

A Turkish Posthumanist Perspective in Science Fiction: Özlem Ada's Embriyogenesis

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Science fiction, from its early stages, has allowed humans to face their most basic fears or to experience their most fundamental fantasies in an environment of virtual reality. "Virtual reality" here does not necessarily mean twenty-first century electronic environments, but cultural media like literature or cinema. Science fiction elaborates on topics that are relevant to ecocriticism through utopias or dystopias that are not always products of fantasy: they can be reflections of what the world has experienced, is experiencing, or will experience. Donna Haraway notes that "the boundary between science fiction and social reality is an optical illusion" (149). In this blurring of fiction and reality, stereotypical examples from Hollywood may seem to dominate, such as commercialized versions of Mary Shelley's *Frankenstein* (1818; 1831) or H.G. Wells' *Time Machine* (1895), which combine futuristic imagery with frightening perceptions of nature and animals.

Much of the science fiction produced in Turkey is no exception to this. Turkish science fiction films are generally reproductions or spoofs of famous Hollywood productions. Examples include *Turist Ömer Uzay Yolunda* (1973; Ömer the Tourist in *Star Trek*), a series that relates the adventures of a comic protagonist with characters and concepts borrowed from *Star Trek*, as well as *Dünyayı Kurtaran Adam* (1982; The Man Who Saved the World), which is mainly based on borrowed scenes from *Star Wars* and involves a famous Turkish actor, Cüneyt Arkın. However, science fiction literature is more authentic. Raif Necdet's early Turkish Republican utopia, *Semavi İhtiras* (1932; The Celestial Passion) for example, tells a story of Nobel-winning Turkish authors (a vision of the future which later became reality) and Turkish girls who fly over the world with their private jets in their free time; Dr. V. Bilgin's *Rüya mı, Hakikat mi?* (1943; Dream or Reality?) features a man who wakes up in the middle of a distressed night and finds himself traveling to Mars. Many similar texts exist in Turkish literature, but they are popular only among the fans of the genre, "who often express themselves in fanzines or webzines," as A. Ömer Türkeş points out in an article on the Turkish science fiction webpage *X-Bilinmeyen* (X-Unknown).¹

¹ "Türkiye'de bilimkurgu sanatı, bugün en çok türün tutkunlarının çıkardıkları fanzinler ve web siteleriyle sürdürüyor, canlılığını" (Türkeş "Bilim mi, Kurmaca mı?"). Other Turkish science fiction texts include *Uzay Yolu* (1973, *Star Trek*), *Haşarı Uzaylı* (1975, *Naughty Alien*), *Renkli Ülkeler* (1976, *Colorful Countries*), *Tarihin Başladığı Gün* (1979, *The Day History Began*), *OBI-J-S 927* (1980), *Mikrop Savaşı* (1983, *War of the Microbes*), *Unutulan Gezegen* (2001, *Forgotten Planet*), *Tanrıların Kenti* (2002, *City of Gods*), all of which are written by Selma Mine, Halil Kocagöz's *Uzaya Kaçış* (1997, *Escape to Space*), Fatih Çatallar's *Evrenin Kapısı* (1997, *Door of the Universe*), whose back cover was written by Stephen Hawking, and

Türkeş also mentions a lesser-known author, Özlem Ada and her book *Embriyogenesis* (1997; Embryogenesis), which sheds light on how recent Turkish science fiction addresses the relationship between humans and non-humans. *Embriyogenesis* can usefully be approached through recent new materialist approaches in ecocriticism. It illustrates Karen Barad's "agential realism," "taking matter seriously" in terms of "materiality and performativity" (132) as well as Stacy Alaimo's "trans-corporeality" ("Trans-Corporeal" 237), since inorganic matter takes on the role of a "free autonomous actor," Carolyn Merchant's term for nature (221). Published in 1997, this unique example of Turkish science fiction contributes interestingly to the ongoing debate regarding agency. From its first pages onwards, the book attracts readers' attention to the agency of matter and nature and to human-nonhuman relationships. The opening lines of *Embriyogenesis* introduce the argument that underlies the plot:

Everything in the world is alive. It is living. The only thing that differs between all life forms is their way of expressing this. When we teach our way of expression to those creatures that we call inanimate, there will be no difference. But they will never dominate the world because we are the first life forms to discover being alive!

Unfortunately, we don't know how we can activate inorganic matter's *being alive*.

But nature knows [how to do it] because all the information is logged in the diary of nature. We are in no hurry to learn the alphabet to read *its* diary. While we are preparing ourselves for the information we are going to learn, at the same time we are learning to read. That's better. (7; italics mine)²

These lines anticipate Barad's perspective in *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning* (2007), an "onto-epistemological" perspective that brings practices of knowing and being together as they are always already "mutually implicated" (Barad 185). In Ada's introductory lines, matter is alive and "nature knows" (Ada 7).

At first sight, Ada seems to take an anthropocentric approach when she suggests that "[. . .] we teach our way of expression to those creatures that we call inanimate" or "they will never dominate the world because we are the first life forms to discover being alive!" (7). However, the overall impression that the quotation conveys is that "[n]ature performs itself differently" (Vicki Kirby, qtd. in Barad 184). In Ada's introductory lines, the word "teach" seems to suggest a binary opposition where the teacher figure functions as "colonizer, white, civilized, advanced, good, beautiful, human, [and] doctor," whereas the pupil is associated with being "colonized, black, primitive, retarded, evil,

Özlem Kurdoğlu's *Son Cephede Şafak* (2000, Dawn at the Last Front), which was originally intended as the fourth story of the famous *Alien* series of Hollywood. For one of the most recent examples of science fiction in Turkish literature, see *Ambrosia Laneti* (2012, The Curse of Ambrosia) by Mustafa Resul Yalçınkaya, which is based on environmental concerns regarding a dystopian future.

² Dünyadaki her şey, canlı. Yaşiyor. Yalnızca bunu ifade ediş biçimi, tüm oluşumlarda farklı. Cansız diye nitelediğimiz yaratıklara kendi ifade tarzımızı öğrettiğimiz zaman, farkımız kalmayacak. Ama onlar hiçbir zaman dünyayı egemenlikleri altına alamayacaklar. Çünkü canlı olduğunu keşfeden ilk oluşumlar bizleriz! Ne yazık ki, inorganik maddelerin canlılığını nasıl hayata geçireceğimizi henüz bilmiyoruz. Ama doğa biliyor. Çünkü bütün bilgiler doğanın günlüğünde kayıtlı. Onun günlüğünü okuyacak alfabeyi çözmek için acelemiz yok. Bir taraftan öğreneceğimiz bilgilere kendimizi hazırlıyoruz, bir taraftan da okumayı söküyoruz. Böylesi daha iyi. (7)

ugly, bestial, [and] patient” (Ashcroft, Griffiths, and Tiffin 24-25). However, it is also possible to read the word “teach” without such binarism if we understand teaching and learning as reciprocal: a teacher first has to learn what s/he teaches, and the learner, has to teach himself/herself in the process of learning. Thus, Ada does not necessarily construct a hierarchy between humans and nonhumans when she speaks of teaching, but rather, refers to a mutual state of transforming knowledge.

Ada's reference to humans' domination of the world may seem similarly anthropocentric, but it may in fact allude to the interconnectedness of life. As Alaimo notes, “[b]racketing the biological body, and thereby severing its evolutionary, historical, and ongoing interconnections with the material world, may not be ethically, politically, or theoretically desirable” (“Trans-Corporeal” 238), and Ada shows with her stories that it is not desirable in the literary sense, either. Dominating the world necessitates a hierarchical structure in which body and mind are separated, which in turn requires a chain of other dichotomies: culture/nature, man/woman, organic/inorganic, and dominating/dominated. With such distinctions, the biological body is bracketed. However, Ada's words indicate that such bracketing is not desirable. This is the reason why other life forms will not dominate the world. Being the first ones to discover that we are alive, we humans have dominated the world for so long because we do not want to share our primary agency with others. Others will not do so because when the interconnection between all beings is understood clearly, there will be no need or no place for such domination.

The phrases in the text that I have italicized also draw attention to the problem of agency. *Being alive*, the first of these phrases, is the translation of the word “canlılık,” which means “the state of being alive,” but also “agency,” “activity,” “the state of being active,” or “a colorful atmosphere of a place.” The word is striking because it gives the reader an idea about the agency of inorganic matter in multiple ways, rather than a fixed meaning. The second phrase, “its diary,” shows how culturally established boundaries regarding gender are always already broken in the Turkish language. In Turkish, there is no gender distinction in the third person singular – no “he,” “she,” or “it.” Although this might lead to confusion in translations to languages that make such distinctions, the average Turkish speaker or writer does not experience any such confusion. All the third person singular pronouns (he/she/it) are referred to as “o” (pronounced “oh”), and the related possessive adjectives (his/her/its) as “onun” (pronounced “oh-noon”); hence, neither nature nor anything else is assigned the role of a particular gender in speech or written language, unless the text is translated or adopted from any other culture. When Ada says “*onun günlüğü*” (*its diary*; *italics mine*), referring to the diary of nature (7), nature is not assigned the role of a female figure, as is often the case in the Western world. When referred to as “o,” nature is not claimed to be animate or inanimate, male or female – but it is assigned the ability of writing a diary, in a clear attribution of agency.

The final point that might need clarification in Ada's introductory note is the author's statement, “we are in no hurry to learn the alphabet” (7). In fact, I would say

that we are; we must be. As many ecocritics would agree, our planet has no time or patience to wait for us to take action. Therefore, we have to be in a hurry to learn the alphabet of nature so as to be able to read its diary. Indeed, today we may be able to read this diary more easily because we ourselves have transformed nature so much. However, Ada's suggestion of "no hurries, no worries" might refer to a material turn that will take place as a consequence of this transformation. In this sense, the author might have intended to propose that no matter what happens, this transformation will take place and require new conceptions of the organic and the inorganic, as the blurb on the novel's back cover highlights:

[. . .] The job of the Gene Designer was to make sure that all these wishes came true by creating the necessary genes. When the time has come and these perfect humans have started to die with no reason, whatsoever (...) The job description of the Gene Designer has changed. From now on, *he/she/it* has to find a way to protect the future existence of human race. Or may be *he/she/it* needs to bring new definitions to the concepts of animate/inanimate, [and] organic/inorganic (...). (Back Cover; italics mine)³

Ada, then, points out the necessity of a paradigm shift that leads humans to share their agency with other life forms, including inorganic matter and what we call "inanimate." This shared agency relates to what Alaimo calls "'trans-corporeality' – the time-space where human corporeality, in all its material fleshiness, is inseparable from 'nature' or 'environment'" ("Trans-Corporeal" 238). According to Alaimo, "the movement across human corporeality and nonhuman nature necessitates rich, complex modes of analysis that travel through the entangled territories of material and discursive, natural and cultural, biological and textual" ("Trans-Corporeal" 238). Similarly, *Embriyogenesis*, by blurring the boundaries between the material and the discursive, the natural and the cultural, the biological and the textual, underlines the importance of a new posthumanist perspective toward the environment that encompasses human and nonhuman beings together.

Ada's book consists of two stories "Hisse Senetleri" (Share Certificates) and "Çaya Yetiştirilir" (You Can Be Ready for the Tea Party)⁴, both of which lend themselves to posthumanist readings. The first story relates the experience of a female robotic being, Nin-ti 2000, in a world of inorganic matter, where Yüce Lotus (Great Lotus) functions as the one and only god of a universe governed by computer codes. Nin-ti 2000 keeps two human pets, Epik (Epic) and Lirik (Lyric), because her configuration involves "the instinct of undertaking the responsibility for looking after an organic system" (50)⁵.

³ Gen Tasarımcısı'nın görevi, gerekli genleri yaratarak bütün bu isteklerin gerçek olmasını sağlamaktı. Gün gelip de, bu mükemmel insanlar nedensiz yere ölmeye başlayınca (...) Gen Tasarımcısı'nın görev tanımı değişti. Artık o, insan ırkının gelecekteki varlığını korumanın bir yolunu bulmalıydı. Belki de canlı/cansız, organik/inorganik kavramlarına yeni tanımlar getirmesi gerekecekti (...) (Back Cover)

⁴ Due to the syntactic differences between English and Turkish, the original title could not be translated in the passive voice as it was in its Turkish form. The translation is kept as close as possible to the meaning with regard to the overall context of the story, rather than being loyal mot-a-mot. In fact, the title sounds like an advertisement that notices people of brief but effective courses or classes, through which the learner is able to catch a tea party.

⁵ "Yüzdelerine bir de 'organik bir sistemin bakımını üstlenme güdüsü' koydu" (50). In fact, the reader is informed about Nin-ti's configuration involving the responsibility for looking after an organic system much later and in a subtle way in the text, when she is in pursuit of creating a new inorganic "baby" for herself. She adds the same responsibility

Keeping human pets, in Ada's fictional universe, reverses the usual human-animal relationship: in the world of Nin-ti 2000, inorganic matter is at the center of the universe, and in the case of a configuration change, all inorganic beings have to be sent to a laboratory where they are reprogrammed for being transformed into a new life form. In other words, if they respond in an unpredictable manner to any kind of an incident, they are "killed" and "reborn" in a new way because they are thought to be out of order. "Being out of order" is explained by analogy to organic matter, whose behavior is much less controlled and much less predictable by means of computer codes. This fictional reversal functions as a parable for the usual marginalization of those who do not conform to cultural norms. Nature tends to play a central role in such marginalization processes, as Alaimo has pointed out:

[N]ature, as a philosophical concept, a potent ideological node, and a cultural repository of norms and moralism, has long been waged against women, people of color, indigenous peoples, queers, and the lower classes. Paradoxically, women, the working class, tribal peoples, and people of color have been denigrated because of their supposed 'proximity' to nature, even as queers have been castigated for being 'unnatural.' ("Trans-Corporeal" 239)

Ada's story literalizes this process by staging it in a world dominated by the inorganic: those who run out of control are likened to organic matter, in an allusion to the way humans treat nonhumans along with those who do not conform. In other words, organic matter stands for the nonhumans of our world in Ada's fictional world. After the death of Epik (the male human pet), Nin-ti 2000 forgets how she is expected to respond, and has difficulty remembering that she is supposed to cry. She realizes that something is wrong with her configuration because forgetting behavior codes is unique to organic beings in this universe of inorganic matter. Having realized that her configuration is changing "for the worse," Nin-ti 2000 starts to experience a certain feeling of freedom, but does not inform the commanders as she is supposed to. Instead, she begins to enjoy her new mood, which gradually turns into an interrogative attitude. She philosophizes about life and her environment, and she decides to cut off her power connection to the computer that governs her. For this, she uses a particle of sand and throws the computer from the top floor of a skyscraper. In order to align herself more with nature, she carefully chooses the sand particle from the ocean floor. After this, she feels that her mental and bodily powers increase enormously, and she decides to have a husband in order to create inorganic matter – a new baby. When the commanders discover that Nin-ti 2000 has released herself from her digital configuration, she is taken to court and sentenced to "transformation." However, this end is not a catastrophe for her – she lives "happily ever after" as a result of her loss of consciousness and time perception.

"Hisse Senetleri" (Share Certificates) owes its title to two turns of the plot: First, Nin-ti 2000's male human pet, Epik, dies of sorrow due to a great financial loss in the

to the configuration of the baby, so in this way, the reader understands that this characteristic of Nin-ti's is part of her configuration, too.

stock market; and second, as Nin-ti 2000 is sentenced to transfiguration by the court as a punishment for her search for freedom, she is turned into a pack of share certificates, losing all her consciousness and perception of time and living happily with her husband Ji-Le and her new inorganic creation. Aside from their metaphorical significance, these turns of the plot can also be considered as engagements with the question of materiality. Nin-ti 2000's experience of conversion from a predestined and supervised synthetic matter into an interrogating mind that searches for her soul can be read through what Barad suggests as "intra-action" (33). Through this conversion, Ada problematizes the relationship between organic and inorganic matter and illustrates what may well be a unique "new materialist" perspective, in Turkish science fiction.

Moreover, since the story suggests the possibility of a transition from machine to human, it can also be read through the perspective of Haraway's "cyborg," which she defines as "a cybernetic organism, a hybrid of machine and organism, a creature of social reality as well as a creature of fiction" (149). At first sight Nin-ti 2000 may seem to be a cyborg only in the general sense of a mechanical being. However, "it is possible to radically reconceive materiality precisely by extending, reconfiguring, and working through many of the theoretical models of the linguistic turn," as Alaimo notes ("Trans-Corporeal" 244). Hence, instead of "theories of social and discursive construction, [which] have embraced the cyborg as a social and technological *construct*, [...] but have ignored, for the most part, the *matter* of the cyborg, a materiality that is as biological as it is technological, both fleshy and wired" (Alaimo, "Trans-Corporeal" 244), I prefer to read Ada's Nin-ti 2000 as a cyborg in the process of "becoming animal." That is to say, this major character in "Hisse Senetleri" is not the cyborg that features in some variants of technological posthumanism, but Haraway's cyborg, which encourages human "kinship with animals" as well as with machines (154). In this sense, Nin-ti 2000 stands at the core of Ada's fiction as well as at the heart of social reality, symbolizing the blurring of boundaries between organic and inorganic. Nin-ti 2000 exemplifies the question of what is human and what is nonhuman: as Rosi Braidotti has phrased it, "the very notion of 'the human' is not only de-stabilized by technologically mediated social relations in a globally connected world, but it is also thrown open to contradictory redefinitions of what exactly counts as human" (197). Because Nin-ti 2000 starts to feel free as organic matter (a human being) does, the story interrogates whether she becomes a human or remains a nonhuman machine.

Ada's story, through this conversion, stages a transition between two different kinds of materialism. The English word "material" has two possible translations into Turkish: the first of these is "maddi," which means "material" in the literal or Marxist sense; that is to say, "related to economic issues." The second translation is "maddesel," which means "material" in a new materialist sense. Ada's story begins and ends with Marxist materialism because of the definition of the title in Turkish, and the transition between the beginning and the end is made possible through the new materialism instantiated by Nin-ti 2000's ambiguous status as human and machine. Ada's language gives the reader a sense of transition from Marxist materialism to new materialism and

all in all, it becomes the intra-action of matter and mind, as well as that of language and reality that shapes the whole account. The erosion of the division between the signifier and the signified plays a crucial role in formulating this transition.

Nin-ti 2000 is introduced at the beginning as unaware of the possibility of such intra-action. The story opens with her phone call to a medical doctor, asking for advice on the health problems of her human pets. She cannot understand that sorrow may cause sickness: "Isn't what we call sorrow only an emotional process, doctor? I don't understand how it can affect them physically" (8)⁶. In this regard, Nin-ti 2000 is not aware of intra-action between mind and matter, as psychosomatic illnesses can be regarded as examples of intra-action: Lynda Birke argues that "internal organs and tissues" can be declared to "perform," and biological bodies are not passive or predestined in a mechanical way; rather, they show "active response to change and contingency" (45). This intra-action also manifests itself in a form of "toxic discourse" when the doctor warns Nin-ti 2000 not to touch Epik and Lirik because she might emit radiation, which might harm humans: "Yes, you've heard right! If you often touch them or pat them, you'll shorten their lifespan. You'd better not take them into your hands while you show them affection" (9).⁷ Through this conceptual reversal in the story, the reader realizes that although humans are kept as pets, they live "normal" lives in their homes. They have furniture such as a small white armchair, "the first item they bought for their home, about which they had beautiful memories" (12)⁸. They are in fact a married couple, so deeply in love that when the male partner dies, the female one does too. Nin-ti 2000 gradually starts to grasp the meaning of this relationship, but in her world, it is difficult to understand such intra-action between feelings and bodies. The agency of love and sadness is not comprehensible to her, in a reversal of humans' usual lack of understanding of the inorganic. Humans cannot grasp, for instance, how dirt can exemplify "agency without agents, a foundational, perpetual becoming that happens without will or intention or delineation," to follow Ladelle McWhorter's example (Alaimo, "Trans-Corporeal" 247). McWhorter, stating that dirt "has no integrity," explains how it acts, and thus also gives an explanation for the love example in the case of Epik and Lirik:

Dirt isn't a particular, identifiable thing. And yet it acts. It aggregates, and depending upon how it aggregates in a particular place, how it arranges itself around various sizes of empty space, it creates a complex water and air filtration system the rhythms of which both help to create more dirt from exposed stone and also to support the microscopic life necessary for turning dead organic matter back into dirt. Dirt perpetuates itself. (166)

This analysis of dirt and its agency can be expanded and adapted to the case of emotions that kill organic bodies. Like dirt, love is not a particular or an identifiable thing, either. And yet it acts to turn organic matter into dead organic matter, which Nin-

⁶ "Üzüntü süreci dediğimiz yalnızca bir duygu süreci değil mi doktor? Onları fiziksel olarak nasıl etkileyebilir anlayamadım?" (8).

⁷ "Evet, doğru duymuşsunuz! Onları sık sık sevmeniz bile yaşam sürelerini kısaltırdı. Severken elinize almamakla iyi ediyorsunuz" (9).

⁸ "Bu koltukta ne kadar güzel anılar vardı. Evlerine aldıkları ilk eşya bu olmuştu" (12).

ti 2000, by using a machine created for this purpose, destroys and transforms into dirt. Again, this process reverses humans' usual engagement with the inorganic: we might say that humans actually fight against the agency of dirt, rather than its existence, through what Barad calls "thingification," meaning "the reduction of lively, emergent, intra-acting phenomena into passive, distinct resources for human use and control" (Alaimo, "Trans-Corporeal" 249). When humans try to get rid of dirt, they reduce it to the level of "nothingness," which they hope has no agency. Similarly, Nin-ti 2000, after she relieves her pain with a few tears, reduces her human pets to the level of nothing for the sake of her own mental health – or for the sake of "proper configuration." Perhaps a more romanticized and conventional reading would also reveal the interdependence of male and female bodies: without one, the other cannot exist, so that the boundaries of gender are also eroded in "Hisse Senetleri." However, for Nin-ti 2000 it is difficult to accept that cells "constantly renew themselves," bone "is always remodeling," and "bodily interiors" "constantly react to change inside or out, and act upon the world" (Birke 45). Psychosomatic illnesses are part of this intra-active relationship between the body and inner or outer stimuli that it receives and responds to, whether it be dirt or love.

Such intra-action, however, is difficult to understand for different forms of bodies: Nin-ti 2000 is no different from a human being in finding this relationship difficult to understand. Alaimo, noting that "environmental philosophy and science studies offer rich and revealing discussions of agency that may be beneficial for corporeal theorists to consider," admits that "it is difficult [...] to imagine what agency would look like in an other-than-human sense" ("Trans-Corporeal" 245). In *Embriyogenesis*, Ada, while proposing a scenario to address this difficulty, reverses the question so that inorganic matter cannot grasp what human agency (or the agency of organic matter) looks like. Nin-ti 2000's phone call to the doctor, revealing her inability to understand how sorrow might cause ill health, illustrates this difficulty, as does Thomas Nagel's well-known essay "What is It like to Be a Bat?" But Nagel is rather more pessimistic regarding the possibility of communication between human and nonhuman:

To the extent that I could look and behave like a wasp or a bat without changing my fundamental structure, my experiences would not be anything like the experiences of those animals. On the other hand, it is doubtful that any meaning can be attached to the supposition that I should possess the internal neurophysiological constitution of a bat. Even if I could by gradual degrees be transformed into a bat, nothing in my present constitution enables me to imagine what the experiences of such a future stage of myself thus metamorphosed would be like. The best evidence would come from the experiences of bats, if we only knew what they were like. (439)

Nagel's explanation seems perfectly appropriate for describing Ada's quandary as a writer of science fiction. As a human, her experiences cannot be anything like those of nonhumans, and that is the reason why Nin-ti 2000, even as a mechanical being and cyborg in the making, cannot escape acting like a typical human with her search for her soul and her ambition to feel free. Nevertheless, published in 1997, "Hisse Senetleri" stands as a unique example of posthumanist thinking in Turkish science fiction.

The second story in *Embriyogenesis*, "Çaya Yetiştirilir," tells the story of Lotus, a human male who works as a gene designer, and A-Ru-Ru, his female assistant, a first-generation artificial human created in a laboratory. The story, which takes place in a transhumanist future, opens with the cliché according to which there is a huge gap between the old-style humans and the new ones. The title, which can be translated as "You Can Be Ready for the Tea Party," refers to this gap because A-Ru-Ru has trouble understanding Lotus's anecdotes about tea parties and dance, for example when he mentions having to learn how to dance in one hour before a tea party in his youth. Instead of going to tea parties to socialize, in this new world, technically supported synthetic creatures ("real" humans as they are now called) make friends in laboratories where they work. Gene therapies, cloning, in-vitro fertilization, intensive care cures for vital organs like liver or kidneys, holograms for communication, and skin-refreshing bulbs are all part of normal life in this futuristic world, which reminds one of Aldous Huxley's *Brave New World* (1932) with its assembly-line babies. Like Huxley's Bernard, Ada's Giriza, another gene designer from the artificial line and Lotus's colleague, celebrates difference and underlines the importance of multiculturalism as a minor theme in the narration with his argument that "women are tired of giving birth to the same baby," adding that the mothers who would wish to have baby girls that would become tall, blonde, creative and sexy women with green eyes have to give birth eight times to a baby with the same genes because the life expectancy of the copy babies is low. The baby dies only when s/he is a teenager while it is actually supposed to live to be 200 or 300 (100)⁹. Ada's emphasis on the pursuit of longevity can be understood in terms of what is now called "agential realism" (Barad 177). According to Barad's "entangled, intra-active, posthuman ethics" (Alaimo, "Material Engagements" 72), acknowledging nonhuman agency would help ecological systems and other life forms flourish, which would help us prevent the kind of dystopian future portrayed in Ada's story. In fact, Barad notes that "[i]ntra-acting responsibly as part of the world means taking account of the entangled phenomena that are intrinsic to the world's vitality and being responsive to the possibilities that might help us and it flourish. Meeting each moment, being alive to the possibilities of becoming, is an ethical call, an invitation that is written into the very matter of all being and becoming" (396).

Since Barad's call is not heard in the world Ada creates in "Çaya Yetiştirilir," the pursuit of longevity ends up in a disaster that the main characters attempt to prevent throughout the story. In "Çaya Yetiştirilir," the regular work of a gene designer is described as "protecting humans from all kinds of diseases [and] weakness by manipulating their genes, [and] even guaranteeing the birth of babies with the particular biological characteristics that families desire by producing with these features" (101).¹⁰ Through this endeavor, the story outlines greater ethical concern than "Hisse Senetleri"

⁹ "Kadınlar aynı bebeği doğurmaktan bıktılar artık. Sarışın, yeşil gözlü, bir seksen boyunda, yaratıcı ve seksi bir kızının olmasını isteyen bir anne, artık sekiz kez aynı özelliklere sahip bir kız çocuğu doğurmak zorunda kalıyor. Çünkü kız iki veya üç yüz yıl yaşaması gerekirken, daha büyüme çağına ölüp gidiyor" (100).

¹⁰ "Görevi, insanların genlerine müdahale ederek insanları her türlü hastalıktan, zayıflıktan korumak, hatta, ailelerin istediği biyolojik özelliklere sahip sarmal sistemler üreterek, bu özellikteki bebeklerin doğmasını sağlamaktır" (101).

in that it engages with humans' pursuit of longevity and its potentially disastrous consequences. The dangers of trying to extend humans' lifespan are exemplified by the sudden deaths of white characters in the story. When news of this catastrophe reaches the universe, a terrorist group called Aşırı Yenilikçiler (Radical Innovators) attacks the pure human race, also known as Kristal Irk (The Crystal Race), and manages to kill them all, except Lotus. The massacre leads Lotus to question the division between nature and culture and their products: he asks himself whether the Crystal Race was too weak to represent humanity despite its description as "real" by many people (105)¹¹. After a long and tiring search, Lotus and A-Ru-Ru, who investigate the shortened lifespans and sudden deaths of members of the white race, discover that the reason that lies in a slight gene-copying mistake: normally, the gene maps of authentic humans are transformed from generation to generation, with different codes of mutation in every one. However, when the genes were copied in laboratories, an error prevented the desirable qualities from being passed on to the next generation, causing blanks in the spiral system, and thus leading to sudden deaths. The system collapses because simply it does not want to carry on anymore, so genes and the whole system, that is, nature, are portrayed in the story as intentional agents. In other words, the so-called master plan of copying genes terminates itself in an attempt to go back to the original state of randomness. Thus, the system of copying genes causes an error leading to blanks in the DNA double helix, preventing the desired genes from being passed on to the following generations, shortening the lifespan of humans, in a way to sustain its "natural state." Here, the idea of nature and DNA encoding is presented as intra-active agents. This goes hand in hand with Barad's suggestion that "[a]gency is not aligned with human intentionality or subjectivity" (177). In fact, in the story, the system has its own ability to decide and act accordingly although it is the human element that causes failure in the system. This shows that human intentionality or subjectivity alone cannot claim agency.

Non-white races, in Ada's story, are better able to adapt to their changing environment and hence survive, whereas the white race is unable to do so because of its genetic structure. In their book on the connections between environmentalist and postcolonial thought, Graham Huggan and Helen Tiffin have discussed "biocolonization," "the broadly biopolitical implications of current western technological experiments and trends," exemplified by several applications ranging from animal cloning to genetically modified foods" (4). Ada's story reverses this scenario by making whites rather than non-whites the victims of such technological experiments. Huggan and Tiffin also discuss "environmental racism," "the environmentally discriminatory treatment of socially marginalized or economically disadvantaged peoples and [...]" "the transference of ecological problems from their 'home' source to a 'foreign' outlet" (4). The poor, the uneducated, and the disenfranchised, who are at the lowest rank of hierarchy within the capitalist class system, are put at the greatest risk from environmental problems through these displacements. Implicitly at least, the demise of whites in "Çaya

¹¹ "Çoğu normal insanın gerçek diye nitelediği Kristal Irk, aslında insanlığı temsil edemeyecek kadar zayıf mıydı?" (105).

Yetiştirilir” might be understood as a comment on such ecologically inflected racism. In the end, however, the story concludes happily, as Lotus and A-Ru-Ru fall in love with each other, and have a baby through traditional sexual intercourse instead of in vitro fertilization. At the same time, they attempt to create future generations out of inorganic matter, so as to make sure that the human race survives, whether organically or inorganically. Ada puts inorganic matter to unexpected uses in this context, for example when A-Ru-Ru and Lotus's artificially created baby daughter, Şiva (Shiva), eats a blanket made of fiberglass.

Although Ada's loosely knit story is by no means a literary masterpiece, it successfully points to randomness as the working principle of nature, and hence, to the interconnectedness of nature with technological disasters. The role of randomness as a working principle in nature emerges when A-Ru-Ru and Lotus discover that they have ignored the importance of mutations in gene mapping:

In every natural being, there occurred some mutations. But some of these mutations never worked, while some of them saved a certain species because the environment in which the organisms lived was changing constantly. Sometimes, this environment would change so much that it would not allow small creatures to live, but then a few individuals that have the necessary mutation to adapt to the environment would survive and help their species continue living. But which mutation would work was not certain. This was valid for humans, too. (161)¹²

Ada here reflects on Darwinian evolution theory and the interdependence it postulates between organic beings and their partly organic and partly inorganic environments. In “Çaya Yetiştirilir,” this interconnectedness emerges prominently in the description of the extinction of a species as follows as remembered by A-Ru-Ru:

In the ages when the world was divided into countries, the things that happened to a certain species of white moth that lived in Birmingham, in the country of England, were a good example to this [mutation]. For these moths, the color white was a good camouflage because they would spend all their days eating the bark of the white beech trees and they used to be safe because their enemies would not be able to tell them apart from the bark. But in time, the city became industrialized. The soot in the air blackened the trees and made the poor moths fall prey to their enemies because the barks turned dark grey and the moths became obviously visible! In time, they faced extinction. But, as the result of a coincidental mutation, the individuals were born dark grey instead of white, and those who died when trees were white now had the chance to live. They multiplied with patience and guaranteed the continuation of their species until humans cut down all the beeches for the sake of using natural products. (161-162)¹³

¹² Doğal olan her canlıda bir takım mutasyonlar olurdu. Ama bu mutasyonlardan, bazıları hiç işe yaramaz, bazıları da, o türün kurtulmasına yol açardı. Çünkü canlıların içinde yaşadıkları ortam sürekli değişiyordu. Bazen bu ortam, küçük canlıların yaşamlarını sürdürmelerine olanak tanımayacak kadar değiştiğinde, o ortama uyum sağlayacak mutasyona sahip olan bir iki birey hayatta kalarak, türlerinin devamını sağlıyordu. Ama hangi mutasyonun işe yarayacağı belli olmazdı. Bu, insanlar için de geçerliydi. (161)

¹³ Dünyanın ülkelere ayrıldığı eski devirlerde, İngiltere ülkesindeki Birmingham'da yaşayan bir cins beyaz pervane türünün başına gelenler, buna [mutasyona] iyi bir örnekti. Bu pervaneler için beyaz renk, doğal bir kamuflejdü. Çünkü bütün günlerini, beyaz kayın ağaçlarının kabuğunu yiyerek geçirirlerdi ve düşmanları tarafından, ağaçtan ayırt edilemedikleri için de güvende olurlardı. Ama zamanla şehir endüstrileşti. Havadaki is, ağaçları kararttı ve zavallı beyaz pervaneleri, düşmanlarına yem etti. Çünkü artık ağaçların kabukları koyu gri olmuştu ve pervaneler de apaçık ortaya çıkmıştı! Zamanla pervanelerin nesli tükenmeye yüz tuttu. Ama, rastlantısal bir mutasyon sonucu, beyaz yerine

This quotation may well be the most important one in the whole book because it indicates the power of narration for environmentalism. Literature as well as many other forms of media should be used in order to attract the attention of the audience for environmental concerns (Iovino n.p.). Science fiction is quite appropriate for this purpose due to its suitability for exploring ethical problems, as Ada does in *Embriyogenesis*. Ada's two stories engage directly and indirectly with environmental problems and work toward a posthumanist perspective on them.

In conclusion, Ada's *Embriyogenesis* presents environmental change in two ways: as a central focus of the story in the case of "Çaya Yetiştirilir," and by way of the engagement with the shape of future societies in "Hisse Senetleri." The two stories successfully represent human and nonhuman bodies as well as communities at risk, while they both question an anthropocentric approach and replace it with a posthumanist perspective as regards the interaction between species. The book highlights issues of agency, intentionality and cognition in both human and nonhuman bodies and thus can be described as futuristic, but by no means apocalyptic. As an example of environmentally oriented science fiction, *Embriyogenesis* succeeds in creating a fluid sense of the intermixtures of organic, inorganic and technological agents in our future.

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koyu gri doğan ve ağaçlar beyazken ölen bireyler, şimdi yaşama şansına sahiptir. Onlar sabırla çoğaldı ve türlerinin devamını sağladı. Ta ki insanlar, doğal ürünler kullanmak uğruna tüm kayınları kesene kadar. (161-162)

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