

# How to Present Nuclear Power as A Scarf and A Wound on The Terrestrial *Superorganism* - The Analysis of Work by Peter Goin, Emmet Gowin, And Monika Niwelińska

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## Abstract

The aim of this paper is to analyze the photographic way of telling about the nuclear danger to the *biotic community* understood as a metaphor that personifies the Planet, sees analogies between human and *biotic communities*, and proves that they are interdependent. The nuclear power (bombs, tests, or power plants) is shown by the photographers as the a scar and a wound inflicted by man on the terrestrial *superorganism*. The article aims to analyze with reference to the works of Peter Goin, Emmet Gowin and Monika Niwelińska. Photographers' actions commemorate the ecological catastrophe. They remind about the still real, yet invisible, threat in these places, their emanation to other areas, and the destruction of the biotic community. Their voice can be seen as a voice in eco-criticism.

**Keywords:** wound, photos, biotic community, nuclear danger

## 1. Introduction

Socially engaged artists discuss many important topics of the modern world. One of them is the devastating nuclear potential. Artists from all over the world (Asia, Australia, Europe, and also the Pacific) talk about the threat posed by the explosion of an atomic bomb, as well as the negative impact on people's lives and the planet of nuclear tests while promoting the ideas of peace and disarmament. And they also comment on the dangers of building nuclear power plants (Schneider&Zweifel, 2004; Burgherr et al., 2004; Boesa et al., 2015). Roman Rosenbaum (2022, p. 27) divides their statements into three categories: representation, recognition, and resistance. The artists testify to the horror of the use of the atom by

emphasizing the consequences of operating nuclear energy to the point of mobilizing the resistance. They pay attention to the effects of the atomic bombing and the catastrophe caused by nuclear testing and accidents at nuclear power plants, as well as the damaging effects on vulnerable and often disenfranchised minorities in areas where nuclear weapons have been tested. They remind that acts of war associated with ecocide include the use of weapons of nuclear mass destruction (Broszimmer, 2002, p. 75). And that the annual radiation of the plutonium used in the world's 424 nuclear power plants alone would be capable of destroying all living creatures on earth (Broszimmer, 2002, p. 105) Art accompanies every aspect of this challenge. „It is ultimately through representation in art that some of the most vital questions of our nuclear world have been taken up and, we would argue, been demystified” (Rosenbaum, 2008, p. 28).

## **2. Biotic community**

The artists' involvement in the discussion on the nuclear threat is an expression of their belief that humans have moral obligations towards the non-human environment and should not disturb the balance of nature. It is also an expression of human concern for the planet and mankind - a story about what is wrong with the planet and what is related to human action. Their voice is essential in the debate on anthropogenic change that disrupted the human-centric world (Chakrabarty, 2021) and led to the idea of Necrocene – an era which man affects the biosphere leading to disorder in (Clark, 2015) of biocentrism which is in fundamental opposition to anthropocentrism (Goralnik & Nelson, 2012; Kopnina et al., 2018; Burchett, 2014) (mankind is entitled to a central position in the world) and, to some extent, to non-anthropocentrism - "sentientism" (Rodogno 2010, Mikkelson, 2018) (at the center are beings capable of feeling). Justin McBrien (2016) writes that the Necrocene is an era of extinction, but it is not an ordinary process of species extinction, but the extermination of humans and non-humans, the destruction of the Earth through the depletion of fossil fuels, rare earth minerals and even helium, acidification and eutrophication oceans, deforestation and desertification, melting ice caps and rising sea levels, and a nuclear waste dump. And he further emphasizes that unlike apoptosis - the process of programmed cell death beneficial to the body - necrosis occurs as a result of trauma. Meanwhile, biocentrism is based on formulated 7 principles - among other things, there is said, that what mankind perceives as reality is a process that involves consciousness (1st principle). The external and internal perceptions are inextricably intertwined (2nd principle). The perception is inextricably linked to the presence of an observer (3rd principle). Without consciousness, “matter” dwells in an undetermined state of probability (4th principle) (Lanza, 2009, p. 127-128). The theory of biocentrism states that the world exists because of life - every life. The development and creation of life is the beginning of the world. The well-being of all living beings creates a responsibility on the part of human beings, which is described as four duties of biocentric ethics: non-harm, non-interference, fidelity, and restitution justice. Robert Lanza (2009) emphasizes that it is important to be aware and observe the world and to combine what is external and internal.

The activity of artists is a proof of the growing awareness of the problems that human civilization causes in non-human environments. They aim to observe and diagnose the world. These artists perceive life on the planet and the planet itself holistically as a *superorganism* or human archive, a materially fragile matrix of cultural inscriptions (Clark, 2015, p. 31), or a specific community: "the balance of the nature" or *biotic community*. Interest in *superorganism* has been growing in the last decade, especially in the context of the Anthropocene and the massive effects of globalization (Vince, 2020; Wilson & Sober, 1989). The idea of a *superorganism* in this paper is understood as complex technological (including nuclear) connections and cultural and ecological processes of globalization - it completes the framework of the Anthropocene with a description of what humanity is developing into, and what kind of destructive form it is. Humanity is treated as a species that disrupts planetary processes.

The concept of the *biotic community* is a utopian (Ubertowska, 2018, p.17) metaphor that personifies the planet, sees analogies between the human and *biotic communities*, and proves that they are interdependent. Matter, humans, and mind are some elements of the earthly fabric and *biotic community*, where a tug or shift in one part of the structure affects and alters every other space-time-matter node in the system. Rob Nixon (2011) in his study *Slow Violence and the Environmentalism of the Poor* showed how spatial and temporal aspects are interrelated to cause environmental pollution. Based on mankind-made disasters, such as the Chernobyl disasters, Nixon shows how the natural and built environment of certain technological objects becomes polluted with toxins, the effects of which are long-term and which the media does not talk about. He proves how complicated interdependence with the biotic community is. Such a perception of the relationship between humans and non-humans eliminates inter-species boundaries and contradicts nature-culture or subject-object binarisms.

### **3. The nuclear wound**

The artists' concern about the planet prompted them to search for a language that would convey the seriousness of ecocide events and enable them to tell stories about the disturbed balance. Artists fascinated by the topic of the eco-catastrophe talk about a degraded post-nuclear, apocalyptic space. They present landscapes of risk as a result of human creation. Among other things, in 2015, a project entitled *Civil Society and Post-War Pacific Basin Reconciliation - Wounds, Scars, and Healing* was carried out at the University of Sydney, commemorating the seventieth anniversary of the end of the conflict in the Asia-Pacific region and the dropping of atomic bombs on Hiroshima and Nagasaki. The result of the project is a book edited by Yasuko Claremont, which is a discussion of the main aspects and repercussions of the war in Asia-Pacific. The authors discuss among others an examination of the aftermath of Hiroshima and Nagasaki nuclear attacks and analyze the way memories of the war have changed with time. On the occasion of this project, the title draws special attention, which indicates the effects of human actions: scars and wounds that need to be healed. The

title of the publication and the project exposes the fact that humanity inflicts wounds on the planet and its species, and thus transforms the earth.

Depending on which scholarly discipline it is defined through, a wound is interpreted as a trauma (Caruth, 1996) or a break in continuity. What both approaches have in common is the presentation of the wound as violating the existing order, leading to disturbances or irregularities, penetrating deep layers of memory, and marking the present. Telling about wounds is, on the one hand, drawing social attention to humankind's actions that threaten security, and on the other, trying to fill the space left by wounds - showing them, starting to talk about them, and thus scarring them. Therefore, the artists indicate the nature of suffering (the type of wound), the place in the *superorganism*-planet affected by suffering, and the species responsible for it. The wound discovered is not a fact in itself, but an interpretation, a compulsive return to the past that affects the present like an unhealed wound, causing gangrene and then amputation or death. This wound is the convergence of the human and non-human spheres (Chakrabarty, 2021) within living memory.

#### 4. Vertical display of the wound

The American artist Peter Goin is a political scientist, who serves as a witness of the evolving landscape. He takes landscape photography. As he says: "due to photography's essential identity – it's connection to The Real – contemporary landscape photography is by its very nature anthropological, although I would probably prefer a slightly more relevant term" (Goin for Blanco-Arroyo, 2020, p.319). According to him: "Photography is inherently woven within the environmental ethic, but, of course, not all photography is about the environment (Goin for Blanco-Arroyo, 2020, p. 319). He is interested in recording the process when ruins become nature and nature becomes ruined. He shows "how humans view the world through the lens of appropriation, framing (...), and identification" (Goin for Blanco-Arroyo, 2020, p. 319). Goin's photos are a statement about Anthropocene and the *biotic community*. He claims: "The Anthropocene is the current geological era acknowledging the role of human activity as a dominant influence on the climate and the environment. The argument for this role is inescapable; even the advent of the nuclear era has transformed the global environment – nearly a 7% increase in radioactivity, everywhere. What consequences will emerge only time can reveal, but in many cases, photographers are responding to the world in which they live by bearing witness, to whatever they see and feel. Their responses may not be entirely focused on the environment, but all of life is interwoven, so the destruction of a hurricane has personal stories and visual narratives that accompany them. Is this responding to the Anthropocene era? Indeed" (Goin for Blanco-Arroyo, 2020, p. 322). Peter Goin (1991) is a photographer who has shown nuclear-marked places. He believes "the photograph is a complicated visual phenomenon that appears elementary (factual). True, a photograph often reveals a great deal more information than its maker ever intended" (Goin, 2001, p. 367).

Goin documented the legacy of human actions on the planet. He is one of the few photographers allowed to document the "testing ground" - the nuclear lands. In his works, Goin shows that the artifacts and sites throughout these nuclear lands represent icons in the

range of myths and political rituals surrounding the nuclear age. This project contains these main sites: Nevada's Nuclear Test Site, the Trinity Site in New Mexico, the Hanford Nuclear Area in Washington, and recently, the Marshall Islands' sites of Bikini and Enewetak Atolls. In his photographs, Goin immortalizes abandoned, neglected, forgotten, forbidden, and condemned places, which are silent witnesses of hostile human activity. It shows mutilated places that have been removed from sight and places that have been artificially created by man, like a glassy, greenish rock melted from the sandy soil during the intense heat of an atomic explosion. A rock is an object proving human activity - it is a new example of living matter, a radioactive, unnatural type of geological rock, a material example of the entanglement of human and non-human nature. Or he shows the town of Doom Town built in the Mojave Desert as part of the atomic testing program or the bunker on Aomen Island in Bikini Atoll. The places that have been affected by nuclear tests, which Goin shows, are mutilated, hybrid places that pose a serious threat to the health of biological organisms, because the level of radioactivity there is still high. Importantly, this threat is invisible - its testimony is the post-apocalyptic, desolate space where nothing grows, nothing lives. Therefore, only showing the wasteland in the right light tells about the poisonous nature of this place, which is why Goin decided for the first time to take a photo in color (photos were taken in the late 1980s) to be able to tell about the toxicity of this place by showing the burning color of the southern light.

Moreover, he makes sure that there is no shadow in the picture, thus emphasizing the lack of the passage of time (Glotfelty, 2014, p. 226). Goin also paid attention to the selection of the immortalized space, focusing on the vacancies of built bunkers, crater-like boom craters, depressions or furrows in the ground that ran against the curvature of the earth, making the space a testimony of human interference in the earth's crust. Goin used a Geiger counter to check the amount of radiation during his photographic work and recorded the received doses of radioactivity on film badges. Cheryll Glotfelty (2014, p. 228) writes: "Goin began to think of the sites he visited as "landscapes of fear," as if the fear he experienced somehow inhered in the sites themselves".

The subject of fear was presented in his artistic video project entitled *Nuclear Monsters* (2016). In it, he presents images from more than sixteen science fiction films about the nuclear age, combined with old archival footage from the atomic age from the Department of Energy, the Atomic Energy Commission, the National Archives, and other repository sites, in which he showed the fear of an atomic explosion as an important piece of cultural history.

### **5. Horizontal display of the wound**

Goin's work is a significant testimony to the mindless destruction and maiming both of people (their forced resettlement from places where nuclear tests are conducted) and their organisms (high rates of leukemia, lymphoma, and cancer in remote areas contaminated after the explosion of an atomic bomb, places away from the sphere of testing or accidents in power plants), but as well the planet's *superorganism*. This testimony is important because radiation and its threat remain invisible and thus easily forgotten and elude commemoration.



Nevertheless, the artists are looking for a way to prove that every genocide or ecocide leaves traces and they try to document them, to present the heterogeneous process of memory. Goin photographed vertically the remnants of nuclear ecocide - the wasteland left by nuclear disasters. He immortalized the changes that took place in the environment, bunkers or the remains of mock-ups of towns, or finally photographing new lumps of rock shaped as a result of the great temperatures of the explosion. He used the lack of shadow to represent the timelessness of these places and the scorching sun to visualize radiation. Meanwhile, another American artist, Emmet Gowin, was interested in the horizontal view.

Gowin is a professor of photography in the Visual Arts Program. He is as well a landscape photographer whose attention is to environmental awareness. He shows such things as nuclear bombs and mine tailings have altered the terrain (Sherman et al., 2013, p. 37). His works are a kind of statement about the relationship of humanity to the natural world with visual delight. Gowin's work includes searching places where nature and humanity have shaped one another over centuries; aerial views of sites impacted by modern catastrophes ranging from volcanic activity to nuclear testing. He points to a destructive component that is inextricably linked to the human desire to create and produce (Cornell 1999) for example he is interested in the issue of the chemical contamination of the Hanford Nuclear Reservation, or the chemo-petrol industries of the Czech Republic. But he is curious about the topic of natural cataclysmic for example he tries to capture nature's raw and stunning power, such as the volcano eruption. He shows the land and the survivors: the enormity of destruction, fear, and the sense of a world made radically strange and unpredictable. He tries to show what the beating heart of the landscape looked like. Gowin sees promise and warning in the manipulated topography of the earth and the deep beauty that connects us to nature. It shows the planet as a biotic community or biocentrism. He believes that people see these amazing, vast, and terrible places, we can shudder because of the feelings we experience when our sense of wholeness is reorganized by what we see.

In the second half of the nineties, he photographed the Nevada National Security Site from a helicopter flight. This perspective allows us to show the wounds that were inflicted not only on the surface of the earth but also inside it. Underground industrial use tests and explosions melted the rocks and created a vacuum, which led to the subsidence of the earth and the formation of craters resembling the marks left by an asteroid impact. His photos show blast areas where the sand was transformed into glass, valleys riddled with hundreds of craters, trenches that protected soldiers from blasts, areas used to bury radioactive waste, and debris left behind from tests five thousand feet below the surface. Just like Goin Gowin immortalizes human interference with the earth: inscriptions in the desert or sensors designed to monitor the dynamics of a nuclear explosion. And he shows how mankind interferes with the planet's *superorganism*. Gowin treats the planet as such an organism. He claims: "We know the earth is like our body," and "It has a circulatory system, it has a skin, it has its energy." (Norman, 2019) And in his photographs, he immortalizes the wounds and scars inflicted on the body of the earth. His photographic testimony to the damage humanity is

causing to the environment is also meant to tell a tale of aesthetic redemption and a more promising future.

## **6. Microscopic display of the wound**

The Polish artist Monika Niwelińska talks about the nuclear threat in yet another way. Like Goin and Gowim, she undertakes to depict the Trinity Site, but she approaches the subject in a completely different way - she is not interested in a horizontal or vertical view but in the microscopic effect of destruction. As part of the *Gamma trace project*, she presented radiographic plates exposed to gamma radiation at the Trinity Site. She is interested in the record of radiation spaces created as a result of radiation, which leads to entropy, trauma, and loss. Her photographic testimonies, according to Niwelińska (n.d, pp. 17-18), “enable the observation and analysis of traces left by human activities in the environment. Photography becomes (...) a tool for researching these sedimentations, deposits of memory. The footprint recorded on the photosensitive plate from the Trinity Site is precisely the record of the human footprint, which activities have left a lasting mark on the desert landscape of New Mexico.” On the film badges, the artist registers the uneven movement of the ray - the radiation process gradually over-exposes successive fragments of the image and interferes with its tissue - in the same way, radiation changes the Trinity Site. Irradiation causing corrosion, and destruction is a record of material erasure, and killing. In this way, Niwelińska documents the post-radiation space and thus visualizes the radiation. To talk about radiation, she does not show scars on the ground, but tries to depict what is invisible - radiation. She tries to reconstruct the record of annihilation in her works. The theme of decay and the question of what lies at the junction of two worlds: being and non-being, memories and oblivion, are very important in her work. Niwelińska is interested in recording the process of memory loss and its restoration. The artist tries to stop the fading image and visualize the destruction. In her works, she tries to shape or restore the damaged or non-visual shape of radiation memory. It proves that appropriate treatments made on film and photographic material allow not so much to stop the "fierce will to destroy" as to document and show it. Niwelińska proves in her works that radiation causes irreversible change. So she studies and visualizes images created as a result of radioactive rays and thus imitates a catastrophe. Shows chemical reactions.

In the series *Radioactive and Radioactive Dust*, she documents the recording of successive stages of the disappearance of images and the blurring of contours. In this way, he shows that it is difficult to photograph a nuclear threat. She says that radiation sites are subject to the processes of entropy, destruction, and disappearance. The same goes for their pictures. The photographic emulsion changes disintegrates and dematerializes. He recalls that the relationship between the image and radiation was already demonstrated in 1896 by Henri Becquerel. The famous Becquerel plate – a photographic plate exposed to nuclear radiation of uranium salts – became a breakthrough discovery and, at the same time, a visual record of radioactivity (Niwelińska, 2023). What's more, the pictures themselves disappear. As proof, it suffices to recall that in August 1945, after the attack on Hiroshima and the Trinity tests,

Kodak plates appeared spotting and flogging from exposure to film during an atomic explosion. The radioactive fallout from the Trinity test contaminated the fields and rivers from which corn leaves and water were used to produce cardboard packaging for photo paper. A similar phenomenon of x-raying and blackening of the plates occurred during the documentation of the Chernobyl disaster. Igor Kostin, a photojournalist, a few hours after the Chernobyl reactor explosion flew over the burning block number four. During the flight, he took several photos, but the radiation destroyed the film. The only surviving photograph from the entire film went around the world (Kostin, 2006). Goin also decided to digitize his photos, which over time began to deteriorate - significant enough that Goin was afraid of losing photos. After scanning the image, he used Photoshop to remove all blemishes - so he performed the process opposite to Niwelińska's - in this way he transformed the image, and made it immortal, once again pointing to the need for creation and human intervention in reality. Cheryll Glotfelty rightly interprets Goin's works as an apotheosis of the human need to make changes in the world that lead to catastrophe, but also to the creation of beautiful things. He claims that presumed "objectivity" or "documentation" does not eliminate beauty (Goin 2001). In his mind, beauty is being continually redefined, perhaps approaching a closer association with eloquence than with the more traditional and predictable forms of aesthetic beauty (Goin for Blanco-Arroyo, 2020, p. 319). In Goin's photos, the wounds inflicted on the *superorganism* are aesthetically beautiful and painterly. This approach allows us to draw attention to one more aspect of destruction - the fact that destruction can lead to aestheticization, and thus the subject of a deadly threat becomes more tame and therefore unnoticeable. Niwelińska reverses this order and shows what is ugly, rotting, and dying.

## **Conclusion**

Goin, Gowin, and Niwelińska, testifying to nuclear ecocide, photograph wounds as they were inflicted on the planet's superorganism by humans and thus document the process leading to the Necrocene era. Wounds and scars observed from three different perspectives: vertical, horizontal, and microscopic are traces commemorating the threatening actions of mankind. These are traces that are not seen on a daily basis because you cannot see radiation or disease with the naked eye, you can only see their remnants. But that is also why they are invisible, and therefore not remembered, because contaminated areas cannot be entered. Everyone artist had to apply for the appropriate permits to enter the contaminated area, risking their health. Normally, nobody can go into this area to gaze at and document the result of the nuclear tests that have been done - how they've changed the planet by creating new rock formations and changing the terrain. The traces of ecocide left and documented from outside and inside show how versatile the contamination is. All artists point to a significant relationship between space/landscape and memory and the organism/body of the planet. They treat the memory of nuclear interference in the *biotic community* as an act of embodiment and a kind of archive. In the act of testifying and remembering they point to the relationship between the human being, the organism, and external factors, such for example as the wind, which carries radioactive elements outside the contaminated area. The fact of showing the wounded,



deformed *superorganism* of the planet - thus an indication of the corporeality of what is human and non-human - allows for a metaphorical presentation of the essence of the problem and refers to the embodiment of trauma. Difficult experiences leave traces in the memory and imprint visible and invisible scars that can lead to diseases that go unnoticed at first. Traumas also lead to medicines - those about which Goin talks in his work and Jacques Derrida writes, emphasizing that the nuclear threat remains above all in the sphere of discourse. In his view, the horrific reality of nuclear conflict can only be a meaningful reference, never a real reference (present or past) of discourse or text. Despite this, nuclear weapons pose a threat and continue to appear in artistic and political discourse as an element of fear and control. Nuclear weapons thus remain at the ready, as Derrida, Porter, and Lewis (1984, p. 24) note: "The anticipation of nuclear war (terrifying as a fantasy or a phantasm of the remnants of lesser destruction) installs humanity - and through all kinds of transmitters even defines the essence of modern humanity - in its rhetorical state ". Moreover, as Derrida, Porter, and Lewis (1984, p. 23) continue (with which it is difficult to disagree): what is fascinating about the nuclear threat is that it is a phantasmatic projection of the irreversible, apocalypse that will lead to the destruction of the world, its culture and memory. The nuclear age, as interpreted by Derrida, is the era of deconstruction of what has been done so far, the thematization of trauma, threats, uncertainty, and the announcement of a catastrophe (Gajda, 2023a; Gajda, 2023b).

The works of Goin, Gowin and Niwelińska are therefore an example of how, using the phrase Serenella Iovino (2014, p. 106) – “material agency and discursive practices mingle in shaping the human and nonhuman world—bodies, landscape, and memory”. And since, as psychologists say, everything about trauma is embodied, artists had to focus on the embodied in order to talk about getting out of trauma. It is about the body and the changes caused to it that they told in order to find scars, X-ray them, and transform them. Therefore, talking about wounds, exposing them, and commemorating them is the beginning of the process of their decontamination and disinfection. Trauma and its bodily and psychological manifestations must be seen and witnessed in order to be acknowledged and healed - and that is exactly what the artists have undertaken. They show the destroyed *superorganism* of the planet and its countless wounded and diseased surfaces (both human and non-human). They prove that „[h]umans, nonhumans, and their stories are tied together. The emerging dynamics of matter and meaning, body and identity, being and knowing, nature and culture, bios and society are therefore to be examined and thought not in isolation from each other, but through one another, matter being an ongoing process of embodiment that involves and mutually determines cognitions, social constructions, scientific practices, and ethical attitudes...there is no simple juxtaposition or mirroring between nature and culture, but a combined >>mesh<<.” (Iovino & Opperman, 2014, p. 5).

To commemorate the traumatic events, the photographers used the planet's *superorganism* - its internal and external tissues, what is visible from the ground, but also from above or inside. Photographed spatial wounds testify to what has happened and, importantly, is still

happening, although the threat is invisible. At the same time, the photos tell of a space marked by the absence of what was, because unvisited and unnoticed, and thus forgotten. Therefore, their works talk about absence and use desolate and degraded surfaces for this purpose - this is how the artists talk about loss and threat. They indicate a wound in the body, but also a wound in the memory. Their aim was to show the traumatic experience and its traces in such a way that they become an essential element of biotic community. These places of memory, on the one hand, fulfill the function of archiving traces and memory of ecocide, and on the other hand, performative functions, preventing the destruction of the planet. In both cases, commemoration would consist in the repetition of events and their effects. Their works are particularly important today - they reveal and symbolize traumatic experiences deeply rooted in our collective consciousness and now more and more often - in the case of another Cold War, which was started by Russia's aggression against Ukraine - sprouting its branches outside and returning to the everyday discourse of fear.

Photographers' actions to commemorate the ecological catastrophe and remind about the still real, yet invisible, threat in these places and their emanation to other areas, as well as the destruction of the *biotic community* can be treated as a voice in eco-criticism. Indirectly telling about the specific effects of the destructive action of man, immortalizing the wounds inflicted by the human species with the *biotic community*, they point to the anthropocentric appropriation and transformation of the planet's *superorganism*. As Goin claim: The photographers cannot change – entirely – the course of history, but that one photograph from space of the planet earth sparked an awareness that we are alone and that we must take care of the home planet where we live. And while this is important, so is our dedication to visual literacy so that we can acknowledge that photography can be, left unchallenged, a tool of oppression, of colonialism, of desire and neglect (Goin for: Blanco-Arroyo, 2020, pp. 322-323).

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