human interests as secondary in prioritization over the needs of wildlife. Superior coexistence then, emphasizes a Shark centric perspective and aligns with a decolonization model (Hammerton and Ford 2018). Humans are capable of seeing intrinsic worth inherent in other species, and placing the interests of nonhuman species above our own; such practices and worldviews are of superior coexistence.

We believe superior coexistence exists in spaces of interactions between Sharks and humans, humans who, as Treves, Santiago-Ávila and Lynn (2019) describe, have the "capabilities and variable sensory, cognitive, and socio-emotional capacities" (2) to know nonhuman species. Advocate-trustees, who serve as human ambassadors representing animals in the judicial system, embody such qualities (Treves et al. 2019). We suggest that humans with such capacities are the very ones to help in Shark rescuing and other ways of communing with Sharks. In sum, superior coexistence holds a space for such humans with conscious and sentient abilities toward nonhuman species.

Scuba diving with Sharks in their natural habitat, without any provisioning, is an example of superior coexistence. Moreover, diving within the superior coexistence zone does not use human intrusion of any sorts. Figure 4, above, of the Whale Shark, had no form of provisioning. Not only does scuba diving with Sharks, without bait, represent the most superior form of coexistence, but it can still allow divers the opportunity to use photography to promote conservation. For example, Conservationist Shawn Heinrichs exemplifies how photography supports Shark conservation efforts. Heinrichs embarked on a five-year mission chasing down Shark fin operations, on the high seas, in an effort to document their practices on camera. Heinrichs captured video of a Tawny Nurse Shark lying on a reef, with all of its [Her] fins hacked off, trying to swim, drowning to death (Mclean and Joffe 2018). Heinrichs worked with Wildaid (https://wildaid.org), a global NGO protecting wild animals and their habitat, to launch Shark fin educational campaigns in China, after which Shark fin consumption reportedly decreased by 70-80% (Mclean and Joffe 2018). Heinrichs notes that imagery gives a voice, and combining visual elements with education resulted in a massive positive change toward Shark conservation.

In addition to Shark photography and videography, Shark sanctuaries exist to protect and conserve Sharks. Globally 29% of all marine protected areas are designated

specifically for Sharks (The Marine Conservation Institute, 2016). We believe that a sanctuary truly focusing on protecting Sharks, and all marine animals, as well as the Sea³, is a Shark centric approach. That is, placing Sharks and their home above human interests (Hammerton and Ford 2018). We believe such a sanctuary aligns with Hammerton and Ford's (2018) call for decolonization of Shark waters to allow Sharks their natural born rights and freedoms. We align with their position.

Within a Western dominant paradigm, which encompasses tyranny, colonialism, and capitalism there is mass consumption and killing of animals. Such atrocities are often justified through a belief that animals lack sentience, among other human qualities, such as cognition (DeWaal 2019). Yet, recent science empirically demonstrates that fish (DeWaal 2019) and other aquatic species feel pain (Sneddon et al. 2018). Such evidence, however, has been met with criticism (Sneddon et al. 2018). This lack of scientific consensus has moved us, as authors of this paper, to use our own lived, felt and embodied wisdom as forms of knowledge. We describe this as encapsulating an openness, embracing embodied understandings and aligning with a higher consciousness. From this frame of reference, we as humans know Sharks can suffer. In other words, we are discussing here humans who are more along the lines of the advocate trustee in their capacities and capabilities to know nonhuman species (Treves, Santiago-Ávila, and Lynn 2019), and especially here in our work, Sharks. That is, a group of humans who feel the pain of others, both humans and nonhumans, in their felt bodies. We align with the work of Porcher (2018) in the understanding that Sharks are sentient, while expanding that to be inclusive of innate knowings through our own human felt consciousness, lived, and embodied experiences. Specifically, by interacting with living Sharks in their natural state, there is a sense of knowing through the felt body, the empathetic physicality, in such a way that we see Sharks as sentient beings who share in an agentic, interactive experience. Here we move away from the paradigm of wildlife watching (Chris 2006), which somehow displaces this sharing of sentience (Schauer 2021a; Patterson 2021). We ascribe to sharing sentience and ask, Do we feel the Shark's fear in those moments? Is Her fear in our awareness and is our fear in Her awareness? Do we feel Her sense of being, of life? Does She feel ours? We see a powerful and sovereign alchemical exchange through two agentic beings, a Shark and a human. We argue that an interaction between two sentient beings, who are sovereign, invokes an emotional response, which transforms ways of knowing. Moreover, there is value in sharing sentience with a Shark in the Sea, but this can be done with a diver, a photographer, a Shark

³ Similar to Sharks, we capitalize the Sea to recognize personhood.

rescuer, or an ambassador of Shark sanctuaries. Perhaps there are others of this nature, who share sentience with Sharks, we call on those humans as well. Such ways of being with nonhuman animals may have the capacity to transform the human condition. One of our coauthors discusses her sharing sentience (Schauer 2021a; Patterson 2021) with a Shark:

Diving at Tiger Beach in The Bahamas was a perspective-changing experience. Tiger Beach is one of the Shark capitals of the world, home to Tiger Sharks, Great Hammerhead Sharks, Bull Sharks, Lemon Sharks, Caribbean Reef Sharks, and Nurse Sharks. I was fortunate enough to be able to have many cage-free experiences with large Sharks in their natural home. Because of the safety precautions with which we were trained before the dive - remaining in an upright position and using a specific, detail-oriented method of entering the water by gently rolling off a foot-deep submerged platform into the water in order to avoiding splashing at the surface - we were able to project ourselves as non-threatening beings, which are neither Her predator nor Her prey. The most thrilling for us divers, needless to say, was to have a close-up interaction with a Tiger Shark. The moment that simply changed my perspective came in the body of a 13-foot long Tiger Shark. At first, She kept her distance – it was clear that She was wary, if not fearful, of my presence. After making a couple passes in the background, She finally came in for a closer look. As She saw my figure kneeling on the sandy ocean floor, motionless and void of threat, She recognized that I was not a danger to Her, and She swam – or rather glided – right up to me, less than a foot from my face, and smoothly turned to loop around. Upon circling back again, our eyes locked. She maintained eye contact with me for a few seconds, and seemed to feel more comfortable around me, as She remained close and calmly glided along and past me. By keeping our eyes locked, we were both able to not only study one another, but somehow use nonverbal communication through our gaze, and our behaviors, to signal a mutual understanding that neither of us are a threat to the other. I instantly felt Her recognition of me as another living, sentient being beneath the surface. At that moment, we were both two large animals underwater, rather than two foes. I felt almost incapacitated by Her curiosity, grace, and intelligence; it was nothing short of mesmerizing. The ability to connect with a wild animal that is so falsely perceived as fearful and dangerous was incredibly empowering, and it changed me, from that point on. We shared the capacity to perceive each other as fellow beings – neither of us felt threatened by the other's presence, and a chord was struck within us both that radiated a connection based on curiosity and trust rather than fear. I strongly believe that we went through a transformation of knowledge together, as we recognized each other's agency and built a level of respect for one another. From then, there was simply no way that I could continue to live my life as usual. I knew that I had to do everything in my power to respect and protect Sharks moving forward.



Figure 5: Whale Shark. Image: Ryan Walsh, 6. 6. 2020, Isla Mujeres, Mexico

Superior Coexistence then, can embrace conservation, through a sharing of sentience between two agentic beings, a Shark and a human. We see the capacity for this to materialize in photography and videography, diving, Shark rescuing and ambassadors of Shark sanctuaries. We align with Hammerton and Ford (2018), stating that the sanctuaries need to be decolonized giving the waters back to Sharks. In line with our Shark centric approach, they argue humans are just another species in the ocean. Nyhus (2016), as well as Hammerton and Ford (2018), find divers capable of having communal interactions with Sharks. We believe too, as narratively recounted above, humans share sentience with Sharks. One narrative from conservationist and photographer Shawn Heinrichs, the other from Shark enthusiast and coauthor of this paper. Through such narration we try to capture how sentience is shared in an underwater space between a Shark and a human. Ultimately, both stories are authentic ways of knowing, which display a sharing of sentience, encompassing self-observation of knowings in our felt bodies, in our lived experiences, and in our embodied understanding with other species. Such are inspirations of a better way to be in this world. Both motivate us to conserve the species we feel, know and love.

Conclusion

In this work, we situate humans and Sharks as coexisting in an economy of life. We align with literature that showcases interactions between humans and wild animals and that varies on a continuum from negative to positive experiences. Our contribution finds that atrocities and varying degrees of negative behaviors toward Sharks exist in a conflict relationship within an economies of death paradigm, and that peaceful, and distinctly differing, forms of coexistence exist within an economies of life paradigm. Economies of life is embedded in coexistence with Sharks, and it supports in real ways the move toward decolonization (Hammerton and Ford 2018). Furthermore, we believe sentience and the understanding and knowing of Sharks from an embodied experience is the deepest form of reverence and veneration for Sharks.

Perhaps there is an ultimate coexistence, which is for another paper, but would include Shark sanctuaries, created for the purpose solely of supporting Shark lives, where humans need not enter. For now, we open the conversation to what other forms of economies of life and superior coexistence may already exist, which forms may be evolving and developing, perhaps as an ultimate coexistence, and which forms may be imagined in a utopian paradise.

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