

Mozaic of Phylosophy and Physicis in Tourism with View to Climate

[http://doi.org/10.21272/fmir.5\(4\).39-50.2021](http://doi.org/10.21272/fmir.5(4).39-50.2021)

“The only acceptable point of view appears to be the one that recognizes both sides of reality the quantitative and the qualitative, the physical and the psychical - as compatible with each other, and can embrace them simultaneously.”

Wolfgang Pauli, *The Influence of Archetypal Ideas on the Scientific Theories of Kepler*

Ana Njegovanović,

Master of Economics, Lecturer at Faculty of Biotechnology in Zagreb; Faculty of Economics and Tourism, University of J. Dobrila in Pula, Croatia

Abstract

Tourism is attracting increasing attention of various scientific disciplines with the aim of studying phenomena in tourism from a specific disciplinary point of view. On issues in the field of philosophy and tourism, we find a large gap because, unlike many and diverse other scientific studies, a philosophical approach to tourism is practically non-existent. In understanding the complex concept of space and time, we need a basic knowledge of physics and neuroscience. Space and time in neuroscience remain separate coordinates to which we attach our observations. Spatial-temporal sequences of brain activity often correlate with measures of distance and duration, and these correlations may not correspond to neural representations of space or time. MIT neuroscientists have identified a brain circuit in the hippocampus that encodes the time of the event, that is, pyramidal cells (green) have been discovered in the CA2 region of the hippocampus that are responsible for storing critical time information. When we experience a new event, our brain records the memory not only of what happened, but also of the context, including the time and place of the event.

Keywords: tourism, philosophy, quantum physics- space-time, brain, climate.

JEL Classification: G4, G41, Q5, Q54.

Cite as: Njegovanović, A. (2021). Mozaic of Phylosophy and Physicis in Tourism with View to Climate. *Financial Markets, Institutions and Risks*, 5(4), 39-50. [http://doi.org/10.21272/fmir.5\(4\).39-50.2021](http://doi.org/10.21272/fmir.5(4).39-50.2021)

Received: 20 October, 2021

Accepted: 16 November, 2021

Published: 30 December, 2021



Copyright: © 2021 by the author. Licensee Sumy State University, Ukraine. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>)

Introduction

Tourism is attracting increasing attention of various scientific disciplines with the aim of studying phenomena in tourism from a specific disciplinary point of view.

On issues in the field of philosophy and tourism, we find a large gap because, unlike many and diverse other scientific studies, a philosophical approach to tourism is practically non-existent.

In understanding the complex concept of space and time, we need a basic knowledge of physics and neuroscience. Space and time in neuroscience remain separate coordinates to which we attach our observations. Spatial-temporal sequences of brain activity often correlate with measures of distance and duration, and these correlations may not correspond to neural representations of space or time.

Tourism is the subject of many different scientific disciplines from economics, history, spatial planning, sociology, psychology and many others. We have incorporated philosophy and physics into the arrangement of micro mosaics by performance.

When we talk about space-time, it is often described as reminiscent of rubber. It is a link to Einstein, who as he developed his theory of general relativity realized that the force of gravity is the result of curves in the fabric of space-time.

Massive objects – like the Earth, the sun, or us – create distortions in space-time that cause it to bend. Curves

limit the ways in which everything in space moves, because objects must follow paths along this distorted curvature. Gravity motion is actually motion along a space-time turn.

Despite its extreme complexity and intricacy, relativity remains the best way to explain the physical phenomena we know about. Scientists know that their models are incomplete because relativity has not yet been fully aligned with quantum mechanics, which explains the properties of subatomic particles with extreme precision, but does not involve the force of gravity.

Quantum mechanics rests on the fact that the tiny parts that make up the universe are discrete or quantized. So photons, the particles that make up light, are like small pieces of light that come in different packets.

Some theorists speculate that perhaps space-time also comes in these quantized parts, helping to bridge relativity and quantum mechanics. Researchers at the European Space Agency have proposed an international Gamma-ray astronomy mission for quantum space-time research (GrailQuest) that would fly our planet and perform ultra-precise measurements of distant, powerful explosions called gamma-ray bursts could detect the nature of space-time up close.

Such a mission might not have been launched for at least a decade and a half, but if it had, it might have helped solve some of the greatest mysteries left in physics.

Thus, there is great interest in researching and developing new protocols that utilize quantum resources for improved information processing, while experimentally significant progress has recently been made in identifying the most appropriate platform for each task, as well as encouraging technology toward progressively larger quantum systems. This means providing an opportunity for scientists, researchers and engineers to publish their current innovations, engineering achievements and some of the most modern applications to solve these problems in the field of quantum information and computing.

Dissemination is also a sign of the strength of research interest but can also be a potential sign of weakness in defining the topic of its key research issues and appropriate research methods. In this sense, the fragmentation of tourism research may contribute to his skepticism. Attempts to restrict tourism in a disciplinary sense can mean the wrong path because a disciplinary approach obscures the rich understanding that can be gained by applying a wide range of disciplines. If we continue to implement global or general theorizing of tourism at the expense of a more applicable understanding of some components of tourism, we risk alienating the industrial and governmental partners that form the basis for the work. Urry(1981) noted that many fragments of the modern world are interconnected, but only if we choose to seek connections. Tourism develops in context, which means that there are no final or universally applicable ‘solutions’ for tourism, and also to understand that every form of tourism, every tourist place and the experience of every tourist is different. There is a need to study the mosaic of activities, repetition of activities and performance, especially on local (destination) scales, and world-scale industry. We can call this paradigm a tourist mosaic. By observing the excavation of a Roman mosaic we can share the pleasure and excitement of archaeologists at the discovery. Also a real discovery of what craftsmen created two thousand years ago from thousands of tiny cubes of brightly colored stones. Although every stone is important they have a lot more sense when seen together as components of a mosaic.

Looking at the present, we can share the tremendous excitement with engineers in developing technology that plays a vital role in sending more tourists into space, and several influential trends will determine the future of space tourism, along with the progress we make on and off our home planet.

The term “scientific science of tourism” is receiving increasing attention in this field (Jafari and Aeser, 1988, 1990, 2005). In the first phase, there is a large volume of bibliographic production that provides encouraging prospects on the paths of maturation of this discipline. Some epistemologists warn that tourism research has failed to develop a unified consensus on what tourism is, as well as a lack of coherent epistemology to help organize the material produced. In this respect, tourism is now subject to an atmosphere of “indiscipline” where the knowledge produced leads to scattered (limited) conclusions.

It is the human brain, a complex system that not only talks about time but also creates it; it builds our sense of chronological flow and allows for a “mental journey through time” - simulations of future and past events. These functions are essential not only for our daily lives, but also for the evolution of the human race: without the ability to predict the future, humanity would never have made tools or invented agriculture. The brain is designed to navigate our ever-changing world by predicting what will happen and when (Buonomano, 2017).

How to understand the complex concept of space and time? Space and time in neuroscience remain separate

coordinates to which we attach our observations. Spatial-temporal sequences of brain activity often correlate with measures of distance and duration, and these correlations may not correspond to neural representations of space or time. Neither the instruments nor the brain feel space or time. Neural activity can be described as a series of events without resorting to the concepts of space or time.

Time flies during enjoyable activities, but slows down when we are bored. Highly motivated states, new situations, and focused cognitive activities (such as speech maintenance) are associated with underestimation of time. In contrast, aversive situations, fatigue, and drowsiness are associated with prolonged subjective time, possibly influencing dopaminergic signaling.

Further research on how to ensure the development of tourism in the 21st century requires new knowledge, so we suggest that new knowledge from philosophy, physics and neuroscience be included in the development of strategies, as a new class of tourists is formed. Namely, the current COVID-19 epidemic will have a significant impact on the tourism industry and will provide new challenges for the sustainable development of tourism. Companies in the tourism sector that survive the pandemic will need to make their products more resilient to future pandemics - which health experts warn will continue to happen - and be able to adapt to projected changes in consumer interest, which will include greater demand for sustainable products. In the post-covid world, changes in travel and tourism are inevitable and are likely to be driven by a combination of consumer choice, destination availability and regulatory change, so these issues also need to be addressed in the future, including sustainable consumption practices that need to be further promoted and fully integrated. The tourism sector by including international carbon footprint agreements or other restrictions.

Climate change is ahead of us, and the consequences of delayed action and low sectoral preparedness for the tourist community should be particularly worrying. The destinations and lives of millions of people dependent on tourism continue to be threatened, as well as the sector's contribution to sustainable development goals and international development ambitions after 2030.

Equally important issues for future research are related to corporate social responsibility, corporate governance and business performance excellence models that can make valuable contributions to sustainable tourism development if properly addressed by the business sectors (Popescu; Popescu & Popescu).

1. Philosophers are tourists, scientists are researchers

The quote Philosophers are tourists, scientists are researchers by Richard Feynman helps us to get closer to a part of philosophical thinking about travel in tourism, but also about spreading global consciousness.

A dialogue of science and philosophy is still necessary today. In the past he played a very important role in the development of science, especially in moments of great conceptual changes in theoretical physics (Galilei and Newton, Faraday and Maxwell, Bohr, Heisenberg, Dirac and Einstein). Developed philosophical consciousness again proves necessary. This also stands from a methodological point of view: the scientist always directs research with regard to ideas of an epistemological nature which he is more or less aware of. It is certainly better to be aware than to be seduced by a priori methodological views whose power we do not know. The scientific approach is constantly looking for the best way to think in the world. It is an exploration of thought forms. The source from which efficiency is drawn. This does not mean that scientific answers are always correct, but that, in areas where scientific thought is applied, they are by definition the best of all that we have come up with. We should constantly strive for better understanding, broadening horizons, finding a broader perspective. This is not very convenient or natural, because we are in a way captives of our own thoughts.

Tourism is attracting increasing attention of various scientific disciplines with the aim of studying phenomena in tourism from a specific disciplinary point of view. We are witnessing the development of the scientific discipline of tourismology as an integrated and systematic approach to tourism. However, when the question arises about the purpose and reasons of tourism, as well as about any other human activity, and even about life itself, we inevitably leave the realm of pure science and enter the ambivalent world of philosophy. When it comes to tourism, we find a big gap in the field of philosophy because, unlike many and diverse other scientific studies, a philosophical approach to tourism is practically non-existent.

There are two main motives for “journeys for change”: the search for local experiences, authenticity, transformation and the “journey to show”: the desire for moments and destinations that can change (World Tourism Organization, 2019 report). According to the above, philosophy can refer to the exploration of the unknown.

In one of his books on idealism, 18th-century Irish philosopher George Berkeley compared his research to a “long journey,” which involves a difficult journey through the “wild labyrinths of philosophy”. The Scottish Enlightenment philosopher David Hume offers similar reflections on half of his most radical skeptical work, *A Treatise on Human Nature*. The “philosophy of travel” is not a thing. This is not a topic of lectures or conferences - there is no list of great philosophical travelers. In *The Meaning of Travel: Philosophers Abroad*, Travel, and Philosophy have been enjoying quiet love for centuries, entangled together. Both travelers and philosophers can aim to push the boundaries of their knowledge - to see what the world is like. Adventure travelers crave new places - even Earth's unexplored oceans and planets around distant stars. It may make sense to quote Lao Tzu, Tao “A good traveler has no fixed plans and is not intent upon arriving”. Radical philosophers ask new questions and discuss old assumptions. What time is it? Or matter? Or goodness?

Today's travel seeks new answers to the questions asked: what is the ethics of doom tourism in places affected by climate change? Can we imagine what other, inhuman minds are like? How could space travel affect us? Briefly; as travel has moved philosophy forward, philosophy has pushed travel practices in new directions. From time to time a new philosophical idea encourages travel to certain places or in certain ways. Thus, *Mountain Glory* claims that since the end of the 17th century, a new theory of space has encouraged tourists to visit the mountains. According to this “absolute” theory, space is God's immensity or infinite presence.

Richard Feynman points out that those who only think and talk but who are removed from any real work related to their thinking and talking, travel the world like a passenger on a foreign travel bus: they observe the landscape and people from air-conditioned comfort, but never they do not taste, touch, smell or soil your hands in any way. The tourist sees the landscape and its people and creates ideas and opinions about them, but since they never get off the tourist bus and interact with the landscape and its people, they never really understand the landscape and its people (nor do they ever really check the validity their ideas and opinions).

Feynman suggests that a scientist, on the other hand, because of his profession, cannot only travel by bus, but must also explore the surrounding landscape and people. The scientist not only thinks and talks, but must: namely, they must be willing and willing to get their hands dirty so as not only to see from the comfort of a tourist bus, but also to get off the bus and taste, touch, and smell. Through an iterative process of thinking and imagining (hypotheses) and talking (with others to question and challenge one's own thinking) and then (experimenting and observing the results of experimentation), the scientist truly gets to know the landscape and its people. Experimenting and observing interactions is also exploring the landscape and its people.

Let's open the big drawer of global workspace theory(IIT). To understand Feynman's “Philosophers are tourists, scientists are researchers, ” IIT does not portray consciousness as information processing, but as the system's causal power to “make a difference toward itself. Consciousness is “the ability of a system to be affected by its own state in the past and to influence its own future. The more the system has cause-and-effect power, the more conscious it is. ” (Koch). 17th century. “The only thing given to me is my experience” (Koch). “It is Descartes' central insight. ”

Consciousness is a fundamental, elementary property of living matter. It can't be derived from anything else. Christof Koch, Allen Institute for Brain Science.

Philosophy offers us tools for thinking, and complexity - as an epistemic paradigm for thinking things through - allows us to better see how seemingly different things are interconnected. Thus, climate change and the Covid-19 pandemic are closely related in their multiplier effects and feed on each other (ecosystem destruction makes us more susceptible to viral pandemics, Khalil et al. 2016).

However, one of our limitations as human beings is that we are full of cognitive misconceptions: we better understand linear systems with direct causal connections instead of complex systems. Based on limited evidence, our intuitive thinking (system) acts as a machine for drawing conclusions trying to achieve coherence. Thus, the combination of a system that facilitates coherence and a lazy system (a more deliberate way of knowing) forces us to accept intuitive but often inaccurate impressions and beliefs.

The quantity and quality of data are not important when behavior that requires coherence prevails, and since we are immersed in a very complex world, it is very difficult to get valid data. That is why WYSIATI, which stands for “what you see, everything that exists”, is one of the hallmarks of our cognition (Kahneman 2011) and leads us to deny the serious impact of climate change at the systemic level. We cannot consider something as serious as climate change when we are not affected by the “here and now” or in other words, because they are less personal and distant in time.

And all of this can be applied to the Covid-19 pandemic, as evidenced by the overconfidence of many Western countries that have done nothing to stop the spread of the virus through February and early March 2020. Because SARS-CoV-2 is a microscopic agent that they don't see and initially affected only remote populations and countries; WYSIATI makes us think it's a problem that doesn't concern us.

Philosophy not only gives us the tools to think and move from a given linear way of thinking to complex, but it also understands us that the Covid-19 pandemic is closely linked to climate change. Philosophy can also teach us the ethics of climate change: how the concepts of justice and goodness apply to climate change (Broome 2012). The ethics of climate change makes us think about how to deal with uncertainty, impact on future generations, the value of human lives, etc., and imposes a moral obligation on individuals and governments to reduce, remove, or replace every carbon footprint they create.

In the 21st century, philosophical roots are inseparable from education. Shaping the education system in the interest of all parties. Based on educational philosophies, the perspectives of academics on ontological and epistemological dimensions are revealed, looking for answers to the goal, role, responsibility and problems of tourism education.

2. Conceptualization of tourism in the framework of quantum physics with view to time-space

If we explore tourist travel and destinations as dynamically evolving complex systems that encompass numerous factors and activities that are interdependent then their relationships take place as a nonlinear approach. While the traditional approach to tourism research has more or less taken place in linear approaches where variables and relationships are monitored to predict future outcomes by simple models by deriving implications for management organizations.

The transformations taking place today in the science of global change and complexity theory require new knowledge from the spheres related to complex adaptive systems, the necessary withdrawal from reductionism, extensive integration of human and natural systems, new interpretations of sustainability and the emergence of sustainability science. for contemporary 21st century tourism leading to re-conceptualization with new tools in shaping the tourism industry. Briefly; overcoming the position of traditional tourism to develop long-term stakeholder relationships is key to transformational change. The adoption of wider networks connects researchers with relevant issues facing society, develops reciprocal learning capacities and creates inclusive sustainable partnerships

There is an imperative need to align socio-economic interests with the ecological systems of the planet Earth, which is the fundamental goal of sustainability, although there is still significant damage to the environment (Klein, 2010), we still see progress towards sustainability in tourism; , Legrand and Chen, 2013). Yet tourism is a very influential industry (Hall, 2008). With the transition of humanity from the Holocene to the Anthropocene (Gren & Huijbens, 2014), there has been a need to rethink and re-adopt a system of thinking for the transition of socio-economic paradigms due to habitat loss, threats to biodiversity and climate change. Preservation of our cultural and ecological diversity is necessary for further development and well-being for life, and is the foundation of tourism.

A 2005 scientific paper by C. Michael Hall, "Time, space, tourism and social physics" can be an example of inspiration and guidelines for analysis from the aspect of physics in tourism. The thought of space leads us to the image that it is just a void - the backdrop of everything else and time that simply flows constantly. We need to understand the importance of space-time to understand why we might need to get involved in developing future strategies in tourism. Space and time form a system of astonishing complexity that can defy our most ardent efforts to figure it out. Space-time weaving is a conceptual model that combines three dimensions of space with a fourth dimension of time. According to existing theories, space-time explains the unusual relativistic effects that occur when traveling close to the speed of light, as well as the movement of massive objects in space. Space-time is known as Minkowski space-time and serves as the background of calculations in both relativity and quantum field theory. The latter describes the dynamics of subatomic particles as fields, according to astrophysicist and scientific writer Ethan Siegel.

Today, when we talk about space-time, we often describe it as something like a tire. This comes from Einstein, who during the development of his theory of general relativity realized that the force of gravity is the result of curves in the fabric of space-time. Massive objects – like the Earth, the sun, or you – create distortions in space-time that cause it to bend. These curves, in turn, limit the ways in which everything in the universe moves, because objects must follow paths along this distorted curvature. Gravity motion is actually motion

along space-time bends. Some theorists speculate that perhaps space-time itself comes in these quantized parts, helping to bridge relativity and quantum mechanics. Researchers at the European Space Agency have proposed the International Laboratory for Quantum Space-Time Research (GrailQuest) for gamma-ray astronomy, which would fly around our planet and perform ultra-precise measurements of distant, powerful explosions called gamma-ray bursts. times.

The intellectual and thought game is in Lee Smolin's thinking in his book *Time Reborn*. "If we think the future is already written, then the things that are most valuable are that we are people of illusion along with time," Smolin said. make choices in life. It is a precious part of our humanity.

If the real metaphysical picture is that only atoms move in a void, then nothing is new and nothing is surprising - it is just a rearrangement of atoms. There is a loss of responsibility as well as a loss of human dignity. ("If I think the future's already written, then the things that are most valuable about being human are illusions along with time," Smolin said. "We still aspire to make choices in life. That is a precious part of our humanity. If the real metaphysical picture is that there are just atoms moving in the void, then nothing is ever new and nothing's ever surprising - it's just the rearrangement of atoms. There's a loss of responsibility as well as a loss of human dignity").

And finally, what space and time do we have in mind when we make an effort to expand our knowledge to new knowledge that is becoming an imperative in tourism as well.

For Immanuel Wallerstein, 1997 'time and space are the most elementary parameters in our existence' and key concepts that influence our understanding of human mobility. Contributions to the understanding of the role of space in the study of tourism are made by Pearce 1987; Smith 1995; Hall and Page 2002, however, the implications of interactions between different spatial scales and the ability to generalize from one scale to the analysis of another in the study of tourism phenomena have been little discussed, but even today there is insufficient research. Consideration of the role of time as a factor in tourism in their analyzes was contributed by Smith (1995); Hall (2005) and Krakovera, (2002). The lack of explicit attention to space and tourism issues is also evident in the awareness of the implications of time and space on tourism consumption and production. Movement through space and time in the basic 'geographical' models of tourism systems Leiper (1990) Fridgen, 1984). In fact, it should be borne in mind that space and time are inseparable, because when one travels in space, one also travels through time. It is important to better understand the phenomenon of tourism, through tracking tourists or tourist supply chains through time and space to and from the tourist area to the destination location and at the destination (or destinations) However, this is not the case.

Studies in tourism are mostly destination-based. They often ignore biographies of individual tourism (mobility) as well as reports at the macro level. The analysis of the Geography of Tourism raises fundamental questions with regard to the epistemology of tourism studies. How well can we generalize from the specific to the general in tourism when we know that the evidence on which many of our works are based is not only spatially specific, but also time-specific in relation to the stages of the travel process? Many surveys in tourism also do not notice the time aspects when surveys were conducted regarding the overall mobility of respondents. Research conducted at different stages of the travel process can give us significantly different results in terms of tourism psychology. Can we place the understanding of tourism consumption in the patterns of mobility and real estate they experience or tourism production, unless we can map the multiscale nature of supply chains and value chains? Time and space in tourism Time is obviously a vital component in travel decision-making and tourism research. In terms of understanding the process of individual travel, research conducted at different stages of travel is likely to yield different results. Perhaps more importantly, our knowledge of the entire trip is extremely weak with several studies dealing with the behavior of tourists in all five phases relative to the same sample or even examining more than one phase. There may be significant operational difficulties in terms of multiple research interventions, but even this does not adequately explain the lack of longitudinal analysis in tourism studies (Mitchell 2005). There is relatively little attention to how previous travel experiences affect later behaviors and experiences. The potential significance of the notion of travel career has been identified in the tourism literature (Pearce 1988; Ryan 1998), but has not been significantly assessed in subsequent research (Pearce 2005). (2004) and Hall (2005a,b) argued that tourism should be placed in the context of overall human mobility, not just previous tourism experience. Such an approach suggests that tourism studies should not only examine links to mobility such as diaspora, educational travel, health travel, migration, mobile labor markets, return migration, and transnationalism (Baldassar 2001; Hall and Williams 2002; Müller 2002; Stephenson 2002; Duval 2003; Coles and Timothy 2004), but also daily routine mobility.

Such as Coles et al. (2004) argued that research plans in the social sciences of tourism should understand higher-level mobility theories that examine the mobility during the lives of interacting individuals, as opposed to existing structured theories of mid-range motivation, decision modeling, and even destination image. are useful, they do little to bridge the rather significant gaps in our knowledge of tourism as a representation of modern social systems. Tourism studies, they suggest, must be prepared to formulate a coherent approach to understanding the meaning of a range of mobility undertaken by individuals rather than tourists. One implication of this approach means that tourism should be recognized as only one form of temporary mobility that occurs in space and time. Consideration of mobility in the social sciences is not new, Wolfe (1966: 7) noted that “most recreational students concentrate on the reasons for travel, but few have much to say about the importance of mobility.

Mobility is “at the heart of certain aspects of leisure time today - especially outdoor recreation and, by definition, recreational travel”. Cosgrove and Jackson (1972: 34) writing about the development of resorts, note that “Fashion” can be shown by the motivation of social differences, which is characterized by geographical segregation. Within such separate areas, an individual initiative can then explain variations in development. The geographical mobility of different social strata results in constant changes in the position and scope of these isolated areas.

3. How the human brain encodes time-space

“... henceforth, space by itself, and time by itself, are doomed to fade away into mere shadows, and only a kind of union between the two will preserve an independent reality”. Hereman Minkowski

The influence that Einstein's ideas had on the academic and public understanding of the physical universe is well known, few people are aware that a similar revolution against space and time is taking place in the fields of experimental psychology and neuroscience. Space in the Brain Spatial cognition is the study of the way the cognitive architecture of the mind perceives, organizes, and communicates with physical space. The greatest historical step towards our modern ideas took place within Immanuel Kant (1781/1787). Kant argued that space as we know it is a pre-consciously organizing feature of the human mind, a scaffolding on which we can understand the physical world of objects, expansion, and movement. In a sense, space for Kant was a window into the world, not a thing that could be seen in it. While philosophers following Kant debated his theory of space perception, it served to lay the groundwork for twentieth-century empirical research on how the mind constructs the space we experience.

In the early 2000s, direct evidence supporting the role of the hippocampus in analyzing and sequencing episodic events began to emerge from animal and human research. Using a range of experimental methodologies, the researchers found that the hippocampus is crucial for encoding a sequence of visual stimuli – either computer screen images or landmarks in the environment – expressing unique patterns of activity during route segmentation overlaps through the environment. The latter finding is particularly important because it opposes a purely cellular model of hippocampal function during navigation. In such a model, hippocampal activity could be expected to be consistent during the overlap of route segments, since a person's physical position is the same through these parts of the environment. This suggests that the hippocampus is involved in representing more than a mere spatial arrangement of the environment. A key step in identifying the types of additional information that the hippocampus processes is made by Howard Eichenbaum and his colleagues at Boston University. In a 2011 paper, the authors proposed a new type of population of neurons in the hippocampus that they labeled as ‘weather cells’.

The knowledge and research of scientists indicates that the hippocampus is able to adapt its activity to both the spatial and temporal aspects of experience, depending on what type of information needs to be encoded or recalled. If our experience of time and space shares similar neural correlates, a fundamental question arises: are space and time truly different in the mind or are they the product of a general neurocognitive system that allows us to understand the world? While Kant had much more to say about space than time, modern cognitive neuroscientists have begun to compose theories to address this issue. Demisa Hassabisa and Eleanor Maguire suggest that the primary function of the hippocampus is not to think about the past and the future, nor to move through space. Instead, through collaboration in a larger network spread across the brain, the hippocampus allows us to construct a view of the world in a spatio-temporal context that provides the ability to simulate past experiences to predict the future and ultimately use information to act directly in the present. However, although this primary role of generating spatio-temporal context has aroused the interest of significant scientists over the last decade, there may be differences between the perception of space and time. Our

perception of space remains stable, while time expands regularly due to the whim of attention - moments stretch and contract as we devote different degrees of focus to our actions in the world. Whichever side the truth resides, next year will undoubtedly provide a rich insight into how the mind represents space and time and whether the two are destined to give in to a single account of how we experience the world.

MIT neuroscientists have identified a brain circuit in the hippocampus that encodes the time of the event. The pyramidal cells of the CA2 region of the Hippocampus region are responsible for storing critical weather information. This means that the hippocampal circle helps maintain the memory timeline. When we experience a new event, our brain records the memory not only of what happened, but also of the context, including the time and place of the event. A new study by MIT neuroscientists tells us that memory time is coded in the hippocampus, so time and space are coded separately. An increasing body of evidence suggests that when we form new memories, different populations of neurons in the brain encode information about time and place. "There is an opinion that 'place stations' and 'time stations' organize memories by mapping information to the hippocampus. This spatial and temporal context serves as a scaffolding that allows us to build our own personal timeline of memory," (Chris MacDonald).

Tourism and travel experiences are a major contribution to the spread of global awareness and awareness, achieving sustainable development in an rapidly shrinking integrated world. Awareness is an area of theoretical speculation and discussion in the disciplines of neuroscience, philosophy, psychology, biology, quantum physics, and spirituality. Global awareness is needed to give context and vision to address the needs of today's world. It is a platform to integrate sustainability at the individual level and justifies a person's desire to travel as a consciousness-expanding experience. In this way, tourism can serve as a positive force for creating a truly sustainable future world. Global consciousness is a non-dualistic visionary goal for humanity, as well as for travel and tourism, that could move towards more sustainable outcomes than the reductionist practice of sustainable development has had in the past.

4. Tourism as a vector and a victim of climate change

Climate change is ahead of us, and the consequences of delayed action and low sectoral preparedness for the tourist community should be particularly worrying. The destinations and lives of millions of people dependent on tourism continue to be threatened, as well as the sector's contribution to sustainable development goals and international development ambitions after 2030. What tourism scientists and experts have done in the last 30 years is that they have not prepared the sector for the next 30 years. low carbon change and transitions. While we cannot make up for lost time, we need to be positive and beware of the traps of climate despair (Weschler). Tasks need to be addressed: improved communication and knowledge mobilization, (2) increased research capacity, and (3) engagement in strategic policy and planning. Sharpley points to "Open, sustainable tourism research", where research activities must become proportionate to the scale of local and global information needs so that the tourism sector can respond effectively and combat the climate crisis.

How much does climate change affect the way we travel?

People have long been driven by a desire to explore the planet and visit distant places. But given that environmental tourism is now calling into question our global habits indicating that it is a time of great change. Namely, it accounts for approximately 8% of global greenhouse gas emissions, a sector that is projected to continue to grow. Most people have an inner desire to explore our planet. Participation in tourism is becoming an increasingly complex sociological phenomenon because it is part of identity, it is part of leisure. In this age of social media, that kind of identity has improved. Much research has been conducted to the extent that tourists are willing to adjust their behavior. And even those people who regularly consume or behave ecologically. The research revealed that they actually temporarily forget their environmental data, that they behave like normal tourists. Yet there is some kind of environmental guilt, but despite that they keep traveling, they keep flying. When we can travel all the time, the meaning is lost. Prof. Richard Sharpley very plastically described "obesity of experience," in Europe and elsewhere, we become obese because of experiences. People will eventually start to understand how to enjoy tourism, do a little less and enjoy it when we travel.

How prof. Sharpley observes that tourism is: one of the many things we consume that we enjoy (part of a neoliberal economy based on growth, which is understood as a driver of progress, of development). There are numerous destinations, societies, countries around the world that are completely dependent on tourism. Consumption will be less in order to achieve balance in the world, so that we can achieve justice and fairness. Of course, it should be acknowledged that tourism is one thing in which there is no justice and fairness, because it is an ecologically very destructive activity enjoyed by a relatively small part of the world's population".

Mitigating the interaction between tourism and climate change depends primarily on technological change, but above all it also depends significantly on economic, political, social and structural changes.

Maybe the climate problems in the trip should end at what time it is?

Time is the realization of the logical rule "Time" in determining the cause of a series of events. Clocks in a mobile rigid system measure the corresponding (τ -) time of the clocks (Dowden- time "what the clocks measure"). The clocks are always at some points of the "coordinate time" in space-time, and the representations of the clock are extended relative to the absolute time on the inverse Lorentz factor; which in turn depends on the speed of the clocks in space-time (in the "absolute frame of reference"). From absolute velocity in the space of any material object so far.

"Is there a time when nothing changes?" Time, as a rule / possibility that works as a whole. A set of information, there is always. (coordinate) time exists as a possibility of some changes in matter, always also, regardless of the existence of Matter. However, both rules are realized in the existing matter (Dowden). "Is there a timeless substrate from which time arises?" - There is no "timeless substrate" (as well as without a "substrate without space") from which time (space) can arise; except of course logic.

Let's open the door to the field of neuroscience and climate change. The journey opens up interesting insights.

A key challenge for environmental neuroscience is to adapt and use experimental tasks that allow us to measure specific cognitive processes and then relate them to research questions that expand our knowledge of environmental psychology. This requires knowledge of both cognitive neuroscience and environmental psychology. We advocate a highly collaborative approach by environmental researchers and cognitive neuroscientists to enrich our theories and our understanding of environmental values, attitudes, identities, and behaviors, as well as our understanding of the brain.

Few published studies of neuroscience on the environment or climate change (U. Wolfe, H. Lindeborg, 2018); however, environmental neuroscientists can learn from related domains.

The knowledge and tools of cognitive neuroscience have enabled researchers to understand the neural correlates of many social constructs applicable to climate change research. One example is "equity," which can relate to cooperation in climate negotiations and dilemmas with resources (MJ Hurlstone, S. Wang, A. Price, Z. Leviston, I. Walker, 2017), as well as to the perception of relative deprivation and injustices due to environmental degradation and attributing responsibility for climate action (I. Walker, Z. Leviston, J. Price, P. Devine-Wright, 2015) Studies of social neuroscience using economic experiments, such as the ultimate game, show that unfair offers from others (people, (AS Gabay, J. Radua, MJ Kempton, MA Mehta, 2014) activate bilateral anterior insula and anterior cingulate cortex (ACC), both areas associated with pain or distress, as well as negative emotional states such as anger and mistrust (AS Gabay, J. Radua, MJ Kempton, MA Mehta; AG Sanfey, JK Rilling, JA Aronson, LE Nystrom, JD Cohen, 2003).

Conclusion

Analyzes of the macroeconomic impacts of past pandemics have mainly aimed to quantify the effects in terms of lost production and growth, however strong conclusions about the long-term economic effects of the pandemic have not been well researched (Bell and Lewis 2004). Studies of such scope typically study the short-term economic effects of pandemics through their impact on supply and demand, the stock market, birth rates, trade, labor inputs, and tourism (Jonung and Roeger 2006).

The relationship between the economy and tourism within COVID 19 has had wide and serious consequences for global economies. Interesting are the stock market research that reacted first, with rates of decline equal to the global financial crisis of 2008. Conducted research (Evidence from the Stock Market Impact of COVID 19 / J. Risk Financial Manag. 2021) empirically quantified the negative impact of coronavirus on stock market performance in China, the United States, Italy, South Korea, Spain and Japan (also interesting global tourist destinations). The results of various estimates indicate that increasing the virus infection rate by 1% reduces stock market returns by 2.3% on a daily basis. The negative impact of coronavirus contamination negatively affects the prices of world commodities such as platinum, silver, Brent and WTI oil. The biggest drop was recorded in the price of a barrel of oil, with an increase in the spread of the virus causing a drop in Brent and WTI oil prices of 4.08% and 3.26%, respectively. These results reflect a state of global stagnation, as well as serious changes in the behavior of individuals and institutions in supply and demand as the virus has hit the world. The decline in oil prices cannot be explained only by a reduction in global demand caused by the

coronavirus, and the “oil price war” between Saudi Arabia and Russia is also contributing to lowering and destabilizing oil prices (Cohen 2020). As the pandemic is still on the rise and the death toll is not over, any economic analysis or projection of the long-term effects of the virus on the stock market is subject to uncertainty. Further market disruptions are expected, institutions and individuals are, and will continue to be, experiencing liquidity stress that stimulates demand for corporate and private debt. The decline in demand and supply of global products is smaller than the decline in oil, but as the pandemic continues, serious changes in end-user behavior will alter global demand for goods and industrial services. Ashraf’s (2020a) argument that the level of aversion to cultural risk defines the intensity of the market response to COVID 19 is consistent with our results. Market agents choose to reduce the adverse effects that have followed by shifting their preferences towards safer investment regions.

References

1. Agarwal, A., Sunita N. (1991). Global Warming in an Unequal World: A Case of Environmental Colonialism, New Delhi: Centre for Science and Environment. [\[Google Scholar\]](#)
2. Ashraf, B. N. (2020a). Stock markets’ reaction to Covid-19: Moderating role of national culture. Finance Research Letter. [\[Google Scholar\]](#)
3. Ashraf, Badar Nadeem. 2020b. Stock markets’ reaction to COVID-19: Cases or fatalities. *Research in International Business and Finance*, 54: 101249. [\[Google Scholar\]](#)
4. B. van den Berg, A.B.H. de Bruin, J.-B.C. Marsman, M.M. Lorist, H.G. Schmidt, A. Aleman, J.W. Snoek. (2020). Thinking fast or slow? Functional magnetic resonance imaging reveals stronger connectivity when experienced neurologists diagnose ambiguous cases. [\[CrossRef\]](#)
5. M.A.S. Boksem, D. de Cremer. (2010). Fairness concerns predict medial frontal negativity amplitude in ultimatum bargaining Soc Neurosci, 5, 118-128. [\[Google Scholar\]](#)
6. Brain Commun, 2. (2020). ISSN 2632-1297. [\[Link\]](#)
7. Bell, Clive, and Maureen Lewis. 2004. The Economic Implications of Epidemics Old and New. *World Economics*, 5, 137–74. JEL A(19). [\[Google Scholar\]](#)
8. Broome J. (2012). *Climate Matters: Ethics in a Warming World*. New York. W.W. Norton & Company. ISBN 10: 0393063364. ISBN 13: 9780393063363. [\[Link\]](#)
9. Buonomano, D.V. (2000). Decoding temporal information: a model based on short-term synaptic plasticity. *J Neurosci*, 20, 1129–1141. [\[Link\]](#)
10. Buonomano, D.V. (2005). A learning rule for the emergence of stable dynamics and timing in recurrent networks. *Neurophysiol*, 94, 2275–2283.
11. Buonomano, D.V. (2009). Bramen J, Khodadadifar M. Influence of the interstimulus interval on temporal processing and learning: testing the state-dependent network model. *Philos Trans R Soc Lond B Biol Sci*. 364, 1865–1873. [\[Link\]](#)
12. Buonomano, D.V. (2002). Karmarkar UR. How do we tell time? *Neuroscientist*, 8, 42–51. [\[Link\]](#)
13. Buonomano D.V., Laje R. (2010). Population clocks: motor timing with neural dynamics. *Trends in Cognitive Sciences*, 14, 520–527. [\[Google Scholar\]](#)
14. Buonomano, D.V. (2009). Maass W. State-dependent Computations: Spatiotemporal Processing in Cortical Networks. *Nat Rev Neurosci*, 10, 113–125. [\[Google Scholar\]](#)
15. Cohen, A. (2020). Too Little too Late? Russia and Saudi Arabia Reach Truce in Oil Price War. [\[Google Scholar\]](#)
16. Correll, J., Urland, G.R., Ito, T.A. (2006). Event-related potentials and the decision to shoot: The role of threat perception and cognitive control. *Journal of Experimental Social Psychology*, 42, 120–128 [\[Link\]](#)
17. Ellemers. N., van Nunspeet, F. (2020). Neuroscience and the social origins of moral behavior: how neural underpinnings of social categorization and conformity affect everyday moral and immoral behavior. *Curr Dir Psychol Sci*, 29. [\[Google Scholar\]](#)
18. Gabay, A.S., Radua, J., Kempton, M.J., Mehta, M.A. (2014). The Ultimatum Game and the brain: a meta-

- analysis of neuroimaging studies. *Neuroscience Biobehavior Review*, 47. [\[Google Scholar\]](#)
19. Hall, C. M., Williams, A. M., & Lew, A. A. (2004). Tourism: Conceptualizations, institutions, and issues. *A Companion to Tourism*, 3-21. [\[Google Scholar\]](#)
 20. Hall, C.M., Page, S.J. (2006). The geography of tourism and recreation: environment. Place and space. Routledge, 62. [\[Google Scholar\]](#)
 21. Hall, C.M., Williams, A.M., Lew, A.A. (2014). Tourism: conceptualizations, disciplinarity, institutions, and issues. In: Lew AA, Hall CM, Williams AM (eds) The Wiley-Blackwell companion to tourism. Wiley Blackwell, Oxford HALL, C.M. [\[CrossRef\]](#)
 22. Hall, C.M. (2005b). Tourism: Re-thinking the Social Science of Mobility Harlow: Prentice-Hall. Reconsidering the Geography of Tourism and Contemporary Mobility. Australian Geographical Studies 43, Australian Geographical Studies in press. [\[Google Scholar\]](#)
 23. Hall, C.M. (2005c). Space-time accessibility and the tourist area cycle of evolution: The role of geographies of spatial interaction and mobility in contributing to an improved understanding of tourism. In Butler, R. (ed.). [\[Google Scholar\]](#)
 24. Huijbens, E. (2014). Natural wellness. The case of Icelandic wilderness landscapes for health and wellness tourism. In: Smith M, Puczko L (eds) Health, tourism and hospitality: spas. Wellness and Medical Travel. Routledge, London, 413-416. [\[Link\]](#)
 25. Hurlstone, M.J., Wang, S., Price, A., Leviston, Z., Walker, I. (2017). Cooperation studies of catastrophe avoidance: implications for climate negotiations. *Climate Change*. [\[Google Scholar\]](#)
 26. Ishikawa, M., Park, Y., Kitazaki, M., Itakura, S. (2017). Social information affects adults' evaluation of fairness in distributions: an ERP approach *PloS One*. [\[Google Scholar\]](#)
 27. Jafari, J. (1990). Research and scholarship: the basis of tourism education. *Journal of Tourism Studies*, 1(1), 33-41. [\[Google Scholar\]](#)
 28. Jafari, J. (2001). The scientification of tourism. In V. L. Smith & M. Brent (Eds.), *Hosts and guests revisited: Tourism issues of the 21st century*. New York: Cognizant Communications, 28-41. [\[Google Scholar\]](#)
 29. Jafari, J. (2005). Bridging out, nesting afield: Powering a new platform. *Journal of Tourism Studies*, 16(2), 1-5. [\[Google Scholar\]](#)
 30. Jafari, J., & Aaser, D. (1988). Tourism as the subject of doctoral dissertations. *Annals of Tourism Research*, 15(3), 407–429. [\[Google Scholar\]](#)
 31. Jonung, L., Werner, R. (2006). The Macroeconomic Effects of a Pandemic in Europe. A Model-Based Assessment. European Commission Working Paper No. 251. Brussels: European Commission. [\[Google Scholar\]](#)
 32. Khalil H. et al. (2016). Declining ecosystem health and the dilution effect. *Scientific Reports*, 6, 31314. [\[Google Scholar\]](#)
 33. Klein, J. T. (2010). A Taxonomy of Interdisciplinarity. In: R. Frodeman, J. T. Klein, & C. Mitcham (Eds.), *The Oxford Handbook of Interdisciplinarity*. Oxford: Oxford University Press. 15-30. [\[Google Scholar\]](#)
 34. Krakover, S. (2002). Time Dimension and Tourism Development in Peripheral Areas. In Krakover, S. and Graduse, Y. (eds) *Tourism in Frontier Areas*, Lanham: Lexington Books. [\[Link\]](#)
 35. Ord, T. (2020), *The Precipice: Existential Risk and The Future of Humanity*. New York. Hachette Books. [\[Link\]](#)
 36. Putnam A. and Broecker W. (2017). Human-induced changes in the distribution of rainfall. *Science Advances*, 3. [\[Google Scholar\]](#)
 37. A.G. Sanfey, J.K. Rilling, J.A. Aronson, L.E. Nystrom, J.D. (2003). Cohen The neural basis of economic decision-making in the Ultimatum Game *Science*, 300. [\[Google Scholar\]](#)
 38. Sloan, P., Legrand, W. & Chen, J. (2013). *Sustainability in the Hospitality Industry: Principles of Sustainable Operations*. (2nd Ed.), London: Routledge ISBN 978-0750679688, 371. [\[Google Scholar\]](#)

39. Urry, J. (1981). Localities, regions and social class. *International Journal of Urban and Regional Research*, 5(4), 455-473. [\[Google Scholar\]](#)
40. White, K.R., Crites, S.L., Taylor, J.H., Corral, G. (2009). Wait, what? Assessing stereotype incongruities using the N400 ERP component, *Soc CognAffect Neurosci*, 4, 191-198. [\[Google Scholar\]](#)
41. Walker, Z. Leviston, J. Price, P. Devine-Wright. (2015) Responses to a worsening environment: relative deprivation mediates between place attachments and behaviour *Eur J Soc Psychol*, 45. [\[Google Scholar\]](#)
42. Wolfe, U., Lindeborg, H. (2018). Neuroscience and sustainability: an online module on environmental neuroscience, *Undergrad Neurosci Educ*, 17. [\[Google Scholar\]](#)
43. Wallerstein, I. (1997). Eurocentrism and its Avatars: The Dilemmas of Social Science, First Published March 1, Research Article. [\[CrossRef\]](#)
44. Wallerstein, I. (1997). The Time of Space and the Space of Time: The Future of Social Sciences. [\[Google Scholar\]](#)
45. Zilberman, D. et al. (2004). The economics of climate change in agriculture. *Mitigation and Adaptation Strategies for Global Change*, 9, 365–382. [\[Google Scholar\]](#)