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Sustainable Barbie? Barbie at the Intersection of Plastic Fantasy and Ecological Awareness

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Abstract

Although first introduced as a doll designed for young girls aged between 4-13, Barbie has become more than that, transforming into a variety of meanings: a cultural text for Material Culture Studies, the glamorous product of the culture industry, a lifestyle, a fashion icon, an object of desire. Despite the popularity of Barbie-mania, the doll has often been harshly criticized for selling fake dreams to young girls about beauty and youth, misrepresenting female identity, legitimizing capitalist ideology and consumer culture norms about the self, society, and, recently, about the environment. It is claimed Barbie is harmful in many ways, but especially in terms of its effects upon the environment, where "pink" carbon emission equals "648 grams of carbon for every 182 grams of Barbie." Today, the plastic toxicity of Barbie is a crucial factor in emphasizing its danger to human and non-human environments in direct and indirect ways. Despite several academic studies focusing on Barbie from feminist or semiotic

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perspectives, Eco-critical and New Materialist approaches to Barbie are quite rare. So, it is the intention of this study to configure Barbie on a new level between material and discursive practices that treat the doll both as a "thing" and as a "cultural text." In other words, where does Barbie stand at the intersection of plastic fantasy and ecological awareness? How does the plastic matter of the doll function in a (social) environment? Is sustainable Barbie possible, or is it only a greenwashing of capitalism? This research, aiming to deconstruct the physical and symbolic plasticity of Barbie and its representations in consumer society with an Eco-critical and New Materialist awareness, centers on "Barbie footprint" as a contemporary ecological problem that leads to climate crisis and ecological degradation.

Keywords: Barbie, climate crisis, toxic plasticity, carbon footprint, New Materialism

Sürdürülebilir Barbie? Plastik Fantezi ve Ekolojik Farkındalığın Kesişiminde Barbie

Öz

Barbie adındaki oyuncak bebek 4-13 yaş aralığındaki kız çocukları için tasarlamıştır ancak Barbie yıllar içinde büyük bir popülariteye kavuşarak, hedef kitlesinin ve amacının ötesine geçmiştir. Günümüzde Barbie, kültür emperyalizmin parıltılı nesnesi, bir moda ikonu, arzu nesnesi, yaşam tarzı, maddeci-kültürel okumalara uygun bir metin, vb. gibi pek çok farklı kavrama dönüşerek, oyuncak bebekten fazlasına işaret etmektedir. Barbie çılgınlığı tüm popülaritesine rağmen, temsil ettiği tüketim toplumu normları, kapitalizmi meşrulaştırması, kız çocuklarına gerçek olmayan bir kimlik algısı özendirdiği için sıklıkla eleştirilmiştir. Bu eleştiriye son zamanlarda çevreye olan zararı da eklenmiştir. Oyuncak bebeğin hammaddesi olan plastik ile bebeğin üretim, satış ve pazarlama aşamasında kullanılan teknikler göz ününe alındığında, Barbie'nin karbon ayak izi (her bir 182 gram ağırlığındaki Barbie için 648 gram karbon salınımı mevcuttur) sanıldığı kadar masum bir pembe olmamakla beraber, azımsanamayacak kadar

fazla bir toksik yapıya sahip olduğu ortaya çıkmaktadır. Bu durum, çağımızın en önemli sorunsalı olan iklim krizini olumsuz yönde etkilemesine rağmen Barbie'nin Çevreci Beşeri Bilimler ve Yeni Maddecilik gibi disiplinler açısından ele alınmasına son derece nadir rastlanmaktadır. O halde, Barbie'yi söylemsel ve maddeci yaklaşımlar çerçevesinde farklı bir açıdan ele alınmasını gerektiren bu çalışmada şu gibi soruların cevapları aranacaktır: Plastik hayaller satan Barbie, iklim krizi farkındalığının neresinde durmaktadır? Barbie'nin plastik yapısının çevreye etkisi nedir? Sürdürülebilir Barbie mümkün müdür yoksa bu kapitalizmin "yeşil aklama" pratiği midir? Tüm bu sorular ışığında bu çalışma, Barbie'nin plastik yapısını ve tüketim kültürü tarafından "plastize" edilmiş farklı temsillerini sorgulayarak, çağımızın en büyük sorunsalı olan iklim krizine olan olumsuz etkilerini Çevreci Beşeri Bilimler ve Yeni Maddecilik öğretileri açısından tartışmayı hedeflemektedir.

Anahtar Kelimeler: Barbie bebek, iklim krizi, plastik, karbon ayak izi, Yeni Maddeci Eleştiri

Introduction

Dolls are not always the innocent, delicate, passive figures of one's childhood. The French poet Rainer Maria Rilke claims dolls represent the darker side of childhood, the uncanny figures of one's past, or, in Baudelaire's words, dolls may serve as melancholy (Gross 12-13). However, dolls are more than the images collected in the past. A doll may stand in time and beyond. They are active, manipulative, powerful tools for transmitting ideological norms and codes about race, class, gender, and ethnicity across time and place. Dolls are shaped by the generational zeitgeist and represented through their varied stylistic manifestations, and they convey the essential practices of a changing environment. Dolls are regarded as cultural texts designed, produced, and consumed. In this vein, a doll as a cultural object, according to Griswold's The Fabrication of Meaning, is "evidence about the culture itself" because "objects are part of the human circuit of discourse" (1077). They shape meaning and behavior through the ideological codes of one culture and can be regarded as symbolic representations

within certain contexts in terms of social media, popular culture, literature, and fashion. As Brunell and Whitney argue, "today, dolls are understood as complex texts that represent layered versions of realities, mediated by the often-contradictory ideologies, values, or worldviews of doll creators, producers, consumers, and players" (qtd. in Zaslow 37). In other words, Barbie, the world's most iconic doll, designed for young girls aged between 4-13 by the American company Mattel in 1959, has gone beyond its real meaning as a doll, transforming into a cultural text with symbolic meanings in popular culture, media, fashion, and literature. However, apart from the symbolic plasticity of Barbie, the plastic materiality of the doll matters even more in our age, defined by the climate crisis. Despite a number of academic studies focusing on Barbie from feminist or semiotic perspectives, Eco-critical and New Materialist approaches to Barbie are quite rare. Thus, it is the intention of this study to configure Barbie on a new level between material and discursive practices that treat the doll both as a thing and as a cultural text and to see where the doll stands at the intersection of plastic fantasy and ecological awareness This brings into mind the ecological implications of a doll as a thing in its vitality. Thing power flourishing as the new discursive practice of the New Material Studies underlines an awareness of the "vitality of matter" (Bennet 348). This explains how a doll may have inherent value as a thing other than its symbolic plasticity, which is formed by the perceived meanings labeled on it by the receiver, owner, producer, and ideology. To put it in a theoretical way, a doll's plastic matter, on the material-semiotic level, is involved "within the huge web of intra-actions that exist among objects and meaning" (Brown 4). Configuring materials as things with "agency" rather than positioning them as objects in symbolic contexts is a recent phenomenon associated with the New Material Studies, which, in Baradian terms, provides a new perspective on the existence of things as "active agents" rather than inert, inorganic structures. In this line of thinking, things may offer meaningful explanations for the problems in our time as the "environment is materially and conceptually reconstituted" (Coole and Frost 6), and such matter "intervenes in the building blocks of life, altering the environment in which the human species among others persist" (24). Additionally, the plastic materiality of the doll, other than the contextual/symbolic meanings attributed to

its presented image in social life and popular media, may pose ethical questions about nature, environment, food, health, and sustainability. With this intention, this study argues that Barbie, in a material-semiotic discourse that borrows from the New Materialism and Ecological Humanities, is harmful to the environment as the Barbie footprint leads to the climate crisis and ecological degradation.

Barbie, at the intersection of ecological awareness and plastic fantasy, is argued to stand apart from the ecological realities of our society. It becomes necessary then to learn the (anti) environmental story behind Barbie as the world's most iconic doll, starting from its first arrival at the market up to the contemporary time. It is, however, important to clarify that this study tries to handle more than one critical point while intending to explore the material-semiotic existence of Barbie in today's world. The first intention is to configure the representation of Barbie as a consumer product of capitalist ideology in a socio-political context. The second point revolves around the doll as a material on thing level where its plasticity matters in human and nonhuman natures, which automatically parallels the third point, re-positioning Barbie in ecological awareness, trying to reduce its plastic footprint for the sake of a sustainable future. In this frame, the first part of this study centers on the historical background of the doll, where and how it was designed, produced, and consumed, along with different manifestations of the doll across time. This critical section handles Barbie generally from an ideological aspect, which is grounded on the critique of capitalism and consumer cultural norms about female beauty, whereas the second part forms the theoretical background, mainly focusing on Barbie in the frame of New Materialism and Ecological Humanities. Centering on the doll's matter to see how it matters in the material world and nature, this part attempts to configure Barbie as a "thing with agency" connecting with other objects in the larger web of meanings. Borrowing from the New Materialist notions about "vibrant matter" and "agency" along with the Eco-critical claims on the "Anthropocene," "Capitalocene," "Plasticene," "toxic colonialism," and "environmental racism," part three aims to underline the critical materialist approaches to the varied influences of late capitalism on climate change. The last part, considering the doll's alarming position in an endangered world, aims to exemplify

the negative side-effects of Barbification/ Barbiecore as concepts to indicate how symbolic plasticity and plastic materiality of the Barbie doll is popular, permanent, and widespread in society in terms of mass media, fashion, cosmetic and health industry. Overall, this work aims to deconstruct the physical and symbolic plasticity of Barbie with an Eco-critical and New Materialist awareness, centering on the "Barbie footprint" as a contemporary ecological problem that leads to the climate crisis and ecological degradation.

Historical Background: A Blonde Is Born

In the beginning, there was Barbie. Ever since its first appearance on the global market by the world's greatest toy company, Mattel, in 1959, Barbie has been synonymous with beauty, glamour, color pink, and plastic. Barbie, first designed as a toy for female children aged between 4-13, today has been transformed into a fashion icon for haute couture, a cultural text for academic study, an artistic piece for Andy Warhol, a fantastic idol for cosmetic surgery, an invitation to anorexia, and sadly a huge contributor to the global climate crisis. Gerber, in her book *Barbie and Ruth,* argues that Ruth Handler, as the co-founder of Mattel, had no idea about the carbon footprint of the doll when she first introduced Barbie to the world with her husband in the garage of their Hollywood house in 1959. On the contrary, she was concerned more about Barbie's being an inspirational role model of female empowerment for young girls, especially when Ruth Handler would face gender discrimination in the male-dominated market or even in the world of Mattel, where she worked solely as the only female for a long time. When Ruth Handler noticed her daughter Barbara -after whom Barbie was named- was unhappy while playing with dolls as they were not in adult shape and were far from satisfaction, she came up with the idea to create something new, a three-dimensional doll with an adult look and body, allowing the child "to project her future adult life upon the doll" (Lord 29-30).

Ruth Handler came across the toy she had in mind accidentally during a trip with her children across Europe, and she immediately transplanted it to America. The world's famous doll, Barbie, was

originally based on a German toy, "Bild-Lilli," created in the image of a popular comic-strip character. It was sold as a gag gift for men in Germany. As Bild-Lilli was more of a femme-fatale, Ruth Handler worked with a team of designers to produce the ideal toy suitable for children. The American doll would be mainstream and nice-looking, justifying the commonly accepted norms about female beauty in patriarchal Western societies, and would not pose a risk or cause distress for parents who were concerned about the psycho-sexual education of their children. Working with Japanese manufacturers, chemists, and fashion designers from different parts of the world, Mattel soon introduced Barbie to the world: She was named Barbara Millicent Roberts and was fictionally from Wisconsin, US, but later became a Malibu girl. She was born as a white, heterosexual, American fashion model doll with an adult body with long legs, tiny shoulders, huge breasts, and pointed feet. It was not only her size that looked unreal, but also what she represented revolved around a fantasy. She was the best of everyone, went to the best places, wore the best clothes, and drove the best cars (Gerber 9-10).

In 1961, Barbie had a boyfriend, Ken –named after Ruth Handler's son Kenneth, but he remained a supporting role among many other props in Barbie's social network, as "Ken was just Ken" (Gosling, "Barbie Album") when Barbie could be anything. Rogers argues that Barbiecore, despite being an illusion, appealed to many consumers who were willing to buy that image (3). The reason why we knew more about her appearance rather than her family, educational, and social background lies in the fact that the doll was created to appeal to as many children as possible, hailing to the status quo. This consumer strategy resulted both in negative and positive ways. To some feminist critics, she was the antithesis of feminism, whereas some were satisfied to see that a feminine doll was created for female children by a woman who had higher expectations about female children's future careers in life. According to M. J. Lord, the author of *Forever Barbie*, "to study Barbie, one has to hold seemingly contradictory ideas in one's head at the same time. People project wildly dissimilar and opposing fantasies on her. She is a universally recognized image, but what she represents is entirely personal" (qtd. in Tulinski 48). Similarly, Tamkin notes that the dolls are at once idealistic and materialistic, offering a

characteristically American fantasy. Although the doll represents a fake lifestyle, false beauty standards, and unreal body size, Barbie has become an epitome of perpetual youth and individual glamour ("A Cultural History of Barbie).

Other than appealing to the status quo, I argue that Barbie glorifies American individualism, which is a big part of consumer capitalism. Emphasis on individuality is not only for economic reasons, which is likely to increase sales but also for teaching the Barbie audience how to organize life in a capitalist way in public and private spheres of life. Barbie makes it possible in two ways: First, there is a Barbie for everyone; no matter who you are or where you come from, you can get the Barbie that suits your taste –with a price. With one plastic Barbie in hand, young consumers achieve higher expectations about (unreal) beauty, youth, and popularity; as for the elder ones, they can even realize the illusionary promise of Barbification through cosmetic surgery, clothing, and consumption in real life. The justification of patriarchy as a marketing strategy is my next claim, which I consider another effective strategy for imposing individuality that hails to audience reception. Here, I use the term patriarchy not as a concept for signaling male domination over the female. On the other hand, I consider the term as a discursive motif of power and control in every single corner of Barbie's life where she has the leading role. To give an example, one can observe the doll's hegemonic existence upon receivers in terms of its imposing the commonly expected norms about body, beauty, career, and social life. Barbie, as a popular medium in shaping and maintaining consumer culture norms, legitimizes its role as a coercive structure that depends on acquiring the symbolic modes of discipline and punishment not through force but through the practices of the Western beauty myth. In essence, rather than offering difference and authenticity, Barbie imposes conformity and status quo through the colorful "masquerade of the body" (Rogers 159). According to Kathy Davis, "Barbie reflects the cultural landscape of late modernity: consumer capitalism, technological development, liberal individualism and belief in the makeability of the human body" (qtd. in Rogers 144). Barbie, legitimizing consumer capitalism through its emphasis on (fake) individuality and status-quo, maintains its role as the cultural agency, actively working through the Griswoldian pattern

of "producer-receiver-and social network" as explored in her book, *Cultures and Societies in a Changing World.* Therefore, it is not wrong to argue that Barbie's bio-politics is based on the discourse of capitalist corporates that determine the creation, production, distribution, and reception of the doll as well as its post-receptive extensions in media and social life.

Despite the negative claims for Barbie's legitimizing normative femininity and supporting consumer society practices, the doll was considered inspirational in time due to the variety of roles she offered female children in terms of career choices: She was the Executive career girl in the 1960s, UNICEF Ambassador in the 1980s; she ran for the presidential elections in the 1990s when no American woman was able to do so; she went to space as an astronaut four years before mankind landed on the moon; she served as a paleontologist, she ran as an athlete, worked as an arctic rescuer, and recently became an eco-warrior, to save nature. Apart from myriad career choices, Barbie also offered young females alternative beauty standards via different clothing and body displays: Barbie has transcended its stereotypical representation to become corpulent, darker, curvy, amputee, or even blind. Today, "dolls are produced in more than 22 ethnicities with 35 different skin tones, 94 hair colors, 13 eye colors and within nine body types including disabled ones with wheelchairs, prosthetic legs, with Down syndrome or any other disability" (Mattel, "Barbie Introduces"). Barbie's endless possibilities in terms of physical appearance and occupational positions allow young girls to dream about their own identities in multiple ways and to identify themselves with these forms in an escapist manner; however, the endless possibilities sold to young females also point to the underlying capitalist interests which justify the ideology in a way that indicates options are endless and equal for everyone, who is willing to control how they look and what they maintain in life. This is a verisimilitude of reality, a way of veiling the hegemonic discourse of power structures in capitalist society.

Mattel's commitment to ecological awareness started in 2019 through its collaboration with "National Geographic" to produce dolls that would emphasize climate awareness. The dolls included a Polar Marine Biologist, an Astrophysicist, an Entomologist, a Wildlife

Conservationist, and a Wildlife Photojournalist. In 2021, the company started the campaign "The Future of Pink is Green" and introduced the "Barbie Loves the Ocean" collection of recycled Barbies, intending to produce plastic-free dolls by 2030. Eco-Leadership series launched in 2022 promoted the sale of recycled ocean-bound Barbies. Initiating partnerships with prominent figures of wildlife such as the ethologist and conservationist Jane Goodall, young eco-activist Greta Thunberg, and Hollywood actress and environmental advocate Daryl Hannah, Mattel increased the social impact of Barbie as a sustainable toy in the popular imagination. Approaching 2025, one can see a new dimension of Barbiecore: She is all going green! However, to what extent does Mattel internalize all these changes? Especially when one considers Barbie's growing environmental consciousness, is Barbie going green, or is it a greenwashing of capitalism? Is Mattel dedicated to its new role of producing sustainable dolls? Questions rise as more Barbies are introduced into our lives at a time of climate crisis. Accordingly, the next section will focus on Barbie's plastic cultural agency in reinforcing and/or subverting the "Plasticene" discourse.

Theoretical Frame: Environmental Concerns and New Materialism in the Plasticene

As Environmental Humanities has introduced plastics as a major environmental issue to the academic agenda, a new, distinct interest has occurred in the discipline of Material Culture Studies that elaborates on the material-semiotic agency of plastics in social life from an ecological view. According to Oppermann's *Material Ecocriticism and the Creativity of Storied Matter*, "ecocriticism has always retained a distinct interest in the significance of the material world, recently framing its dynamics within the conceptual horizon of the New Materialist paradigm" (55). Referencing Bill Brown's *Thing Theory,* she argues in *From Ecological Postmodernism to Material Ecocriticism*, "things speak in a world of multiple interacting processes, such as climate change or the consumption of global capitalism, entailing geopolitical and economic practices and thus reminding us of the act that 'the linguistic, social, political and biological are inseparable'" (Hekman qtd. in Oppermann 83). This perspective signals a departure

from the anthropocentric worldview and instead, connects humans as "hybrids of nature and culture" (Latour 11) to the nonhuman world. *Things* or, in other words, inorganic substances and the nonhuman world connect, affect, or configure with the human world via their *material agencies,* which means that (living) matter is in constant "intra-action" (Barad 33) rather than "interaction" with the nonhuman world. Things in such a situation -termed an "assemblage" position- can exist merely and perhaps more vividly as things when they are embedded in varied material-semiotic contexts (Bennett 351). This means that things, before becoming objects turning out to be subjects, remain as active agents that have inherent value on a material level, actively participating among multiple entities, both human and nonhuman, affecting meaning and structure. Bennett labels this as "enchanted materialism," ascribing agency to inorganic phenomena (Coole and Frost 9) with which they act as bodies with agentic capabilities in the way they structure their milieu and respond to significant patterns (20). This New Material approach, as argued in *From Posthumanism to Posthuman Ecocriticism,* allows us "to understand why all agencies matter and why we should be more attentive to their agentic role in today's world and be ecologically aware of the crisscrossing of strands of their stories" (35).

From this perspective, it is noticed that plastics as material agencies operate largely in the wide spectrum of human and non-human life, and at this point, ecological implications of thing-discourse are given credit, especially in the *Plasticene,* which is used as a new definition for describing our age. "Plastisphere," coined by the microbial ecologist Eric Zettler in 2013, refers to a new marine microbial habitat formed by plastics and microplastics (Zettler, Mincer, and Amaral-Zettler 7137). This is a huge part of our present ecosystem, which is a sub-division of the *Anthropocene.* Formulated by Paul Crutzen and Eugene Stoermer in 2000, the Anthropocene is a definition for "our geological time which has been immensely marked by human activity forming a 'planetary crisis'" (Moore, "Anthropocene or Capitalocene" 3). Likewise, Schneider-Mayerson et al. claim that we are living through an extraordinary time of crises whose primary manifestation is anthropogenic climate change. Having entered this new epoch, it is acknowledged that plastics occupy a huge part in human and nonhuman

nature, affecting climate change. Rangel-Buitrago, Neal, and Williams argue that plastics, since their invention in the early twentieth century by Leo Hendrik Baekeland, are transformed from "yesterday's hero to today's villain," taking hold of daily human life and further dissolving in nature. According to the UNEP Environment report, "every year, 19-23 million tonnes of plastic waste leaks into aquatic ecosystems, polluting lakes, rivers and seas" (UNEP).

The disposal of plastics is yet another climate problem. Due to the long-lasting, flexible structure of plastics, they remain in nature for a long time, dissolving into harmful chemicals and synthetic materials that affect human and nonhuman bodies through intra-action. Kolbert argues that according to a 2021 report on microplastics, children are feeding on these small particulars even before they can eat; moreover, microplastics are found in human placentas. One can never underestimate the danger of inorganic entanglement of microplastics with our bodies at this point. However, the fact that our bodies are open sites for such entanglement also reminds us that "bodies are no longer seen as purely discursive constructs nor as biological substances with boundaries. Bodies are sites of material interchanges between 'various bodily natures' directly engaged with the environment and other bodies" (Oppermann, "From Posthumanism" 61). Conceiving matter as self-transformative, direct, and active disturbs the conventional sense that the only agents are humans who possess cognitive abilities (Coole and Frost 10). However, matter is also a significant player in games of power (20). This line of thought is similar to Heather Davis' claims on the "queer toxicity of plastics" penetrating within the hormonal systems of humans and animals or food chains. According to Davis "the queering of our bodies via particular chemicals is not altogether apocalyptic," ("Plastic Matter") on the contrary, it is novel and challenging. The morphed bodies might be alternative sites for meaning in the Plasticene:

> They gather in the environment in the forms of blighted landscapes, bags fluttering in the wind, or lighters and wrappers found in ditches, masses of untold plastic items piled in garbage dumps, and in the gyres of the ocean, where they swirl and are eaten by many forms of marine life, from bacteria

> to birds, tortoises to whales. Plastics also accumulate what is around them, particularly by adsorbing persistent organic pollutants, which, due to a similar chemical structure, tend to latch on to oil-based plastics. It influences its environment while remaining mute to that environment's influence. (Davis, "Life and Death in the Anthropocene" 351)

As plastic agencies, toys are positioned at the core of this (anti) environmental sensibility. Toys are formed by fossil fuels, which contribute to global warming. The toy industry, from Mattel to Lego, is synonymous with such plastic waste. This explains why 280 million tons of plastic were produced worldwide in 2012, with a projected increase to 33 billion tons annually by 2050 (Davis qtd. in Rochman, Browne, Halpern et al. 349). One can clearly understand the reason for this tremendous toxic existence when the plastic materiality of Barbie is documented in terms of its ingredients, which generally remains veiled by the doll's symbolic plasticity:

> At least five types of fossil fuel-based plastics are used for making Barbie: polyvinyl chloride (PVC), ethylene vinyl acetate (EVA), acrylonitrile butadiene styrene (ABS), and hard vinyl—plus additive chemicals. One of these plastic additives, called Di(isononyl) cyclohexane-1,2-dicarboxylate (DINCH), has been used in newer Barbies to replace phthalates, which are additives linked to asthma, metabolic disorders, obesity, cancer, and other health problems. However, research on human cells suggests DINCH could have adverse outcomes similar to that of other toxic plasticizers in children's toys. Plastic toys also release toxic microplastics and nanoplastics, which are easily inhaled and ingested. Plastics commonly contain hormone (endocrine) disrupting chemicals, and this shows that we are absorbing these chemicals into our bodies. Hormone-disrupting chemicals are linked to serious health problems, including developmental, growth, metabolic, and reproductive issues. (Plastic Pollution Coalition)

The above reference, which emphasizes the toxic plasticity of Barbie, is necessary information that helps us see what we consume

when we buy a single doll, which otherwise remains unnoticed and embodied in the symbolic plasticity of the doll. Barbie causes significant carbon emissions, with one 182-gram Barbie doll emitting about 660 grams of carbon (Young) besides the manufacturing process and transport. This means Mattel is utilizing at least 10.9 billion grams of plastic in addition to producing 39.6 billion grams of carbon emissions annually on one product alone (Plastic-reimagined). What is worse, only a limited number of toys can be recycled due to the complex structure of plastics used. This means that during disposal, the Barbie –with capital B- becomes any barbie, turning into a waste product, among many other things in nature, ready for landfill. At this point, Barbie, erasing its subject position as a fashionable icon in popular media and losing its meaning as an object on an ideological-semiotic level, starts to exist as a plastic on thing level, mediating among different agencies. This reminds us how Barbie, in its inorganic plasticity, works with other organic and inorganic matters through intra-action, underlining its presence as a material agency with inherent value. The "enchanted materiality" of the doll in this state then allows us to perceive its existence more carefully in an eco-sensitive context. The sooner the Barbie is thrown away in a landfill and becomes a thing among many other agencies, the faster it rids of its given cultural value in a subject position that justifies capitalistic interests. The doll parts in the pile of plastic waste now prevail as active agencies in contact with a variety of other possible agencies in terms of nano-plastic chemicals and petro-substances, all of which directly or indirectly intervene in human and nonhuman natures, leading to ecological degradation.

It is also true that, ironically, the plasticity that forms the doll makes it even more real, reachable, and durable, but at the same time, more disposable. According to Bennett, "American consumerism works against itself as too much stuff in too quick succession equals the fast throw from object to thrash" (351). Once the child is done with the Barbie at hand, it becomes a waste. The same is also true for the company: After the new collection is released, Mattel then begins to design a new one, replacing the former. This shows that although "Barbie has become an extension of girls" (Tulinski 75) through its inspirational representations, it is also an extension of capitalism; produced, consumed, perceived, and disposed of very fast

to be replaced with a new one on the shelves. This fits into the idea of *Capitalocene* -rather than Anthropocene- termed by J. W. Moore, who attempts to define our present condition and our age as the product of capitalism, designed, shaped, and destroyed according to the interests of huge financial conglomerates ("Anthropocene or Capitalocene" 1). This is a sign that indicates "ideology has a material existence reflected on material actions which are defined by the material" (Coole and Frost 34). Other than Barbie's material toxicity, which matters on a thing level in the Plasticene, its symbolic toxicity on an ideological level point to the doll's existence in the Capitalocene. Barbie indeed sells a (capitalist) dream, which is not fantastic but all in plastic, harmful to kids' imagination as well as to the environment because "92 % of American girls aged 3-12 own an average of 12 Barbie dolls" (Carbon Credits). In other words, Barbie, at the waste level, now exists as a new entity, freed from the semiotic meanings attached to it. From a New Materialist point of view, this is a crucial point allowing us to consider the vital materiality of the doll as a toxic thing and allowing us to see how it functions among other elements in the physical environment, translating into "7,776g or 7.8kg CO2e per child" (Carbon Credits). This signals Barbie's plastic cultural agency in reinforcing the Plasticene discourse. However, there are some claims that Barbie-mania has recently stepped into ecological awareness, and Mattel is trying to reduce Barbie's plastic footprint. In the next part, we will see whether climate change exists in Barbie's world or not.

Is Barbie Really Going Green?

Once the sign of plastic glamour, Barbie is now the indicator of green, making an eco-friendly mark on sustainability. Mattel claims to have taken the initiative for a "greener" Barbie, aiming to teach children about nature conservation and climate change. Mattel's commitment to ecological awareness started in 2019 through its collaboration with the "National Geographic" to produce dolls that would emphasize ecological awareness. The dolls included a polar marine biologist, an entomologist, and a wildlife photojournalist, all of which were partially made from recycled ocean-bound plastic, excluding the main parts

of the doll, such as the hair, head, and torso. Other than these series, Mattel introduced the "Playback Program," which allowed customers to send back old toys for recycling. In 2021, the company started the campaign "The Future of Pink is Green" to produce 100 % recycled bio-based plastic materials and packaging by the end of 2030, which sounded unreal. This again signaled the impossibility of reducing the plastic footprint of the doll because they were made from a complex mixture of plastics, metals, and electronics (Pears).

Parallel to the eco-campaign, Mattel launched the collection of the "Barbie Loves the Ocean" series in collaboration with a jewelry brand to sell Barbie bracelets made from recycled materials, which are designed by artisans in Bali, Indonesia. Not to mention the profit of manufacturing Barbie and her accessories in countries where the workforce is cheaper, teaming up with artisans in Asia makes Mattel hardly an ecological role model for toy companies all around the world. In the frame of "environmental racism," which is defined as the act of disposing hazardous waste at places that are mostly populated by marginalized people and poorer nations (Chavis), Mattel's collaboration with the Asian workforce is somewhat similar to Mattel's dumping its plastic waste in developing or under-developed countries where, according to Lerner, local sites are considered "sacrifice zones" for waste disposal. The dumping of the industrial waste of the West on the territories of developing or under-developed countries is termed "toxic colonialism" (Pratt 584), and this partially functions as a part of "slow violence," which is defined as the large-scale ecological violence often occurring in unnoticed threats of climate crisis across time, mostly visible in under-developed or developing nations. According to Nixon's *Slow Violence and the Environmentalism of the Poor*, the most common examples of slow violence are "petro-imperialism, the mega-dam industry, out-sourced toxicity . . . forces that disproportionately jeopardize the live hoods, prospects, and memory banks of the global poor" (5).

Moreover, "environmental racism" has a huge role in the climate crisis. Coined by the African American activist and author Dr. Benjamin F. Chavis Jr., the term is broadly perceived as the intentional siting of polluting and waste facilities in communities primarily populated

by African Americans, Latines, Indigenous People, Asian Americans and Pacific Islanders, migrant farmworkers, and low-income workers (Chavis). People living in those areas are mostly likely to be exposed to environmental degradation due to the results of mining and oil extraction, chemical production, and extensive agriculture. According to Ihejirika, the world's most developed economies produce 80 % of global emissions from coal, oil, and gas, but it's the developing or under-developed nations that bear the burden of global warming. The local population who is already living in the neighborhood or is responsible for cleaning out the waste is exposed to danger in the first place as they do not have adequate technology to handle the disproportioned waste, and they are eventually exposed and become vulnerable to toxic contamination. This also parallels what Joan Martinez-Alier claims in his significant book, *Environmentalism of the Poor,* that "economic growth, unfortunately, means increased environmental impacts and emphasizes geographical displacement of sources and sinks," which is mostly visible in the rainforests of Indonesia, where trees are cut and used for Barbie packaging. "Indonesia is a target for paper sourcing because of its abundant, carbon-rich rainforests. Thinning their trees makes a huge impact on increasing carbon emissions worldwide" (Postconsumers).

As green authorities have long criticized Mattel and other toy companies for their toxic colonialist strategies, many capitalist corporates now feel the urgency "to go green," such as Mattel's launching of the Barbie series, made from ocean-bound plastic in Mexico's Baja peninsula, knowing that plastic disposal on the site meets the ocean and air. The company has also been in collaboration with noteworthy eco-activists such as Jane Goodall and Greta Thunberg and worked with the Jane Goodall Institute to introduce a "Jane Goodall Inspiring Woman Doll," which highlighted one of the renowned authorities of nature conservation and wildlife protection. In addition, the company has launched the "Eco-Leadership" collection in 2022. The series consists of four different Barbies (one chief sustainability officer, one conservation scientist, one renewable energy engineer, and one environmental advocate) all, according to Mattel, are made from carbon neutral and recycled ocean-bound plastic, which means "doll plastic parts are made from 90 % plastic, sourced within 50 km of

waterways in areas lacking formal waste collection systems; the doll head, hair and accessories excluded" (Mattel, "Future of Pink").

The customer feedback about the collection was mostly positive. A 2021 survey showed that 60 % of consumers are willing to pay more for sustainable dolls. However, according to an academic critique, the collection is an example of greenwashing as the "recipe for sustainability the dolls embody only requires a heavy dose of science and technology, whipped up by well-meaning entrepreneurship, with a little love for the planet sprinkled on top" (Boesenberg). What the writer means with her remarkable interpretation is that although the collection very generally underlines themes related to ecological consciousness, such as "slow violence," "global warming," and "green energy," it is not enough to stress the causes of the problem. Moreover, the collection consists of Barbies from different ethnic backgrounds, but ethnic diversity does not include indigenous Barbies at all. Therefore, it lacks the representation of Indigenous people who are, in reality, more exposed to environmental crises rather than other groups of people in the US, and this is an example of "environmental racism" (Boesenberg). Moreover, the writer argues that the series is far from encouraging ecological awareness; on the contrary, it doubles conspicuous consumption. The most important critique Boesenberg underlines in her article is related to the materiality of the dolls, which are only *partially* made from recycled plastic, contrary to what Mattel has claimed worldwide.

As the study argues, the company's taking a green step in raising climate awareness in children is an important point, but capitalistic concerns and consumer society strategies always stand out clearly. What we see in the collection, after all, is still the same: pretty Barbie only in different clothes, made from the same plastic material, claimed to be *partially* recycled. In other words, the carbon footprint of Barbie contributes to the climate crisis on a large scale in terms of "slow violence," "environmental racism," "toxic colonialism," and "toxic plasticity." This contribution, far from being prevented, unfortunately, continues to increase in terms of Barbie side-effects, which I define as the indirect yet persistent and widespread effects of Barbiecore visible on the human body and social environment in terms of mass media,

fashion, and health industry. I argue that these negative effects can be classified as de-environmental side-effects of Barbiecore, which are embodied in different human practices, implying that Barbie myth is a well-established consumer phenomenon all around the world.

To begin with, Mattel has always benefited positively from mass media, especially the cinema industry, releasing a variety of Barbie animations, video games, and movies since 2001. Especially after the release of the blockbuster *Barbie* in 2023, known as the first live-action Barbie movie starring Margot Robbie and Ryan Gosling in leading roles as Barbie and Ken, Barbiecore enlarged its dimensions in many sectors, from fashion and decoration to health and food. The movie has been overwhelmingly successful in reaching the target audience with its ironic emphasis on plastics and consumption, at the same time encouraging the audience to consume more. It is estimated that people have spent millions to buy pink Barbie products, consume pink Barbie food, and even make an Airbnb reservation to stay overnight at the pink Barbie dream house in Malibu.

The movie has contributed to the purchase of Barbie dolls and Barbie-themed merchandise all around the world in a very short time. Sixty million dolls were sold annually before the movie's release (Shaw), causing a shortage of pink color at the market. This is due to Mattel's cooperation with more than 100 popular brands, from Balmain and Zara to McDonalds and Apple, to increase the prevalence of the doll. Adding to the cinema industry, the fashion world is argued to be responsible for popularizing Barbification and disseminating Barbie-themed clothing and accessories across the world. It is claimed that the fashion industry already owns three of the world's CO2 emissions and 20 % of global water pollution (Catabui), not to mention the ecological effects of Barbie-merchandize products, which doubled after the movie was released. According to Tatlerasia, the color company Pantone has launched a new shade named Barbie color: 219 C, which is officially credited as Barbie Pink. Greta Gerwig, the director of *Barbie,* along with producers Warner Bros. and Mattel, have written history, earning $1.4 billion worldwide, making the movie the top box office film of the year. However, it is understood that Mattel has contributed immensely to plastic pollution and over-consumption with one movie, excessively

using plastic and paint materials and triggering carbon emissions indirectly.

Another possible de-environmental side-effect of Barbiecore is visible in the healthcare and beauty industry in which plastic/cosmetic surgery functions, indirectly contributing to climate change. Beauty is a long-established criterion in Western society whose origins are traced back to Antiquity. The Platonic/ideal form attributed to the female body flourishes from ancient sources where the ideal spirit merges with the perfect body, creating the Western beauty myth transmitted across centuries in the long (his)tory of man. In contemporary Western societies, beauty, according to the feminist critic Naomi Wolf, has become a form of currency in circulation among men (12) and a religion of domesticity (66). In other words, "beauty myth is not about women at all. It is about men's institutions and institutional power (13). Because of consumer society codes and patriarchal enforcements on standard beauty norms in imposing a perfect, slender, docile female body image that can be modified, enhanced, and idealized, more women are observed today to step into a variety of cosmetic/plastic complications with a Barbie picture in their hands.

Either through surgery, chemicals, extreme body sports, or excessive dieting, which may lead to anorexia, women try to modify their bodies following the expected beauty norms of the West. Bordo argues in *The Body and the Reproduction of Femininity* that "at the farthest extremes, the practices of femininity may lead women to demoralization and death" (14). In *Reading the Slender Body,* Bordo signals the fact that "the body today has become cultural plastic," meaning more people tend to standardize their physical appearances concerning the promoted images of Barbie (qtd. in Rogers 124). This also reminds Foucault's claims on docile bodies, which are subjected, used, transformed, and improved. Depending on cosmetic/plastic surgery, young girls think that they can act as liberated authorities, making free choices about how they look; however, this is nothing more than legitimizing the practice of oppressive institutions of patriarchy (qtd. in Collins 106). Barbie is thus an "icon of consumerist somatics, a technology of the body driven by the idea that our bodies can be whatever we like if we devote enough money to them. This

development makes the body an aerobic instrument, a surgical object, a dietary experiment, a fleshy clay capable of endless remolding" (Rogers 112).

Because of the negative influence of Barbie and similar iconic pressures triggered on women, today, cosmetic/plastic surgery has become a tremendous industry, compromising 4.4 % of the global climate footprint. More women are rushing into clinics for facial/bodily transformations, especially after the release of the *Barbie* movie. After the first week of the film's opening, a doctor from Beverly Hills Plastic Surgery Group claimed to receive patients asking for Barbie's waist and breasts or about rib removal to clinch their waist like Barbie (Rubin). Bodily/facial modifications either rely on plastic surgery such as liposuction, Barbie nose rhinoplasty, Barbie waist plasty, Barbie rib removal, Barbie vaginoplasty, Barbie abdominoplasty, Barbie breast augmentation, or on non-invasive alternatives like Barbie face and Barbie shoulder Botox, Hollywood Smile dental whitening procedure, silicone adjustment, fillers and thread lifts (Ulusoy). It is widely acknowledged that carbon emission estimates are mainly from the procedures above. For instance, breast implants can contain PVC and 40 other chemicals, including xylene, benzene, Freon, and platinum salts (Siegle). Besides the chemicals used in surgery, the process of manufacturing and shipping plastic surgery materials contributes to environmental degradation. Energy consumption during plastic surgery operations is another point because of the extensive usage of electrical tools and infrastructure. In short, both toxic chemicals and the disposal of hazardous medical waste contribute to climate contamination (Thompson).

As the study argues, Barbie, with its unrealistic proportions, promotes a very dangerous and harmful image for young women. Other than sports and dieting, which offer restricted changes to the body, women rely on cosmetic/plastic surgery for more permanent and fast transformations to reach the unattainable and unhealthy body highlighted by the Western beauty myth. Many doctors, psychologists, and feminist critics are concerned with the alarming side of Barbification, but who is considering the negative side-effects of Barbiecore in terms of ecological degradation? Although Barbification in the health and

beauty industry has an immense but indirect effect on the climate crisis, people are slow to re-consider its urgency. However, this results mainly in two things: the subjection of women and secondly in the exploitation and degradation of the natural world. In light of the de-environmental side-effects of Barbification in terms of mass media, fashion, and health industry, this section handles ecological endangerment and self (destruction) as the drastic outcomes of Barbiecore.

Conclusion

Academic research on Barbie has treated the doll mostly within the fields of Cultural Studies and Feminist Studies; however, discussing Barbie from the perspective of Ecological Humanities and New Materialism is very rare, although Barbie contributes to the climate crisis immensely with its huge carbon imprint in a world of plastic where the climate crisis is the biggest problem of our time. This article argues that Barbie is not moving from a plastic fantasy towards a more sustainable future with a lesser carbon footprint. Unfortunately, Mattel's attempt looks like greenwashing. In this light, this study has indicated that Barbie, both in its plastic toxicity and symbolic plasticity, stands closer to ecological degradation and material consumption than subverting the Plasticene discourse.

This argument is further explored in the article in terms of two sections. The first part, centering on the historical background of Barbie and its different representations across time, has considered Barbie as a cultural product of Western society mainly shaped by capitalist ideology and its so-called consumer practices. In that sense, Barbie is handled within its symbolic plasticity on an ideological level that makes Barbie a preferred medium for what it represents. Barbification highlights the desired norms and beauty codes of the consumerist Western society in terms of invisible "coercive practices" such as body shaping, dieting, cosmetic/plastic surgery, and fashion, all of which provide a means of control over the body. These enforcements imply that Barbie is not sustainable at all; on the contrary, it is (self) destructive and harmful both for the individual and society.

The study further argues that the doll, on a material level, is harmful because it is made from a plastic substance that is almost too hard to be recycled in nature, which (in)directly causes danger for land, air, and ocean in a fast or slow way, depending on the means of "intra-action of matter" in the web of relations. Moreover, the toxic plasticity of the doll affects (non) human health and the food chain in myriad ways due to the dissemination of nano-chemical particles, which may soon flourish in the food we eat, on the clothes we put on, in the things we touch, even in the placenta of a mother's womb. Other than that, the cutting of rainforests for the supply of doll packages, relying on cheap labor and waste disposal in developing or under-developed countries, in short, the carbon emission before and after the whole process of creation, distribution, and consumption of the doll is a big reminder that Barbie is not a sustainable product. All these negative effects become visible when the doll is rid of its symbolic interpretations as a cultural icon so that its reception as a thing with inherent value becomes clear in ecological contexts, allowing us to perceive the toxic plasticity of the material.

To conclude, Barbie has remained an inspirational figure for female children at some points. However, the doll is widely remembered for imposing standardization of gender norms and normative beauty standards of patriarchal culture and, recently, for its carbon imprint in the age of the *Plasticene*. As it is generally acknowledged that plastics are harmful chemicals that affect human and nonhuman natures in multiple ways, plastic Barbie, from ecological and New Materialist perspectives, is argued to be an example of "environmental racism" and "slow violence" besides showcasing how toxic materiality is visible in the "waste's embeddedness in ecological networks" (Oppermann, "From Posthumanism" 30). Barbie, in the vitality of its matter, is precisely making a serious call for our endangered planet.

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