

New Materialism and the Wastelanding of Arrakis in Frank Herbert's *Dune*

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The origins of Frank Herbert's *Dune* series can be traced back to an unfinished scientific article "They Stopped the Moving Sands", which detailed the United States Department of Agriculture's project in Oregon to use specially designed grasses to hold sand dunes in place (Pak 117). The worldbuilding and storytelling in *Dune* relies heavily on concepts of ecological discourse, analyzing how the development of ecological sciences and political power struggles can reshape, give meaning to, or strip meaning away from an environment. The struggle for the desert planet Arrakis in Frank Herbert's *Dune* provides an example of Traci Brynne Voyles' theories of wastelanding, and demonstrates new materialist storytelling by drawing a direct link between human politics and seemingly "nonhuman" environmental factors as well as depicting the agency of not only the colonized people, but the environment of the planet itself. *Dune* depicts these complicated series of interrelated discourses and a complex web of new materialist agencies to deconstruct imperialist ambitions of control, depicting the disastrous effects of the Atreides' families efforts to control a planet that exerts agency towards preventing settler-colonial occupation and its impact on the planet's indigenous culture.

The environment of the desert planet Arrakis and the cultural practices of their indigenous population, the Fremen, serve as effective examples of new materialist ways of thought. Iovino and Oppermann describe the idea of the "material turn", also known as "new materialisms", as a new way of thinking of basic assumptions about human relationships with nature. The first assumption new materialism challenges is the "chasm between the human and the nonhuman world in terms of agency" (Iovino & Oppermann 2). While old ways of thinking

view humans as the only beings with true agency, new materialism argues that all material forces have agency, in that they have the capability to affect the world around them.

The sand, wind, water, *spice melange*, and sandworm (also known as “makers” due to their role in producing spice) serve as the key non-human agents of the Arrakeen ecosystem, each one exerting its agency to a profound effect on Fremen life. The sand and wind create fierce sandstorms, with “winds over eight hundred kilometers” (Herbert 234) which force fremen civilization into caverns protected from the elements. Sandworms create a similar threat, as their ability to sense movements in the sand make ground travel deadly. The scarcity of water gives the material a sacred importance to Fremen culture, with many customs being formed around its scarcity; the water of a dead Fremen is given to their tribe (unless the Fremen was killed in a duel, in which case the water is given to the victor), and when Paul Atreides sheds tears for a Fremen he defeated in ritual combat, the tribe excitedly chants “Usul gives moisture to the dead!” (Herbert 317). In an ecosystem with an extreme scarcity of water, shedding a tear for a dead man is seen as the ultimate gesture of spiritual generosity; the water and its relation to the Fremen give it a voice in their culture that alters the meaning of a common human behavior.

The *spice melange*, the material which drives the plot of *Dune*, is described in the novel’s “Terminology of the Imperium” as “the crop for which Arrakis is the unique source. The spice, chiefly noted for its geriatric qualities, is mildly addictive when taken in small quantities, severely addictive when imbibed in quantities above two grams daily per seventy kilos of body weight... Muad’Dib claimed the spice as a key to his prophetic powers. Guild navigators make similar claims” (Herbert 535). The character of Duke Leto describes how spice affects the colonization of Arrakis by explaining that “Spice is in everything here. You breathe it and eat it in almost everything. And I find that this imparts a certain natural immunity to some of the

most common poisons of the Assassins' Handbook....We cannot kill off large segments of our population with poison—and we cannot be attacked this way, either. Arrakis makes us moral and ethical” (Herbert 111). Not only does this detail speak to the importance of spice as a material in Fremen life, but also serves as an example of the new materialist “system of distributive agency”, where many different materials exert their agency and work towards a certain effect (Iovino & Oppermann 3). Just as the practice of shedding a tear is altered in discourse through the scarcity of water, the commonality of spice serves as a way for Arrakis to exert its own agency upon human behaviors.

Both of these examples demonstrate another key concept in new materialism: the idea that “things (or matter) draw their agentic power from their relation to discourses that in turn structure human relations to materiality” (Iovino & Oppermann 4). As well as being exemplified in the discursive power of tears in the Fremen society, or the ability of the spice to create “ethical” behaviors through resistance to poison, the abilities of the Bene Gesserit demonstrate material agency in words and languages themselves.

“Paul faced the old woman, holding anger in check. ‘Does one dismiss the Lady Jessica as though she were a serving wench?’

A smile flicked the corners of the wrinkled old mouth. ‘The Lady Jessica was my serving wench, lad, for fourteen years at school.’ She nodded. ‘And a good one, too. Now, you come here!’

The command whipped out at him. Paul found himself obeying before he could think about it. *Using the Voice on me*, he thought. He stopped at her gesture, standing beside her knees” (Herbert 13).

This confrontation between Paul and the Bene Gesserit Reverend Mother is the first instance of the Bene Gesserit power of “the voice”. Ronny Parkerson’s essay “Semantics, General Semantics, and Ecology in Frank Herbert's *Dune*” highlights this passage as an example of the direct power of language in *Dune*. Through the Bene Gesserit ability, Herbert establishes both literally and metaphorically the way voice and language can function as a material in and of itself due to its ability to affect ecosystems and exert power on others. Parkerson also analyzes the death of Liet-Kynes, an ecologist specializing on the Arrakeen ecosystem, in which he hears both his internal voice as well as the voice of his father in hallucinations leading up to his death. The voice of his father mentions the system of ecological notation he has invented, claiming that the Fremen must become ecologically literate through his means of notation. Eventually, Liet-Kynes sees a vision of the ruin that his ecological ambitions will bring to Arrakis before dying on the sand. By placing an emphasis on voice as well as ecology in this chapter, Parkerson argues, *Dune* draws a direct connection between the use of language and semantics with the treatment of ecosystems and environments (Parkerson 410-411).

The link between discourse and ecology is further examined in Traci Brynne Voyles’ theory of wastelanding. In her book *Wastelanding: Legacies of Uranium Mining in Navajo Country*, Voyles describes two primary forms of wastelanding: “the assumption that nonwhite lands are valueless, or valuable only for what can be mined from beneath them, and the subsequent devastation of those very environs by polluting industries”, also known as “social construction and reification.” She claims that “Like race, which is a social construction made material by the embodied consequences of racism (threats and acts of violence, foreshortened life expectancy, incarceration, under and uncompensated labor, inequalities in wealth accrument, and so on), ideas about the value of environments are manifested by the material consequences

of environmental destruction” (Voyles 10). Describing how desert environments are subjected to wastelanding, she explains that

“Deserts as ‘environments of scarcity’ led explorers and settlers to develop a view of desert tribes, in Fremont's words, as ‘the nearest approach to the mere animal creation.’ Ironically, the fact that desert tribes survived-in fact flourished-in ‘environments of scarcity’ in which white settlers so struggled could have been evidence, by the same racist (il)logic, of the tribes' superiority rather than inferiority, an excellent example of the ways in which, when it comes to social constructions, ‘logic is in the eyes of the logician’” (Voyles 18).

The social construction of a wasteland can be observed by the Reverend Mother's description of Arrakis as “the wasteland where nothing lives except the spice and the sandworms,” (Herbert 36). Through her language depicting Arrakis as a lifeless planet, the occupation of Arrakis by the Harkonnens and Atreides is justified, and the land is rendered as meaningful only for the exportation of spice. Voyles' idea of the “empty except for Indians” excuse (Voyles 8) becomes “empty except for Fremen”, which is noted by a description of the Fremen from Paul's point of view as “people who lived at the desert edge without caid or bashar to command them: will-o'-the-sand people called Fremen, marked down on no census of the Imperial Regate” (Herbert 10). Paul's description of the Fremen as “will-o'-the-sand” seems to directly connect the Fremen to the Arrakeen ecosystem in a way that reflects new materialism, yet this closeness to nature is instead demonized by the Empire as barbaric or animalistic.

While the rhetoric of the Reverend Mother and Paul early in the novel serve as an example of the social construction of a wasteland, the novel does not depict a “reification” in the traditional sense. Arrakis is not polluted or made useless by over-extraction of resources (a

sequence in which a spice-mining rig is devoured whole by a gigantic sandworm demonstrates how the over-extraction of spice is prevented by the ecosystem itself), but instead undergoes the process of terraforming as the Atrides attempt to turn the planet into a green, water-rich ecosystem rather than a “barren” desert environment. Chris Pak’s analysis of terraforming in *Dune* states that while the process is first seen as “an emblem for Fremen dreams of freedom, abundance, and vitality” (Pak 118), the terraforming of Arrakis proves to be a devastating form of oppression of both the Arrakeen ecosystem and Fremen culture. Pak describes the character of Liet-Kynes and his father Pardot’s plan towards “the use of the ‘native labor pool’ to conduct the terragouging of Arrakis” (Pak 119). This is used to highlight how the idea of terraforming relates to the oppression of indigenous people; their labor is exploited in order to change their own home planet for the gain of a settler-colonial power (while the Fremen believe the terraforming is for their own good, it ultimately serves to reinforce the power of the Houses over the planet). He describes how the characters of Pardot and Kynes highlight how in order for terraforming to be achievable, the Fremen must first develop agriculture and a settled civilization. Therefore, the entire project of terraforming Arrakis requires a settler-colonial overthrow of indigenous ways of life.

Describing events from later novels in the *Dune* trilogy, Pak states that “When it is revealed that free water on the planet’s surface threatens the sandworms’ extinction, the pastoral ideal that the dream of a terraformed planet offers to the Fremen is gradually undermined” (Pak 123). He labels the terraforming of Arrakis as “deterritorialization”, a term which can be defined as “the emergence of new cultural forms and practices that are no longer rooted in place” (Pak 124), as the newfound abundance of water topples many aspects of Fremen culture, and its destruction of the sandworms threatens the production of spice, a material sacred to Fremen

traditions. In this way, the terraforming of Arrakis becomes an act of gentrification, its colonial occupation shifting the planet to become valuable through a non-Arrakeen lens, where green-ness and free-flowing water are signs of value, at the expense of Fremen value on the “makers” and the abundance of spice.

The oppressive ecological “gentrification” of Arrakis can be understood through the ideas of new materialist meaning-making, as it demonstrates the porosity of meaning and matter and how they build off of each other to form human cultural understandings of nature. Through this lens, the process of wastelanding can be seen as the result of an ecocritical disjoint, where the material experiences of two cultures differ in a way that creates entirely different views of culture and therefore differing ideas of values in nature. That is not to say, however, that a new materialist view of wastelanding would see the social construction of a wasteland as a simple misunderstanding; rather, it can identify discrepancies in ecological thought as an exploitable aspect of environmental discourse, as highlighted by Frank Herbert’s claim that “ecology might be the next banner for demagogues and would-be heroes” (Parkerson 404). This also displays the porous nature of ecology and human politics; while political decisions can change the course of an ecosystem through pollution, resource extraction, or in the fictional case of Arrakis, terraforming, the political system which gives rise to these changes can be traced back to the cultural notions provided to humans by the material conditions of their ecosystems.

Describing the role of consent in indigenous Nishnaabeg education, Leanne Betasamosake Simpson states in her book *As We Have Always Done* that

“Coming to know also requires complex, committed, consensual engagement. Relationships within Nishnaabewin are based upon the consent- the informed (honest) consent - of all

beings involved. The word consensual here is key because if children learn to normalize dominance and nonconsent within the context of education, then nonconsent becomes part of the normalized tool kit of those with authoritarian power” (Simpson 151).

The Fremen culture, while not explicitly stated as such in the novel, operates in a similar nature with consent, as well as Simpson’s description of “land as pedagogy”, where land itself is used as a teaching curriculum. This is most clearly exemplified in the Fremen coming-of-age tradition of riding the sandworm. The practice of riding a sandworm does show a Fremen placing control on a worm for a temporary amount of time, however it is done so through respect, as demonstrated in Paul’s first ride:

“Paul found himself riding upright atop the worm. He felt exultant, like an emperor surveying his world. He suppressed a sudden urge to cavort there, to turn the worm, to show off his mastery of this creature.

Suddenly he understood why Stilgar had warned him once about brash young men who danced and played with these monsters, doing handstands on their backs, removing both hooks and replanting them before the worm could spill them.”

The tradition of the worm functions through a sense of respect: to ride the worm, it is necessary to respect its power. Worms are let free after being ridden, showing that to Fremen, control is not meant to be a permanent arrangement. The Fremen believe that control is not meant to be permanent, because the very environment of Arrakis prevents it; as previously mentioned, the ecosystem itself is the root of the Fremen’s nomadic traditions. They do not understand settler-colonialism, because the act of permanently settling upon a “conquered” land

is rendered alien by Arrakis itself. This, in turn, makes the Atreides' goal of manufacturing consent for terraforming much simpler; the Atreides are able to exploit the Fremen's lack of understanding towards the ideas of the conquest of land, and therefore shift it into a symbol of hope and prosperity rather than subjugation.

As later installments in the franchise prove, this plan has a fundamental oversight, as when the Fremen begin to realize the effects of terraforming on their culture, they begin to rebel against him as a ruler who has "slain the past" (Pak 124). The Atreides' plan to control Arrakis is also fundamentally flawed in that it fails to realize that the planet itself has the agency to resist its occupation, as shown in the aforementioned sequence of a spice mining rig being devoured by a worm. Pak notes that "Arrakis itself 'fought him, resisted, slipped away from his commands,' illustrating how the nature of the planet resists the imposition of an individual's landscaping vision" (Pak 124). The failure to establish control can be seen as a lack of a new materialist mindset: Paul fails to accommodate for the agency of Arrakis because his environmental mindset does not recognize that the planet is *capable* of agency.

In conclusion, a new materialist analysis of *Dune* highlights how human experiences that are formed by ecosystems can give rise to cultural and political practices which affect other ecosystems in turn, creating a network of distributive agency between environment and human. Analyzing settler-colonialism through a new materialist mindset, *Dune* deconstructs ideas of controlling, dominating, or molding ecosystems by depicting the agencies of ecosystems themselves as resistant to change, and highlighting the inevitable rebellions caused by erasing indigenous cultures through attacks on both their landscapes and cultural identities.

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