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t's difficult to talk about things which seem obvious. It's difficult to shape meanings deeply rooted in language and culture. It's also difficult to step beyond hackneyed concepts and examine them in altered contexts. All this applies very much to the concept encapsulated in Polish czułość, English "tenderness." According to the conventional understanding of the notion, we can, for instance, speak tenderly about plants and to plants, gaze upon and write about them tenderly, take tender care of them, and so on. As a biologist, I'm afraid that as I continue writing about tenderness, I will strip it down to its elements, analyze them, force them into the framework of a more general theory and attempt to operationalize it. Tenderness can be approached in two ways: as objectifying the subject of investigation, or as an emotional reluctance to engage with it. Let's call these the "tender-bereft" and "tender-aversive" stances, if you will.

As a botanist, I should probably be particularly attentive to plants, but when I think of them in such terms, I have to readily admit that they actually receive far more tenderness from my wife - a scholar of the humanities. I am a keen observer of trees and have been giving them plenty of attention and even dedication for many years. But all this interest, engagement and even sacrifice doesn't actually concern the trees – it concerns me. Rather than giving them agency, my research strips them of it. I name and analyze, I seek to identify mechanisms concealed within these huge, majestic, long-living organisms, to snatch their secrets, expose them, rob them, and I do all of this with no feeling or soul, in a "tender-bereft" way. I suspend my emotions as I work, just as one might take off a coat as one enters a lab. I am in control of the situation, and as I leave, I pick up my tenderness along with my coat. After all, these kinds of investigations require a kind of intelligence stripped of

In our everyday lives, outside the lab, we tend to give agency to the subject of our attention, cementing our relationship with it; we give it special treatment and recognize its right to share time and space with us – in short, we give it equal status. Such tenderness would be intentional and conscious. Bestowing tenderness on someone or something is equivalent of taking care of them, supporting and ensuring their

But it is also worth considering the existence of natural, unintentional tenderness existing beyond words. Is such a thing possible? If, taking a cue from Tokarczuk, we assume that our soul is a tender narrator, then to transfer this tenderness onto that which is subconscious, unintentional and natural we would have to assume everything has a soul. So, let us assume it does.

### Stressors

Let us start from the ability to feel, or even further back, from responsiveness – or, better still, let's put responsiveness at the start of our story. We have to realize that at its foundations lie quantum energy and matter, atoms, molecules and macromolecules. Their vibrating, processual nature allows them to respond to changes in their environment abounding with myriad forces: from the gravitational to the weak and strong electromagnetic forces, which have an effect on all systems. Although these forces have individual names and scales, in this article I will refer to all of them as "stressors." Some will have a very weak effect and these interactions will be negligible, imperceptible to "adaptive systems" (taken here to mean any conscious or unconscious being / any conscious or unconscious process). Such interactions are known as "neustress." This low intensity of a stressor is suboptimal for the functioning of the system and it prevents it from meeting its full potential. Once a stressor becomes more intense, it is known as a "eustressor" and its effect as eustress. This is a positive type of stress. Its intensity is in tune with the expression of internal potential and the system maintaining its essential properties. As its intensity increases we reach the conditions of "distress," the kind of stress that brings discomfort and burden, and limits the potential of the system, for example by making it difficult to adapt to its environment or forcing change. However, it does not go so far as to destroy the system. The next stage along the continuum is "critical stress," causing structural degradation and threatening the very integrity and coherence of such unconscious existence. The final stage is "lethal stress," bringing irreparable system damage and disintegration.

We can assume that this typology describes the sensitivity-based relationships in unconscious beings. These relationships occur between an unconscious environment and its internal elements. The internal and external systems adapt to one another dynamically, and as long as the environmental conditions remain



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within certain boundaries, the relationship is adaptive. While neustress, eustress and distress are all adaptive, it is only eustress which can be described as protective, delicate, gentle – in other words, tender.

If this is how we define tenderness of an (unconscious) environment towards unconscious internal beings or processes, can these internal processes also be tender towards their unconscious environment? It seems to be the case. If they are in harmony with other elements co-creating this environment, they respond to the environment with stress at an optimal level for its internal metabolism – in other words, they are eustressors. They relax internal tension and form the

Typology of relationships of tenderness among conscious beings

	а	b	С	d	е	f	g	h
a1	a1 a	a1 b	a1 c	a1 d	a1 e	a1 f	a1 g	a1 h
b1	b1 a	b1 b	b1 c	b1 d	b1 e	b1 f	b1 g	b1 h
c1	c1 a	c1 b	c1 c	c1 d	c1 e	c1 f	c1 g	c1 h
d1	d1 a	d1 b	d1 c	d1 d	d1 e	d1 f	d1 g	d1 h
e1	e1 a	e1 b	e1 c	e1 d	e1 e	e1 f	e1 g	e1 h
f1	f1 a	f1 b	f1 c	f1 d	f1 e	f1 f	f1 g	f1 h
g1	g1 a	g1 b	g1 c	g1 d	g1 e	g1 f	g1 g	g1 h
h1	h1 a	h1 b	h1 c	h1 d	h1 e	h1 f	h1 g	h1 h

basis of processes of adaptation to the meta-environment, which exists beyond our unconscious, closest environment. Therefore, we can talk about a hierarchy of caring, tender environments, providing conditions for optimal, harmonious functioning of adaptive systems within comfortable surroundings.

#### Relations of tenderness

To try to capture the complexity of potential relations concerning tender sensitivity, I will propose a simple typology:

- a) a conscious being showing and accepting sensitivity
- b) a conscious being showing but not accepting sensitivity

- c) a conscious being not showing but accepting sensitivity
- d) a conscious being not showing or accepting sensitivity
- e) an unconscious being showing and accepting sensitivity
- f) an unconscious being showing but not accepting sensitivity
- g) an unconscious being not showing but accepting sensitivity
- h) an unconscious being not showing or accepting sensitivity

This typology can be expanded into a typology of relations between:

- 1) conscious beings *a-d* and *a1-d1* (from *a1 a* to *d1 d*)
- 2) conscious and unconscious beings *a-h* and *a1-h1* (from *e1 a* to *hi d*)
- 3) unconscious beings *e-h* and *e1-h1* (from *e1 e* to *h1 h*)

Such a matrix has 64 solutions that define morphological types of the sensitivity-based relations between two equivalent or non-equivalent systems. It includes such extreme relations as mutual acceptance and showing of sensitivity on the part of conscious beings, and a complete absence of acceptance or showing of sensitivity on the part of unconscious beings. It appears that a "tender narrator" (defined here as a conscious being showing and either accepting or not accepting tenderness – a or b) may participate in 15 (dark yellow) or 28 (both light and dark yellow) different types of relations out of the 64 possibilities.

### Tender choices and values

The typology can be developed further, for example by splitting the category of unconscious beings into living and inanimate beings, or conscious beings into sentient and non-sentient beings. Even though all such divisions are subjective and arbitrary, they may still be justified if we are faced with the need to make decisions which result in changing or adapting our environment. In this case, the categories can facilitate choices which are not only justified but also take into account our emotions, in other words tender choices. We frequently face such decisions when economic and environmental issues are at stake. We confuse definitions and categories; we treat something which is invaluable as valueless. What's worse, we are prone to seeing invaluable things only as a sum of the elements of the invaluable whole, and we have the audacity to say that everything is worth only whatever the market is willing to pay. This attitude is far too common and is perfectly described as "soulless," and given the complexity of the relations we are discussing, it would be objectifying, or "tender-bereft" as we have called it. Although it may appear rational, at its core is a failure to understand the consequences it will have on

the environment, destroying all that is cohesive and harmonious – and thus invaluable.

What follows from my typology of tender sensitivity? It seems to me to offer an interesting diagnostic tool allowing us to define our relations with other conscious and unconscious beings with a high degree of precision. It means we can address the degree to which we subjectify our internal and external environment. A good diagnosis forms the basis for finding the point which we see as reasonably expected. Since there are many possible routes to this goal, we can choose one that is the shortest or perhaps that is the least painful and stressful. Of course neither awareness of where we are (our emotional attitude to ourselves, our friends and family, other conscious or unconscious beings around us) nor setting a goal we intend to reach can replace the effort, work and practice required to bring about internal change, but it's a good start.

#### Tenderness as order

Understood this way, tender sensitivity would reinstate balance and order, and bring harmony, peace, respite and comfort. This is a collective description of processes supporting complexity and guaranteeing the stability of systems such as cells, individuals, populations, ecosystems, biomes, the biosphere, hydrosphere, atmosphere and geosphere, Earth, the Solar System, the Milky Way, galaxies held together by gravity and the entire Universe. It is sensitive to our closest environment, separating the system from all others which are hostile, dangerous and damaging to it. It means they are unable to create a gradient reducing or relaxing tension between the system and its environment. This is why space is not tender towards living cells without many intermediary systems and environments. Although the Universe is no more tender to our biosphere or Earth, it does provide a supportive environment for our galaxy, which encompasses the Solar System where Earth orbits the Sun at the exact distance which supports the existence water in its solid, liquid and gas states. Earth orbits the Sun and rotates around its own axis, which results on two important cycles - daily and annual - which create a tender environment supporting life. Additionally, Earth's gravity is affected by the Moon, which in turn causes tides and cycles forming an important element of ontogenesis and supporting the evolution of life on our planet.

# Tenderness of the Sun, Earth and plants

Over the course of millions of years, plants have evolved to draw upon the tender sensitivity of the Sun and Earth. This power enabled them to harness the energy and water surrounding them, and, over time, to leave the oceans – their original environment – behind and start inhabiting land. They have become a fundamental element of the biosphere and created an infinity of (time)spaces – niches which tend to and feed myriad beings. The thin layer of life surrounding our planet may seem to us, as individuals, powerful and eternal, at times harsh, even brutal and cruel; but from the perspective of the Universe it is fragile and precarious, tender and protective. Life on Earth would be impossible without the tender sensitivity of the Sun and the planet itself. Complex organisms such as humans could not have evolved without the tenderness and endurance of the biosphere.

We have been created by the sensitivity of the biosphere, and have been subject to its natural cycles for millions of years. We were once born and died to the rhythms marked by nature, and, over time, we have also created our own environments and niches supporting countless cultures and languages. Without the tenderness we extend to one another, it is impossible to imagine the development of social relations or complex societies. The development of culture showed us that life can be enjoyable, safe and long,

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providing we overcome pain, suffering and death. And we identified nature and superstition as being the root of all our problems. The process of desacralizing nature and transcendental reality was an essential element of objectifying nature and subjecting it to study, analysis and exploitation. The development of machines brought rapid social, economic and natural changes, and it allowed us to create a different kind of tender environment, putting a wall between us and the natural world: the culture of technology. We created tools which brought us out of our tender (subjective) relationship with nature and gave us a sense of uniqueness, autonomy, and impunity. We waged a war on nature, which in certain cases has been spectacularly successful. We are well-fed, we live longer lives, our children don't routinely die at a young age, our lives are safer than they've ever been, and we have made great progress in areas such as democracy, equal rights, freedom and justice which make our lives better.



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This has gradually created a metasystem which has objectified us, taken away our dignity and agency, torn us from our pedestal and desacralized us. The world of machines has weakened or destroyed many basic tender relations which must exist between physical humans and their physical environment (the natural world and the biosphere) – relations which I have described as sensitive eustressors. Tensions between our consumerist civilization and nature have been building up for decades, and those relations are increasingly reaching worrisome or even critical levels. We are seeing that in the long run there is no way of winning this war started by our ancestors. We seem to be surprised that even though we have at our disposal the most energy in humankind's history, vast capital, legions of scientists, state-of-the-art technologies and education we are still unable to solve problems such as the climate crisis, collapsing biodiversity and deepening social and economic divisions. At the same time we are completely ignoring that these problems are actually a direct result of the fact that we have all these

things at our disposal. We behave as though we truly believe that we can save ourselves from drowning by pulling on our own hair, like Baron Munchhausen.

#### The tender narrator

Unfortunately, this oppression cannot be eliminated just by increasing efforts and redirecting the necessary resources (which are also themselves the cause of the current situation) for remedying the effects wrought by these causes. Something extremely important is missing. And this is why, in the ecotone between the world of machines and the world of nature, the "tender narrator" has been discovered. By redefining the relationship between humankind and our environment, this narrator is once again giving nature agency in the area of signs and symbols, imagination and boundless creativity. The narrator is helping us understand that the path we are currently upon is leading us astray, towards an abyss, and while this path seems so rational, it is also thoughtless.

