

UNIVERSITATEA BABEȘ-BOLYAI, CLUJ-NAPOCA
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Cerul între Sferă și Glob.
Întâlniri sferice intermediale ale Antropocenei și a
Culturilor Non-Occidentale în Planetariu

Rezumat

Conducător științific:

Assoc. prof. Dr. habil. Florin ȚOLAȘ

Doctorand:

Adela-Iuliana MUNTEAN (NEGUSTOR)

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Cuvinte cheie: *contemplator caeli, sphairopoia*, Apollo, planetariu, dom, cinematografia fulldome, Antropocenă, technosferă, indigen, globalizare.

Rezumat

Prin prisma perspectivelor paradoxale ale sferei și globului, teza doctorală intitulată *Cerul între Sferă și Glob, Întâlniri Sferice Intermediale ale Antropocenei și a Culturilor Non-Occidentale în Planetariu* prezintă evoluția reprezentării cerului de-a lungul celor trei etape ale globalizării și a schimbărilor paradigmatică Om-Univers survenite din trecerea de la geocentrism spre heliocentrism, dizolvarea sferei cerești și raportarea umanității în infinitatea Universului.

În căutarea de a înțelege poziția sa în Univers, omul a făcut nenumărate schimburi de perspective între poziționarea sa centrală și periferică. Deși tranziția de la modelul geocentric centrat pe Pământ către modelul heliocentric centrat pe Soare este una bine-cunoscută, această schimbare de perspectivă reprezintă doar un aspect al relației complexe pe care umanitatea o are cu spațiul celest. Un alt tip de explorare perspectivală dintre centru și periferie este strict legată de poziționarea Omului care observă Cerul. Această explorare mai puțin cunoscută se află înrădăcinată între perspectivele care configurează Cerul între sferă și glob. **Perspectiva sferică** prinde contur când observarea cerului și a corpurilor cerești se realizează de pe Pământ. Din această poziție, filosofii greci au postulat că Pământul este nucleul unui univers sferic, cu corpuri cerești care se mișcă pe orbite circulare. Cu toate acestea, exista o curiozitate neîncetată cu privire la ceea ce se afla dincolo de limitele acestei sfere cerești, astfel că folosind intelectul și imaginația, filosofii greci s-au îmbarcat în călătorii simbolice, depășind limitele acesteia. Din acest unghi îndepărtat, ei au privit înapoi spre Pământul acum perceput ca mic și neînsemnat. Această navigare acorporală a marcat inaugurarea **perspectivei Apolinice** care face posibilă ca sfera cerească privită până atunci din interior să fie reconceptuată ca **un glob privit din exterior**. Apollo, zeul grec care conducea carul de aur al soarelui zbura suficient de sus pentru a privi Pământul de sus. Această **perspectivă a globului** a influențat în mod semnificativ gândirea filozofică, antropologică, psihologică și reprezentatională, introducând capacitatea de a vedea universul dintr-un punct de vedere detașat, divin. Pe lângă călătoriile lor imaginative, grecii au făcut posibilă această perspectivă Apolinică și prin crearea globului ceresc, un model la scară redusă al universului sferic care plasează Pământul în centrul său și reprezintă constelațiile într-un mod care reflectă pozițiile lor reale pe cer. Acest mod de reprezentare a marcat o schimbare semnificativă față de punctul

de vedere convențional al perspectivei sferice, deoarece pentru a face față provocării de a prezenta constelațiile dintr-o perspectivă externă, creatorii de globuri au folosit în mod ingenios imagini inverse ale constelațiilor, potrivindu-se astfel cu modul în care un observator le-ar vedea din afara sferei cerești unde constelațiile sunt reconceptuate în oglindă pe un glob privit din exterior. Această abordare a evidențiat contrastul dintre proiecțiile gnomonice (interior) și ortografice (exterior), întruchipând capacitatea duală a observatorului de a se percepe cerul atât din interiorul cât și din afara sferei cerești. Astfel trecerea de la geocentrism către heliocentrism care a durat aproape 1700 de ani pentru a fi îmbrățișată pe deplin, reprezintă doar una din crizele existențiale ale umanității. În toată această perioadă, Copernic, deși propunea modelul heliocentric, nu a negat existența sferelor cerești care făceau posibilă configurarea Cerului între sferă și glob. Tycho Brahe a fost cel care a contestat noțiunea de sferă cristalină care cuprindea Pământul în mijlocul său. Așadar, o turnură și mai mare decât trecerea de la geocentrism la heliocentrism a fost declanșată de dezintegrarea conceptului de sferă cerească și poziționarea umanității într-un univers infinit. Această schimbare a aprins conflicte între percepția umană și intelect, precum și între știință și religie.

Cu toate acestea, în urma dizolvării acestor sfere, omenirea a creat cupola planetariului, un spațiu semisferic, ca un sanctuar pentru a contempla rolul său pe Pământ și în Univers. Adăpostită sub această cupolă, umanitatea se află în mijlocul unei alte dileme existențiale a cărei amenințare la adresa existenței tuturor formelor de viață solicită o reevaluare a relației noastre cu planeta și universul. O nouă viziune asupra acestei paradigme este Antropocena, un concept care evidențiază impactul semnificativ al umanității asupra ecosistemelor Pământului.

În această teză investighez potențialul generator de transformare a mediilor imersive, cum ar fi filmele fulldome, dar și alte proiecte intermediale prezentate în planetarii. Toate acestea cu scopul de a oferi o viziune sferică asupra lumii.

Spre deosebire de perspectiva tradițională excentrică a globului, care poziționează spectatorii ca observatori externi, această tehnologie imersivă oferă o întâlnire concentrată spre interior, favorizând un sentiment mai profund de conexiune cu împrejurimile noastre. Prin studii de caz detaliate, cercetez modul în care planetariile pot remodela atitudinile față de problemele legate de mediu și drepturile omului. Urmărind evoluția istorică a sferei și relația sa complicată cu globul, navighez în interacțiunea complexă dintre îmbrățișarea perspectivei

sferice și detașarea asociată cu punctul de vedere a globului, dezvăluind coexistența lor paradoxală.

Pornind de la aceste considerente prezentate rezumativ mai sus, se regăsesc și motivele pentru care am ales să tratez acest subiect: pe de o parte există o motivație subiectivă dată de preocupările mele pentru planetariu și proiecțiile sferice în domuri mobile. Această direcție de activitate s-a manifestat prin mai multe proiecte practice în cadrul cărora am implementat diverse programe artistice și culturale. Astfel am reușit să aduc în peisajul cultural românesc și nu numai conceptul de proiecție digitală în planetariu și domul mobil (vezi *Proiectele mele de dom: 2016-2024*). Pe lângă această latură practică, în urma unor cercetări teoretice am constatat că acest subiect este aproape necunoscut și nevalorificat în literatura de specialitate din România. Acesta a fost al doilea motiv care a determinat motivația alegerii temei de doctorat.

În demersul meu am pornit de la câteva întrebări de cercetare, care au fost concepute pentru a explora conexiunile complexe dintre schimbările istorice ale înțelegerii astronomice, progresele tehnologice și impactul lor cultural și societal.

O primă interogație pornește de la modul în care conceptul sferic al *kosmosului* dezvoltat de greci a influențat perspectivele filozofice, teologice și științifice ale civilizațiilor ulterioare, inclusiv perioadele creștine medievale și renescentiste. Care au fost factorii cheie care au determinat trecerea de la conceptul de sfere cerești la acceptarea unui univers infinit și cum a influențat această schimbare gândirea științifică și filozofică ulterioară și sistemul de reprezentare cerească? Cum ne-au transformat progresele tehnologice, cum ar fi utilizarea telescopului și a sateliților de observare a Pământului, explorarea și înțelegerea universului? Care a fost impactul cronofotografiei și ulterior a cinematografiei asupra cercetării științifice, în special în astronomie, și cum a evoluat această relație? Cum au evoluat planetariile de la înființarea lor în 1924 în ceea ce privește tehnologia, arhitectura și rolul lor la intersecția științei, artei și educației, și cum a transformat invenția și integrarea noilor tehnologii în planetarii înțelegerea publicului asupra mediului înconjurător? Cum reflectă și influențează planetariile relația umanității cu Pământul în epoca Antropocenei?

Sursele cercetării

Pentru a putea răspunde la aceste întrebări am utilizat o bibliografie vastă care acoperă toate perioadele istorice analizate. Una dintre dificultățile cu care m-am confruntat a fost

selectarea și utilizarea celor mai relevante texte (volume sau articole), care să îmi contureze fiecare capitol în parte. În literatura internațională există multe cercetări care au legătură directă sau conexă cu subiectul acestei teze, însă nicio abordare care să ofere o analiză complexă din perspectivă interdisciplinară. Bogăția materialului bibliografic cercetat, aparținând specialiștilor unor domenii diverse de cercetare (geografie, filosofie, astronomie, științele naturii, istoria artei, etc.), m-a ajutat să creionez o imagine de ansamblu asupra viziunii diacronice în ceea ce privește reprezentarea Cerului. A doua categorie de surse pe care am utilizat-o sunt studiile de caz, în limbajul de specialitate producții audio-vizuale fulldome despre Antropocenă și nuanțele pe care acestea la implică.

Am încercat să răspund la întrebările de cercetare de mai sus în cele trei capitole ale tezei de doctorat: capitolul I intitulat *GLOBALIZAREA METAFIZICĂ* conturează evoluția înțelegerii cosmice de la conceptele sferice ale grecilor până la schimburile intelectuale din Evul Mediu. Această perioadă cuprinde contribuțiile astronomice fundamentate de filozofii greci, adaptările romane și bizantine în arhitectură și iconografie și rolul critic al savanților arabi în conservarea și îmbunătățirea cunoștințelor preluate de la greci. Această sinergie a înțelepciunii antice și a teologiei creștine din Evul Mediu a creat fundamentul pentru Renaștere și Iluminism. Capitolul ilustrează încercarea persistentă a umanității de a înțelege cosmosul, prezentând o călătorie de investigare și expresie de secole care ne-a modelat profund viziunea asupra universului și locul nostru în el.

Capitolul II intitulat *GLOBALIZAREA TERESTRĂ ȘI CELESTĂ* parcurge trecerea monumentală de la geocentrism la heliocentrism, dizolvarea sferei cerești și poziționarea umanității în infinitatea Universului cu narațiunea sa evolutivă care se extinde până în Epoca Explorării, evidențiind evoluția împletită a navigației cerești și a descoperirii terestre. În plus, capitolul explorează tranziția de la cunoașterea privată la instituirea Muzeului cu acces pentru publicul larg, exemplificată prin crearea unor sfere imersive care au simbolizat căutarea umanității de a înțelege Pământul și Cerul. De asemenea, capitolul II încapsulează și evoluția planetariilor de la înființarea lor în 1924, subliniind rolul lor de a îmbina știința, arta și tehnologia. Acest capitol traversează repere semnificative din istoria descoperirilor și colaborării științifice de la sfârșitul secolului al XIX-lea până la începutul secolului al XX-lea, evidențiind modul în care aceste evoluții ne-au remodelat înțelegerea spațiului ceresc și metodele noastre de cercetare.

În prima sa parte, capitolul III intitulat *GLOBALIZAREA DIGITALĂ* prezintă relația complexă dintre umanitate și Pământ în Antropocenă, examinând modul în care planetariile servesc drept platforme pentru explorarea acestei dinamici. A doua parte a acestui capitol explorează potențialul de transformare al planetariilor în prezentarea unei viziuni mai incluzive și pluraliste asupra universului, subliniind importanța integrării perspectivelor non-europene și a diverselor povești culturale ale cerului prin studii de caz cinematografice full-dome care îmbogățesc narațiunile istorice dominante.

Concluzii

Contribuția grecească la înțelegerea sferică a cosmosului servește drept piatră de temelie în evoluția gândirii științifice și filozofice. Îmbinând rigoarea matematică cu profunzimea filozofică, grecii nu numai că au transformat perspectiva umanității asupra cosmosului, dar au și stabilit o moștenire de cercetare care continuă să inspire căutarea cunoașterii despre univers. Capacitatea lor de a vizualiza și reprezenta sfera cerească atât din punct de vedere intern, cât și extern a promovat o formă unică de reflexivitate conștientă, încorporând o viziune apoliniană rezonând de-a lungul secolelor, modelând țesătura gândirii globale și imaginației geografice contemporane.

Călătoria de la simbolismul arhitectural roman la fuziunea bizantină a iconografiei politice și religioase și rolul esențial al lumii arabe în conservarea și îmbunătățirea cunoștințelor antice, subliniază un continuum bogat grecesc de cercetare și expresie umană. Această odisee istorică reflectă căutarea de durată de a înțelege spațiul celest, manifestându-se în realizările materiale, simbolice și intelectuale ale civilizațiilor succesive. Moștenirea acestor perioade- de la măreția tangibilă a Panteonului până la contribuțiile intelectuale ale savanților arabi- ilustrează impactul profund al schimbului cultural și al adaptării în modelarea înțelegerii noastre colective a universului și a locului nostru în el.

Evul Mediu a fost martorul unei interacțiuni profunde între moștenirile intelectuale romane și grecești, creștinism și integrarea cunoștințelor antice în gândirea medievală. Această relație complexă, modelată de convertirea cuceritorilor germani la creștinism, a facilitat păstrarea și transformarea cunoștințelor romane și grecești în cadrul doctrinei și simbolismului creștin.

Descoperirile lui Tycho Brahe au provocat cosmologia aristotelică dominantă, ducând la dizolvarea sferelor cerești tradiționale, inițiind astfel declinul geocentrismului. Dispariția sferelor cerești a avut implicații profunde, declanșând spaima existențială și contribuind la o schimbare a viziunii asupra lumii în timpul Renașterii, ducând în cele din urmă la o nouă înțelegere a spațiului celest. Contribuțiile inovatoare ale lui Johannes Kepler în astronomie, bazate pe observațiile lui Tycho Brahe, au marcat o schimbare transformatoare în gândirea cosmologică occidentală.

Întâlnirile sferice intermediale ale Antropocenei explorează interacțiunea dintre antroponoo-sferele create de om și sferele Pământului, subliniind fuziunea cercetării științifice și a expresiei artistice în Planetariu. Progresele tehnologice din planetarii au revoluționat înțelegerea universului și conexiunea noastră cu Pământul. Proiectoarele digitale prezintă vizualizări cerești și terestre complexe, permițând explorarea sistemelor diversificate ale Pământului prin Earth System Science (ESS). Planetariile digitale oferă vizualizări geostiințifice de impact, cu rolul de a educa și implica publicul spre geografie, geologie și schimbările climatice. Acest nou domeniu despre Pământ prezintă aceste interacțiuni și ilustrează modul în care schimbările dintr-o sferă le afectează pe altele, inclusiv antroposfera emergentă.

Ca o concluzie generală privind rolul Planetariului în Antropocenă, putem afirma că acesta oferă oportunitatea de a diversifica cunoștințele globalizate și de a prezenta viziuni mai incluzive și pluraliste asupra spațiului celest, subliniind importanța integrării perspectivelor non-europene ale cerului. Numeroasele studii de caz cinematografice fulldome pe care le-am utilizat îmbogățesc narațiunile istorice dominante oferind publicului oportunitatea de a privi în tapiseria bogată a cerului care prezintă povești aparținând diferitelor culturi.

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