

THE UNIVERSITY OF CHICAGO

Martian Borderlands:
Colonizing (Outer) Space in the
Lower Rio Grande Valley

By

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At the Origin, the Mouth of the River

*“I stand at the river, watch the curving, twisting serpent,
a serpent nailed to the fence where
the mouth of the Rio Grande empties into the Gulf.”*

~ Gloria Anzaldúa, “Borderlands/La Frontera” (Anzaldúa 1987)



Figure 1: An image of Boca Chica Beach viewed from the ocean shoreline. Nearby is SpaceX's Starship Super-Heavy Launch Vehicle. Photograph taken by the author.

I stood at the mouth of the Rio Grande, the tide periodically engulfing my bare feet, as I sank further into sand and seashell that was splotted gray and black from oil spills in the Gulf of Mexico. There was no one around me, but across the water, where the river empties into the ocean, distant silhouettes stood in the water. The Mexican coast of Playa Bagdad was lined with trucks and people across the border, birds traversing overhead. Along the adjacent floodplains

stood *Faro de Bagdad*, a lighthouse that once helped ships navigate into what was the booming transnational seaport of Port Bagdad. The river marked what seemed like a reflection, with the lighthouse mirroring SpaceX's towering Starship Super Heavy-lift launch vehicle prototype, erected behind me on the American side. The rocket was set to launch in a few weeks with the hope of one day transporting humans into outer space. This liminal entry point where the origin of life began for Esto'k Gna people, and where aeronautical engineers hope to transport humans to colonize Mars, is where I begin.



Figure 2: A view of the mouth of the Rio Grande. In the distance is Bagdad Lighthouse and people swimming on Playa Bagdad in Tamaulipas, Mexico.

Boca Chica Beach lines the Southernmost tip of Texas stretching a few miles along the Gulf of Mexico. The public beach is a cherished location for both members of the

Carrizo-Comecrudo Tribe and the majority ethnically Mexican population of Cameron County.¹² It is located on Somi Se’k, also known as the Lower Rio Grande Valley (RGV) of South Texas, the ancestral home of the Carrizo-Comecrudo Tribe of Texas, where the Rio Grande meets the Gulf of Mexico, where freshwater meets saltwater, where migratory birds and vulnerable species make transnational journeys, and now where SpaceX erected Starbase as a launch site to send humans to Mars.

SpaceX (Space Exploration Technologies Incorporated), a private outer space travel venture founded in 2002, announced plans to set up a facility in Boca Chica Beach in 2014 that came following the approval of the Federal Aviation Administration and U.S. Fish and Wildlife Service in 2013. (FAA 2021; Berger 2013) Elon Musk, who serves as the main CEO of SpaceX, has since pushed to expand the facility and rebrand the area as “Starbase, Texas” with hopes of transforming it into a spaceport city that will one day transport humans to Mars. (Musk 2021a) For Musk and Cameron County officials, Boca Chica Beach serves as a bridge to Mars and is the key to local economic development in South Texas.

I have kept myself updated on SpaceX’s presence through online activism carried out by locals who expressed their dissent to the project. Having studied astrophysics in college, SpaceX’s proposed “Starbase” near Brownsville, which sits 20 miles from Boca Chica Beach and a four-and-a-half-hour drive from my hometown of San Antonio, made me feel apprehensive, though curious, as to how its development would unfold. SpaceX’s presence in the

¹ I use the term ethnic Mexican in line with how scholars of the U.S.-Mexico borderlands describe Mexican American, Chicana, Mexican-national and Mexican immigrant people as a population.

² There exist only three federally recognized tribes in Texas - the Alabama-Coushatta Tribe of Texas, the Kickapoo Traditional Tribe of Texas, and the Tigua Ysleta del Sur Pueblo. While the Carrizo-Comecrudo Tribe of Texas is not a Federally Recognized Tribe, the violent histories of colonization in Texas, following waves of Spanish, Mexican, Texan, and American settlement, has forced many Indigenous peoples of South Texas to adopt identities such as Mexican, Hispanic, American, Texan, and so on to assimilate as a means of survival. This echoes the struggle that many other Indigenous tribal nations face in gaining tribal sovereignty and receiving federal recognition. As such, their lack of official treaties and U.S. legal protections limits their ability to negotiate with the United States and the State of Texas.

Lower RGV has been generally controversial and subject to lawsuits as they conduct erratic road closures that come without notice, rocket explosions that shatter windows and release debris onto local land and wildlife, and bring an influx of employees from outside of the RGV into Brownsville. This last point has drastically increased the cost of living in Brownsville, which was named the poorest city in the United States for several years. Activists and Carrizo-Comecrudo tribal members accuse SpaceX's settlement of disenfranchising and dispossessing land from residents, jeopardizing local ecology, and disrupting relations to land long-cherished and long-established by Esto'k Gna people and local ethnic Mexicans. (Sandoval and Camacho, 2021)

In this project, I track SpaceX's impacts in the years following its settlement on Boca Chica Beach through an ethnographic study of the Starbase launch site, Brownsville, and the Lower RGV to form analyze the ongoing effects of SpaceX's arrival on local people of Brownsville, Esto'k Gna, and Somi Se'k. I position this project at the intersection of Indigenous decolonial critique, science and technology studies, and U.S.-Mexico borderlands literature, and I draw upon ethnographic projects that tackle technoscientific projects related to space exploration and from those who have critiqued space exploration as settler colonial. (Maile 2021; Smiles 2022) I am wondering what it means for interplanetary rocket launches to take place in heavily colonized areas of the world. (Redfield, 2000) I also draw upon ethnographic literature that asks how scientists imagine and conceptualize the planetary through place-making practices. (Messerli, 2016) Though, rather than disengage from scientists and space exploration enthusiasts' Western expansionist rhetoric and their claims to speak for all of humanity and the planet, I seek to question how colonial language and intention manifest at Starbase and what rhetoric means for place-making and relation-building between Earth and Mars. (Valentine, 2012) Though

conceptualizing life in outer space can facilitate a radical ideation of relational politics, as seen in science fiction,³ Indigenous futurity, and Afrofuturism which radically emancipates itself from the present moment on Earth, the case of Starbase in the Lower RGV shows how space exploration is inevitably implicated in Earthly politics and cannot exist in a vacuum. (Valentine, 2017) I am interested in both what drives space exploration, the means and ends in realizing such a project for those currently most invested, and the ethical consequences that lie for those here on Earth who serve as a transit for such projects. I aim to take SpaceX and its supporters seriously on their own terms while also making sense of how SpaceX's presence is interpreted and negotiated between people of the South Texas borderlands. This project draws inspiration from ethnographic studies of the Thirty Meter Telescope (TMT) on Mauna Kea, which detail how "technoscientific conquest" may exist within even "benign sciences" like astronomy and physics in constructing telescopes on sacred Kanaka Maoli sites. (Casumbal-Salazar 2017; Maile 2023) My research is also underpinned by scholarly work by environmental ecologists and biologists, and those studying the effects of SpaceX's explosive debris and sound pollution on fishermen and organized crime in Playa Bagdad. (Sandoval and Camacho 2021; Reyes-Retana 2022) Some have written ethnographically as it relates to the economic and social possibilities of Starbase through "planetary ethnography," resisting any particular position to reimagine social relations as they relate to the history of American investment in the Lower RGV and the global interest in Starbase. (Szolucha, 2023) Regardless, this situation is ongoing and there is an urgent need for ethnographic literature engaging with how Starbase sits with local resistance movements, online media, and the history of settler colonial violence that is ever-present in the South Texas borderlands.

³ Theorizing about the "human" and kin relations on Mars and in outer space has been taken up in Radcliffe's Mars trilogy, Leguin's Hainish Cycle, and Octavia Butler's Xenogenesis trilogy, among many other authors of sci-fi.

Having grown up in South Texas, I have an intimate familiarity with the area, its beaches, and the sociocultural specificity of its residents and history. I also hold a deep interest in how technoscientific projects affect society, informed by my undergraduate astrophysics education that exposed me to working with scientists and engineers. I focus on using my “forked tongue,” both bilingually in Spanish and English and in my familiarity with the Texas borderlands and modern science, as an opportune position to mediate and theorize about Starbase’s development in South Texas. (Anzaldúa 1987) Drawing from Anzaldúa’s *Coatlicue* self-in-between state, I may at times push back against “harmful-sense” and serve as an against-the-grain storyteller in my ethnographic writing, informed as a Chicana from South Texas and having been trained for several years as a student of modern science. (Lugones 1992, 33) That being said, I recognize that I did not grow up in Brownsville, am not Esto’k Gna, nor am I an engineer at SpaceX, thus my ability to interpret will require some work on my part, but my familiarity with these social spheres and the way that they have shaped my subjectivity may allow for more room to theorize than if I were to conduct this research with no preemptive knowledge.

Online media has been crucial for staying updated on local resistance against Starbase’s development. During the beginning of the FAA’s re-evaluation of SpaceX’s biological assessment in 2021, the #fueraSpaceX⁴ hashtag was used by several activists and local environmental organizations to circulate information, zines, and videos to update others and spread awareness of SpaceX’s operations on Instagram, Twitter,⁵ and other social media platforms. I used these social media posts as an avenue for contacting and conducting interviews with five activists affiliated with various organizations including the Sierra Club, Another Gulf is

⁴ The hashtag #fueraSpaceX or “Fuera SpaceX” roughly translates to “Get Out, SpaceX” in Spanish.

⁵ While at the tail end of this thesis project, Elon Musk, CEO of SpaceX and also the current owner of Twitter, had changed the company’s name from ‘Twitter’ to ‘X’ as part of X corp. That being said, for the sake of simplicity, I will be referencing the site as Twitter and the posts as tweets.

Possible, Voces Unidas, and Jotería Científica. I also partook in an online group meeting with the South Texas Environmental Justice Network in February where several activists, Carrizo-Comecrudo tribal members, and community members came together to debrief on collective action. All of the activists that I spoke with were Texas-based, either living in the Lower RGV region or maintaining a connection to the area through their families. I draw from decolonial methodologies of participant action research (PAR) by centering perspectives of local activists and members of the Carrizo-Comecrudo Tribe to help shape and theorize on the data that I collect. (Tuhiwai-Smith, 1999) Though many SpaceX supporters and local officials paint activists expressing dissenting opinions as outside agitators and environmental extremists, I have found that my interlocutors are keen on understanding SpaceX's presence through their interpersonal relations, their personal commitment to the area's residents, involvement in facilitating lawsuits against SpaceX, and in their own knowledge of RGV history.

Interviews with activists were among many interactions that I took part in during my ethnographic fieldwork in Brownsville in December and April of 2023. Over the course of six days, I spoke with residents and tourists while visiting Boca Chica Beach, the historic downtown area of Brownsville, and several local museums. I also use publicly available testimonies from the Federal Aviation Administration's (FAA) Town Hall meetings in October of 2021 in which locals and non-locals voiced their opinions on the revised Programmatic Environmental Assessment (PEA) that would approve SpaceX's launch of their proposed Starship/Super-Heavy rocket. This will be used to understand the various stakes of technoscientific projects and what SpaceX's operations mean to different publics. I also use digital ethnographic methods in analyzing SpaceX's social media presence and online SpaceX discourse to reveal how these

publics are formed, and how online media presents contrasting depictions of SpaceX from those of peoples' lived experiences in the Lower RGV.

Though this project presents obvious limitations in time and scope as a Master's thesis, with limited sustained ethnographic rapport, I draw from my own background and familiarity with South Texas in addition to the various data sources available, both online and offline, creating a patchwork to attend to the various dimensions of this highly layered situation. In seeking out where power is exerted at the extremities of SpaceX's influence, both online and locally on the ground, my combined methodology may reveal how modern science as a "knowledge apparatus" maintains political control of land and state power. (Foucault, 1980) The collected data will contribute to how certain "boundary objects" are made between social networks and infrastructures, and how interpretations of space exploration may come to mean different things to different people while remaining opaque or enigmatic at sites of discursive incommensurability. (Star, 1989) The epistemic and discursive complexity of SpaceX's operations conflate senses of scale, juggling between universalistic and planetary assertions that take place at the already diffuse socio-environmental dynamics of the South Texas borderlands. To make sense of these disparate epistemologies, I draw from the frameworks characterizing the cacophony of settler colonialism and discourses on the Anthropocene, our supposed current era in which human activity competes with the geophysical processes of the Earth. (Byrd 2011; Chakrabarty 2009) Through the lens of a "patchy Anthropocene," I can attend to planetary models, Indigenous cosmologies, and political economies that make up the various layers of Boca Chica Beach as it contends with SpaceX's activities and rationale. (Tsing, 2017) Throughout the thesis, I also point to photography that I have taken of Brownsville and Starbase

along with figures from online media that may allow one to better conceptualize this cacophonous setting, most of which are included in the Appendix.

While other anthropologists who work on issues of space exploration advocate for looking beyond initial critiques of language and rhetoric, claiming that Earthly matters and reference points may prove of little use to social and relational life in outer space, the situation of Boca Chica provides an urgent and telling case-study for how SpaceX's attempts to colonize Mars materially affect those of the Lower RGV. (Battaglia, Valentine, and Olson, 2015) I argue that in the context of the South Texas borderlands, in what was considered the heart of the Western frontier, Mars colonization - in the way that it is envisioned by those supporting Starbase's development - is not an innocent apolitical metaphor and in fact, utilizes several strategies and logics of American settler colonialism that are historically emblematic of the U.S.-Mexico borderlands. (Tuck and Yang, 2012) First, I show how SpaceX supporters use claims of science, progress, and rationality as ideological regimes of veridiction, asserting Mars Colonization as a universal good for all of humanity, and obfuscating their American Western expansionist rationale that manifests through "technoscientific conquest." (Foucault, 1979; Maile 2021) Secondly, I will use established theoretical literature on the U.S.-Mexico borderlands, historical accounts of violence against ethnic Mexicans and Indigenous peoples in Texas, critical environmental justice literature, and Indigenous decolonial critique to theorize alongside my interlocutors in what they call "neocolonialism" to describe SpaceX's presence. Through establishing Starbase, SpaceX reinstates settler colonial orientations that SpaceX's activities render local people and ecologies alien by coordinating with liberal settler governing bodies like the State of Texas and Cameron County to effectively alienate local humans, non-humans, and land in the Lower RGV. Thirdly, I outline how SpaceX and its supporters' online use of social

media posts perpetuate settler colonialism through place-making practices similar to those used by white American settlers in the Western frontier. Like the biased narratives that are pushed in school curricula and cultural institutions in Texas to this day, SpaceX curates a liberal image of modernity on the internet that denies acknowledging local Indigenous, Mexican, and Chicana peoples, histories, and cosmologies a place within it. Finally, I will review how Indigenous and ethnically Mexican residents contend with SpaceX's presence and their futurity within the increasingly ecological and economic precarity of the borderlands along with some residents' attempts at integrating with Starbase's political economy that relies on cruel optimism. (Belrant 2011) I end by analyzing how the creation of a speculative Earth-Mars entry point in Boca Chica Beach (re)creates and maintains a Martian Borderlands that sets local inhabitants as aliens denied of futurity, and what this says about the current privatized nature of space travel.

The following provides a tangible case for using decolonial theory and methodologies along with science and technologies studies to analyze the way technoscientific enterprises appeal to universalizing claims of modern science in collaboration with neoliberal policies to colonize and dispossess lands here on Earth and in outer space. I hope this project not only brings about further discussion of the social phenomena of SpaceX's operations in South Texas but also creates a critical recollection of public history for future reference to both my interlocutors and anyone wanting a critical understanding of this case. I hope that this ethnography may also shed light on the ethics of thinking about socio-political cases like these that are growing ever more prominent in the present day.

Conquistador Technoscience and the Future of (In)Humanity

"Mars is a rock—cold, empty, almost airless, dead. Yet it's heaven in a way. We can see it in the night sky, a whole other world, but too nearby, too close within the reach of the people who've made such hell of life here on Earth."

~ Octavia Butler, "Parable of the Sower" (Butler 1993, 24)

On a Thursday morning, residents of Padre Island, Brownsville, and Northeastern Tamaulipas, Mexico felt the Earth shake. The Starship Super-Heavy rocket that loomed over Boca Chica Beach launched on May 20, 2023, after weeks of delays. News stations streamed the spacecraft's launch live online, with fiery rocket plumes blowing smoke clouds and dust that spread offscreen, as shown in figure 3. Spectators cheered from their computer screens and designated viewing areas on Port Isabel and Padre Island as the rocket exploded into a bright plume of debris over the Gulf of Mexico. For SpaceX engineers and space exploration enthusiasts, this was a cause for celebration, as the collected data brought SpaceX one step closer to a Mars colony. For many others, the destruction of the living non-human beings that inhabit the beach and wildlife refuges, concern over debris destroying property, of having beach access, or of the economic changes that Starbase will bring. Comments from residents of Padre Island, Brownsville, and Cameron County voiced complaints of windows shattering due to vibrations caused by rocket testing, a threat to at-risk wildlife populations such as ocelots, and of spotting dead animals run over from increased automobile traffic.

This explosion was one of the latest rocket tests in Boca Chica Beach. Previously, SpaceX launched and exploded a Falcon 9 rocket in 2019 that shattered windows and launched debris into backyards and tested static fires that were noted to have burned through acres of the nearby habitats of ocelots and migratory birds in September of 2022. With their rapid

development since testing their Falcon 9 prototype, Starbase came under increased scrutiny and concern over the long-term effects of these explosions and tests. In 2021, with the attempt to rebrand the area as “Starbase,” SpaceX planned to run test flights of their Starship/Super-Heavy rocket, the largest spacecraft ever built, at Boca Chica Beach. As SpaceX had only been approved to launch smaller Falcon 9 rockets, which led to SpaceX and the FAA needing to formulate and approve a new Programmatic Environmental Assessment (PEA) document to remove any legal obstacles that may deter Starship’s construction and launch. While these kinds of legal revisions are nothing new to SpaceX’s case, as the Texas Government had previously amended its constitution’s Open Beaches Act in 2013 which allowed Cameron County and SpaceX to close Boca Chica beach to the public for rocket launches, the FAA did hold two public hearings in October of 2021 for the public to voice concerns or support, though this public is left ambiguous. As the meetings took place during the COVID-19 pandemic, when all public meetings by the U.S. federal government were conducted remotely, their online format allowed for people internationally to register and voice an opinion in addition to locals. And because the FAA was obligated to listen to every registrant, hundreds of many SpaceX enthusiasts internationally from Spain, Brazil, India, Malaysia, and throughout the world could voice their opinion. The two meetings are publicly archived on the internet for retroactive viewing on Youtube and contain seven hours of three-minute testimonies from commentators. Though Appendix I of the FAA’s revised final PEA document responds to various questions and concerns following the meetings, the majority of these comments are categorized as “non-substantive” or “non-germane,” deemed to be baseless personal opinions or unrelated to the meeting. (FAA 2021) Having attended one of the meetings when it was hosted live, I believe this dismissed feedback holds a wealth of information that can be analyzed ethnographically.

The following section traces the FAA town halls and outlines the discursive politics within the meetings to give a brief overview of the stakes of Starbase for SpaceX enthusiasts and dissenting voices. I will also review the outcome of these meetings that lead up to SpaceX's recent Starship launch and explosion on April 20, 2023. The inclusion of locals, outsiders, and newcomers who voice dissent and support for the development of Brownsville and a future on Mars illustrates the complexity and incommensurability between political, ethical, and epistemic claims. In examining the ways in which different publics come to understand SpaceX's activities, the FAA's PEA, and each other's claims to Boca Chica Beach, I conclude that the town hall meetings not only expose the inherent flaws in liberal government proceedings but also reveal the ideologies that underlie modern science, space colonization, and technological progress.

Activist Emma Guevara mentions during the FAA town hall how many SpaceX supporters voiced mostly pre-formulated opinions and propositions that are repeatedly regurgitated in SpaceX media, SpaceX fans, and Elon Musk. (Musk 2017; FAA 2021a, 3:28:50) SpaceX's website states various assertions, that they are "making history," "making humanity multi-planetary," creating a "spacefaring civilization," and "believing in the future." (SpaceX 2023b) Similarly, many SpaceX enthusiasts reiterate these points, believing that technoscientific projects like the moon landing, Mars colonization, and space travel are endeavors universally worth pursuing.

As one SpaceX enthusiast says "It's really the people in tech who change the world. They're the people who deal the cards, whether it's fire or electricity – for good or bad – or the cotton gin or the iPhone or the atom bomb" (Szolucha 2023b) Such a view is characteristic of technological determinism, which follows that technology is a major cause of social change, independent of social factors, and follows a linear trajectory that increases over time with the

advancement of “civilization.” (Wyatt 2008, 169) To do science is to be part of a lineage of scientists working to advance a collective human knowledge for the benefit of mankind, knowledge that is theoretically accessible to anyone under a shared “rationality” that is based on mathematics and “objective” scientific research. (Weber 1948, 116) It assumes that the scientific method is both methodical and subject to innovations, contradicting the ad-hoc ways in which scientific theories and knowledge are actually produced. (Feyerabend 1975, 35-36) The sciences, especially physics and engineering, presume a removed, all-knowing, disembodied “god’s trick” view that promises objectivity, (Haraway 1988, 577) functioning under the guise of methodical “geniuses” who single-handedly give rise to innovative ideas, as echoed by one man who professed that, “Elon’s special type of genius only happens once in a generation. He’s like a Nikola Tesla, Albert Einstein, Henry Ford, and Steve Jobs all rolled into one. He’s a thoroughbred champion that should not be hobbled. Give him [some] reins but let him run.” (FAA 2022b, 3:37:47) Such a view fails to take into account modern science’s anarchic forms of knowledge production by “reproduc[ing] the cultural supremacy of Western science as self-evident,” and allowing SpaceX supporters to invoke the morality of liberal multiculturalism to prioritize SpaceX’s operations as a common good. (Casumbal-Salazar 2017, 8) This is expressed through rhetorical terms like “humanity,” “us,” and “we,” as many non-local supporters of SpaceX voice their opinions as “citizen[s] of the world.” (FAA 2022b, 3:00:00) Here, science functions as a political tool, allowing anyone to have a stake in its perpetuation, and within the ongoing legacy of modern science and technological progress, SpaceX’s explosive rocket launches seem reasonable, rational, and even desirable. Regardless of their material outcomes, their operations are exonerated, as “there’s no stopping progress, and anyone that tries to stop progress lays a path of waste, haste, and regret.” (FAA 2022b, 2:32:00) This

renders any dissenting opinion of SpaceX as inherently regressive, and allows SpaceX supporters, regardless of having any knowledge of Brownsville or the Valley, to conclude that “SpaceX operations can and will coexist with area wildlife, with residents, and historical sites.” (FAA, 2022a, 3:02:00)

The FAA’s meetings are sites of epistemological clashes and incommensurability between those with a science background, those with no science background, locals, non-locals, Esto’k Gna, settlers, those who receive information online, and those who gather information from lived experience, among several other ways of knowing. In order to attend to both local concerns and the logic of technoscientific enterprise, I interpret SpaceX’s operations as producing “situated knowledges,” which interprets science as a contextualized practice where only partial perspectives situated in subjectivity can promise any objective knowledge. (Haraway 1988, 593) Building off of this, I employ Karen Barad’s concept of agential realism to understand how technoscientific apparatuses like those of Starship and Starbase come to matter as “specific material (re)configurations of the world” through materially-discursive “intra-actions.” (Barad 2007, 140) In this way, SpaceX engineers and rockets like Starship cannot be considered as isolated technoscientific practices, and instead are performatively co-constituted with Boca Chica Beach, the Lower RGV, and local inhabitants.

Many engineers assume that understanding the technical science behind Starship and SpaceX’s scientific goals grants them more authority over others with no formal science background. However, these claims to “facts” and rationality obfuscate the politically material-discursive configurations that allow experts, engineers, and scientists claim to truth-telling through “regimes of veridiction.” (Foucault 1978, 36) This alternative method of understanding technoscience follows socio-political structures that grant it authority and points

to the mechanisms that allow scientists and engineers to naturalize science as “facts” formed through a liberal marketplace and technology as being produced for the universal good of humanity. The supposed democratic neutrality of the FAA town hall, as well as the situatedness of Starbase in South Texas, makes it ideal to showcase the regimes of veridiction that facilitate and maintain SpaceX's operations in Boca Chica.

The way science and liberalism work in tandem is evident in the way the town hall meetings are conducted. The FAA hired the Incentive Technology Group, LLC (ICF), a third-party company, to organize the meeting. They provide a technical introduction to the revised PEA document as well as the Starship/Super Heavy launch vehicles laden with statistical data and aeronautical engineering jargon, under the assumption that greater technical knowledge of SpaceX's rockets will suffice to justify their operations. Although this same information is translated into Spanish, various residents, including activist Rebekah Hinojosa, pointed out that the meeting's inclusion of a Spanish translator was not conveyed to the community of Brownsville or Cameron County within thirty days' notice, and instead was mentioned at the “last minute.” (FAA 2022a, 1:01:26) This, Hinojosa argued, inherently excludes many Spanish-speaking community members of Brownsville from participation within the hearing, privileging fluent English speakers, and is a violation of the Title 6 Civil Rights Act of 1964, as it discriminates against primarily Spanish speaking people. When the secretary of the environment from the state of Tamaulipas speaks on her concerns over environmental issues, translation is also not included in the meeting's recording, and instructions for seeing the translation are only communicated after she is done speaking. (FAA 2022a, 1:51:23) Such linguistic bias is noticeable as the moderator butchers the pronunciation of every Hispanic first and last name throughout the entire meeting, implying that the neutral voice within the liberal

bureaucratic proceeding is one with no familiarity or situatedness in the predominantly ethnic Mexican population of South Texas.

Regimes of veridiction like the FAA town hall delimit local opposition while simultaneously enabling SpaceX enthusiasts to argue that settling Mars will potentially save humanity from global crises such as climate change, hypothetical meteor strikes, nuclear fallout, the sun's eventual supernova, and the universe's heat death. Regardless of how realistic these claims are, their speculative benefits position the "human species" as a unified general public against the local people of South Texas who must bear the burden of SpaceX's rocket launches for the continuity of humanity. Social scientists have taken to explaining how humans have never been able to experience themselves as a unified "species," (Chakrabarty 2009, 220) though spoken in the context of how people conceptualize the "Anthropocene," this also applies to how those who promote space colonization assume access to a shared "humanity." Indigenous scholars have critiqued the "we" which many scientists and environmentalists assume within issues regarding pollution, climate change, and environmental degradation in the Anthropocene. (Liboiron 2020, 100) Liboiron explains how difference is controlled simultaneously through universalisms and stereotypes in conjunction, analyzing rhetoric used by environmentalist groups who reference global human responsibility, rendering one group as the standard norm while all others are trivialized as fringe peripheries. Industrial processes and technoscientific practices are conflated with human processes in a global "we," differing the culpability of those humans who have contributed disproportionately to pollution and Climate Change under a neutral globalizing language. (Liboiron 2020, 106)

Universalization and difference-making within Western thought have a historical genealogy in technoscientific projects, as Jodi Byrd describes how the European scientific

project of calculating the planetary parallax by observing the transit of Venus in 1769 on Indigenous lands was foundational to developing cosmological telemetry and developing a European “planetary consciousness.” (Byrd 2011, 27-28) This inaugurated the liberalism characteristic of the Enlightenment and Western empire which coincided with the formation of the United States, allowing for the conceptualization of the global through the use of Indigeneity as the transit on which discursive and universal claims are made. Thus, the United State’s empire is not formed through the creation of frontiers, but through a paradigmatic “indianness” which is deemed abject, ungrievable, and the original enemy combatant, an identifier that can be mapped onto any person that stands against the just civilizing nature of a convivial liberal multicultural empire. From here, the very notion of the human is defined under Eurocentric, white supremacist, Enlightenment ideals of rationality that dictate who and what is (in)human. Space exploration and astronomy have a history of further conflating liberal humanity, technoscientific conquest, and risk assessment, spanning how NASA’s Apollo Mission informed the creation of the atomic bomb, reshaping once again how American liberal empire understood the planet as an intact ecology in need of national security. (Masco 2010) As one commenter states, “Let’s not politicize space exploration and rocket science ... Rocket science is non-partisan and is essential to the sophisticated STEM⁶ advances in America.” (FAA 2022b, 2:50:20)

I use David Uahikea Maile’s analytic of technoscientific conquest to describe the way in which liberal Western empire grants (in)humanity through technoscientific projects like the TMT telescope on Mauna Kea, Hawaii. Using Tiffany Leshebo King’s definition of “conquistador humanism,” which delineates how European conquest and dehumanization of Black and Indigenous peoples was central to developing the liberal concept of the “human,” ethnic Mexicans are judged as (in)human on the basis of whether they are in favor of SpaceX’s

⁶ STEM is an acronym used to describe Science, Technology, Engineering, and Mathematics education.

operations. (King 2019) SpaceX falls in line with this kind of conquistador technoscience, as its supporters question the validity of those in opposition to Starbase and Starship, claiming that they are either a fringe group of “environmental extremists” who do not represent the majority of people, (FAA 2022a, 1:18:28) or claiming that they are nefarious invaders hired by industry competitors of SpaceX to thwart their plans. (FAA 2022a, 3:12:30) Locals who support SpaceX, regardless of conflicts of interest, such as the City Commissioner of Brownsville or a construction manager contracted by SpaceX, are viewed as part of a modern rational worldview and closer to humanity. Though multiple voices within the meeting conveyed fundamentally different epistemological understandings of science, social issues, law, and politics, by dehumanizing those who are against SpaceX, they are able to assert their own humanity to formulate a (mostly) coherent voice in favor of SpaceX. Even so, many SpaceX supporters are hostile to the FAA’s meeting, blaming bureaucracy as a hamper to technological progress. The Environmental Protection Agency (EPA), the National Environmental Protection Act (NEPA), and the FAA are seen as hegemonic and oppressive towards technoscientific projects which seek to better humanity, hindering progress with needless and performative environmental regulations. (FAA 2022a, 1:18:28) In these cases, non-human beings that reside on the beach are seen as inhuman as well, and government processes like those of conservation, as illustrated in figures 4-7, are viewed as hindrances to humanity.

Technoscience unites voices in supporting SpaceX's cause through “boundary objects” which allows for things relevant to scientific inquiry like rockets, Starbase, Earth, and Mars to come to mean different things in different social worlds while retaining a common identity and legibility across common use. (Star 2012, 393) Technological determinism is one such boundary object, as it embodies different ideologies that come to mean the same thing, exerting diffuse

control over several publics through vague notions of human progress and economic growth. I use Wendy Espeland's definition of "ideology" as a systematic agglomeration of meanings, values, and beliefs from a particular social group's worldview. (Espeland 1998, 43-44) Espeland uses this definition to characterize the Bureau of Reclamation's creation of a liberal 'worldview' that legitimizes settler colonial irrigation projects, dams, and national parks rooted in ideals of technological progress, public good, and Christian theology in the American Western frontier. She claims that this not only describes the bureaucratic systems of the U.S. federal government but also the romantic visions that mechanical engineers had of their own hydroelectric energy dams and irrigation projects in providing power to the country and "making the desert bloom." Espeland's examples illustrate how such technoscientific projects are facilitated under liberal systems through shared rationality of technological determinism, and how it even has an aesthetic appeal of the technological sublime. (Nye 1994) This has an uncanny parallel to the way that the FAA's PEA document serves as the legislative backbone for SpaceX and engineers' shared vision of Mars colonization. The document reinforces science and technology as regimes of veridiction, allowing SpaceX supporters and the FAA to assert that SpaceX is environmentally conscious despite the contradictory testimonies from numerous activists, researchers, and residents make.

Settler colonial ideologies of technoscientific conquest show themselves for what they are in a few comments. One woman's testimony in particular circumvents rationality by quoting Genesis in her unequivocal support of SpaceX. (FAA 2022a, 2:28:40) She interprets the idea of space exploration as a sort of Manifest Destiny, where humans are destined to go past the two "lights" in the sky as divided by God. In stating that "We are not created for the Earth. The Earth is created for human beings," the commenter unravels the complex linkage in the United States'

legacy of settler colonial claims to land and life. These talking points are reminiscent of human-centered ideologies used by Europeans settling the New World, of white colonists settling the Western Frontier, and of the Bureau of Reclamation's manipulation of the landscape for the sake of private industry and capital. All of these examples have caused incomprehensible damage to the environment throughout North America, and they all used scientific knowledge and technology as quasi-sacrosanct methods to subjugate land and peoples. A perspective like this woman's, which claims that buzzards and birds will be killed regardless of SpaceX's actions is not unique, as others have stated that some piping plovers must be sacrificed for the sake of humanity, revealing the hidden ideological underpinnings that lie within the supposed apolitical, neutral, universal goals of Mars colonization that many supporters espouse.

The politics of Mars colonization also show within the rhetoric that some supporters of SpaceX use in invoking concerns for national security in reaching Mars before other ignoble state entities like China and Russia. By extending abject inhuman 'indianness' from internal dissenting residents and Esto'k Gna to include external enemy nation-states, these comments use rhetoric of national security to enforce Western liberal empire as justification for SpaceX to colonize Boca Chica and Mars. This is evidenced by one commenter's recitation of the U.S. pledge of allegiance, followed by stating that "we" will get justice on "those Martians up there that owe us that land." (FAA 2022a, 3:32:19) Instances like these reveal the colonial implications of space exploration, as colonizing Mars, in the way SpaceX and its supporters see it, relies on the same American settler colonial notions of *terra nullius*, terraforming and erasure of pre-existing environments. This same man judged those who are against human exploration and multi-planetary goals as short-sighted and "closed-minded," implying that a settler colonial way of thinking is inherently open-minded. In this instance, rational arguments that invoke universal

ideals for making humanity a multi-planetary species collapse into the violence and dehumanization that is central to the liberal concept of the “human,” inherently excluding large swathes of people, including hypothetical Martians whose lands must be appropriated for the sake of human expansion.

Overall, there remain various loose ends to this town hall meeting as voices and ideologies reverberate one after another. Notions of science, knowledge, and ideology cross paths in epistemological collisions between people globally and locally. After the meetings concluded, Elon Musk called on his followers on Twitter to submit their concerns to the FAA over email as well, (Musk 2021c) which adds another layer to how the liberal processes are co-opted by SpaceX enthusiasts. The question remains for what SpaceX’s operations as material-discursive technoscientific practices mean materially for people of the Lower RGV.

Aliens of the Final Frontera, Constructing a Martian Borderlands⁷

“We’re one Nation, Under God, Indivisible, with Liberty and Justice for all. And I believe we’re gonna get justice on all those Martians up there that owe us that land.”

~ A man’s testimony during an FAA town hall meeting. (FAA 2021a, 3:32:19)

On February 6th, 2022, four police officers, three of which had no uniform, pushed into environmental activist Bekah Hinojosa’s apartment and handcuffed her. While being escorted to a police car in pajamas, she asked why she was being detained, to which one answered, “Criminal mischief. You know why. Graffiti. You know why.” Hinojosa was accused of allegedly defacing a downtown mural commissioned by the City of Brownsville with the words “Gentrified Stop SpaceX.” The mural was commissioned to a Los Angeles-based artist who was

⁷ I take inspiration from an article by journalist Gus Bova in using the term “Final Frontera” to describe SpaceX’s presence in the South Texas borderlands. (Bova 2021)

paid \$20,000 with funds donated by the Elon Musk Foundation, depicting the words “BTX,” an acronym that the City of Brownsville was pushing as a way of rebranding Brownsville to better suit the technology industry, shown in figure 8. (Davila 2022) This arrest came two days after the graffiti was reported, with the former Mayor of Brownsville, Trey Mendez, proceeding to publish Hinojosa’s mug shot along with a photo of the defaced mural on his personal Facebook page, in which he posted information about her workplace, her full legal name, and mentioned that “Ms. Hinojosa has been quoted in several anti-SpaceX articles.” (Jimenez 2022) While Mendez claimed to presume that Hinojosa was innocent until proven guilty, and proceeded to remove the post, Hinojosa was subjected to the threat of online harassment, and the transgression left a mark on many activists, who now fear similar political retribution.

Protestors took to the Cameron County District Attorney’s Office on April 4th for the #freergvbekah rally, an online flyer of which is shown in figure 9, calling for the District Attorney and the City of Brownsville to drop Hinojosa’s charges and launch an investigation on Mayor Trey Mendez for exerting an abuse of power. A day before the protest, the Esto’k Gna Carrizo-Comecrudo Tribe had concluded their Bridge to the Ancestors Youth Walk, traversing from the Permian Basin through Big Bend National Park in West Texas and finishing in Garcia Pasture near Port Isabel. Many from this Youth walk joined locals in the #freergvbekah rally, standing in solidarity with Hinojosa, and expressing their refusal to permit SpaceX’s operations to continue on Somi Se’k. The protest happened a few days before I arrived in Brownsville to conduct fieldwork,⁸ and though I missed the concluding run and the rally, many of my interlocutors attended both and recounted the collective support for Hinojosa, activists’ public denouncements of Mayor Mendez’s intimidation tactics, and how tribal members and activists

⁸ I arrived in Brownsville on April 7, 2023, narrowly missing the #freergvbekah rally that happened on April 4th.

made it known that South Texas is *Somi Se'k, Esto'k Gna* land, first and foremost before any LNG pipeline or any SpaceX launch site.

In the following section, I detail how local community activists and organizers understand SpaceX's presence through their observations, criticisms, and theorization. I will extrapolate on what activists and *Esto'k Gna* have come to label "neo-colonialism," or a renewed intensification of the ongoing colonization faced in the Rio Grande Valley region for centuries, manifesting in Texas's neoliberal policies which deregulate SpaceX's operations and embolden outside engineers and SpaceX enthusiasts to settle Brownsville and the Lower RGV, facilitating the ongoing historical marginalization of Indigenous peoples and ethnic Mexicans in the process. This will be done through the lens of critical environmental justice literature, Indigenous decolonial critique, critical legal geography, science and technology studies, and U.S.-Mexico borderlands literature to theorize how space colonization operates through liberal governments to colonize the area by using "place-making" devices to create a Martian Borderlands that renders land, *Esto'k Gna*, and ethnic Mexicans as alien.

The many reverberations of Texas's colonial history can be felt to this day. Much of the Lower RGV is a rural, predominantly ethnically Mexican population who continue to struggle with poverty and water security issues. From the Spanish imposing the *hacienda* systems that dispossessed Native peoples in the 16th century to times of Anglo-American settlement that lead to the Texas revolution and U.S. annexation, the Lower RGV has constantly been defined by colonization of Native land, and more recently by ethnic Mexican land dispossession and deregulation for Anglo-American private interests. Lands that were long inhabited by *Esto'k Gna* have been traded off repeatedly between colonial powers like those of the Spanish, Mexico, the Texas Republic, the United States, the Republic of the Rio Grande, and the Confederate States of

America. Anglo-Americans were the most recent wave of settlers. Following the Treaty of Guadalupe Hidalgo, the U.S. extended its borders into the American West. In Texas, this was followed by heavy taxation of ethnic Mexican land-owners who were pressured into selling lands at absurdly cheap prices to Anglo-American settlers, who paid little to no money for lands that sold for pennies an acre. (Martinez 2018) This was accompanied by the U.S.'s use of chattel slavery and policies in settling the Western frontier, which included corroborating with Mexico on the intentional genocide of Indigenous peoples. Legal and infrastructural frameworks were key tools historically used in the Texas borderlands to alienate non-white peoples who inhabit the area, As previously mentioned, the United States's liberal notions of justice, democracy, law, and civil order were defined by rendering any people who stand in the way of U.S. economic desires as Indian, the original enemy combatant that poses a direct challenge to the state's sovereignty. (Byrd 2011) This can be seen in the way that early 20th-century white American settlers reacted to the refugee crisis that came with Mexican Revolution, pushing for greater protections from both Native peoples and ethnic Mexicans through violent policing measures, justified by a racial hierarchy that followed white supremacist ideology. This brought about a violent era from the 1910s-1920s of lynchings of Mexicans including American-born ethnic Mexicans by vigilante groups, Federal troops, and the Texas Rangers, initiating an era of terror as Anglo-Americans moved into the Valley to profit off of irrigation projects. This logic of biological superiority is central to Texas's legal history, as it characterizes Native Americans as innately savages and Mexicans as corrupt treacherous enemies of the state, in part due to their mixed Indigenous-Spanish ancestry, constructing the racialization of Mexicans and Natives as "Indians" and illegal aliens who can never be part of American modernity. (Martinez 2018, 230)

The case of Mayor Mendez publishing Hinojosa's arrest online bears a resemblance to the way government officials of Texas in the past corroborated with Anglo-American vigilante lynch mobs that accused many ethnic Mexicans in Texas of being bandits during the early 20th century, subjecting them to extra-judicial punishments and executions. (Martinez, 2018) This follows what an activist calls "*mordida* culture," as ethnic Mexican residents "know that if they're nice to the white man, if they're nice to the man who has the bank, they're nice to the man who has the business, then they get a little bit of crumbs from the table." (Las Imaginistas et al. 2021, 44:00) Gloria Anzaldúa qualifies this statement in pointing out that "the only legitimate inhabitants are those in power, the whites and those who align themselves with whites." (Anzaldúa 1987, 5) The role that Mexican-Americans play in the Lower RGV borderlands is complicated by their dual hyphenated identity, a liberal Anglo-American invention that imagines Mexicans as assimilating while keeping their own culture intact. (Lugones 1992, 35) This renders the identity of "Mexican" as a "superexploitable being who is a practitioner of a superfluous, ornamental, culture," while being "American" is what allows Mexican-Americans to have dubious membership into the "real" culture as functioning citizens. The mapping of "indianness" onto Natives and certain "unlawful" Mexicans allows Mayor Mendez to publish Hinojosa's information and extra-judicially punish her for a crime that she had not been convicted of. Activists have expressed feeling a sense of fear in speaking out against SpaceX, not unlike the terror wrought on ethnic Mexicans in the past. This sort of abject existence is indicative of the way ethnic Mexicans must navigate interactions with Border Patrol, *La Migra*, and policing.

In December 2022, my father, a Mexican national, accompanied me on my initial visit to Brownsville. I took photos along Highway 4, as shown in figures 10-19, which looked more like

a research facility as one came closer to Boca Chica Beach. It was a cold windy day, so we promptly left and subsequently stopped at the Border Patrol checkpoint, shown in figures 20 and 18. “Did you enjoy the water?” the Latino officer asked sarcastically, suspicious of our visit to the beach on a freezing December day. He let us go, but it was only the beginning of our border patrol exchanges, as on our way back to San Antonio, we were stopped again at a checkpoint, shown in figures 21, over on U.S. Route 77. We forgot to bring documentation, and so they took us aside to run a background check, as an officer stood by with a drug-sniffing dog. I have many experiences with militarization at the U.S.-Mexico border, as my family crossed the border through Laredo and Nuevo Laredo by car and bus on family trips to Mexico, but this was just a taste of the lived experience that residents of the Lower RGV face on a daily basis. In downtown Brownsville, as shown in figure 22, people continuously came and went across the barbed wire-laced bridge entrance to Matamoros, Tamaulipas.

A few months later in April of 2023, I borrowed my dad’s car and drove alone from my hometown of San Antonio to Brownsville, remembering to bring my passport this time. I came to conduct three intensive in-person interviews and some general fieldwork in Boca Chica Beach and Brownsville. Near dusk on the day that I arrived in Brownsville, I drove up to a relatively small house where I met Atl, an activist who I had met through the online South Texas Environmental Justice Network group meeting.⁹ He was a brown man who was slightly shorter than me and wore glasses. This was his parents' home, he explained, and the six couches that lined the small living room had housed fifteen people just yesterday in a family gathering. His mostly black hair and minimally wrinkled skin made him look to be in his 40s, but given his anecdotes, he was definitely much older. Atl spoke in a calm, unrushed South Texan drawl, about

⁹ My interlocutor suggested using the alias ‘*Atl*,’ which is Nahuatl for ‘Water,’ to refer to him, and so I continue throughout the thesis in referring to him as such.

his family, the history of Brownsville, how the area had changed over the decades, his experience working as a teacher, and how he became involved in activism through the gay rights movement in the 70s. As the night drew on, Atl's two nephews and sister arrived at the house one by one from work. They all shook my hand as they came through with kind smiles and warm demeanors.

Atl expressed his initial excitement about SpaceX's arrival in 2013, and of how disheartened he was knowing that they were going to settle on Boca Chica. He had fond childhood memories of the beach, of seeing Mexican people on the other side of the river, along with other family stories of the *kermes* community gatherings at the local church, of his parents' helping shelter Mexican migrants, and of the quaint life that people here lived despite the complex histories of poverty and migration following incidents like the Mexican peso devaluation. Now, he is concerned that the price for even a modest home has risen from fifty to two-hundred thousand dollars. "I have a young friend, and he can't afford a home here... even a shack is going for 150-k," he says, "they just want the property."

These were common concerns that I encountered in my time speaking with activists and people from Brownsville. Though inflation and gentrification are common concerns throughout Texas, the Lower RGV's situation is quite extreme, given that Brownsville was named the poorest city in the country, followed by McAllen nearby, and wages seem to stagnate for the majority of individuals. (Hurley 2014) Since SpaceX arrived in Cameron County, the median price for a home in Brownsville has increased from \$110,000 in 2013 to \$150,000 in 2019. (Texas Real Estate Research Center 2023) This median has risen to as much as \$272,500 in May of 2023. With some homes in Brownsville increasing by almost triple their original amount in

the past three years, the city has outgrown being the poorest in the country, but many local people struggle to make ends meet with rising rent, taxes, and housing costs.

As scholars have drawn comparisons between contemporary gentrification and settler colonialism, (Launius and Boyce 2021) activists recognize rising housing costs as a symptom of a greater settler colonial project tied to land, development, and displacement. Many activists of the Rio Grande Valley use an environmental justice framework to holistically advocate for locals of Brownsville, non-human inhabitants of the area, and the many dimensions of environmental harm that intersect with racism and local disenfranchisement. This falls in line with current critical environmental justice literature which attends to how disenfranchised communities are often the first to be affected by environmental degradation such as environmental racism when environmental harm disproportionately affects ethnic minorities such as Black, Indigenous, and Latinx populations in the United States. (Pellow, 2017) In the case of South Texas, legal geographers have described the history of water scarcity as marked by various supreme court cases which justified white agricultural elite landowners in depriving local ethnic Mexicans of potable water while reaping the benefits from irrigation projects. (Jepson 2012) Activists have pointed to the histories of private interests in fossil fuels, migrant labor, and agricultural technologies that have contaminated the land and affected those who are most vulnerable. Cities in the Valley like Mission, Texas, the birthplace of Monsanto, are indicative of this history of contamination. Between the 1950s and 1970s, thirty companies released eight of the most dangerous chemicals, including Agent Orange, from the Helena Chemical Plant nearby the homes of ethnic Mexican communities. (Perez 2015) This has been linked to five generations of residents developing illnesses, cancers, miscarriages, and rare physical deformities at an alarming rate while receiving no justice or compensation for the harm caused by these pollutants.

Situations like these are constantly on the minds of people in the Valley, as chemicals, carcinogens, and pollutants brought by private corporations have continuously affected low-income ethnic Mexican communities that struggle to have any legal say within Texas's staunch position in deregulation. As one Corpus Christi local said, "I know Bekah Hinojosa because she brought water to my community when a refinery poisoned our water. We couldn't drink out of it." (FAA 2022b, 3:27:00) Activists are critical in pointing out that Texas's liberal legislation toward SpaceX replicates the same power relations that historically allowed white-owned companies to environmentally disenfranchise ethnic Mexicans. Environmental organizations and the Carrizo-Comecrudo Tribe have had difficulty in seeking legal action against SpaceX, as there is no legal precedent in Texas for taking on an astronomical company for environmental harm. In fact, the State of Texas amended its constitution in 2013, permitting SpaceX to effectively circumvent the Open Beaches Act by allowing rocket launches to be reason enough in prohibiting people from beach premises. Although attempts at legal action are ongoing, especially with the recent explosion of Starship, SpaceX development continues at a rapid pace.

Many politicians and SpaceX supporters fail to recognize SpaceX's place within the long history of racialized violence caused by environmental harm in South Texas, choosing to believe that environmental racism is a "manufactured" concept, and defining environmentalism purely in terms of legal conservation efforts. (FAA 2022b, 2:12:05) This neglects the subtle ways in which environmental costs are incurred on the low-income ethnically Mexican populace that is rendered subaltern, dispossessed of the beach as a recreational site and the Esto'k Gna peoples' relations with the area as a sacred site that holds historical artifacts in Garcia Pasture along with significance to their Indigenous cosmology. (Pulido 1996; Whyte 2016) Though one may say

that SpaceX legally bought the properties that Starbase sits on, without obliging Texas to resort to eminent domain, the way liberal government and private entities negotiate stolen land abides by an inherently extractivist settler logic. The risk-assessing language of the Biological Assessment Report often uses vague definitions of what pollution is acceptable for the area, but states that SpaceX will pose no significant harm to the area, a fact that is contested by many activists who point to SpaceX's static fires and rocket explosions as shown in figures 23-24. This does not even touch on the debris and sound pollution that would affect Mexican fishermen and organized crime in Matamoros and Playa Bagdad. (Reyes-Retana 2022) Fishermen of Boca Chica had also expressed to me the unusually poor number of catches in recent years. Besides the fact that contamination is difficult to measure, as cancers are often detected far after contamination is done, assimilative capacity, the concept that an environment can sustain a certain amount of contamination, is a settler colonial construction of modern environmental pollution, (Liboiron 2021) as it relies on a notion of primitive accumulation that alienates land, water and Indigenous relations to designate 'natural' areas as property to be extracted as natural sinks for dumping. Science always happens with land relations, and in the case of Boca Chica Beach, land, water, and all of its inhabitants also incur the cost of pollution as the beach is designated as a sink for debris, exhaust, fracking, and other contaminants. To even abide by these legal proceedings adheres to an alienation of land from Indigenous relations, (Coulthard, 2014) and assumes the seizure of Esto'k Gna peoples' lands to the state of Texas and the United States. When Indigenous peoples are finally included in any legal proceeding over their land, their autonomy is regarded as marginal.¹⁰

¹⁰ In Appendix C of the FAA's updated PEA claims to have sent out an invitation for consultation to the Carrizo-Comerudo Tribe in addition to multiple other tribal governments but claim to have not received a response. This is a common strategy enacted by the United States government as a way of bureaucratically removing agency from tribal governments in legal decision-making. (FAA, 2021)

The way that technological progress and the planetary scale are embedded into SpaceX's urgent rhetoric facilitates this alienation. I turn to Anna Tsing's "patchy Anthropocene," which states how wealth is amassed through value produced along unplanned patches that are appropriated for capital, directly inspires a process of alienation that obviates people and things from their lifeworlds through which one asset matters, such as SpaceX's rocket launches, leaving everything else to waste. (Tsing 2017, 5-6) To think simultaneously about the stakes of the planet while attending to the local specificities of Boca Chica and Somi Se'k attends to the cacophony of how people perceive and adapt to these new relations, (Tsing 2017, 98) and to the cacophony of colonialism layered in histories of the U.S.-Mexico borderlands, (Byrd 2011, xxvii) which both situate and unsettle SpaceX and its settler colonial effects on the area. Alienation of land and people in South Texas is indicative of the extractivist logic embedded in SpaceX's view of space colonization. The same methods of understanding Mars as land to colonize and terraform are informed by the legacy that geology and anthropology had in conceptualizing "Earth-making," uniting human history as part of geological time. (Schmidt 2017, 60) This perspective was central to developing modern liberal policies of water management and solving the "land problem" of the American frontier through "purposefully direct[ing] geological processes to enhance evolutionary progress." Kathryn Yusoff builds upon this intersection of the social and geologic in how Black and brown bodies are an extractive buffer for violence within the Anthropocene while minerals and fossil fuels are designated as inhuman, racialized in the same ideologies of extraction as that of chattel slavery. In this way, both land and people on Earth and Mars are made inhuman through the same process of settler colonial alienation.

Residents of the borderlands in Brownsville find themselves and their histories caught in-between these colonial logics on both local and global scales. Gloria Anzaldúa, who writes

from the perspective of Brownsville and the RGV, states that, “A borderland is a vague and undetermined place created by the emotional residue of an unnatural boundary. It is in a constant state of transition. The prohibited and forbidden are its inhabitants,” (Anzaldúa 1986, 3) Just as borderdwellers struggle between the forces of Mexican and Anglo-American worlds, SpaceX’s presence only amplifies the existing “emotional residue” of the U.S.-Mexico borderlands through attempting to permeate the spatial distance between Earth and Mars, effectively collapsing the planetary into the local. As activist Bekah Hinojosa states, “You know, Elon Musk is on his quest to colonize Mars, and it’s beginning — he’s beginning by colonizing our community that’s on the frontlines of the U.S.-Mexico border... where we’re dealing with layers and layers of injustices.” (Hinojosa 2023) Technoscientific conquest adds another layer of violence upon the U.S.-Mexico border, as SpaceX enthusiast settlers bring new liberal cultural expectations to the area in envisioning both a literal and metaphorical bridge to Mars. I label this phenomenon as Martian Borderlands, or the diffuse geography that is defined by planetary entry-points between Earth and Mars which render inhabitants as aliens, severed from their Earthly lifeworlds. That being said, I do not wish to commit “intellectual colonialism” by using the borderlands metaphorically, (Muñoz 2018) but instead wish to demonstrate how space colonization is not a metaphor, and is enabled by the same logics of settler colonialism central to both technoscientific conquest and the history of the South Texas borderlands. (Tuck and Yang 2012)

SpaceX’s activity exemplifies this alienation by blocking off roads, carelessly launching debris, creating noise pollution, and utilizing entities such as the U.S. border patrol to surveil residents and keep settler SpaceX employees safe. SpaceX and the company’s followers explicitly and implicitly view the humans and non-humans of the borderlands as alien, inhuman, and expendable for the purpose of Mars settlement, setting claim and alienating Martian land just

as they colonize and alienate the Lower RGV. Within this new Martian alterity, one activist says, “Let Mars be Mars. It is not terra nullus. When people go to colonize things they make it seem like there was nothing there. There are things here in Brownsville. There are things in our community. We exist. Mars exists. It’s not an empty space for us to go fill with things and to insert our ideas into... we think just because we are not there that it doesn’t have meaning, that it doesn’t have autonomy.” (Las Imaginistas et al. 2021, 34:00)

One of the main ways in which Martian Borderlands exist is in the image of SpaceX and Starbase that is envisioned by the global public through online media. In the following part, I analyze how the internet allows SpaceX and SpaceX enthusiasts to imagine Starbase, generating a global claim to the area and facilitating the settlement of the Lower RGV.

Cowboy Astronauts, “Creating the City of Starbase, TX,” and Other Settler Mythologies

“History doesn’t start at the Alamo. It starts with this river.”

*~ Juan Mancias (Esto ’k Gna), Chairman of the Carrizo-Comecrudo Tribe of Texas
(Caycedo and de la Rozas 2020, 7:10)*

Following the Starship launch and explosion, SpaceX’s Youtube channel posted a video of a speculative Mars mission. It shows a dramatized animation simulating the launch of a fully-fledged Starship taking off from Boca Chica Beach and arriving at a brightly lit Mars colony. Starship panned over planet Earth and Mars before landing but made sure to dramatize the vast barrenness of the land, visualizing a future on Mars that was long dreamed of in science fiction. SpaceX and Elon Musk, SpaceX’s founder, often depict Boca Chica Beach and the surrounding area as a large expansive backdrop for Starship. These tropes draw from the American intentionally drawing from aesthetics of the Western frontier. During an interview,

Musk commented, “We’ve got a lot of land with nobody around, so if it blows up, it’s cool.” (Musk 2018) The vastness of empty land was a recurrent sentiment repeated by many outspoken commenters at the FAA meeting. (FAA 2022a, 2:23:00; FAA 2022a, 2:51:00) “If you just look at a map, SpaceX’s footprint is very small in relation to that [land],” (FAA 2022a, 1:18:50) one commenter says while flying over the launch facility during his visit to Boca Chica, “The thing that struck me was the vastness of the wetlands and the minuscule presence of SpaceX’s two facilities.” As illustrated in images such as those in figures 25-26, Starship provides people with a sense of awe, fulfilling the image of the technological sublime which stands out against the land, characteristic of “progress” and the American frontier. (Nye 1996)

Activists previously criticized journalists for misrepresenting Boca Chica Beach and the people of South Texas, accusing them of crafting a particular narrative that downplayed the significance of ethnic Mexican histories and Esto’k Gna cosmologies. (Guevara 2022) Brownsville activist Emma Guevara critiqued journalists for failing to depict South Texas accurately in their globally reaching press releases, instead highlighting the few white voices along with framing the situation in a “neutral” light. Although difficult to identify from only looking at online sources such as media and news articles, SpaceX’s presence sticks out entirely among the vast majority of Mexican and Chicax residents, and while this may be obvious for those living in Brownsville, these sorts of layered social collisions are rendered marginal or entirely obfuscated in much of how SpaceX and Starbase are depicted online.

I want to expand on Guevara’s criticism to encompass media that depicts SpaceX online more broadly. Social media plays a key role in informing fans and the global public on Starbase, Boca Chica, and Brownsville. As one man states, “They’ve opened their doors and windows so that we can see everything that they’re doing... We are seeing history unfold before our eyes and

we have the ability to have a voice in what's happening ... If it wasn't for the online community... we wouldn't have windows into that world.” (FAA 2022b, 2:29:30) While some have extrapolated on how live streams, vlogs, and social media that document SpaceX’s activities online have created new economies, worlds, and social possibilities, (Szolucha 2023) it is important to ground how the internet as used by SpaceX and SpaceX enthusiasts in tangibly influencing the material realities of Brownsville locals. Livestreams and their comments sections, as shown in figure 27, create an illusion of transparency and democratic input, as anyone is allowed to view Starbase remotely worldwide, playing into logics that facilitate liberal Western empire’s colonization of Somi Se’k. Online media’s ability to simulate senses of scale simultaneously through recording Starbase on-site, shown in figure 28, serves to create a cohesive sublime aesthetic of Starship and Mars colonization, devoid of any cultural specificity of the area such as those in figure 29. This in turn replicates the same settler colonial propaganda that was once widespread in the Valley, propagated by institutions of Texas public history.

In the past few decades, the most influential technological innovations have been in information technologies, which replicate things already existing or simulate optimistic visions of the future that may never come. As David Graeber puts it, “Where once the sheer physical power of technologies themselves gave us a sense of history sweeping forward, we are now reduced to a play of screens and images.” (Graeber 2015, 111) Many SpaceX enthusiasts see SpaceX as leading to history-sweeping technologies like those of past science fiction which served to predict future technologies. As one man goes as far as stating,

“Sci-fi shows made me want to pursue a career in science... To me as an outsider not from America, It doesn't matter where SpaceX is from. What I want to see is fleets of spaceships soaring to space colonies, humans living on different planets, and magical materials from space

that can do almost anything. Before anyone can see this, our technology needs to advance and tests need to be undergone.” (FAA 2022b, 2:38:38)

Though Graeber is apprehensive to adopt a critical approach to challenge the “modernist narratives that undergird images and surfaces which gave depth and reality were a lie,” (Graeber 2015, 112-113) reasoning instead that corporate-inspired bureaucratic processes of capitalism within liberal governments are to blame, I want to take a closer look at how modernist narratives are used by SpaceX, their fans, and ‘space influencers’¹¹ to curate “images” of modernity for its fanbase. SpaceX’s social media platforms all have several millions of followers online, with their videos, posts, and images receiving massive amounts of attention worldwide. This is done through a consistent investment in channeling “outformation,” or data that gets propagated through public discourses, images, photos, posts, narratives, sounds, and media over platforms such as social media, the internet, and television, to shape public knowledge and the political imaginations of the public and their fan-base. (Ezrahi 2004, 258-259) Though Ezrahi claims that outformation democratizes knowledge and frees the public from hegemonic forms of organized “information,” outformation can also be easily manipulated to control how the public perceives scientific and technological projects. On the internet, people with large monetary resources, particular forms of social capital, and large social media followings are able to use algorithms to selectively push narratives and ideologies. These sorts of “image-making” apparatuses allow SpaceX to have diffused control over not only its brand image but also the public’s understanding of space exploration and Mars colonization.

Researchers have shown that “place-making” strategies like those used by visitors and scientists in the Mars Center Research Station (MDRS) are common among space exploration

¹¹ I use the term ‘space influencer’ to describe content producers with large amounts of followers on social media who post almost exclusively positive posts about SpaceX and NASA.

enthusiasts and those who research outer space. (Messeri 2016) Established by the Mars Society, the station superimposes the planetary within the local, effectively using narrative to bridge vast differences in scale by making Martian geography a “place” that can be embodied, experienced, and better known. Researchers and enthusiasts of space exploration use a combination of mental images to imagine Mars and other planetary bodies, similar to how SpaceX enthusiasts imagine themselves on Mars while using Boca Chica to get there. SpaceX models much of its online image off of NASA’s previous brand identity, an image crafted on the analogy of space exploration as colonizing the Western frontier. NASA astrobiologists and astronauts adopted the idea of being cowboys as they tested their missions in the Utah desert, (Messeri 2016, 46-49) and the Apollo mission bridged the modern scientific enterprise into reenacting settler colonialism in the emerging material landscape of the moon. Since then, these images of the frontier have been taken up by organizations like the Mars Society and by commercial ventures like SpaceX for decades. (Messeri 2016, 46-49) Robert Zubrin, who established the Mars Society in 1998, further formulated a justification for Mars exploration and settlement based on Frederick Turner’s western frontier thesis. Though reformulated to encompass Mars, a place with no human natives or any of the violence, it is no surprise that the cowboy astronaut trope retains some of its character in Texas. Though colonizing outer space may be seen as a benign analogy for the science fictional fantasies of SpaceX fans, its image also serves to aestheticize the sublime American vision that SpaceX has cultivated. Claims to “innovation,” “expansion,” and “discovery” obfuscate the legacy of American space exploration that pays homage to Christopher Columbus and the doctrine of discovery, prevalent in private technology enterprises that are guided by a ‘frontier spirit’ which undergirds their corporate philosophies. (Little and Winch, 2021) SpaceX’s presence in this way replicates the same settler strategies that have been at play

in the Valley for some time. However, SpaceX differentiates itself in its approach to settler colonialism through neocolonial strategies that are carried out by confounding senses of scale in the material stakes of interplanetary travel while also propagating media over the internet to a global audience.

Many have criticized realtors and landowners for capitalizing on this online image, as shown in figures 30 and 31. Even while I booked my stay in Brownsville for conducting ethnographic research, several adverts, including the one I chose to stay in, mentioned being nearby Starbase and directly marketed to SpaceX tourists. Activists have compared the rhetoric of expansion, opportunity, and development that SpaceX and realtors use to depict Boca Chica and Brownsville as reminiscent of the 1920s “Magic Valley” myth that was propagandized to Anglo-American settlers in the Rio Grande Valley. (Las Imaginistas et al. 2021, 50:48) This myth was prevalent during a time of mass irrigation projects, railroad construction, and Anglo-American settlement in the Valley that promised wealth and an enchanted vision of technological progress to speculating Anglo-Americans from the middle and southeastern United States to settle in the Valley. Just as white settlers romanticize the western frontier and held onto their own technological determinist beliefs, SpaceX and its supporters rely on the same strategies of aestheticizing Starbase for private ventures and American settlement, buying into an enchanted vision of outer space as both essential to the progress of humanity and as a way to attract settlers into the Valley once again. Musk plays a critical role in attempting to shift Brownsville’s demographic through not only sharing media that depicts this image but also through posting masses of followers online, this includes explicitly encouraging non-local people to settle in “Starbase, Texas.” (Musk 2021b)

The countless videos documenting SpaceX and its presence fail to capture the tensions between an assumed frontier narrative that has come to define space exploration and the legacy these same narratives have had in disenfranchising the largely Mexican American population which constitutes South Texas. On Youtube, SpaceX fans and enthusiasts have taken it upon themselves to vlog their experiences of visiting Starbase, Brownsville, and even interviewing Elon Musk, often providing advice for what to expect when going to Brownsville. One such video interviews *Starbase Realty*, a realtor that markets ads towards those moving for SpaceX, and that also offers to buy homes from locals. (Sheriff 2022) Under the video, most comments are positive towards SpaceX, attesting to the influx of income it is bringing to the area while others made by local residents are more critical. As shown in figure 32 a comment, made by who I presume is a local man, is quite revealing saying,

“Just a repeat of what happened to my ancestors here in the RGV when Los Verinches [Texas Rangers and white vigilante mobs] lynched, killed and stole much of our land grants in La Matanza. Now it is high society with big \$\$\$ who will slowly but surely push us out of our own homes because we can’t keep up with outer space prices. I moved to Brownsville in 1997 realizing that, the gateway to the world, would inevitably become the gateway to the universe. Due to it being the least expensive city to live in America [American flag emoji], and the Beautiful hidden gem it is. Guess I need to apply at Space X.”

This comment provides a look into how local ethnic Mexicans juggle several spatiotemporal scales in interpreting Starbase within the historical context of the Valley. “*La Matanza*,” was a series of racially-motivated lynchings during the early 20th century which targeted ethnic Mexicans. This was carried out with little oversight and brutal violence by the State of Texas, Texas Rangers, and Anglo-American vigilante mobs, striking an era of terror that

pushed many out of the area. The commenter provides a sobering view that points to how the new wave of settlers coming for SpaceX who push ethnic Mexicans out of their communities with “outer space prices” mimics the previous wave of white settlers who came for the Magic Valley and coerced ethnic Mexicans out of the RGV through extrajudicial violence.

This kind of understanding of the Texas Rangers is conspicuously lacking within public history institutions in Texas. Though landmarks that commemorate lynchings and massacres have begun to be erected in the past few years, this is a latent adjustment to the decades of biased retellings of Texas history that glorify the Texas Rangers. The Brownsville Historical Museum is a testament to how well-established frontier narratives are in Texas, as outlined in the exhibits, dioramas, and artifacts that center Anglo-American founders of Brownsville and the history of technological development in the rail and transportation industry. Among bronze statues and paintings that glorified the cowboy archetype of the Western Frontier, shown in figures 33 and 34, one description of the Texas Rangers reads, “With the breakdown of civil authority in northern Mexico, many bandits began to raid towns in South Texas. The Texas Rangers patrolled the region to protect its residents, although they frequently had a tendency to shoot first and ask questions later.” This image exculpates the Texas Rangers from the legacies of violence wrought on Indigenous peoples and ethnic Mexicans in the borderlands. Monica Muñoz-Martinez, who documented oral histories of victims of lynchings, describes how narratives of the Texas Rangers conveniently omit histories that are poorly documented for the purpose of both sanitizing Texas history and relegating ethnic Mexicans to a marginal place in the “Texas creation myth.” (Martinez 2018) Cameron County was one of the most heavily targeted regions of Anglo-American vigilante violence against ethnic Mexicans in the state of Texas. She articulates this by saying, “As early as the 1930s, Texas history textbooks denounced the Mexican

“character” and omitted ethnic Mexican contributions to the development of Texas. Erasing the violence of conquest and colonization shaped the narratives of belonging among the public.”

(Martinez 2018, 230-231) Upon leaving the museum’s gift shop, I spotted a children’s book titled “ABCs of the Rio Grande Valley,” made by two descendants of Anglo-American settlers that make sure to emphasize the disappearance of Native tribes of Texas, shown in figure 35.

Through firsting and lasting narratives that falsely claim the disappearance of Native peoples, institutions reinstate the myth that Anglo-American settlers were the first people to erect proper institutions of social order worthy of notice, (O’Brien 2010) denying Indigenous peoples and ethnic Mexicans a place in modernity.

SpaceX’s online public-facing presence generates an image that follows a similar style of curation which fabricates a technological frontier narrative that removes almost all traces of Mexican identity. This obfuscates the way that SpaceX’s acquisition of land is re-enacting the same corroboration between the State of Texas and private settler companies, such as how the use of border patrol as pseudo-private security is reminiscent of the King Ranch, the largest American-owned cattle ranch located in present-day Kingsville that spanned almost a million acres and held its own Texas Rangers headquarters. (Martinez 2018, 20-21) While a large global audience remotely consumes SpaceX media on the internet, sanitized of any positionality, this historical resemblance is self-evident to many Brownsville residents, who notice their own absence within SpaceX media and question the material effects of gentrification caused by SpaceX employees and tourists. In sharing geographical space, the online image of “Starbase, Texas” collapses into local Texan mythologies as both erase Native and ethnic Mexican histories. This is shown as one SpaceX enthusiast, who had moved to an RV resort near the launch site, shared her support for SpaceX’s proposed desalination plant, claiming that it may resolve the

RGV and Mexico's water insecurity. In neglecting to recognize the history of white American landowners who denied ethnic Mexicans clean water at every opportunity during a slew of supreme court legal cases in the 1970s, narratives of SpaceX's benevolence sever its continuity with ongoing Texan settler colonialism and disenfranchisement of ethnic Mexicans in the Valley. (Jepson 2012) The commenter goes on to mention how odd it was that people failed to take care of the Civil War memorial markers dedicated to Confederate soldiers that line Highway 4 towards Boca Chica Beach. She states, "This community I noticed really does take care of their dead and their grave-stone, but for some reason, the historical markers on this road have been overlooked." (FAA 2022a, 52:14:00) Just as outsiders are shocked to find the settler Anglo-American history that supposedly defines Texas is not reflective of the majority ethnic Mexicans in the Valley, they are also shocked to find that Brownsville's borderlands culture does not resemble what online SpaceX media depicts.

Similarly, many residents see through the rhetoric of SpaceX, "Starbase," and the local government, as Texan myths are nothing new. Atl recounted to me that "In Catholic school, the nuns would call [him] the antichrist because [he] asked too many questions," in reference to the bias and lies that encompassed middle school Texas History. "This isn't even a Valley, this is a Delta... so I wondered, what else are they lying to me about?" He explained how the Indigenous history of the area and the violence against ethnic Mexicans, Indigenous peoples, and Black peoples in school was always missing. Only noble stories of the Alamo, the Texas Rangers, the defeat of Santa Ana, and now the arrival of SpaceX remained. Perhaps it is not surprising that the staffer at the Brownsville Historical Museum mentioned how there was discussion to incorporate SpaceX into future exhibitions on transportation, railroads, air travel, sea travel, and now space

travel. In the following part, I will recount how locals have been adapting and making sense of SpaceX's presence, and what this means for the future of the Lower RGV.

The Mexican Restaurant at the End of the Universe

“One day we will have tacos on Mars while playing Tejano music in a colony on Mars... And that is just one culture of many cultures that will be preserved throughout the universe.”

~ Testimony of a construction manager contracted by SpaceX. (FAA 2022a, 3:55:04)

On the last full day of my fieldwork in Brownsville, I left Boca Chica Beach in the late afternoon rush hour. I was stuck in the rain between SpaceX employees' vehicles on Highway 4's single lane, anxiously waiting to be let through the Border Patrol station. Though, despite the two-mile-long line, most cars are let through fairly quickly. As I approach the front, a white Border Patrol officer asks “SpaceX?” I answer “No,” and so I go through the ritual of showing my ID and letting him look through the back windows of the car, but I'm soon let go.

Back in Brownsville, I searched on Google Maps for somewhere to eat, and I found “Spacefish Mariscos,” a restaurant near the East side of the city. The restaurant's photos sparked my curiosity, as their logo featured an illustration of an astronaut fishing for fish on the moon alongside plates of Mexican food and a dining room that had a Christmas tree in the corner. Inside, a mostly vacant small restaurant greeted me with minimal kitschy decor, the aforementioned Christmas tree, and waiters conversing in Spanish near the back. Despite the logo and marketing that seemed to cater to a SpaceX audience, the rest of the restaurant retained an average Mexican restaurant look. Their menu included photos of dishes like most other Mexican restaurants, but the logo was pasted next to a shrimp cocktail of equal size, as shown in figure 35. After eating my ceviche tostadas and leaving a tip, I learned from the waiter that the

restaurant had opened in 2019 and that business had been slow as of late. In my time visiting Brownsville, most people that I spoke to had felt little engagement with SpaceX settlers and tourists and knew little about SpaceX or the details of its operations. In this last section, I will go over how residents of Brownsville understand SpaceX's presence and what futurity lies for them as SpaceX continues developing Starbase.

Outside of the Brownsville Museum of Fine Art, a painted wooden sculpture depicts a portrait of Gloria Anzaldúa "Each of us must know our Indian heritage. Our afromestizaje. Our history of resistance," shown in figure 36. At the museum, two exhibits featured local Valley and Texas-based artists. Most of the pieces were explicitly political, engaging directly with issues regarding race, the border, and migration that were present in the minds of most ethnic Mexicans and Chicanxs. At the gift shop, Mexican artisanal crafts were sold alongside merchandise from a previous exhibition that featured a local photographer's shots of Starbase. A pile of baby shirts printed with an image of Mars included the phrase "on the Border, by the Sea, and Beyond," and on the counter was a stack of calendars, all printed with photographs from the same local photographer. "What do you think of SpaceX?" I asked the attendant who staffed the checkout desk while flipping through a calendar that featured the same Starhopper structure on every page, shown in figure 37.

"It's a culture shock, a clash," she tells me. Just as many local people encountered metropolitan newcomers for the first time who speak languages like German and Korean, new settlers are startled by the binational Mexican-Texan borderlands culture. Other interlocutors have feared an increase in border patrol surveillance due to people feeling unsafe in such a predominantly ethnically Mexican area. Atl mentioned to me that he hears helicopters flying overhead now. The Museum of Art attendant spoke about her experience moving from Mexico to

Brownsville. She had hoped for a quiet life in a small town, attracted to Brownsville's low cost of living and quaint size, but SpaceX altered this entirely, as she can barely afford rent now. "I don't see this affecting me positively in my lifetime. Maybe in my children's or grandchildren's lifetimes, but right now, this [SpaceX's Starbase] is not meant for me," she then recommended that I check the Children's Museum which had a new space-themed exhibit.

I took the attendant's advice and went across the street to investigate, entering the loud echo-y building with kids yelling and running in the indoor playsets. "Are you sure you want to see it? I mean, It's nothing special," the young receptionist said to me, glancing over to the crowds of children running and screaming. The exhibit consisted of posters with information and an activity where kids can a mockup satellites out of foam blocks that get spun. It was not funded by SpaceX, and the museum has had little to no contact with SpaceX as an organization. That said, the activity was only open on weekends, and I only was able to glimpse the exhibit through photos that the attendant shared. When I asked about SpaceX, like most other residents, she initially sidesteps, "There are pros and cons... but the reality is that rent is rising and people can barely afford to live in Brownsville now." She called on her coworker for his opinion, a young man, and he mentioned the environmental impacts of rocket launches on the ecosystem.

Taking inspiration from Berlant, scholars have characterized both gentrification and settler colonialism as creating a situation of "cruel optimism," or a relation of attachment to compromised conditions of possibility where a subject's desired object or scene threatens their well-being, but at the same time the subject senses that they could not live without the content of the said attachment. (Berlant 2011; Byrd 2011, 34-37; Addie and Fraser 2019) This is the situation all residents of Brownsville face, as many would rather adopt the branding and ideas that SpaceX puts forward than be deprived of agency over their material conditions in the face of

changes wrought by SpaceX's development. A man at Boca Chica Beach who was swimming with his family was in favor of SpaceX and mentioned how his son was studying to be an engineer. "It's cool that the kids get to see something like that," he said, pointing at the rocket. When I asked if he was going to see the launch in person, he said that he couldn't since it was held on a weekday and he had work. This instance shows the limitation of locals' full engagement with SpaceX even for ethnic Mexicans in favor of its development. Whether SpaceX stays for good, leaves, or goes bankrupt, residents are left with no choice but to resign themselves to take the risk and accept SpaceX. This shows in how one construction contractor for SpaceX says, "one day they will have tacos on Mars while listening to Tejano music," (FAA 2022b, 3:55:04) but as many activists note, these workers find themselves in the same situation as many Mexican laborers who worked the fields laden with pesticides and DDT in the Valley during the agricultural boom, as they have no medical benefits and safety measures in regards to chemicals and equipment remain ambiguous on the FAA's PEA.

This ties to the Lower RGV's history of Indigenous assimilation through genocide against abject "indians," as ethnic Mexicans have no choice but to forego any notion of Indigeneity to survive within the logic of citizenship in liberal American empire. As one activist notes, "The people of Brownsville are the diaspora of Native American people, and maybe people have forgotten their roots but I haven't, and I'm happy to share." (Las Imaginistas et al. 2021, 41:38) Indigenous epistemologies, such as "restorying" the Rio Grande as river rather than as border, (Muñoz 2018) poses a challenge to American liberal notions of statecraft, as many have vouched for border demilitarization. As Christopher Basaldú (Esto'k Gna) says, "The crisis at the border is that the U.S. is committing humanitarian offenses against Indigenous people [referencing Mexican and Central American migrants]... the U.S. wants to pretend that these human beings

are less than human.” (Basaldú 2020) Here, indigeneity becomes a parallax view from which to critique the very notions of liberalism and its imposition of ‘indianness’ onto ‘illegal aliens.’ Many activists, Esto’k Gna, and Valley residents share a desire to mend Indigenous relations to Somi Se’k and to redefine themselves and the borderlands on their own terms, outside of settler myths. “They come and colonize before we can even know ourselves... Indigenous histories get erased,” as one activist said to me. Newcomers replace these concerns of Indigenous futurity with priorities of futures on Mars.

To conclude, it is clear that SpaceX’s online presence and imagery influence a global population through settler narratives that utilize liberal rhetoric of humanity and development to enable technoscientific conquest. This in turn shapes the material-discursive conditions of technoscience as practiced in the lower RGV. Like Texan mythologies of the “Magic Valley” and Texas Rangers, SpaceX markets the area as a vacant place to build Starbase, leaving out the lived reality of the many inhabitants of the Texas borderlands. In this way, SpaceX’s actions seem to barely secure any future for the local people of Brownsville, for Esto’k Gna, or for non-human inhabitants of Boca Chica Beach. These kinds of situations are indicative of settler colonialism, which has subjected Indigenous peoples to apocalyptic scenarios marked by genocide, alienation, and severe alteration of the environment. (Whyte 2018) In these dystopian times during the Anthropocene, the people of Brownsville are uncertain as to what will happen in the future, but regardless, they must bear the consequences incurred by Starbase.

Appendix



Figure 3: Screenshots of WSJ livestream showing Starship launching and exploding in mid-air after shooting off course. (Wall Street Journal 2023)



Figure 4: To the left, a sign by Boca Chica Beach warns tourists not to drive on the wildlife refuge. On the right, various signs at the entrance of Boca Chica Beach.



Figure 5: Periodic signs along Boca Chica Beach state to be aware of sea turtles. Starship sits in the distance.



Figure 6: Plants and succulents at Boca Chica Beach.



Figure 7: Birds and seagulls against the shore on Boca Chica Beach.



Figure 8: The 'BTX' mural at Brownsville which was previously painted with "Gentrified. Stop SpaceX." The graffiti has since been painted over.



Figure 9: One of many digital flyers that circulated online spreading awareness of the #freergvbekah rally. (Another Gulf is Possible 2023a) Since the arrest of Hinojosa, there have been several protests against the city's charges.



Figure 10: A paletaria ice cream shop at the entrance of Highway 4.



Figure 11: Various cars of SpaceX employees parked on the side of Highway 4.



Figure 12: SpaceX Starbase launch site near Boca Chica Beach in December of 2022.



Figure 13: A view from Highway 4 near the entrance of Boca Chica Beach showing Starship, before it launched on April 20, 2023.



Figure 14: A view of Highway 4 from Boca Chica Beach.



Figure 15: The Starbase facility's sign. Here, people are allowed to park and take photos in front of the "Starbase" sign.



Figure 16: A view from Highway 4 while passing by the Starbase facility.



Figure 17: Various rocket prototypes, such as the Falcon 9 that sit on display next to Boca Chica Village. Most properties of that village were purchased by SpaceX,



Figure 18: A view of Starship from Highway 4.



Figure 19: A view of Starbase from Highway 4. Many trucks park along the side of the road.



Figure 20: Images of the border patrol checkpoint along Highway 4. One must go through this checkpoint to exit Boca Chica Beach and reach Brownsville.



Figure 21: A border patrol checkpoint on U.S. Route-77. One must go through this checkpoint whenever leaving the Lower RGV/Brownsville to reach San Antonio.



Figure 22: The Brownsville/Matamoros bridge in Downtown Brownsville. People come and go through the militarized border to shop for Christmas gifts and go to school or work.



Figure 23: Images taken after a static fire test by Falcon 9 which burned over 60 acres of land surrounding the Starbase launch site. (Serrano 2023)



Figure 24: An aerial image of the damage done within the blast range within Starship's launch. (RGV Aerial Photography 2023)

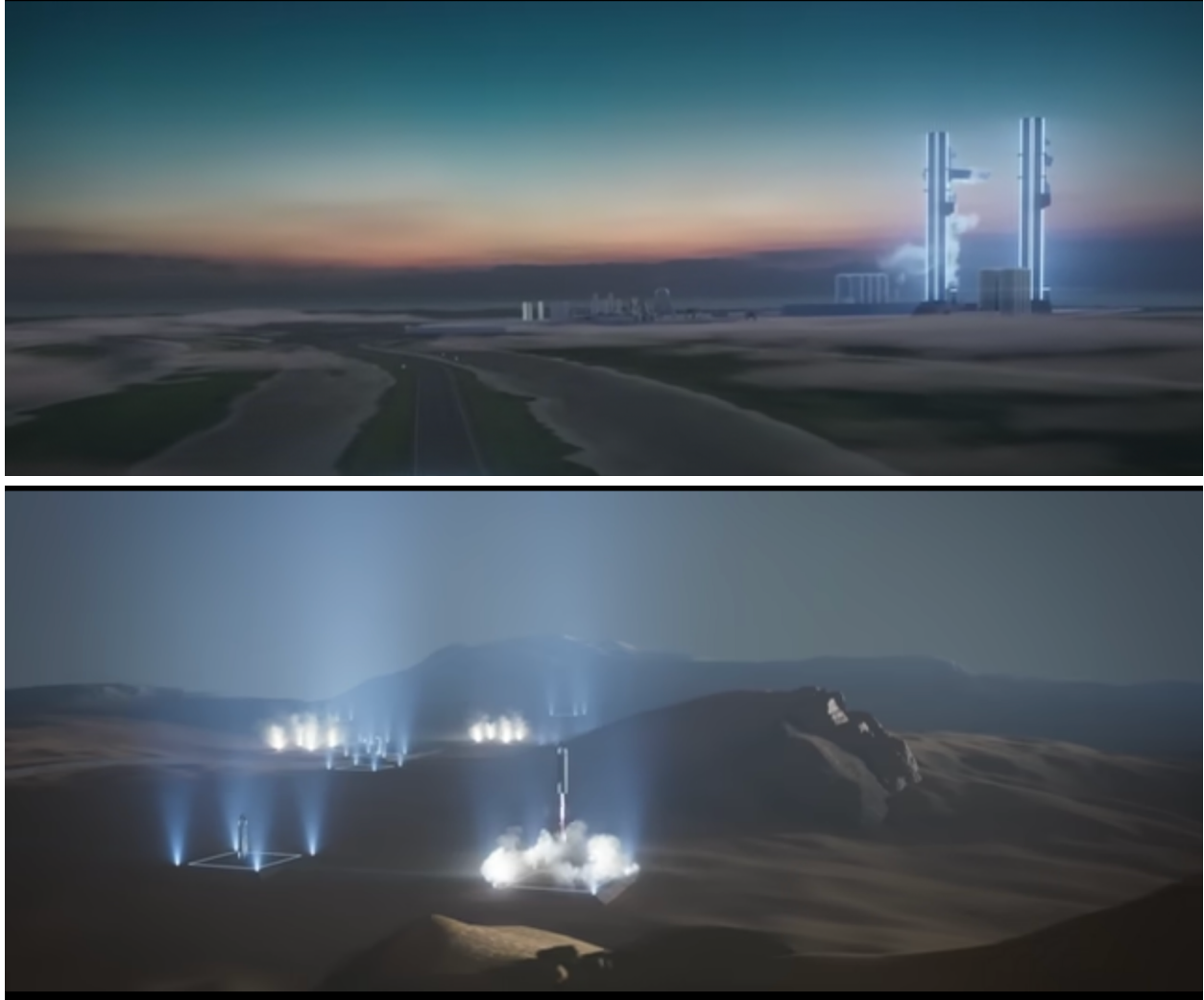


Figure 25: Screenshots from SpaceX's promotional video that digitally animates the launch of a commercial Starbase vehicle on Boca Chica Beach which lands on a human colony on Mars. (SpaceX 2023c)



Figure 26: Image of Starship on Starbase from SpaceX's website. (SpaceX 2023a)

Starbase Live 12:28:49 PM CDT

SpaceX • Starship • Boca Chica, Texas

NSF Hot-staging test assembly rolled to Massey's. Next Closure July 31, 10PM - 1AM CDT.

Starbase Live: 24/7 Starship & Super Heavy Development From SpaceX's Boca Chica Facility

796K subscribers Join Subscribe 90K Share

1,441 watching now Started streaming on Jul 12, 2021

Starship is SpaceX's fully reusable launch system which is being developed at Starbase in Cameron County, Texas. Starbase LIVE provides 24/7 coverage of the exciting developments and testing progress. Show more

Top chat

Latest Daily Video: htt...

ocelots?

Jo The Russians have been using it on a *lot* of their stages since the 60's, maybe even before but even I'm not that old. The difficulty really is how it fits into reusability but that's a future problem

We are talking about separation, so they should be considered as 2 objects. Do the $F=MA$ calc and see how much thrust is needed from starship to have a higher accel than the booster

It does

they ate all the fish

Titan II used it too, not just the Russians

It can be easily worked out @joh hn reusability is very doable with hot staging

Now I want fish

Subscribers-only mode

Hide chat

All From NASASpaceflight SpaceX Relat >

Figure 27: A Youtube livestream that shows live footage of Starbase from multiple locations. To the side is a live stream of comments accessible to anyone watching. I block out usernames to retain the anonymity of users. (NASASpaceflight 2023)



Figure 28: Image of what I presume is a videographic device recording Starship from Boca Chica Beach to live stream over the internet.



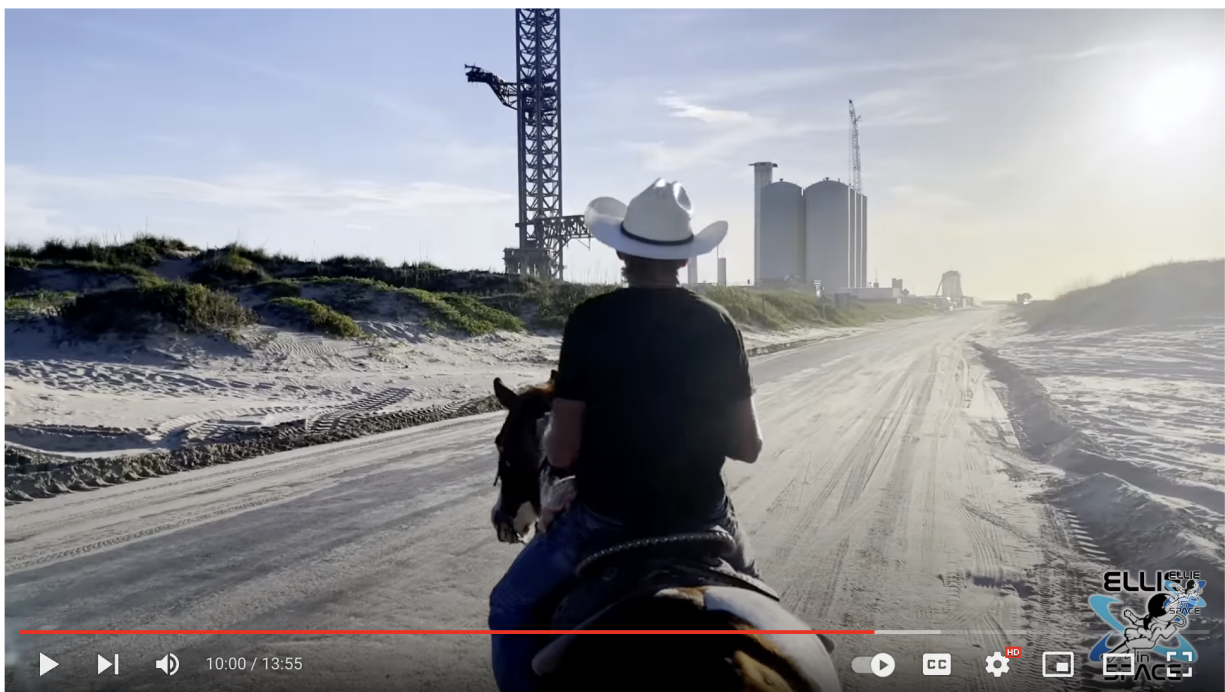
Figure 29: Cascarones are a widespread Mexican and Chicanx tradition. Cascarones, dyed eggs filled with confetti, are broken on peoples' heads on Easter. Photo was taken a day after Easter Sunday on Boca Chica Beach.



Figure 30: Image showing an RV resort that caters to SpaceX and Liquefied Natural Gas employees. (Another Gulf is Possible 2023b)



Figure 31: Starbase Realty's website. (Starbase Realty 2023)



SpaceX, taking up space in Brownsville, Texas



72.3K subscribers

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2.5K



Share

Download



56,451 views Premiered Jun 13, 2022

SpaceX has transformed the town of Brownsville in Texas in many ways. Elon has poured money into the city's revitalization projects and the school districts. But some argue the influx of employees moving to call SpaceX home has jacked up prices. I reached out to realtor Craig Grove to get the scoop on how SpaceX has really affected Brownsville. He started Starbase Realty after Elon announced its name in 2021.



[Redacted]

1 year ago

Just a repeat of what happened to my ancestors here in the RGV when Los Verinches lynched, killed, and stole much of our land grants in La Matanza. Now it is high society with big \$\$\$ who will slowly but surely push us out of our own homes because we can't keep up with outer space prices. I moved to Brownsville in 1997 realizing that, the gateway to the world, would inevitably become the gateway to the universe. Due to it being the least expensive city to live in America 🇺🇸, and the Beautiful hidden gem it is. Guess I need to apply at Space X.



1



Reply

Figure 32: A video made by a vlogger covering SpaceX's Starbase. Below was a comment of whom I presume is a local man. There are countless videos like these online that document. I block out usernames to retain anonymity of users. (Sheriff 2022)

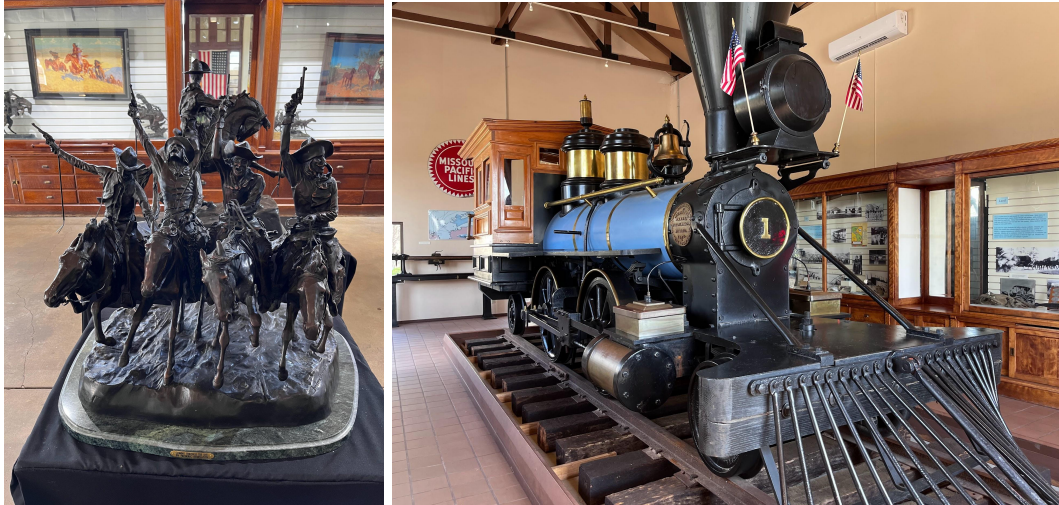


Figure 33: image from the Brownsville Historical Museum that displayed bronze statues and paintings depicting the Western Frontier depicting Texas Rangers, cowboys and Indigenous people on horseback.



Figure 34: Above is an image taken from the Brownsville Historical Museum's display. It depicts a photograph of the Texas Rangers that reads "The Texas Rangers patrolled the region to protect its residents, although they frequently had a tendency to shoot first and ask questions later."



Figure 35: Photographs taken of an ABCs of the Rio Grande Valley book intended to be read by children. This shows some pages that reinstate firsting and lasting narratives used by settler Americans in Texas.



Figure 36: A photograph of Spacefish Mariscos Mexican Restaurant, Spacefish Mariscos' menu featuring its logo, and of the interior of the restaurant.



Figure 37: The front of the Brownsville Museum of Fine Art, which displays a sculpture dedicated to Gloria Anzaldúa.

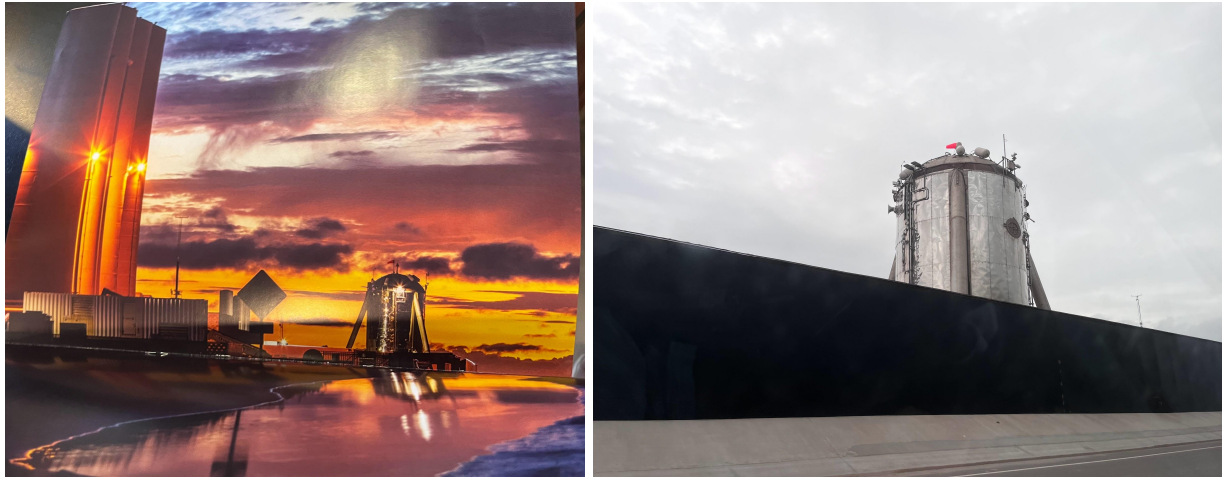


Figure 38: SpaceX calendar sold at the Museum of Fine Art featured from a photographer's SpaceX themed show. This calendar in particular had nothing but photos of the Starhopper, seen on the right.

Sources

1. Another Gulf is Possible. Twitter post. April 3, 2023.
https://twitter.com/AnotherGulf_/status/1642967229640613903.
2. Another Gulf is Possible. Twitter post. May 21, 2023.
https://twitter.com/AnotherGulf_/status/1660339460804845571.
3. Anzaldúa, Gloria. *Borderlands/la frontera*, Aunt Luta Books, 1987.
4. Basaldú, Chistopher. "THE PUSHBACK | Christopher Basaldu." *THE PUSHBACK*, Oct 15, 2020. 2:03. https://www.youtube.com/watch?v=PW2z_jE8rUk.
5. Barad, Karen. *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. duke university Press, 2007.
6. Battaglia, Debbora, David Valentine, and Valerie Olson. "Relational space: An earthly installation." *Cultural Anthropology* 30, no. 2 (2015): 245-256.

7. Berger, Eric. "Texas, SpaceX announce spaceport deal near Brownsville." *Chron*, Aug 4, 2014.
<https://blog.chron.com/sciguy/2014/08/texas-spacex-announce-spaceport-deal-near-brownsville/>.
8. Berlant, Lauren. *Cruel optimism*. Duke University Press, 2011.
9. Bova, Gus. "The Final Frontera: Elon Musk wants to go to Mars. Money, regulations, and public beaches are no object." *Texas Observer*, Aug 20, 2021.
<https://www.texasobserver.org/the-final-frontera/>.
10. Butler, Octavia E. *Parable of the Sower*. Four Walls Eight Windows, 1993.
11. Byrd, Jodi A. *The transit of empire: Indigenous critiques of colonialism*. U of Minnesota Press, 2011.
12. Casumbal-Salazar, Iokepa. "A fictive kinship: Making "modernity," "ancient Hawaiians," and the telescopes on Mauna Kea." *Native American and Indigenous Studies* 4, no. 2 (2017): 1-30.
13. Cayecedo, Carolina and David de la Rozas, director. *Teaching of the Hands*. Carrizo-Comecrudo Tribe of Texas, 2020. 45:27.
<https://www.youtube.com/watch?v=GQcKa6-lvhw>.
14. Chakrabarty, Dipesh. "The climate of history: Four theses." *Critical inquiry* 35, no. 2 (2009): 197-222.
15. Coulthard, Glen Sean. "Red skin, white masks: Rejecting the colonial politics of recognition." Minneapolis: Minnesota (2014).
16. Davila, Gaige. "Brownsville Activist Speaks out after Arrest over Anti-SpaceX Graffiti on Musk-Funded Mural." *TPR*, February 24, 2022.

<https://www.tpr.org/criminal-justice/2022-02-24/brownsville-activist-speaks-out-after-arrest-over-anti-spacex-graffiti-on-musk-funded-mural>.

17. De la Cadena, Marisol, and Mario Blaser, eds. *A world of many worlds*. Duke University Press, 2018.
18. Ezrahi, Yaron. "Science and the political imagination in contemporary democracies." In *States of knowledge*, pp. 254-273. Routledge, 2004.
19. Federal Aviation Administration. *Final Programmatic Environmental Assessment (PEA) Executive Summary for Starship/Super Heavy*. Office of Federal Space Transportation, June 13, 2021.
20. Federal Aviation Administration. "FAA Public Hearing SpaceX Boca Chica, TX – October 18, 2021." Filmed October 18, 2021. Federal Aviation Administration video, 3:39:41. Posted June 29, 2022. <https://www.youtube.com/watch?v=KRkDQVw4UjQ>.
21. Federal Aviation Administration. "FAA Public Hearing SpaceX Boca Chica, TX – October 20, 2021." Filmed October 20, 2021. Federal Aviation Administration video, 3:39:41. Posted June 29, 2022. <https://www.youtube.com/watch?v=hKNZuIteyk8>.
22. Feyerabend, Paul. *Against method: Outline of an anarchistic theory of knowledge*. Verso Books, 2020.
23. Foucault, Michel. *Power/knowledge: Selected interviews and other writings, 1972-1977*. Vintage, 1980.
24. Foucault, Michel, Arnold I. Davidson, and Graham Burchell. *The birth of biopolitics: lectures at the Collège de France, 1978-1979*. Springer, 2008.
25. Espeland, Wendy Nelson. *The struggle for water: Politics, rationality, and identity in the American Southwest*. University of Chicago Press, 1998.

26. Graeber, David. "Of flying cars and the declining rate of profit." *The baffle* 19 (2012): 66-84.
27. Guevara, Emma. "What Journalists Should Know before Reporting on the SpaceX at Boca Chica Beach." *Trucha RGV*, 3 Feb. 2022, <https://truchargv.com/what-journalists-should-know-before-reporting-on-the-spacex-at-boca-chica-beach/>.
28. Haraway, Donna. "Situated knowledges: The science question in feminism and the privilege of partial perspective." *Feminist studies* 14, no. 3 (1988): 575-599.
29. Hinojosa, Rebekah. "'Colonizing Our Community': Elon Musk's SpaceX Rocket Explodes in Texas as Feds OK New LNG Projects." By Amy Goodman. *Democracy Now!*, April 21, 2023. https://www.democracynow.org/2023/4/21/spacex_gulf_coast.
30. Hurley, Amanda Kolson. "In America's Poorest City, a Housing Breakthrough." *Bloomberg*, October 1, 2014. <https://www.bloomberg.com/news/articles/2014-10-01/in-america-s-poorest-city-a-housing-breakthrough>.
31. Jepson, Wendy. "Claiming space, claiming water: Contested legal geographies of water in South Texas." *Annals of the Association of American Geographers* 102, no. 3 (2012): 614-631.
32. Jimenez, Freddy. "Commentary: On the Shoulders of Giants." Edited by Josue Rawmirez and Abbey Vela. *Trucha RGV*, April 28, 2022. <https://truchargv.com/social-justice-template-2/>.
33. Joteria Cientifica. *Fuera SpaceX Zine*. Accessed February 20, 2023. May 30, 2021. https://issuu.com/joteriacientifica/docs/stop_spacex_zine.

34. King, Tiffany Lethabo. *The Black shoals: Offshore formations of Black and Native studies*. Duke University Press, 2019.
35. Las Imaginiasta et al., director, ¡Sabado Night Live!. Trucha RGV, May 8, 2021. 57:47. <https://www.facebook.com/watch/?v=150808930345066&ref=sharing>.
36. Latour, Bruno. *Science in action: How to follow scientists and engineers through society*. Harvard University Press, 1987.
37. Launius, Sarah, and Geoffrey Alan Boyce. "More than metaphor: Settler colonialism, frontier logic, and the continuities of racialized dispossession in a southwest US city." *Annals of the American Association of Geographers* 111, no. 1 (2021): 157-174.
38. Liboiron, Max. *Pollution is colonialism*. Duke University Press, 2021.
39. Lugones, María. "On borderlands/La frontera: An interpretive essay." *Hypatia* 7, no. 4 (1992): 31-37.
40. Maile, David Uahikeaikalei 'ohu. "On Being Late: Cruising Mauna Kea and Unsettling Technoscientific Conquest in Hawai 'i." *American Indian Culture and Research Journal* 45, no. 1 (2021): 95-122.
41. Little, Ben, and Alison Winch. *The new patriarchs of digital capitalism: Celebrity tech founders and networks of power*. Routledge, 2021.
42. Masco, Joseph. "Bad weather: On planetary crisis." *Social Studies of Science* 40, no. 1 (2010): 7-40.
43. Messeri, Lisa. *Placing Outer Space*. Duke University Press, 2016.
44. Martinez, Monica Muñoz. *The injustice never leaves you: Anti-Mexican violence in Texas*. Harvard University Press, 2018.

45. Muñoz, Marissa. "River as lifeblood, river as border: The irreconcilable discrepancies of colonial occupation from/with/on/of the frontera." In *Indigenous and Decolonizing Studies in Education*, pp. 62-81. Routledge, 2018.
46. Musk, Elon. "Making humans a multi-planetary species." *New Space* 5, no. 2 (2017): 46-61.
47. Musk, Elon. "SpaceX Founder Comment Sparks Outrage with Boca Chica Reside." KRGV, 2018.
<https://www.krgv.com/videos/space-x-founder-comment-sparks-outrage-with-boca-chica-reside/>.
48. Musk, Elon. Twitter post. March 2, 2021, 2:31 p.m.
<https://twitter.com/elonmusk/status/1366848696298561536>.
49. Musk, Elon. Twitter post. March 30, 2021, 9:17 a.m.
<https://twitter.com/elonmusk/status/1376901399867441156?lang=en>.
50. Musk, Elon. Twitter post. October 23, 2021.
<https://web.archive.org/web/20211023233302/https://twitter.com/elonmusk>.
51. NASA Spaceflight, "Starbase Live: 24/7 Starship & Super Heavy Development From SpaceX's Boca Chica Facility." Youtube. Accessed July 21, 2023. June 12, 2021. Livestream. <https://www.youtube.com/watch?v=mhJRzQsLZGg>.
52. Nye, David E. *American technological sublime*. mit Press, 1996.
53. O'Brien, Jean M. *Firsting and lasting: Writing Indians out of existence in New England*. U of Minnesota Press, 2010.
54. Pellow, David Naguib. *What is critical environmental justice?*. John Wiley & Sons, 2017.

55. Perez, Laura, director. One Day on Earth Project: Mission, TX, 04/26/2014. RGV.me, 2015. 10:25. <https://www.facebook.com/watch/?v=374895609357028>.
56. Pulido, Laura. Environmentalism and economic justice: Two Chicano struggles in the Southwest. University of Arizona Press, 1996.
57. Redfield, Peter. Space in the tropics: From convicts to rockets in French Guiana. University of California Press, 2000.
58. Reyes-Retana, Jerónimo. "Playa Bagdad|SpaceX:Sound, Necropolitics and the Industrialization of Space." Proceedings of the 10th Conference on Computation, Communication, Aesthetics & X. (2022) 75-84.
59. RGV Aerial Photography. Twitter post. Apr 21, 2023, 2:38 p.m. <https://twitter.com/RGVaerialphotos/status/1649497824457904129>.
60. Sandoval, Christian and Katy Camacho. "SpaceX : a neocolonizer's fantasy." Fuera SpaceX Zine, Joteria Cientifica. 2021.
61. Schmidt, Jeremy Water: Abundance, Scarcity, and Security in the Age of Humanity. NYU Press, 2017.
62. Serrano, Michelle (@battleangelfajita). 2023. "they gave spacehex permission to launch. This is how Boca Chica looked when they did a small static fire #spacehex #bocachicabeach." TikTok. April 15, 2023. <https://www.tiktok.com/@battleangelfajita/video/7222384996181429546>.
63. Sheriff, Eliana. "SpaceX, taking up space in Brownsville, Texas." Youtube. Jun 13, 2022. 13:55. <https://www.youtube.com/watch?v=Hb8L-NNJqzY>.
64. Shorter, David Delgado, and Kim TallBear. "An Introduction to Settler Science and the Ethics of Contact." American Indian Culture and Research Journal 45, no. 1 (2021): 1-8.

65. Smiles, D. (2020, October 26). "The Settler Logics of (Outer) Space." Retrieved February 12, 2023, from <https://www.societyandspace.org/articles/the-settler-logics-of-outer-space>.
66. SpaceX. "Starship." Accessed July 21, 2023. <https://www.spacex.com/vehicles/starship/>.
67. SpaceX. "Starship." Accessed July 21, 2023. <https://www.spacex.com/mission/#:~:text=MAKING%20HUMANITY%20MULTIPLA NETARY,destinations%20in%20the%20solar%20system>.
68. SpaceX. "Starship Mission to Mars." Youtube. Apr 10, 2023. 5:09. <https://www.youtube.com/watch?v=921VbEMAwY>.
69. Star, Susan Leigh, and James R. Griesemer. "Institutional ecology, translations' and boundary objects: Amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39." *Social studies of science* 19, no. 3 (1989): 387-420.
70. Starbase Realty. "All About Brownsville TX, Visiting- Moving- Relocation." Accessed July 21, 2023. <https://brownsvillerele.com/>.
71. Szolucha, Anna. "History, Borders, and the Work of "Beyond." *The Routledge Handbook of Social Studies of Outer Space* (2023).
72. Texas Real Estate Research Center. "Housing Activity for Cameron County." Accessed July 21, 2023. https://www.recenter.tamu.edu/data/housing-activity/#!/activity/County/Cameron_County
73. Tsing, Anna Lowenhaupt, Nils Bubandt, Elaine Gan, and Heather Anne Swanson, eds. *Arts of living on a damaged planet: Ghosts and monsters of the Anthropocene*. U of Minnesota Press, 2017.

74. Tuck, Eve, and K. Wayne Yang. "Decolonization is not a metaphor." *Tabula Rasa* 38 (2021): 61-111.
75. Tuhiwai-Smith, Linda. *Decolonizing methodologies: Research and indigenous peoples*. Bloomsbury Publishing, 1999.
76. Wallstreet Journal. "Starship Explosion Video: Watch Elon Musk's Rocket Explode After Launch | WSJ." Youtube. Apr 20, 2023. 4:29.
<https://www.youtube.com/watch?v=bl7IqyEyqhY>.
77. Weber, Max. "Science as a Vocation." In *Science and the Quest for Reality*, pp. 382-394. London: Palgrave Macmillan UK, 1946.
78. Whyte, Kyle. "Indigenous experience, environmental justice and settler colonialism." *Environmental Justice and Settler Colonialism* (April 25, 2016) (2016).
79. Whyte, Kyle P. "Indigenous science (fiction) for the Anthropocene: Ancestral dystopias and fantasies of climate change crises." *Environment and Planning E: Nature and Space* 1, no. 1-2 (2018): 224-242.
80. Wyatt, Sally. "Technological determinism is dead; long live technological determinism." *The handbook of science and technology studies* 3 (2008): 165-180.
81. Valencia, Sayak. *Gore capitalism*. Vol. 24. MIT Press, 2018.
82. Valentine, David. "Exit strategy: Profit, cosmology, and the future of humans in space." *Anthropological Quarterly* (2012): 1045-1067.
83. Valentine, David. "Gravity fixes: Habituating to the human on Mars and Island Three." *HAU: Journal of Ethnographic theory* 7, no. 3 (2017): 185-209.