

Thorsten Philipp

## **Spaceship Earth and its Soundscapes. Latency Problems of International Ecological Conflicts in Pop Music**

What kind of confrontational power does pop music exert on the processing of global ecological conflicts? What role does it play in making societies care about environmental ethics and in raising ecological awareness? These and similar questions arise when it comes to clarifying the chances and limits of sustainability communication in times of major global challenges. A debate surrounding these aspects could start with the question of the musicians' or performers' *intentions* and then amount to attributing an environmental agenda to individual artists by taking into account their song lyrics, their appearance, and their will for political change as expressed via the media. Such an approach seems tempting, but presupposes a linear sender-receiver model, according to which the sender has a *message* for their listeners. The assumption that ecological motifs in song lyrics can be attributed to ecological sensitization on the artists' part overlooks the fact that environmental conflicts permeate a society's *entire* discourse, and that they cannot be avoided due to their cultural dominance. Given their ubiquity, ecological problems more or less inevitably evoke a strong response and find an outlet in pop music. Environmental conflicts tend to remain unresolved for long periods and are therefore present not only in social settings of conflict and mediation (Nill 2013, p. 127), but even in areas that appear apolitical on the surface or – like pop music – belong to a society's *pre-political arena*. Environmental conflicts thus determine not only the consciousness of societies, but also the subconscious, i.e., the hidden, non-negotiated conflict constellations of social life.

Pop music, in regard to its relationship with ecology, is then less a space of activity or agitation for managing political interests than a public sounding board for conflict processing. Research is therefore required less on the intentions of the music's creators, performers, or producers and any supposed political effects, but rather on the unresolved, partly unspoken, non-negotiated dynamics of conflict within a society and its *latent structures*. According to German systems theorist Niklas Luhmann, latency is the possibility of "observation what others *cannot* observe" (Luhmann 2000, p. 94). Ever since modernity, Luhmann argues, a kind of public communication evolves, in which the observer seeks to know more about the observed object by exploring its deeper and hidden layers: in psychoanalysis, in the nineteenth century novel as well as in other areas of artistic production, cultural practices arise which illuminate latent structures of personalities – even though the respective individuals, real or fictitious, are not aware of them themselves (Luhmann 1990, p. 668). These techniques of "observing observation" (Luhmann 2000, p. 94) hold the opportunity to uncover the observed actors' differentiation strategies, but also to detect latent structures and mechanisms which are not being processed in discourse, and to ask why they remain in latency (Luhmann 2005, p. 336). This basic premise raises the question to what extent pop music can be tapped as a sounding board for the communicative processing of latent social conflicts demanding negotiation.

Of course, ecological questions by no means operate entirely on a latent level, as shown by intense debates in politics and media. At the same time, however, they entail subordinate conflicts of social justice unequally and insufficiently represented in public discourse (Scheidel

et al. 2020). So, in the complex nexus of environmental and climate-related conflicts, can pop music describe anything those involved in it may not see themselves? In order to explore this question, this paper takes an analytical look at the treatment of sustainability theories in pop music: theories developed since the 1960s in the context of the Spaceship Earth metaphor. In doing so, (1) the spaceship metaphor's significance for sustainability theories is explained, (2-4) its use in pop music is demonstrated with musical examples, and (5) its continuation in the form of the Gaia hypothesis is traced along the lines of its interpretations in pop music in order to (6) venture a summary analysis. The number of musical contributions to this topic is broad and covers many genres, regions and language areas. The following selection of songs is subjective, neither complete nor representative. It attempts to explore central latency problems by discussing popular Western examples which appear particularly dense in their way of prominently processing discourse characteristics. Starting with a glimpse at a 1980s example from Germany, which on the surface still seems absorbed by the fascination of space travel, the analysis continues with the processing of alienation of the space age by the British band Gorillaz. After a glimpse on the miniaturization of earth images by Lil Dicky, the overview ends with discussing the works on the Gaia hypothesis by Björk, James Taylor and OneRepublic.

## The Astronaut's Perspective and Planetary Thinking

Since the end of the 1960s, the Spaceship Earth metaphor has been a pithy and pop-culturally productive image in Western industrial societies to reflect the ecological question's central conflict constellations. The phrase is a direct result of space travel to the moon and early photographic images of Earth made in the course of manned missions. Media coverage of space exploration and especially the photographs *Earthrise* by Apollo 8 (1968) and *Blue Marble* by Apollo 17 (1972) were significant for the global environmental movements in multiple ways. Thanks to them, Earth became visible and observable. At the same time, the images of Earth provided an aesthetic stimulus for thinking and speaking in planetary (truly global) categories. Far more than any technological innovation, they changed collective consciousness and brought about an objective perspective on both planet and humanity. By encouraging a holistic view of environmental problems and making boundaries perceivable to the observer, they also established a synoptic *overview effect*. Frank White, for example, seized by optimism due to his own observations during a cross-country flight starting from Washington, D.C., stated: "People who live in space will take for granted philosophical insights that have taken those on Earth thousands of years to formulate" (White 2014, p. 2). Confidence in this change of consciousness was regarded by leaders of the discourse as a first step towards building a "universal civilization" (White 2014, p. 172).



Figure 1: *Earthrise* (Apollo 9), 1968  
© Wikimedia Commons



Figure 2: *Blue Marble* (Apollo 17), 1972  
© Wikimedia Commons

Earth – until Copernicus the center of the universe, then merely one planet among many others – “was now again something unique in the cosmos: something at once beautiful and vulnerable” (Radkau 2014, p. 93). From that point on, the astronaut’s perspective became an elemental concept of environmental policy, reinforcing thinking in both large-scale cycles and systemic contexts (Sachs 1994, p. 81) as well as managerial approaches – especially since numerous environmental problems (ozone depletion, climate change, forest dieback, etc.) became apparent in their consequences and observable in their interferences only by use of satellite-based monitoring. Satellite pictures in particular established the notion that the environmental question could only be conceived from a global perspective (Radkau 2008, p. 291).

On a theoretical level, the trope of Spaceship Earth was processed by Barbara Ward (1966) and refined in *Only One Earth*, a volume coauthored with René Dubos (Ward and Dubos 1972). The manifesto *The Economics of the Coming Spaceship Earth* by Quaker Kenneth Boulding (Boulding 1968) sparked a particularly strong reaction in pop culture: a paper oriented toward economics and developed in the intellectual sphere of Herman Daly’s *Steady State Economy* (Daly 1973).

Richard Buckminster Fuller's *Operating Manual for Spaceship Earth* (Fuller 1969) achieved similar success. Fuller, through his experience on Navy warships in 1916, was inspired by the idea of a global management of the 'spaceship'. In his reflections on how to solve the environmental problem and ensure humanity's survival, he put his trust not so much in politics as in STEM and design subjects (Anker 2007, p. 424).

The spaceship metaphor was based on the earlier trope of the boat in which all humans sit together. It referenced one of the popular metaphors for the principle of solidarity, supplemented, however, with the technological dimension of space travel, the optimistic idea of technological practicality and scientific discovery, humanity's conquest of space, and the limits of the planetary system. By interweaving traditional and progressive figures of thought, it established itself as a myth of bridging differences and reconciling opposites (Höhler 2006, p. 47).

## Disoriented Space Travel and Technical Failure: Peter Schilling

Both the astronaut's perspective and the spaceship metaphor were used to great media effect on the German and international public in the music of Peter Schilling. In his fusion of science fiction, planetary thinking, and pictures of space, he illustrated the ecological awareness emerging throughout society in the 1980s. The short-lived *Neue Deutsche Welle* had already passed its zenith when Schilling, with his song *Major Tom (Coming Home)*, became (along with Nena) one of only two of its representatives to reach the Top 20 Billboard 100 in 1982 (Longerich 1989, p. 224). The German-language version, *Völlig losgelöst*, occupied No. 1 of the German charts for eight weeks. Schilling's synth-pop song, a reference to David Bowie's tragic artistic figure *Major Tom (Space Oddity, 1969)*, was still largely devoted to the fascination of space travel and the mysteries of the universe. At the same time, it brought to the fore the problem of unfeasibility and technical failure. The mission of Schilling's fictitious Major Tom – like Bowie's – is beset by irreversible complications: The astronaut looks down at the shimmering blue Earth to which he will never return. Space has become his new home: "Now the light commands / This is my home / I'm coming home."

On the same, allusively titled album *Error in the System*, Schilling develops the spaceship metaphor even further, taking a much more skeptical view of the future. *The Noah Plan* (German-language version: *Die Wüste lebt*), a nervous, short-winded, and ironically twisted critique of civilization (Meier 2000, p. 51), already implicates the ecological catastrophes of the 1980s: "A million years have come and gone / the Earth is shifting toward the sun / synthetic atmosphere is lost / and forces the computers off", the spoken intro tells us. The German-language version, from which the song was translated into English, even describes Earth as an active agent: „Nach vielen Tausend Jahren hat / Die Erde nun den Menschen satt / Sie gibt die Atmosphäre auf / Und schaltet die Computer aus“ ("After many thousands of years / the Earth is now fed up with humankind / it gives up the atmosphere / and switches the computers off" Translation T.P.). The loss of technological control causes seismic and climatic chain reactions which prelude the climate alarm of the 2000s: "Alarmsignal, die Sonne brennt / Heißer als man sie kennt" ("Alarm, the sun burns / Hotter than we know it", translation T.P.). The song's lyrics and rhyme scheme are rather simplistic, and Schilling's tonal allusion to the aesthetic of space travel – an acoustic quote of the famous whistle of astromech droid R2-D2 from the film epic *Star Wars* – is a comparatively shallow reply to David Bowie's artistically psychedelic sounds

in *Space Oddity*. In his song *Terra Titanic (Lost in the Sea)*, released two years later, Schilling depicts a doomed voyage on an arctic ocean. Here, he ties the global perspective on planet Earth to the historic tragedy of RMS Titanic's sinking in 1912. Despite warnings of sonar and radar, the collapse of civilization is inevitable: "Like a crystal cathedral afloat on the tide / Comes a mountain of ice on the course to collide / While passengers sleep thinking God's on their side". Morse signals animate the soundscape, while Schilling's high-pitched and signal-like voice in the chorus supports the alarm rhetoric, and synthesizers and guitars mechanically drive the rhythm forward. Ocean liner and space ship are one: "S.O.S. if you can".

## Planetary Disorientation and Littering: Gorillaz

Spaceship metaphors, planetary limits, pessimism about the future, and conflicts resulting from limited carrying capacity are motifs that pervaded two concept albums by the British virtual cartoon band Gorillaz, founded in 1998 by Blur singer Damon Albarn and cartoonist Jamie Hewlett. Invisible in the background of the four fictitious band members 2D (vocals and keyboard), Murdoc Niccals (bass), Noodle (guitar), and Russel Hobbs (drums) are changing lineups of musicians and producers. Damon lent his voice to the character of 2D and thereby remained disguised but still recognizable, both present and hidden as a rock star (Pattie 2007, p. 157). What set Albarn and Hewlett's project apart was not only their development of hybridity, but also their subversive critique of the pop music industry's cult of personality, with a propensity for degrowth and skepticism about progress added into the mix. Repeatedly, Albarn had contributed views critical of technology, and hinted at criticism of the pop star's iconic status as well as the pop music industry in general (Richardson 2005, p. 3). The Gorillaz' environmentally aware contributions are noteworthy, too, in terms of their treatment of planetary perspectives. By virtue of its creative framework, the band nonetheless demonstrates a critical distance from the pop music industry's logic of the capitalist exploitation, which envelopes it. Since Albarn's cartoon band seems to subvert celebrity performance, it can be viewed as a plea in favor of artistic freedom and as a protest against the constraints imposed by the market (Rambarran 2016, p. 159 f.).

Albarn and Hewlett had already published a successful studio album, selling over six million copies, when they released their second album, *Demon Days*, in 2005. The album is a strikingly collaborative work, produced with artists such as De La Soul, Neneh Cherry, Ike Turner, Shaun Ryder, and Dennis Hopper, and it broke new ground in storytelling. Albarn connected the songs through a narrative framework, while Jamie Hewlett and his agency Zombie Flesh Eaters created the visual illustrations for the music videos and album cover. *Demon Days* allegorically tells of a journey into the night, which is how Albarn conceived the current state of human history (Perez 2005). On the surface, Hewlett's cartoons suggest cheerful, childish entertainment, and even the sound evokes a facile, if somewhat melancholy, lightheartedness. The song lyrics, however, unmoved by the acoustic feel-good atmosphere, prove to be a rejection of any frivolous culture of fun, and even the album title toys with a metaphor of dread. "Are we the last living souls?", Albarn writes right in the album's opening song.

Spaceship discourse and the problem of there being no Planet B are already overtly present in the title of the song *Every Planet We Reach is Dead*. The song lyrics' associations seem abstract at first glance, but more and more they introduce a distinct environmental meaning as well

as a tableau of lethargic disorientation: “I lost my leg like I lost my way / So no loose ends / Nothing to see me down / How are we going to work this out?” The sun is veiled, the view of the future obscured, the path of self-destruction – despite enduring love – inevitable. The narrator sings as a dreamer and leads us down into their hidden innermost self: “I love you / But what are we going to do?”, they ask their counterpart – planet Earth? Life on the planet, however, is corrupted to the core: in the eponymous song, the company Feel Good Inc. dazzles the city-dwellers with feel-good messages from which there is no escape. In the song *Fire Coming Out Of The Monkey’s Head* on the same album, actor Dennis Hopper, using sprechgesang, narrates a tragic story, disguised as a childish fairy-tale: how the merry and innocent Happyfolk people are subjugated by a nameless enemy in disfiguring disguise: “There were no screams, there was no time / [...] There was only fire, and then ... nothing.” Here, there is no more talk of a spaceship, but Happyfolk’s rather spiritual und holistic unity with nature discreetly alluded to the Gaia hypothesis derived from Spaceship Earth theories, which will be discussed later.

### Miniaturization and Celebrity Performance: Lil Dicky

In condensed and simultaneously distorted form, the Spaceship Earth motif returns in the elaborate 2019 production *Earth* by US actor and satirist David Andrew Burd, aka Lil Dicky. The artist had already attempted to combine hip-hop with comedy in previous productions. His efforts to keep an ironic distance from masculine and misogynistic forms of rap had provoked polemical criticism (Robinson 2018). *Earth* – following in steps of the 1985 charity song *We Are The World* – turned out to be an extravagant celebrity show, featuring pop icons such as Justin Bieber, Ariana Grande, Snoop Dog, Shawn Mendes, Miley Cyrus, Katy Perry, Ed Sheeran, and the Backstreet Boys. Lil Dicky had successfully sought funding from the Leonardo DiCaprio Foundation to finance his project, and all royalty payments, according to the artists’ own account, were to be returned to the foundation (Wolfson 2019).

The song’s musical structure is easy: linear rhythm and harmonic progression, as well as a lack of modulations, dissonances, and changes in tempo facilitate a sing-along catchiness following the nursery rhyme aesthetic. Instrumentation and percussion borrow from indigenous sounds (marimba, bongos) and acoustically allude to the discourse surrounding wilderness and colonial folklore, which has proved particularly productive for the environmental discourse (Radkau 2014, p. 172; Callicott 1998). The song achieves momentum only by adding or taking away instruments, whose intensity also signifies the environmental themes: the term ‘Earth’ always comes at the first beat and at the keynote. The lyrics, too, adhere to utmost clarity: plain sentence structure, grammar, and diction emphasize the song’s resemblance to a nursery rhyme. It begins with a seemingly casual spoken introduction by Lil Dicky, which already references central motifs of the astronaut aesthetic: “I’m a human, and I just wanted to, you know, for the sake of all of us earthlings out there, just wanted to say: we love the Earth, it is our planet.” Humans are introduced as “earthlings” and defined in terms of belonging to the planet. The rest is a succession of animal and plant species introducing themselves along stereotypical lines using coarse language: Justin Bieber appears as a monkey, Ariana Grande follows as a zebra, Halsey as a baby lion, Snoop Dog as a marijuana plant, Charlie Puth as a giraffe, Miley Cyrus as an elephant, Lil Yachty as a human papilloma virus HPV, etc. The focus is on the common declaration of the chorus: “We love the Earth” – the parallels to *We Are The World* are unmistakable in structure, tempo, objective, and conative function.



Figure 3: Lil Dicky: Earth (film still)

Source: Youtube, [https://youtu.be/pvuN\\_WvF1to](https://youtu.be/pvuN_WvF1to)

The music video, too, is dominated by planetary aesthetics. Its central narrative is designed as an animated film. A live-action prologue first shows how quarreling children meet the real-life Lil Dicky in the street and – after he points out their littering – get into a partly crude dispute with him. When one of the boys opens a mysterious book that has fallen out of an overturned garbage can, the actual main part of the music video begins. An animated cartoon depicts world history as a book: humanity’s upright gait, growing mountains of trash, a conversation on Mount Everest. Lil Dicky, who, in the animation, is clad only in a loincloth and equipped with a spear, uses minimization throughout his lyrics: pony replaces horse, infant monkey replaces monkey, etc. Stuffed animals serve as objects of identification. In the film’s final part, the spaceship becomes the central topos: Lil Dicky’s voice, in the manner of a radio call, now sounds distorted: “I hope it’s not a simulation”. Leonardo DiCaprio appears on board the Titanic and – in a blatantly obvious allusion to the spaceship metaphor – finally gets beamed onto a spaceship (which, however, is not Earth).

### **Gaia and Ecosystem-based Thinking: James Taylor, Björk, and OneRepublic**

The spaceship metaphor proves even more fruitful when it first encounters, in the 1970s, the burgeoning concept of ecosystems, which made the cycles of water, energy, carbon, oxygen, minerals, and other matter objects of research. This is, in turn, the starting point for the concept of the biosphere. Pictures of Earth taken from the astronaut’s perspective as well as the new overview effect provide a crucial basis for the development of a hypothesis according to which Earth is to be understood as a total and closed living organism. The Gaia hypothesis, informed mainly by the work of biophysicist and physician James Lovelock and biologist Lynn Margulis (1998), emphasizes the permanent activity of organic processes. All living organism form a unity in planetary interaction. Life itself, from this perspective, is conceivable only as planetary coexistence, as mutual relatedness of all vital processes. Life is collective community.



As part of his research for NASA during the 1960s, Lovelock had pursued an answer to the question which criteria other planets must meet in order to be habitable to humans. The astronaut's perspective provided him with stimuli: "When I first saw Gaia in my mind, I felt as an astronaut must have done as he stood on the Moon, gazing back at our home the Earth. The feeling strengthens as theory and evidence come in to confirm the thought that the earth may be a living organism" (Lovelock 1988, p. 205). The space age permits, for the first time, comparative perspectives on different planets and their potential for human life. Thus, the question of what specifically distinguishes Earth from other planets arises. The astronaut's perspective on Earth also provides Lovelock with access to what he calls "planetary biology" (Lovelock 1988, p. 29), because from its vantage point, indicators of a common destiny for all living beings seem obvious. For Lovelock, Gaia was "the name of the Earth seen as a single physiological system, an entity that is alive at least to the extent that, like other living organisms, chemistry and temperature are self-regulated at a state favorable for its inhabitants" (Lovelock 2000, p. 11).

In his writings, however, Lovelock looks at the Earth less as from an astronaut's, than from a physician's, perspective: the planet is his "patient" (Lovelock 2000, p. 18), and geophysiology ("Earth medicine") as a holistic systems science of living organisms is his medical discipline. According to Lovelock, Gaia creates conditions favorable to life vis-à-vis changing internal and external conditions. She actively regulates environmental conditions to counteract chemical equilibrium. Humans, however, behave like cancer cells (Lovelock 2000, p. 154), and humankind is a disease that interferes – through technology and industry – with Gaia's homeostatic mechanism. There are four possible outcomes: "destruction of the invading disease organisms; chronic infection; destruction of the host; or symbiosis – a lasting relationship of mutual benefit to the host and invader" (Lovelock 2000, p. 153). Gaia is no longer just a planetary metaphor nor is it a divinization of nature, but rather a scientific concept (Latour 2015, p. 31): a medical system definable in terms of systems theory. For a later publication, Lovelock had a dark red image of the Earth put on the cover (Lovelock 2009), reshaping the planetary image with cautionary associations of blood, heat, and alarm.

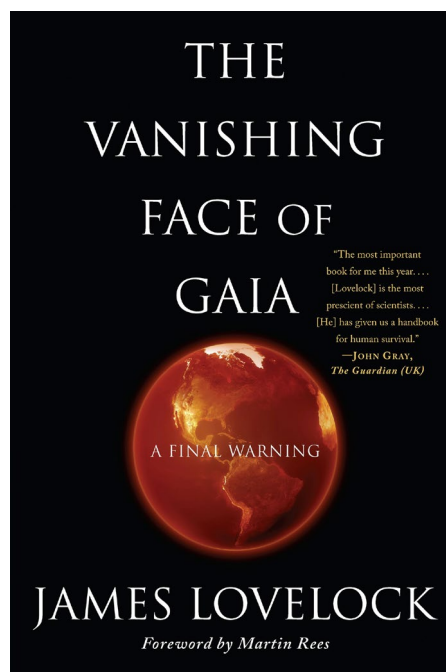


Figure 4: James Lovelock, *The Vanishing Face of Gaia*, book cover  
© Basic Books



Even in the form of its prototypes, the Gaia hypothesis already received considerable reception in pop culture. Tropes and narratives from those prototypes were constantly recombined in art and literature. Thus, they found their way back into the environmental movements and continue to shape them to this day – far beyond what their originators expressed or intended. This also created new audiences and recipients who carried on the narratives (Pak 2016, p. 215). James Cameron's 2009 Hollywood blockbuster *Avatar*, for example, eloquently intertwined Gaia, nature worship, spirituality, and the predominant social concerns about climate change and global environmental degradation.

Gaia motifs penetrated pop music beginning in the 1990s. James Taylor e.g. seized on Gaia in the title of a narrative song in 1997. In it, Old Testament motifs, modern critiques of civilization, apocalyptic thinking, and contemporary images of metropolitan New York were intertwined and given an ecological perspective. A catchy melody and straightforward harmonic progression characterize Taylor's typical singer-songwriter style. In the background, Branford Masalis' saxophone solos accentuated the musical narrative, and meditative wind chimes, floating synthesizer sounds and extensive background vocals surround Taylor's solo voice with spherical sound. Lyrically, the song turned out to be a direct speech to Gaia, a prayer for protection from anthropogenic environmental destruction: „Someone's got to stop us now, save us from us Gaia, no one's got to stop us now,“ the background choir sings ominously during the bridge. Only spirituality and prayer offer a way out: „Pray for yourself and for God's sake, say one for me, poor wretched unbeliever.“ The spiritual movement behind Gaia does not lead to knowledge of God (Holden 1997), but leaves the searcher as „a poor, wretched unbeliever.“ Obviously, the song reproduces holistic eco-theological theories in which Gaia becomes a cosmic network in God's relationship to nature and humanity (Primavesi 2000). Taylor regarded his album *Hourglass* as a collection of “spirituals for agnostics” (Ribowsky 2016, p. 282).

In a far more richly allusive fashion, Icelandic artist Björk incorporated rudiments of the Gaia hypothesis into her song *Earth Intruders*, lead single on her sixth studio album, *Volta* (2007), co-produced by Timberland. The song combines motifs and themes from indigenous aesthetics with catastrophe, alarm, and hunting tropes. Not for the first time, nature is the artist's basic, central, recurring theme; a theme combining classical tropes like solace, artistic inspiration, immediacy, and wilderness with a contemporary islandic awareness of nature (Dibben 2013, p. 55). The song and the land grab it describes are disorderly, without strategy, unsystematic – unlike the spaceship aesthetic's technicism: “I tried to edit it afterwards to fix it and make logic out of it, [...] but it's just like chaos,” the singer confessed about her poetic work (Barton 2014). There are no impediments, the advance is open and fast – “Feel the Speed” – a vague confession of guilt is all that remains: „Forgive us, tribe“. For the artist, nature is a network of values and the space of action for a movement of religious search beyond organized social communities: „Nature is our chapel,“ Björk replied in an interview when asked about the status of religion in Icelandic society (Gunnarsson 2004). Her fifth studio album, *Medulla* (2004), already is a largely spiritual and ecofeminist reflection on the physicality and origin of humanity in the natural world.

In the artist's appropriation of Gaia, paganism and Nordic myths of nature (Faulhaber 2008, p. 91) blend with the ecologically inspired critique of religion. The intrusion of alien invaders onto the globe as recounted in the song's lyrics brings us back to Lovelock's diagnosis that Gaia suffers from “people plague” (Lovelock 2000, p. 153). These reflections on unity and

nature are consistently accompanied by the artist's public activism in favor of environmental protection. By creating a unifying perspective, they also identify the protection of Icelandic nature with the protection of Icelandic cultural identity (Dibben 2013, p. 70). In an article in 2005, the artist criticized the Icelandic government for its massive expansion of aluminum smelting in ecologically sensitive areas of Iceland (Björk 2008).

The connection of Gaia tropes with international climate politics also emerged around the documentary film *An Inconvenient Sequel: Truth to Power* (2017). In it, Nobel Peace Prize laureate Al Gore resumed his on-screen plea for international climate politics, which he had launched in 2006 with the blockbuster *An Inconvenient Truth*. Ryan B. Tedder, lead singer of the U.S. pop-rock band OneRepublic, formed in 2007, wrote the film's title song. *Truth to Power* is a serene pop ballad with unobtrusive instrumentation and a classical song structure, using elements from Soul and Gospel. Its focus is on the vocals and its title alludes to the idiom "speaking truth to power". The lyrics, however, tell us about truth turning to power, broaching the real opportunity for the truth to take over. Continuing the premises of the Gaia hypothesis, the song is made up of a poetic but disenchanting speech given to humanity by the personified Earth: "If you could see me / the way I see you / If you could feel me / the way I feel you / You'd be a believer." The elegiac invitation to change our perspective remains in a subjunctive conditional. What is clearly addressed is the dimension of faith and spirituality; and the gospel sound which contextualizes the vocals infuses the planetary perspective with both a cry of alarm and a hopeful departure – just as crucial here as in Al Gore's film. The film poster is thoroughly dedicated to the metaphor of Spaceship Earth: it depicts a stylized hourglass with the globe – Blue Marble – melting in the upper glass and flowing down into the lower glass as a rain of ash falling onto a dystopian industrial silhouette.



Figure 5: Al Gore, *An Inconvenient Sequel*, film poster  
© Paramount Pictures

In pop music, the artistic treatment of Gaia tropes and the personification of an organic, feeling Earth capable of suffering and viewed from the astronaut's perspective turns out to be a particularly productive topos when dealing with environmental conflicts. Connections with

alarm and warnings of danger are especially obvious, for example, in the 2007 hip hop song *S.O.S. (Mother Nature)* by U.S. rapper William James Adams alias will.i.am. Connections with apocalyptic scenarios of extinction, for example, in the 2012 song *Dark Days* by Australian metalcore band Parkway Drive or in the cynical *Abschied* (2020) by Berlin punk band Die Ärzte: “*Los komm, wir sterben endlich aus, denn das ist besser für die Welt.*” (“Come on, we’re finally dying out, as it’s better for the world,” translation T.P.). The topos also reached the opulent symphonic rock of Sarah Brightman, who in her 2008 song *Running* attempted an impassioned hymn of environmental rescue in support of “Gaia’s green and blue”.

## Pop Music as Latency Space:

### The Spaceship as a Resonating Body of Environmental Conflicts

The overview shows that the artistic treatment of the spaceship metaphor and its continuation through the Gaia hypothesis in pop music reveals several latency problems inherent to many environmental issues. Schilling’s songs of the 1980s already show the extent of the world’s disenchantment by space photography, as the mysteries of orbit and Earth were subjected to a sober, objective photographic imaging. In this way, not only desertification, loss of forests, light pollution, and the state of the ozone layer could gradually be analyzed, but space travel starkly exposed that another planet for the survival of humankind was out of the question. The idea and shape of a *Planet B* – as it appeared distinctly in Schilling’s work – were subject of expensive research by NASA during the 1960s (Sachs 1994, p. 83), and they subsequently penetrated popular culture. Here, Earth and environmental problems were viewed through the dispassionate lens of technicism only: as remote mathematics rather than with emotion and concern.

In the early phase of space travel, tensions between the perceived omnipotence of natural and technical science on the one side and the fragility of human existence on the other side dominate not only thought, but also pop music. The conative character of the spaceship metaphor implicitly suggests that all people are affected in the same way by environmental changes and have caused them to the same extent. And contrary to what the metaphor suggests, there is no congruence of interests aboard the spaceship: the severe conflicts between global South and North, and between social groups, but also the different levels of exposure and vulnerability remain hidden – as does the fact that international institutions have not so much relieved the burden on the environment as enforced a technical, managerial access to planetary resources (Köhler 2016, p. 248).

The latency problem in Lil Dicky’s song, like in many others, lies in a depiction reduced to one-sidedness as well as in the simplifying elements inherent to the spaceship metaphor: Aboard Lil Dicky’s spaceship all passengers (be they human or animal) are equal. Any disparities between perpetrators and victims of environmental destruction are leveled and ignored. The community idea obscures causal connections and prevents any attribution of responsibility. The equality of those affected – held up as a prerequisite for solidarity – is but fiction and deception. Simultaneously, pop music caters to neo-Malthusian fears of a “population bomb” (Ehrlich 1968) by ascribing a scientifically determined carrying capacity to the spaceship: it assumes a “natural” – but in fact Darwinian – limit to the number of passengers. Schilling’s *The Noah Plan* inconspicuously reproduces the spaceship metaphor’s latent problem. There is not enough room for all the species aboard the lifeboat, even though Schilling creates an ad hoc

utopia at this very point of his narrative: “Everyone that’s coming / Has been safely brought on board.” According to the logic of *Lifeboat Ethics* (Hardin 1980) and the planet’s carrying capacity (Hardin 1976), salvation aboard the ark can be offered only to those deemed relevant enough to be saved (Höhler 2015, p. 95).

In terms of its theoretical treatment, and also its pop musical presentation, the spaceship metaphor tacitly represents an anthropocentric idea of colonial conquest. How deeply its reception in popular music stays rooted in the Western dogma of progress, how quickly it can take on not only neo-colonialist, but even racist features is made clear by Lil Dicky: his animated alter ego swings through the music video, clad in a loincloth, blatantly alluding to literary and film character Tarzan. The *Tarzan syndrome*, a topos that appears throughout Western cultural production and also in Lil Dicky’s video, consists of a white male foreigner explaining the environment to indigenous people and keeping them safe. By virtue of his civilizational superiority, he gains mastery over the jungle, without having to learn anything from the native population (Haslam 2015, p. 85-87). With his dream of the beloved planet, Lil Dicky also reaches nationalistic dimensions, when he emphatically interjects, “We love you, India, / We love you, Africa / We love the Chinese,” and finally, apparently alluding to the darkest chapter of German history, “We forgive you, Germany.” Who exactly is meant by “we” is unclear. Heir of a neo-colonial tradition of conquest and overconfidence, Lil Dicky’s song unwillingly unveils a core latency problem of the spaceship trope: the Western explanation of the world is real, whereas other cultural logics remain obsolete. Its cultural counterpart is developed by Afrofuturist attempts to rewrite the history of progress, to picture “black utopias” (Zamalin 2018) and to dismantle the hierarchies of modernity by favoring a mythological Afrocentric perspective: Sun Ra’s legendary vision of the “The Black Man in the Cosmos” (1971), Parliament’s *Mothership Connection* (1975), using gospel traditions to illustrate Africa as the “motherland” of humanity (Steinskog 2018, p. 203), or Kode9’s *Memories to the Future* are just some of numerous Afrofuturist examples to redesign the narration.

The miniaturization of human-nature relationships in Lil Dicky’s and similar pop musical expressions of the planetary perspective – in the French-speaking world, for example, through Dominique Demey’s pedagogical songs, or, in Great Britain, through Ellie Goulding’s opulent soundtracks – seem to promise didactic capital in terms of education for sustainable development. But on closer inspection, it touches on another problem of latency that is reinforced by the spaceship metaphor’s communitarian impetus: As objects of communication, Lil Dicky’s minimized models of juvenile animals express rather human than animal characteristics. Cows and monkeys are able to speak, love, or forgive; zebras and lions can instruct, ask questions, or make jokes.

In terms of latency, the spaceship’s miniaturized natural world reflects human ambivalence in an environment increasingly perceived as dysfunctional. Nature narratives continue the anthropomorphic stories about animals and the environment present in Bernhard Grzimek’s documentary films as well as in Dian Fossey’s love for gorillas: her desperate struggle to protect the mountain gorillas received a particularly strong response in pop culture, and even became a Hollywood success with *Gorillas in the Mist* in 1988 (Radkau 2014, p. 187-188). Like in animal films, the representation of animals in pop music appears suitable, at first glance, for conveying messages of nature conservation and environmental protection to a broad audience with sometimes divergent and even contradictory interests. On the surface, Lil Dicky’s animat-

ed Spaceship Earth helps transform the cause behind the protest in a way that makes it tenable across large groups of a population. However, it remains a problem that it entrenches alienated understandings of animals and nature. These do not represent nature, but rather social needs and societal structures within a superstructure of technicism, and thus cannot protect nature either. Aboard Lil Dicky's spaceship, children learn less about animals and plants than they do about themselves and social narratives.

Finally, pop music using the astronaut's perspective on planet Earth points to one more latency problem of the spaceship metaphor: control. When Fuller states – similar to what Sido and Andreas Bourani suggest in their German song *Astronaut*, released in 2015 – that we are all astronauts (Fuller 1969, p. 46), one question remains, after all: who is the captain of our ship? Who decides and who carries out? To steer a spaceship according to democratic rules appears unrealistic. Is the spaceship in the end a betrayal of the great promises of modernity: participation and integral development for all people? Or, asked from an Afrofuturist perspective: "Isn't the unreal estate of the future already owned by the technocrats, futurologists, streamliners, and set designers – white to a man – who have engineered our collective fantasies?" (Dery 1994, p. 180). Obviously, the spaceship trope needs counter-histories (Steinskog 2014, p. 4) to realign it from the experience of a globally marginalized and oppressed public and to liberate it from technological determinism (Zamalin 2018, p. 144). The narrative practices of Afrofuturism, which emerge in parallel with their sister genre science fiction, offer inspiration in all popular genres (Lavender 2019: 2): Musical contributions from Broken Beat e.g. redefine the narration of space travel and rhythm science by surpassing colonial and capitalist thinking patterns and designing an optimist future of multi-ethnic conviviality and high affinity for technicism (Alisch and Maier 2019, p. 139).

Despite this problem of latently perpetuating colonial ideas of conquest, the Spaceship Earth metaphor and its extension towards Gaia have an integrative effect: particularly the treatment of the Gaia hypothesis by James Taylor, Björk, and OneRepublic make it clear that conveying holistic understandings of nature, apart from Christian narratives, is popular because it is connective to spirituality, agnosticism, and esotericism. Additionally, it can be connected to other contentious topics such as sexuality and gender roles. Furthermore, it is compatible with the postulate of advocacy and alliance, which has always been productive in environmental ethics (Nielsen 2017): nature speaks to humans, Gaia can act, Gaia sends messages. However, the presupposed dualism humans-nature, which is an explicit goal to overcome of the singer Björk, renders a nuanced attribution of responsibility impossible.

In sum, the musical examples show how the astronaut's perspective and its continuation through the Gaia hypothesis tend to relativize the real diversity of ecology. Instead, they explain its richness from a single, dominant paradigm of perception. In any case, the astronaut's view demands a *selection*, as it relies on biophysical functions and scientific knowledge in the Western tradition (Köhler 2016, p. 249). It thereby perpetuates colonial patterns of thought. Through its function as an alarm call (Philipp 2021), Spaceship Earth, when used in pop music, accentuates perceived time pressure. Concurrently, it makes it difficult to think about possible solutions in a nuanced, sophisticated way.

The ecological discourse which emerges from pop music is therefore by no means a message, a committed statement, or an appeal by singers or songwriters to their audience. It is rather a sounding board for latent, unresolved conflicts contained within the dispute about sustaina-

bility, nature conservation, and environmental protection: disparity in affectedness and vulnerability, structures of dependency and dominance in the wake of colonial and nationalist exploitation, negation of responsibility through indiscriminate use of metaphors, and trivialization of nature and the environment. From a political science perspective, it is high time to comprehensively evaluate pop music soundscapes and their inherent conflicts.

## List of References

- Alisch, Stefanie, and Carla J. Maier. 2019. "The Sound of Afrofuturism." In *We Travel the Space Ways: Black Imagination, Fragments, and Diffractions*, edited by Henriette Gunkel und karalynch, 133–149. Bielefeld: transcript.
- Anker, Peder. 2007. "Buckminster Fuller as Captain of Spaceship Earth." *Minerva* 45 (4): 417–34.
- Barton, Laura. 2014. "I Had a Little Bit of Cabin Fever." Accessed June 4, 2022. <https://www.theguardian.com/music/2007/apr/27/popandrock3>.
- Björk. 2008. "After Financial Meltdown, Now It's Smeltdown." *The Times*, October 28, 2008, 28.
- Boulding, Kenneth Ewart. 1968. "The Economics of the Coming Spaceship Earth." *Beyond economics: essays on society, religion, and ethics*, 275–87.
- Callicott, J. Baird (ed.). 1998. *The great new wilderness debate*. Athens, Ga.: University of Georgia Press.
- Daly, Herman E. 1973. "The Steady-State Economy: Toward a Political Economy of Biophysical Equilibrium and Moral Growth." In *Toward a Steady-State Economy*, edited by Herman E. Daly, 149–74. San Francisco: Freeman.
- Dery, Mark. 1994. "Black to the Future: Interviews with Samuel R. Delany, Greg Tate, and Tricia Rose." In *Flame wars. The discourse of cyberculture*, edited by Mark Dery, 179–222. Durham, NC: Duke University Press.
- Dibben, Nicola. 2013. *Björk*. London: Equinox.
- Ehrlich, Paul R. 1968. *The Population Bomb*. New York: Ballantine.
- Faulhaber, Edwin F. 2008. "Communicator Between Worlds: Björk Reaches Beyond the Binaries." Electronic Thesis, Bowling Green State University. Accessed June 4, 2022. [http://rave.ohiolink.edu/etdc/view?acc\\_num=bgsu1219186474](http://rave.ohiolink.edu/etdc/view?acc_num=bgsu1219186474).
- Fuller, Richard Buckminster. 1969. *Operating Manual for Spaceship Earth*. Mattituck, NY: Aeonian.
- Gunnarsson, Valur. 2004. "Waving a Pirate Flag." Accessed June 4, 2022. <https://grapevine.is/mag/feature/2004/08/20/waving-a-pirate-flag/>.
- Hardin, Garrett. 1976. "Carrying Capacity as an Ethical Concept." In *Lifeboat Ethics: The Moral Dilemmas of World Hunger*, edited by George R. Lucas, and Thomas Ogletree, 120–37. New York: Harper & Row.
- Hardin, Garrett. 1980. "Lifeboat Ethics: A Malthusian View." In *Dialectics of Third World Development*, edited by Ingolf Vogeler and Anthony Souza, 171–85. Montclair: Allanheld, Osmun.
- Haslam, Jason. 2015. *Gender, Race, and American Science Fiction: Reflections on Fantastic Identities*. Hoboken: Routledge.
- Höhler, Sabine. 2006. "Raumschiff Erde. Eine mythische Figur des Umweltzeitalters." In *Beam us up, Boulding! 40 Jahre "Raumschiff Erde"*, edited by Sabine Höhler and Fred Luks, 43–52. Karlsruhe: Vereinigung für Ökologische Ökonomie.

- Höhler, Sabine. 2015. *Spaceship Earth in the Environmental Age, 1960-1990*. London: Pickering & Chatto.
- Holden, Stephen. 1997. "A Troubadour from the 70's in Search of Serenity." *The New York Times*, July 18, 1997. Accessed June 4, 2022. <https://www.nytimes.com/1997/05/18/arts/a-troubadour-from-the-70-s-in-search-of-serenity.html>.
- Köhler, Bettina. 2016. "Raumschiff Erde." In *Wörterbuch Klimadebatte*, edited by Sybille Bauriedl, 245–51. Bielefeld: transcript.
- Latour, Bruno. 2015. "Waiting for Gaia: Composing the Common World through Arts and Politics." In *What is cosmopolitical design? Design, nature and the built environment*, edited by Albená Yaneva und Alejandro Zaera, 21–33. Farnham: Ashgate.
- Lavender, Isiah. 2019. *Afrofuturism rising: The literary prehistory of a movement*. Columbus: The Ohio State University Press.
- Longerich, Winfried. 1989. „Da Da Da“: Zur Standortbestimmung der Neuen Deutschen Welle. Pfaffenweiler: Centaurus.
- Lovelock, James E. 1988. *The Ages of Gaia*. New York: Norton.
- Lovelock, James E. (1991) 2000. *Gaia: The Practical Science of Planetary Medicine*. Revised edition. New York: Oxford University Press.
- Lovelock, James E. 2009. *The Vanishing Face of Gaia: A Final Warning*. New York: Basic.
- Luhmann, Niklas. 1990. *Die Wissenschaft der Gesellschaft*. Frankfurt am Main: Suhrkamp.
- Luhmann, Niklas. 2000. *Art as a social system*. Stanford: Stanford University Press.
- Luhmann, Niklas. 2005. *Social Systems*. Translated by John Bednarz, Jr. with Dirk Baecker. Stanford: Stanford University Press.
- Margulis, Lynn. 1998. *Symbiotic Planet: A New Look at Evolution*. New York: Basic.
- Meier, Andreas. 2000. *Politischer Wertewandel und populäre Musik*. Münster: Lit.
- Nielsen, Larry A. 2017. *Nature's Allies: Eight Conservationists Who Changed Our World*. Washington, DC: Island Press.
- Nill, Jan. 2013. "Innovation dynamics as lever for adaptive long-term policies: An evolutionary approach." *Long-term governance for social-ecological change*, edited by Bernd Siebenhuner and Michael Pregernig, 127-146. Abingdon, Oxon: Routledge.
- Pak, Chris. 2016. *Terraforming: Ecopolitical Transformations and Environmentalism in Science Fiction*. Liverpool: Liverpool University Press.
- Pattie, David. 2007. *Rock Music in Performance*. Basingstoke: Palgrave Macmillan.
- Perez, Rodrigo. 2005. "Cartoon Gorillaz Put a Muzzle on Danger Mouse, Damon Albarn." Accessed June 4, 2022. <https://www.mtv.com/news/1gxpdp/cartoon-gorillaz-put-a-muzzle-on-danger-mouse-damon-albarn>.
- Philipp, Thorsten. 2021. "Der Sound der Katastrophe: Popmusik als Resonanzraum ökologischer Krisen." *Forschungsjournal Soziale Bewegungen* 34 (2). Accessed June 4, 2022. <https://forschungsjournal.de/fjsb-plus/philipp>.
- Primavesi, Anne. 2000. *Sacred Gaia: Holistic theology and earth system science*. London/New York: Routledge.
- Radkau, Joachim. 2008. *Nature and Power: A Global History of the Environment*. Cambridge: Cambridge University Press.
- Radkau, Joachim. 2014. *The Age of Ecology*. Hoboken: Wiley.



- Rambarran, Shara. 2016. "'Feel Good' with Gorillaz and 'Reject False Icons': The Fantasy World of the Virtual Group and Their Creators." In *The Oxford Handbook of Music and Virtuality*, edited by Sheila Whiteley and Shara Rambarran, 148-65. New York: Oxford University Press.
- Ribowsky, Mark. 2016. *Sweet Dreams and Flying Machines: The Life and Music of James Taylor*. Chicago: Chicago Review Press.
- Richardson, John. 2005. "'The Digital Won't Let Me Go': Constructions of the Virtual and the Real in Gorillaz' 'Clint Eastwood'." *Journal of Popular Music Studies* 17 (1): 1-2.
- Robinson, Peter. 2018. "Lil Dicky and the Truth About Comedy Rap – It's Tricky!" Accessed June 4, 2022. <https://www.theguardian.com/global/2018/apr/13/lil-dicky-interview-comedy-rap-rapper-freaky-friday-big-shaq-lonely-island>.
- Sachs, Wolfgang. 1994. "Der Blaue Planet: Zur Zweideutigkeit einer modernen Ikone." In *Zum Naturbegriff der Gegenwart*, edited by Joachim Wilke, 75-93. Stuttgart: Frommann-Holzboog.
- Scheidel, Arnim, Daniela Del Bene, Juan Liu, Grettel Navas, Sara Mingorría, Federico Demaria, Sofía Avila, Brototi Roy, Irmak Ertör, Leah Temper und Joan Martínez-Alier. 2020. "Environmental conflicts and defenders: A global overview." *Global environmental change: human and policy dimensions* 63, 1-12. Accessed June 4, 2022. <https://doi.org/10.1016/j.gloenvcha.2020.102104>.
- Steinskog, Erik. 2017. *Afrofuturism and Black Sound Studies: Culture, Technology, and Things to Come*. Cham: Springer.
- Ward, Barbara. 1966. *Spaceship Earth*. New York: Columbia University Press.
- Ward, Barbara, and René J. Dubos. 1972. *Only One Earth: The Care and Maintenance of a Small Planet*. New York: Norton.
- White, Frank. 2014. *The Overview Effect*. Third edition. Reston: American Institute of Aeronautics and Astronautics.
- Wolfson, Sam. 2019. "From Baboon Raps to Extinction Gongs: Can Climate Art Save the World?" Accessed June 4, 2022. <https://www.theguardian.com/culture/2019/jul/20/from-baboon-raps-to-extinction-gongs-can-climate-art-save-the-world>.
- Zamalin, Alex. 2019. *Black Utopia: The history of an idea from black nationalism to Afrofuturism*. New York: Columbia University Press.

## Discography

- Björk. 2007. Earth Intruders. *Volta*. One Little Indian TPLP460CD.
- David Bowie. 1969. Space Oddity. *Space Oddity*. Philips SBL 7912.
- Die Ärzte. 2020. Abschied. *Albaum – Musik, die Bäume pflanzt*. Trikont US-0516.
- Dominique Dimey. 2008. Merci à ma planète. *Touche pas à ma planète*. Naïve 3298493181550.
- Ellie Goulding. 2019. In This Together. *Our Planet (Original Soundtrack)*. Decca 4818023.
- Gorillaz. 2005. Every Planet We Reach Is Dead. *Demon Days*. Parlophone 07243 873838 1 4.
- Gorillaz. 2005. Fire Coming Out of the Monkey's Head. *Demon Days*. Parlophone 07243 873838 1 4.
- Gorillaz. 2005. Last Living Souls. *Demon Days*. Parlophone 07243 873838 1 4.
- Kode9 + The Spaceape. 2006. *Memories Of The Future*. Hyerdub HYPCD001.
- James Taylor. 1997. Gaia. *Hourglass*. Columbia CK 67912.

- OneRepublic. 2017. *Truth To Power*. Interscope.
- Parliament. 1975. *Mothership Connection*. Casablanca CBLA 71013.
- Parkway Drive. 2012. *Dark Days*. *Atlas*. Epitaph 87230-2.
- Peter Schilling. 1982. Major Tom (Völlig losgelöst). *Fehler im System*. WEA 24.0026-1.
- Peter Schilling. 1982. Die Wüste lebt. *Fehler im System*. WEA 24.0026-1.
- Peter Schilling. 1983. Major Tom (Coming Home). *Error In The System*. WEA 24-0213-1.
- Peter Schilling. 1983. The Noah Plan. *Error In The System*. WEA 24-0213-1.
- Peter Schilling. 1985. Terra Titanic (Lost To The Sea). *Things To Come*. Elektra 9 60404-1.
- Sarah Brightman. 2007. *Running*. EMI. 5099 9 507963 2 8.
- Sido feat. Andreas Bourani. 2015. *Astronaut*. Urban 0602547440174.
- Sun Ra. 1973. *Space Is The Place*. Blue Thumb BTS 41.
- USA For Africa. 1985. *We Are The World*. Columbia. US2-05179.
- will.i.am. 2007. S.O.S. (Mother Nature). *Songs About Girls*. Interscope 1747675.

**Thorsten Philipp**, Dr., political scientist and romance scholar, is lecturer at the Leuphana University Lüneburg, the University Passau and the Baden-Württemberg Cooperative State University. As a member of the president's staff at TU Berlin, he is in charge of promoting transdisciplinary didactics and transformative education projects at the crossroads of university and society. His research explores pop music as a resonance space of sustainability communication.

### **Abstract (English)**

While the political dimension of pop songs is often discussed through the songwriters' intentions, this article explores music as a resonance body of *latency*: Can pop songs describe hidden societal structures and political dynamics that remain invisible in politics, particularly in environmental conflicts? Focusing the ecological metaphor "Spaceship Earth", its narration in pop culture and its continuation through the Gaia hypothesis, this article uses prominent pop music examples to show that virulent, but mostly unspoken and unresolved aspects of environmental conflicts – unequal vulnerabilities, hierarchies and inequitable responsibility attribution – are continuously processed, distorted and condensed in pop music.

### **Abstract (Deutsch)**

Obwohl die politische Dimension von Popmusik häufig der Intention ihrer Urheber diskutiert wird, wertet dieser Artikel Musik als Resonanzraum der *Latenz*: Kann Musik verborgene gesellschaftliche Strukturen und Dynamiken beschreiben, die in der öffentlichen Politik nicht artikuliert und bearbeitet werden? Entlang der Metapher „Raumschiff Erde“, ihrer Abbildung in der Popkultur und ihrer Weiterverarbeitung durch die Gaia-Hypothese zeigt der Artikel anhand exemplarischer Musikbeispiele, dass virulente, aber unausgesprochene und ungelöste Aspekte von Umweltkonflikten – darunter Ungleichheit in der Vulnerabilität, unfaire Praktiken der Responsibilisierung – popmusikalisch verarbeitet werden und verdichtet oder verzerrt Gestalt gewinnen.

**Proposal for Citation.** Philipp, Thorsten. 2022. "Spaceship Earth and its Soundscapes. Latency Problems of International Ecological Conflicts in Pop Music." In *Transformational POP: Transitions, Breaks, and Crises in Popular Music (Studies)*, edited by Beate Flath, Christoph Jacke and Manuel Troike (~Vibes – The IASPM D-A-CH Series 2). Berlin: IASPM D-A-CH. Online at <http://www.vibes-theseries.org/philipp-spaceship-earth>.