PREFACE

SPACE CONQUEST: MAN'S MOST AUDACIOUS DREAM

Aniello MONTANO[1], Natale Gaspare DE SANTO[2], Massimo CIRILLO[3], Amalia VIRZO[4], Antonio VIVIANI[5], Mariano BIZZARRI[6], Gerardo MAROTTA[7]

Guest Editors of *Annales Kinesiologiae*

[1] University of Salerno, Department of Philosophy
[2] Second University of Naples, Department of Medicine
[3] Chair of Nephrology, University of Salerno, Department of Medicine
[4] University Federico II, Naples, Department of Strctural and Functional Biology
[5] Second University of Naples, Department of Airspace Engineering and Mechanics
[6] University La Sapienza, Roma, Deparment of Experimental Medicine and Scientific Committee of the Italian Space Agency
[7] Italian Institute for Philosophical Studies, Naples

Corresponding author:
Natale Gaspare DE SANTO
Emeritus Professor, Second University of Naples, Department of Medicine,
5 via Pansini, Pad. 17, Nephrology, 80131 Naples, Italy

This is the second issue of *Annales Kinesiologiae* reporting research presented at the International Meeting on *Living the space – The space a Human Habitat*, which took place in Naples on December 1–2, 2011. During the event, Space emerged as the target of men curiosity, creativity, intelligence and hard work, a place where to realize man's most audacious dreams. The meeting organized by the Italian Institute for Philosophical Studies, the Second University of Naples, the University of Salerno, the University Federico II in Naples and the Italian Space Agency discussed the hot topics of this enterprise, which appears capable to solve man's problems here on Earth.

The image of man as a figure well rooted into the ground but with an eye to heaven, the earthly nature but leaning towards the outer space, is old and established, and still retains all its living actuality. Albeit in different forms, man has always considered cosmic space as a place to watch with interest, looking for both the causes and the relief of

his own fears and anxieties. Even in the twentieth century, a secular and disenchanted writer, Albert Camus (1913–1960), in his *Wedding in Tipaza*, strongly emphasizes with grace the special spirit of complicity between earth and heaven, fostered by the Algerians, a race of men "born from sun and sea, lively and flavorful, which derives its greatness from simplicity and standing on the shores of the sea turns his knowing smile to the luminous smile of heaven (Camus, 1988). Man smiles at the heaven and the accomplice heaven responds with a beaming smile.

Two centuries earlier, Giambattista Vico (1668–1744) a Catholic thinker among the most important innovators of philosophy in the eighteenth century (Vico, a) in Europe, in search of the first glimmer of humanity and the first glimpse of civilization in the mind of those solitary beasts wandering in the woods retrieves the old theory attributed by Sextus Empiricus (160–210 AD)` to Democritus of Abdera (470–370 BC) that "men in the distant past, observing the celestial phenomena, thunder and lightning, thunderbolts and clusters of stars, eclipses of sun and moon, were frightened, thinking they were provoked by the gods" (Diehls-Kranz, a). An additional testimony, at the time of Clement of Alexandria (c150–c215 AD), attests to Democritus "a few wise men, raising their hands up where we, the Greeks, say that air is, ´Zeus decides and knows everything, he gives and takes away and is the Lord of all things` " (Diehls-Kranz, b). For Vico in *The New Science* and for Democritus – according to the testimony of Sextus and Clement – man looks at the sky, – the limitless space that surrounds him,– and populates it with his imagination with powerful and menacing divinities (Vico, b).

This is perhaps one of the first ways in which man tries to conquer the space, transferring in the unlimited space not himself physically, but his supposed psychical tensions. And it is perhaps one of the first times that he elaborates those circular reasonings, the hermeneutic "vicious" circles, consisting of a premise which justifies the conclusion, and this, in turn, justifies the premise. The fear (*phobos*), and the hope or the benefit (*chreia*) lead men to imagine the existence of gods in the heavens and to consider them as both cause and relief of their passions.

Before being considered as the psychological and ethic paradigm – as in Democritus – the outer space inhabited by gods was utilized by many peoples and many cultures, as a political paradigm, defined by Antonio Capizzi (1982) as *cosmic monarchy*.

To provide credible assurance of eternal life and absolute perfection to monarchical institutions in force in ancient societies – Capizzi says – a parallelism between state organization and cosmic organization was speculated. In the unlimited and uncircumscribed cosmic space men project the model that governs the order and the hierarchical relationships in the confined space of the State. It is told through the Bards of the absolute power of a god – Lord of all – on air, earth, water and fire, even when the power on some of these elements, constituting the Whole, is delegated to minor divinities. In the myth the model of absolute monarchy, wherein the individuality (the king) means royalty and the community (the people) means obedience, is transformed. The vicious circle for which human and historical models provide the basis for divine paradigms, believed to be eternal, and, in turn, are used to confirm and guarantee the human model which produced them – is put once again in place.

This parallelism between State and Cosmos is present in Egyptian religion, in Mesopotamian mythology, in Minoan Crete, in the culture of the antique Egypt where the king himself is deified, as also happens in the Persia of Cyrus and Xerxes. In Persia – as Herodotus recounts – Cyrus and Xerses, convinced to possess divine powers, exercise judicial functions even on nature. The former divides the river Ginde into 180 channels with little flow of water as punishment for having drowned his sacred horse. The latter sentenced the Aegean sea to a total of 300 lashes for having destroyed during a storm the bridges he had built (Herodotus, a and b).

In Greece, the first political celestial model was created by Hesiod (750–650 BC). In the *Theogony,* the formation of this model is followed in its progressive form and development. At the beginning, in the space occur veritable civil wars between Abyss, Night, Ether, Light, Sea and Ocean, and there are Cyclops, Furies, Giants, Nymphs, and Titans. In the cosmos unsociability and terror are the rules. Political order begins with Hecates (Hesiod, a) and the name of king appears with Chronos. The monarchic model takes place after Gigantomachy, after the victory of Zeus over the Titans (Hesiod, b). Homer, in turns, describes the *cosmic monarchy* established with Zeus at the head of all gods. Once again cosmic space and political space are organized and ruled by the same monarchist and absolutist, paradigms.

Whereas governors urge scholars and poets to develop models of organization of the cosmos to be used as examples to enhance and provide assurance of eternity to their power in the State, city planners, architects, sailors, soothsayers, augurs, astrologers and interpreters of divine desires, look at the sky and stars to draw lessons and recommendations for their work.

Among the astrologers, should be remembered Tommaso Campanella (1568–1639). In *The City of the Sun*, the Calabrian philosopher says that 24 priests remain all day in the temple to sing psalms and to watch the stars. Their task is to "mark by means of astrolabes their movement and its effects, so they know the countries in which mutations will occur. They are able to decide the hours of generation and the days of seeding and harvesting, they serve as intermediaries between God and men, among them is selected the Sun (chief of the city), they write important things and experiment in science. They never descend from their place, except for eating, they are not interested in the female sex, unless women are needed as healings for the body. Every day the Sun (the priest, head of the city) goes to the temple and talks to them about what they have investigated on the benefits of the city and of all the nations of the world" (Campanella, 2001).

Since ever and for any activity men project themselves into Space with the acuteness of vision and the creativity of imagination consider the unlimited space around them and the celestial bodies within as the whole of their own world, and draw theirttention toward it, for the benefit of their existence.

Cosmic space and terrestrial space are thought by Democritus as made of the same elements, very small particles, infinite in number and in perpetual motion. The heavens, the stars, planets, Earth, animals, humans and all things in nature are composed of atoms, indivisible bodies spinning in the empty space. Between Heaven and Earth

there is no ontological difference. In fact terrestrial physics and celestial physics are governed by the same laws of aggregation and disaggregation of atoms. All existing things, all things that we see, including humans, are the product of the combination of identical substances (Diehls-Kranz, c). Nothing is perceived as alien to man. Man is a full participant of the unity of the Whole. And with Leucippus, Democritus' mentor, he feels he has found a way, by using sensible experience and rational procedures, to understand generation and destruction, the movement and the multiplicity of things (Diehls-Kranz, d).

This model of the infinite universe, of infinite worlds spinning in it and made by the same "substance", by others "called the stars", will be taken up by Giordano Bruno (1548–1600), the great thinker from Nola, who by magnifying the cosmic space to the infinite, shatters the sky of fixed stars, identified by Aristotle as the limit of the cosmos, thus lousing up any absolute reference. In the universe each point is related to another "thus we being are on Earth assert that the Earth is in the middle [ ]. Those living on the moon think the Earth, the sun and the other stars rotate around them, who are in the middle and at the end of their half diameters of their horizons" (Bruno, 1985). As a consequence, we are heaven for the hypothetical inhabitants of other planets, just like they are heaven for us. For Bruno, the outer space and all the celestial bodies can be inhabited. Of course the inhabitants of such celestial bodies can grow and express their point of view on the rest of the universe around them.

In a destabilizing epoch due to a phenomenon of globalization produced by the enlargement of the Greek civilization to Middle East and to East, after Alexander the Great, a refined and cautious intellectual, Epicurus of Samos, between the fourth and the third century B.C., tries to pacify the spirits of his contemporaries. His philosophical model is simple and ambitious at the same time. To maintain a serene mind we must neutralize the fear that comes from ignorance and superstition, enabling the true knowledge. He takes over and corrects the theory of Democritus about atoms, discarding any form of determinism due to necessity. In the physical as well as in the moral world nothing is needed in a fatalistic manner. Men to be happy must free themselves from traditional concerns, starting with the fear of the gods and death. We should never take care of death because when we are here she is absent, and when she comes we are not here any longer. Gods, however, do exist, says Epicurus, but being blessed, immortal, immune to business and anxiety, are not concerned at all with human affairs, which would disturb their state of bliss and imperturbability (Epicurus, 1970). These gods, perpetually happy, live far away from men in the Cosmos, in the spaces between the infinite worlds that populate the universe, the *Intermundia* (the spaces between the worlds" (Cicero, *De Natura deorum*). Epicurus represents them as "the paradigm of the excellent and of a perfectly self-sufficient, blissful life that a wise man has to achieve." He, therefore, uses "the existence between world and world of empty spaces, the inter worlds […].to locate the ideal home of the gods" (Masi 1981).

Once again, the cosmic space is the place where people project their desire and dream of peace and heavenly bliss by attributing both conditions to their surrogates, the gods. Albeit through a third party, through the *dramatis personae* (the actors of the

tragedy), men move into space to achieve happiness, quiet pleasures that are hard to achieve in their historical world, let alone during periods of alienation and impoverishment due to processes of globalization. And there, in space, through the images of the gods, is also confined the cause of many of their fears and their anxieties. It becomes the place where to relegate and keep away the reasons generating such anxieties and fears.

With the advent of Christianity nothing changes. The sky is still populated by many divine figures, and is the place from which men receive laws and ethical-political paradigms. In addition to the three persons of the mystical unity of God, there are angels, archangels, seraphim, and cherubim, saints and the souls of believers who died in Lord's divine grace and there is Mary, the mother of Jesus, taken up into heaven in the unit of body and soul. Angels move in the infinite spaces of the Cosmos. Sometimes, they reach the Earth and communicate to men Lord's will and protect them from evil. God descends to meet Moses, who led the Jews out of slavery, to which they were subject in Egypt, and on Mount Sinai God gives the table of laws, the Decalogue (*Exodus*, a), the Covenant Code (*Exodus*, b) to Moses who finds it difficult to turn a crowd of slaves into a people, led by a recognized authority and held together by a law indisputable because of its divine origin. Once again the infinite space, "the highest", is the place of perfection, of the eternal happiness, the prize that "every wish advances", and is the place where men seek the solution, or at least the alleviation to their problems on Earth.

The interest of the Catholic Church for space, however, is not only of a strictly ethical and metaphysical nature. It is also fuelled by scientific reasons. The desire to explore the created universe led the church to establish many astronomical observatories. At the beginning of the 18th century, the Church contributed to the creation of the Institute of Science in Bologna, where astronomical observation was prominent. In 1952, Pious XII (1876–1958), addressing the general assembly of the International Astronomical Society, praised the study of astronomy thanks to which "human spirit has exceeded the limits of physical senses". Also John Paul II (1920–2005) had a strong interest in science and astronomy, in the belief that faith and science, separately and independently, may "purify" each other.

Besides religious means, there are endless means by which men have sought salvation in space and escape from the fears of life, especially from the greatest of all, the fear of death for ever. Poets and literates have dreamed of inter-spatial flights, landings on the moon or other planets. In *Orlando enraged* of Ludovico Ariosto (1474–1635), Astolfo is forced to go to the Moon where all things lost on Earth are, to retrieve the lost wits of Orlando.

The interpretative framework of this desire to conquer the Space, however, seems to be always the same: to use the sky to solve the problems here on Earth. Even today, the race for the conquest of space is not only aimed to make visible and feared the power of individual States, but also to satisfy the insatiable human thirst for knowledge and mastery of the forces and of the unexplored regions of nature to use them at our own advantage, for instance by colonizing space, just like the great European powers colonized the new lands overseas since the discovery of America. The idea, born from the dream of a Russian

scientist to colonize the "Milky Way" (Tsiolkovsky, 1928), is to broaden the "cradle too small" in which humanity feels increasingly closed and almost confined. (Genta, 1980).

Space still appears as the way of adventure to realize Faustian dreams, today as never before supported and encouraged by the power of technology. The dreams that help men to expand their knowledge, which has an impact on many branches of human knowledge, from physics to medicine, from astronomy to philosophy, because any innovation in any one branch of knowledge implies a redefinition, a redirection and an acceleration of all disciplines. This is easily understood by analyzing the changes occurred in the world of science, philosophy, technology, literature and the arts since the "Copernican revolution" or Einstein's theory of relativity. All this demonstrates the enormous creative power of human mind, "this greatest gift, this divine light", as in the words of Baruch Spinoza (1632–1677).

As outlined in the preface to the previous issue of *Annales Kinesiologiae* in the short term space conquest will be facilitated and driven by hyper-specialization, although the latter sometimes may fail in catching the complexity. It is evident that space conquest is one of the few human enterprises capable to catch complexity by utilizing sectorial knowledge and this should be regarded as a great merit deserving credit. Space science, which has been successful although at high economic costs, seems to hold the capacity to achieve Edgar Morin's dream for a "planetary education" through a process of "humanization". We are happy to stress that the French interdisciplinary thinker, in the last page of *La voie/ The way*, his latest masterpiece (Morin, 2012) ponders about the many possibilities offered to humans looking into Cosmos among which: i. travelling into space for thousands years to come, ii. the possibility of human migration into liveable planets, iii. the possibility to investigate on the existence of additional forms of intelligence distinct from man, iv. the existence of parallel cosmoses, v. the possibility to investigate whether the reality space-time is embedded in a reality lacking space and time, and vi. the continuity of the symbiosis between man and his technical production.

So to move to Mars we need to create new sciences, new technologies, new materials (De Santo, 2011), but this will be not detrimental to the enterprise for the time ongoing.

ACKNOWLEDGEMENTS

We wish to thank Professor Rado Pišot, the Editor-in-Chief of *Annales Kinesiologiae*, for publishing this material and for endorsing the request by philosophers during the Conference for adequate funding of space research generated in human sciences.

Thanks are also due to the Second University of Naples, the University of Salerno, the University Federico II, the Italian Space Agency, and the Italian Institute for Philosophical Studies for making the event possible.

Finally, warmest thanks to Matej Plevnik, editorial board member of this Journal, for the time he devoted to bringing this project to its fulfilment. It has been a privilege and a pleasure to work with him.

ABBREVIATIONS

Diehls-Kranz. *Die Fragmente der Vorsokratiker*, 3 vols. Kranz W, Ed., 6th Edition, Zurich, Weidman 1951–52. This book includes all extant writings of all Presocratic authors. Each author is assigned a number. Entries are numbered as (a) testimonia, that is ancient accounts of the author's life and doctrine, (b) *ipsissima verba* reporting the exact words of the author, and (c) imitations that false the author as a model.

PREDGOVOR

OSVAJANJE VESOLJA: ČLOVEKOVE NAJDRZNEJŠE SANJE

Aniello MONTANO[1], Natale Gaspare DE SANTO[2],
Massimo CIRILLO[3], Amalia VIRZO[4], Antonio VIVIANI[5],
Mariano BIZZARRI[6], Gerardo MAROTTA[7]

Gostujoči uredniki znanstvene revije *Annales Kinesiologiae*
[1] Univerza v Salernu, Oddelek za filozofijo
[2] Zaslužni profesor, Druga univerza v Neaplju, Oddelek za medicino
[3] Univerza v Salernu, Oddelek za medicino, Katedra za nefrologijo
[4] Univerza Federico II., Neapelj, Oddelek za strukturalno in funkcionalno biologijo
[5] Druga univerza, Neapelj, Oddelek za letalsko inženirstvo in mehaniko
[6] Univerza La Sapienza v Rimu, Oddelek za eksperimentalno medicino in
Znanstveni odbor Italijanske vesoljske agencije
[6] Italijanski inštitut za filozofske študije, Neapelj

Vodilni avtor:
Natale Gaspare DE SANTO
Zaslužni profesor, Druga univerza v Neaplju, Oddelek za medicino,
5 via Pansini, Pad. 17, Nephrology, 80131 Neapelj, Italija

Pred vami je druga izdaja raziskovalnega poročila *Annales Kinesiologiae*, ki je bilo predstavljeno na mednarodni konferenci Živeti vesolje – vesolje kot človeški življenjski prostor (Living the Space – The Space a Human Habitat), ki je bila organizirana v Neaplju od 1. do 2. decembra 2011. Na tej konferenci je bilo vesolje središče človeške radovednosti, ustvarjalnosti, inteligence in težkega dela, prostor, kjer se lahko uresničijo človekove najdrznejše sanje. Konferenco so organizirali Italijanski inštitut za filozofske študije Druge univerze v Neaplju, Univerza v Salernu ter Univerza Federico II v Neaplju. Udeleženci so razpravljali o vročih temah te iniciative, ki se zdi zmožna reševati človekove težave tu na Zemlji.

Podoba človeka kot bitja, ki je dobro zakoreninjeno na Zemlji, vendar z enim očesom vedno obrnjeno proti nebesom, z zemeljsko naravo, ki pa se nagiba k vesolju, je

stara in uveljavljena, vendar še vedno ohranja vso aktualnost v današnjem svetu. Človek se je vedno zanimal za kozmično vesolje, četudi v različnih oblikah, kjer je iskal tako razloge kot tudi rešitve za svoje strahove in bojazni. Tudi v 20. stoletju je sekularni in razočarani francoski pisatelj Albert Camus (1913–1960) v svojem delu *Poroka v Tipazi* močno in sofisticirano poudaril poseben duh povezanosti Zemlje in nebes, ki ga hranijo Alžirci, tekmovanje človeka, „*rojenega iz sonca in morja, živahnega in polnega okusov, katerega izjemnost izhaja iz enostavnosti in postavanje na obalah morja spremeni njegov poznavalski nasmeh v žareč nasmeh nebes*" (Camus, 1988). Človek se smehlja nebesom, ta pa mu odgovorijo z žarečim nasmehom.

Dve stoletji poprej katoliški mislec Giambattista Vico (1668–1744), eden izmed najpomembnejših evropskih inovatorjev v filozofiji 18. stoletja (Vico, a), med iskanjem prvega prebliska človečnosti in prvega bežnega pogleda civilizacije v mislih osamljenih zveri, ki so pohajale po gozdovih, ponovno obudi staro teorijo, ki jo je Sekstus Empirik (160–210 pr. n. št.) prisodil Demokritu iz Abdere (470–370 pr. n. št.), in sicer, da so "bili možje v daljni preteklosti med opazovanjem zemeljskih pojavov, neviht in udarov strel, bliskov z gromom ter nakopičenih zvezd, sončnih in luninih mrkov prestrašeni, saj so mislili, da so jih povzročali bogovi" (Diehls-Kranz, a). Še eno pričevanje, tokrat s strani Klementa Aleksandrijskega (pribl. 150–215 pr. n. št.), izpričuje Demokritovo teorijo, namreč "nekaj modrih mož, ki svoje roke iztegujejo visoko, kjer mi, Grki, pravimo, da je zrak, pravi: Zevs se odloča in ve vse, daje in vzame, on je gospodar vsega" (Diehls-Kranz, b). Vico v svoji *Novi znanosti*, tako kot Demokrit – glede na pričevanja Sekstusa in Klementa – pravi, da človek gleda proti nebu, neomejenemu prostoru, ki ga obkroža, ter ga napolni s svojo domišljijo in močnimi ter grozečimi božanstvi (Vico, b).

To je najbrž eden prvih načinov, s katerimi človek želi osvojiti vesolje in kjer se, ne telesno, vendar s svojimi domnevnimi telesnimi napetostmi, preseli v "kozmos". In to je najbrž prvič, ko človek oblikuje krožna sklepanja, hermenevtične "začarane" kroge, ki vsebujejo premiso, ki opravičuje sklep, in obratno, ko sklep opravičuje premiso. Strah (*phobos*) in upanje ali korist (*chreia*) vodita človeka, da si domišlja obstoj bogov v nebesih in da jih upošteva kot razlog in olajšanje za svoje strasti.

Preden se je vesolje obravnavalo kot psihološko in etično paradigmo – kot pri Demokritu –, so vesolje, ki so ga naseljevali bogovi, ljudje in mnoge kulture, uporabljali kot politično paradigmo, ki jo Antonio Capizzi (1982) opisuje kot *kozmična monarhija*.

Capizzi pravi, da je za zagotavljanje kredibilnosti večnega življenja in absolutne popolnosti monarhističnim institucijam, ki so vladale starodavnim družbam, potrebno vzpostaviti vzporednice med organizacijo stanja in organizacijo kozmosa. V neomejenem in neopisanem kozmičnem vesolju si ljudje zamišljajo model, ki vlada redu in hierarhičnim razmerjem v omejenem prostoru Države. Bardi govorijo o absolutni moči boga – gospodarja vsega – zraka, zemlje, vode in ognja, tudi ko je moč nad nekaterimi izmed teh elementov, ki tvorijo Celoto, razporejena med nižja božanstva. V mitu je model absolutne monarhije, kjer individualnost (kralj) pomeni kraljestvo in skupnost (ljudje) pomeni pokorščino, preoblikovan. Začarani krog, v katerem človeški in zgodovinski modeli predstavljajo osnovo za božanske paradigme, ki naj bi bile večne in ki se uporabljajo za potrditev

in garancijo človeškega modela, ki jih je ustvaril, je zopet vzpostavljen.

Ta vzporednica med Državo in Kozmosom je predstavljena v egipčanski veri, mezopotamski mitologiji, v minojski Kreti, v kulturi starodavnega Egipta, kjer je kralj obožev an, prav tako je prisotna v Perziji v času Cirusa in Kserksesa. V Perziji – kot pripoveduje Herodot – sta Cirus in Kserkses prepričevala ljudi, da imata božanske moči in da lahko svoje pravne funkcije izvajata tudi v naravi. Cirus je razdelil reko Ginde v 180 potokov z malo pretočnosti kot kazen za svojega potopljenega svetega konja (Herodotus, a and b). Kserkses je obsodil Egejsko morje na 300 udarcev z bičem, ker naj bi med nevihto uničilo mostove, ki jih je bil zgradil.

V Grčiji je prvi politični božanski model ustvaril Hesiod (750–650 pr. n. št.). V svoji *Teogoniji* sledi oblikovanju tega modela v zelo progresivni obliki in razvoju. Na začetku se v vesolju pojavijo prave civilne vojne med Breznom, Nočjo, Eteričnostjo, Morjem in Oceanom, kjer pa se pojavijo Kiklopi, Furije, Giganti, Nimfe in Titani. V kozmosu sta nedružabnost in teror pravili. Politični red se začne s Hekatom (Hesiod, a) in ime kralja se pojavi pri Kronosu. Monarhični model se pojavi v Gigantomahiji, po zmagi Zevsa nad Titani (Hesiod, b). Homer pa opisuje *kozmično monarhijo*, ki jo je Zevs ustvaril kot vladar vseh bogov. Še enkrat se kozmično vesolje in politično vesolje ravnata po enakih paradigmah – monarhističnih in absolutističnih.

Medtem ko vladarji silijo učenjake in pesnike, da razvijajo modele kozmosa, ki se uporabljajo kot primeri za zagotavljanje večnosti njihovega vladanja Državi, pa mestni načrtovalci, arhitekti, mornarji, preroki, vedeževalci, astrologi in interpreti božanskih želja gledajo proti nebu in zvezdam, kjer iščejo navdih za svoja mnenja in priporočila za svoje delo.

Med astrologi se moramo spomniti Tommasa Campanelle (1568–1639). V svojem *Mestu Sonca* ta kalabrijski filozof pravi, da je 24 duhovnikov ves dan v templju, kjer pojejo psalme in opazujejo zvezde. Njihova naloga je, da „s pomočjo kotomerjev označijo njihove premike in učinke, da bodo vedeli, v katerih državah se bodo dogajale spremembe. Tako se lahko odločijo o ustreznem času in dnevih, ko se seje in žanje, služijo kot posredniki med bogom in človekom, med njimi je izbranec Sonce (gospodar mesta), pišejo o pomembnih stvareh in poskusih v znanosti. Svojih mest nikoli ne zapustijo, razen ko se odpravijo k jedi, ne zanimajo se za ženske, razen če so le te potrebne kot zdravilke. Sonce (duhovnik, vodja mesta) vsak dan obišče tempelj in se z njimi pogovarja o njihovih izsledkih, ki so dobri za mesto in vse narode sveta“ (Campanella, 2001).

Že od nekdaj in za katerokoli dejavnost se je človek s pomočjo ostrine vida in ustvarjalnosti domišljije postavljal v vesolje, tako da je neomejen prostor okoli sebe in božanska telesa v njem razumel kot celoto svojega sveta, ter tako pozornost usmerjal proti tem božanstvom v korist njihovemu obstoju.

Kozmično vesolje in zemeljsko vesolje Demokrit definira kot celoto enakih elementov, zelo majhnih delcev, ki so neomejeni v številu in v stalnem gibanju. Nebesa, zvezde, planeti, Zemlja, živali, človeška bitja in vse stvari v naravi so sestavljene iz atomov, nedeljivih teles, ki se vrtijo v praznem prostoru. Med Nebesi in Zemljo ni ontološke razlike. V zemeljski fiziki in božanski fiziki veljajo enaki zakoni združitve in razdružitve atomov.

Vse stvari, ki obstajajo, vse, kar vidimo, vključno s človeškimi bitji, je proizvod kombinacije identičnih snovi (Diehls-Kranz, c). Človeku ni nič tuje. Človek je del enotnosti Celote. Leucip, ki je bil Demokritov mentor, meni, da je s pomočjo čutnih izkušenj in racionalnih postopkov našel način, kako razumeti ustvarjanje in uničenje, gibanje in mnoštvo stvari (Diehls-Kranz, d).

Ta model neskončnega univerzuma, neskončnih svetov, ki se v univerzumu vrtijo in jih tvori ista "snov", ki jih drugi imenujejo "zvezde", prevzame Giordano Bruno (1548–1600), veliki mislec iz Nole. Ta je poveličeval kozmični prostor v neskončnost in tako izničil nebo, ki ga tvorijo fiksne zvezde, po Aristotelu skrajna meja kozmosa, ter tako iztrebil tudi vsakršno absolutno referenčno točko. V univerzumu je vsaka točka povezana z drugo, "pri čemer mi, ki smo na Zemlji, izjavljamo, da je Zemlja v sredini […]. Tisti, ki živijo na Luni, mislijo, da se Zemlja, Sonce in druge zvezde vrtijo okoli njih, in da so v sredini ter na koncu polmerov svojih horizontov" (Bruno, 1985). Posledično smo mi nebesa hipotetičnim naseljencem na drugih planetih, tako kot so oni nebesa nam. Bruno pravi, da je možno naseliti vesolje in vsa nebeška telesa. Seveda lahko naseljenci takšnih nebeških teles rastejo in izražajo svoje mnenje o univerzumu, ki jih obkroža.

V dobi, ki je postala nestabilna zaradi pojava globalizacije, ki jo je povzročilo širjenje grške civilizacije na Srednji Vzhod in Vzhod po Aleksandru Velikem, imenitni in previdni intelektualec Epikur iz Samosa med četrtim in tretjim stoletjem pred našim štetjem skuša pomiriti duhove svojih sodobnikov. Njegov filozofski model je enostaven in hkrati ambiciozen. Če želimo ohraniti vedrost, moramo nevtralizirati strah, ki izhaja iz ignorance in praznoverja, tako da dovolimo pot pravemu znanju. Tako prevzame in popravi Demokritovo teorijo atomov, kjer zavrača vsakršno obliko determinizma, ki nastane zaradi nuje. V fizičnem in moralnem svetu nič ni potrebno na fatalističen način. Če človek želi biti srečen, se mora osvoboditi tradicionalnih skrbi, začenši s strahom pred bogovi in smrtjo. Nikoli ne bi smeli skrbeti o smrti, saj ko smo tu, smrt ni prisotna, ko pa pride, nas ni več tu. Bogovi pa kljub temu obstajajo, vendar so blagoslovljeni, nesmrtni, imuni za posel in bojazni, ne obremenjujejo se s človekovimi zadevami, saj bi to zmotilo njihovo stanje blaženosti in ravnodušnosti (Epicurus, 1970). Ti bogovi večno in srečno živijo stran od človeka v Kozmosu, v prostorih med neskončnimi svetovi, ki naseljujejo univerzum, t. i. *Intermundiji* (prostori med svetovi) (Cicero, *De Natura deorum*). Epikur jih predstavlja kot „paradigma izjemnega in popolnoma samozadostnega, blaženega življenja, ki ga mora doseči moder človek". Tako uporablja „obstoj med svetom in svetom praznih prostorov, medsvetovi […], s katerimi določi popoln dom za bogove" (Masi 1981).

Še enkrat, kozmični prostor je prostor, kjer ljudje izražajo svoje želje in sanje o miru in nebeški blaženosti tako, da ta stanja pripisujejo svojim namestnikom, bogovom. Četudi prek tretje osebe, t. i. *dramatis personae* (igralci v tragediji), ljudje potujejo v vesolje, da dosežejo srečo, tihe užitke, ki jih je težko doseči v njihovem historičnem svetu, še posebej med obdobji odtujenosti in osiromašenja zaradi globalizacije. In prav tam, v vesolju, se v podobah bogov skriva vzrok mnogih strahov in bojazni ljudi. To je prostor, kamor odženejo razloge, ki povzročajo te bojazni in strahove.

S prihodom krščanstva se nič ne spremeni. Nebo še vedno naseljujejo božanska bitja, prav tako je to kraj, od koder človek sprejema zakone ter etično-politične paradigme. Poleg treh oseb, ki tvorijo mistično enotnost Boga, so tu še angeli, nadangeli, serafini in kerubini, svetniki in duše vernikov, ki so umrli v božji milosti, prav tako je tu Marija, Jezusova mati, ki se je z dušo in telesom povzdignila v nebesa. Angeli se gibajo v neskončnih prostorih Kozmosa. Včasih dosežejo Zemljo in posredujejo božjo voljo človeku in ga tako ščitijo pred zlom. Bog pride na Zemljo, kjer sreča Mojzesa, ki je vodil Jude iz suženjstva v Egiptu. Na gori Sinaj mu Bog izroči seznam zakonov, t. i. dekalog (*Exodus,*a 8) oziroma deset zapovedi (*Exodus*, b), saj Mojzes le stežka skuša spremeniti množico sužnjev v ljudi, ki jih je vodila priznana avtoriteta in so se ravnali po nespornem zakonu, ki je veljal prav zaradi božanskega izvora. Še enkrat je neskončni prostor, torej „najvišji", prostor popolnosti, večne sreče, nagrade, ki jo „vsak želi doseči", prav tako je to kraj, kjer človek išče rešitev oziroma vsaj lajšanje težav na Zemlji.

Zanimanje Katoliške cerkve za vesolje pa nima zgolj etične in metafizične narave. Prav tako to zanimanje žene znanstvena motivacija. Želja po raziskovanju ustvarjenega univerzuma je vodila Cerkev k ustanovitvi mnogih astronomskih observatorijev. V začetku 18. stoletja je Cerkev prispevala k ustanovitvi Znanstvenega inštituta v Bologni, kjer je bilo astronomsko opazovanje zelo razširjeno. Leta 1952 je papež Pij (1876–1958) nagovoril generalno skupščino Mednarodnega združenja za astronomijo, kjer je pohvalil preučevanje astronomije, zaradi česar je «človekov duh presegel meje fizičnih čutov». Janez Pavel II. (1920–2005) se je prav tako zanimal za znanost in astronomijo, saj je verjel, da vera in znanost, ločeno in samostojno, lahko «očistita» druga drugo.

Poleg religioznih načinov obstaja tudi nešteto drugih načinov, s pomočjo katerih je človek iskal odrešitev v vesolju in tako ubežal življenjskim strahovom, še posebej največjemu strahu – strahu pred smrtjo. Pesniki in književniki so sanjali o poletih v medsvetove, pristankih na Luni in drugih planetih. V delu Ludovica Ariosta (1474–1533), Besneči Roland, je Astolfo prisiljen, da odide na Luno, kjer lahko najde vse stvari, ki so izgubljene na Zemlji, in tako ponovno najde svojo izgubljeno razsodnost.

Interpretativno ozadje želje po osvojitvi vesolja pa kljub vsemu ostaja enako: uporabiti nebo, da bi rešili probleme na Zemlji. Še danes tekmovanje za osvojitev vesolja ni le dokazovanje in ustrahovanje drugih pred močjo posameznih držav, vendar pa predstavlja tudi nenasitno žejo po znanju in obvladovanju sil ter neraziskanih področij narave, ki bi jih lahko uporabili v lastno prid, na primer s pomočjo kolonizacije vesolja, podobno kot so velike evropske sile kolonizirale nove prekomorske dežele že od odkritja Amerike naprej. Ideja, ki se je porodila iz sanj ruskega znanstvenika, da kolonizira „Mlečno pot" (Tsiolkovsky, 1928), pomeni, da je potrebno širiti "*premajhno zibelko*", v kateri se človeštvo počuti vedno bolj zaprto in že skoraj omejeno (Genta, 1980).

Vesolje je še vedno nek pustolovski način uresničevanja faustovskih sanj, ki pa ga danes kot še nikoli prej podpira in spodbuja moč tehnologije. Sanje, ki pomagajo človeku, da širi svoje znanje, imajo močan vpliv na mnoge veje človeškega znanja; od fizike do medicine, od astronomije do filozofije, saj vsaka inovacija v kateri koli veji znanja predstavlja ponovno opredelitev, drugačno usmerjenost in pospešitev vseh disciplin. To zlahka razumemo s pomočjo analize sprememb, ki so se zgodile v svetu znanosti,

filozofije, tehnologije, literature in umetnosti že od Kopernikove revolucije ali Einsteinove relativnostne teorije. Vse to kaže ogromno ustvarjalno moč človeškega razuma, "to izjemno darilo, to božansko svetlobo", kot ga opisuje Baruch Spinoza (1632–1677).

Kot je bilo opisano v predgovoru prejšnje izdaje revije *Annales Kinesiologiae*, se bo na kratek rok osvajanje vesolja izvajalo in vodilo s pomočjo izjemne specializacije, čeprav se ta lahko včasih izjalovi prav zaradi svoje kompleksnosti. Jasno je, da je osvajanje vesolja eno izmed številnih človeških dejanj, ki lahko zajame kompleksnost s pomočjo uporabe specializiranega znanja, to pa bi lahko upoštevali kot izjemno odliko, ki si zasluži vsako spoštovanje. Zdi se, da vesoljska znanost, ki je bila uspešna, čeprav ob zelo visokih stroških, lahko doseže sanje Edgarja Morina po „planetarni izobrazbi" skozi proces „humanizacije". Veseli nas, da lahko poudarimo, da francoski interdisciplinarni mislec na zadnji strani svojega zadnjega dela *Pot* (*La Voie*) (Morin, 2012) razmišlja o številnih možnostih, ki so na voljo ljudem, ki stremijo proti Kozmosu, med drugim: i.) potovanje v vesolje v prihodnjih tisočih letih, ii.) možnost migracije človeka na naseljive planete, iii.) možnost raziskovanja obstoja drugih oblik inteligence, ki se razlikujejo od človeka, iv.) obstoj vzporednih kozmosov, v.) raziskovanje dejstva, ali je stvarnost prostor-čas vtisnjena v stvarnost, kjer prostor in čas manjkata, in vi.) kontinuiteta simbioze med človekom in tehnično proizvodnjo.

Če se želimo preseliti na Mars, moramo ustvariti nove znanosti, nove tehnologije, nove materiale (De Santo, 2011), kar pa sedaj še ne bo škodljivo za to področje človekove dejavnosti.

ZAHVALE

Želimo se zahvaliti profesorju Radu Pišotu, glavnemu uredniku revije *Annales Kinesiologiae*, za objavo tega prispevka in za spodbujanje želje filozofov, izražene na konferenci, po zadostnem financiranju raziskovanja vesolja na področju družbenih ved.

Hvala tudi Drugi univerzi v Neaplju, Univerzi v Salernu, Univerzi Federico II, Italijanski vesoljski agenciji in Italijanskemu inštitutu za filozofske študije, ki so omogočile ta dogodek.

Za konec pa se zahvaljujemo Mateju Plevniku, članu uredniškega odbora, za čas, ki ga je posvetil uresničevanju tega projekta. Sodelovanje z njim mi je bilo v veliko zadovoljstvo.

RAZLAGA KRATIC

Diehls-Kranz. Die Fragmente der Vorsokratiker, 3 vols. Kranz W, Ed., 6th Edition, Zurich, Weidman 1951─52. Knjiga vsebuje vse dostopne tekste iz časa pred Sokratom. Vsak avtor je označen s številko. Vpisi so označeni kot (a) pričanja, ki izhajajo iz avtorjevega življenja in dela, (b) dejstva v besedah, ki izražajo točna besede avtorjev, in (c) imitacije, ki so izdale avtorja kot model.

REFERENCES AND NOTES / REFERENCE IN OPOMBE

Bruno, G. (1985). De l'universo infinito e mondi. In/V Dialoghi Italiani, Bruno, G., Gentile, G. Aquilecchia, (eds./ur.), Vol I. (p./str. 406) Florence/Firence: Sansoni.

Campanella, T. (2001). The City of the Sun. In/V Ernst, G. (ed./ur.) (p./str. 82). Milan/Milano: Rizzoli.

Camus, A. (1988). Wedding at Tipaza. In/V Camus A., Opere. Romanzi racconti, saggi. M. T. Giaveri &/in R. Grenier (edited and introduced by/uredila in predstavila) (p./str. 65). Milan/Milano: Bompiani.

Capizzi, A. (1982). La Repubblica cosmica. Appunti per una storia non peripatetica della nascita della filosofia in Grecia. Rome/Rim: Edizioni dell'Ateneo, pp/str. 233–238.

Cicero. De natura deorum, I, 8,18.

Diehls-Kranz. (a). Vorsokratiker 68 A 75. In/V 68 b 5 bis, 8,1 one reads "men of the early generations lived without law like beasts and used to get out from the pasture in dribs and drabs"/citat "mlade generacije so živele brez zakonov kot zveri in so uhajale s pašnikov po kapljicah".

Diehls-Kranz. (b). Vorsokratiker 68B 30.

Diehls-Kranz. (c). Vorsokratiker DK 67 A 8, DK 67 A 9 e DK 68 A 56.

Diehls-Kranz. (d). Vorsokratiker DK 67 A 7.

Epicurus (1970). Letter to Meneceus./Pismo Meneceusu. In/V G. Arrighetti (ed./ur.), Epicurus, Works/Epikur, Dela (124–125 and/in 123). Turin/Torino: Einaudi.

Exodus. (a). 20, 2–17.

Exodus. (b). 20, 22–23, 19.

Genta G. (2000). La culla troppo stretta. Le frontiere naturali dello spazio. Turin/Torino: Paravia.

Herodotus. (a). Histories, Vol I (Clio), 189.

Herodotus. (b). Histories, Vol VII (Polymnia), 34–35.

Hesiod. (a). Theogony, 411–412.

Hesiod. (b). Theogony, 462, 476, 486, 491.

Masi, G. (1981). Il pensiero ellenistico, Queb, Bologna, p. 155.

Morin, E. (2011). La voie. Paris/Pariz: Arthéme Fayard. Italian translation/Italijanski prevod R. Cortina. La via. Milan/Milano.

Spinoza, B. (1980). Theological-Political treatise. Introduction of/Uvod E. Giancotti Boscherini. Translation and comment of/Prevod in komentar A. Droetto and/in E. Giancotti Boscherini. Turin/Torino: Einaudi, cap./pogl. XV, p./str. 361.

Tsiolkovsky, K. (1928). The willing of Universe. Kaluga.

Vico, G.B. (1976) (a). The new science. In/V F. Nicoli (ed./ur.), paragraph 369 and following/ odstavek 369 in nadaljevanje. Turin/Torino: Einaudi.

Vico, G.B. (1976) (b). "Thus the early theologian poets invented the first divine novel, the greatest of those invented thereafter. Jupiter, king and father of men and gods […] was respected, revered and observed". "Tako so zgodnji teološki pesniki izumili prvo božansko novelo, najbolj izjemno med vsemi, ki so nastale po njej. Jupiter, kralj in oče vseh ljudi in bogov […], je bil spoštovan, cenjen in upoštevan". Op. cit, odstavek 379.

De Santo, N. G. (2011) (a). Spazio, la nuova dimensione che l`umanità deve affrontare. / Space, the final conquest. Spacemag, 3(5). 39–41.

De Santo, N. G., Cirillo, M., Virzo, A., Bizzarri, M., Viviani, A., Marotta, G., et al. (2011) (b). Living the space – The space a human habitat. Annales Kinesiologiae, 2, 95–100.