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IMMAGINI?



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CONVEGNO INTERNAZIONALE E INTERDISCIPLINARE
INTERNATIONAL AND INTERDISCIPLINARY CONFERENCE

IMMAGINE E IMMAGINAZIONE

IMAGE AND IMAGINATION

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WHY IMMAGINI?

[ITA] //

Perché un convegno internazionale mantiene il titolo in lingua italiana mentre il sottotitolo è bilingue? La ragione sta nel ruolo del punto interrogativo, tanto centrale da essere eletto, raddoppiato simmetricamente, logo del convegno. Si tratta, chiaramente, di un significato duplice. Il primo è un gioco di parole che lega indissolubilmente la parola "immagini" alla parola "immaginazione" e originato dal punto interrogativo, che estende di fatto l'ampiezza semantica di "immagini" al quesito "stai immaginando?" o all'esortazione "puoi immaginare?". Il secondo significato è un atteggiamento che accomuna i promotori e gli organizzatori del convegno ovvero l'atteggiamento di chi è convinto che il Sapere è un patrimonio in divenire e sempre aperto, che si costruisce prima di tutto formulando interrogativi per oltrepassare limiti e frontiere. E l'interrogativo da cui scaturisce questo convegno interdisciplinare è piuttosto semplice: gli studiosi che operano in ambiti disciplinari differenti come indagano il rapporto tra immagine e immaginazione? Così gli studiosi della rappresentazione, della comunicazione visiva, dell'educazione, della psicologia e tanti altri (senza presunzione di esaustività) sono stati invitati a confrontarsi su un campo di ricerca comune, in cui ognuno si muove in modo diverso. Proprio questa "coabitazione" fa del rapporto tra immagine e immaginazione un campo pienamente interdisciplinare, o meglio transdisciplinare: il mondo dell'immagine e del visuale, è un mondo in cui tutte le discipline elencate esprimono a pieno titolo proprie teorie e prassi operative, legittimate anche dal riconoscimento reciproco di interazioni fin troppo occasionali. Se è vero che la stagione dell'immagine che si fa pervasiva – fiorita tra la fine dell'Ottocento e gli inizi del Novecento con la diffusione di cinema e fotografia e confermata negli anni novanta del Novecento attraverso la presa di coscienza (e di posizione) da parte degli studiosi dei Visual Studies in area anglofona e della Bildwissenschaft in area germanofona – sta subendo una nuova trasformazione, appare quanto mai opportuno affrontare questo dibattito ora. L'immagine nel XXI secolo è digitale, pervasiva, rapida. È un'immagine filtrata dai dispositivi mobili, in entrata come in uscita, che viene prodotta, consumata all'istante e consegnata prima a chiunque (anche a chi non sappiamo e magari a chi non vorremmo) e poi a un oblio stazionario, relegata in una condizione di irraggiungibilità (spezzato ormai il rapporto di prossimità temporale) in cui è tuttavia impossibile cancellarne completamente le tracce. L'immagine nel XXI secolo è uno spazio. È uno spazio visuale, formato da dimensioni note ma la cui profondità è da scoprire, in cui si agisce e si costruiscono relazioni attraverso l'immaginazione. L'immagine nel XXI secolo è immersiva, in un costante equilibrio tra la tridimensionalità della fruizione e la bidimensionalità della proiezione. L'immagine nel XXI secolo è ancora più di prima il veicolo preferenziale per lo sviluppo dell'immaginazione e dell'ideazione, per la conformazione tipica delle creatività figurative (architettura, pittura, fumetto, design visuale, infografica ecc.). L'immagine nel XXI secolo, oggi, è un'esperienza visuale che produce uno sguardo che conduce all'immaginazione. I contributi presentati dagli autori che hanno risposto alla Call for paper sono estremamente differenziati, ma possono essere organizzati in tre grandi filoni. Il primo è praticato dagli autori che hanno approcciato questioni di carattere generale, riflettendo spesso sul ruolo delle diverse discipline nel campo comune del rapporto immagine-immaginazione, con esiti forieri di ulteriori futuri approfondimenti (soprattutto nell'ambito della rappresentazione e della pedagogia). Il secondo è definito dagli autori che hanno rintracciato genealogie e radici storiche di aspetti attuali della cultura visuale. Il terzo è costituito dagli autori che, presentando un numero ragguardevole di studi specifici, compongono di fatto un repertorio ampio e al contempo profondo di esperienze d'uso delle immagini e dell'immaginazione. In questo insieme variegato ma armonico si innestano le riflessioni e le esperienze dei keynote speaker provenienti dalle più disparate aree culturali e geografiche, che hanno proposto linee guida su come sia possibile – e tutto sommato facile – declinare

il rapporto tra immagine e immaginazione se lo sguardo che poniamo in essere viene, anche solo in parte, ibridato con altre discipline. IMMAGINI?

[ENG] //////////////////////////////////////

Why does an international conference maintain its Italian title when its subtitle is bilingual? This is likely because 'IMMAGINI' has a double meaning; it is a word pun that links the word 'images' to the word 'imagination'. The question mark then extends the semantic amplitude of 'images' to the question 'Are you imagining?', or to the exhortation 'Can you imagine?'. The second meaning is an attitude shared by the conference promoters and the organizers, who are convinced that knowledge is a heritage in the making and always open, which is primarily built by formulating questions to overcome boundaries and borders. This interdisciplinary conference raises the question: How can scholars from different disciplinary fields investigate the relationships between images and imagination? Therefore, various scholars, including of graphic representation, visual communication, education and psychology, are invited to confront a common research field. This cohabitation results in an interdisciplinary, or rather trans-disciplinary, approach. All of the listed disciplines express their theories and operative practices as images, also legitimated by the mutual recognition of the occasionally interactions. This debate is timely. We are now undergoing a transformation from the age when images flourished (between the end of the nineteenth and the beginning of the twentieth century with the diffusion of cinema and photography) into the nineties of the twentieth century through the acquisition of consciousness (and position) by scholars of Visual Studies in English speaking countries and of Bildwissenschaft in German-speaking countries. The image in the 21st century is digital, quickly and pervasive. It is an image filtered by mobile devices, in input as in output, which is instantly produced, consumed and delivered first to anyone (even to those whom you do not know and maybe to those whom you do not want) and then to a steady oblivion. It is relegated to a state of unreachability (broken by now the relationship of time proximity), in which it is, however, impossible to completely delete the traces. The image in the 21st century is a space. It is a visual space, formed by known dimensions but whose depth is to be discovered, in which one acts and builds relationships through imagination. The image in the 21st century is immersive, in a constant balance between the three-dimensionality of fruition and the two-dimensionality of the section of a projection. The image in the 21st century is still the preferred vehicle for the development of imagination and ideation, for the typical conformation of figurative creativity (architecture, painting, comics, graphic design, data visualization, etc.). The image in the 21st century is nowadays an experience of a visual artefact that produces a look that leads to imagination. The contributions presented by the authors who responded to the Call for Papers are positively heterogeneous but can be organised in three broad strands. The first is practised by the authors who have approached questions of a general nature, often reflecting on the role of the different disciplines in the common field of the image–imagination relationship, with results that would merit further study (in particular, in the field of graphic representation and pedagogy). The second is defined by the authors who have traced genealogies and historical roots in the current aspects of visual culture. The third is composed of authors presenting specific case studies and representing a wide and deep repertoire of experiences of the use of images and imagination. The reflections and experiences of the keynote speakers from the most diverse cultural and geographical areas can be grafted into this variegated but harmonious whole. They have proposed guidelines on how it is possible – and even easy – to decline the relationships between image and imagination if the glance we put in place is, even partially, hybridized with other disciplines. And if we really discover that hybridization enriches the identity? IMMAGINI?

CALL FOR PAPER

[ITA] //

Tra immagine e immaginazione intercorre una relazione biunivoca e indissolubile, le cui molteplici declinazioni coinvolgono linee di ricerca eterogenee e al contempo attigue: vi sono immagini che incarnano l'immaginazione del loro autore (disegno di progetto) e immagini che tentano di risalire alle sue intenzioni originarie (disegno conoscitivo); immagini profondamente radicate in uno spazio reale (mappe geografiche e immagini di città) e immagini agite in uno spazio necessariamente immaginato (virtual & augmented reality, città utopiche o spazi piranesiani); immagini che alterano intenzionalmente la realtà percepita (manipolazioni fotografiche) e immagini che derivano dall'inganno o dall'alterazione degli schemi percettivi [rappresentazioni anamorfiche e fenomeni dispercettivi]; immagini che costruiscono percorsi narrativi (visual storytelling) e immagini educative, capaci di formare il sapere, il saper fare e il saper essere (iconografia e iconologia didattica); immagini che potenziano l'esperienza narrativa del bambino [illustrazione per l'infanzia] e immagini esperienziali in cui trovano sintesi tempo e spazio (disegno infantile); immagini che stimolano l'immaginazione del loro fruitore (visual design) e immagini interattive che supportano l'immaginazione del pianificatore (elaborazione e visualizzazione di dati su scala territoriale). Le immagini in quanto artefatti visuali, "oggetti ideati", sintesi perfetta tra eidos ed eidolon, rappresentano e racchiudono mondi interi, reali o immaginari, nello spazio di uno sguardo. Questo sguardo si fa limite tra le caratteristiche pre-percettive dell'immagine e le sue caratteristiche pre-proiettive. Questo sguardo è il limite retinico tra ciò che un'immagine è e ciò che un'immagine significa. È lo sguardo che questo convegno si propone di indagare, attraverso il confronto tra contributi provenienti da diverse prospettive scientifiche, con l'intento di gettare nuova luce su interrogativi storici e di trarre nuovi spunti e applicazioni per il futuro delle immagini.

[ENG] //

A biunivocal and indissoluble relationship exists between image and imagination, whose multiple manifestations involve heterogeneous, and at the same time contiguous, research path: there are images that embody the imagination of their author (drawing design) and images that try to go back to his original intentions (survey drawing); images deeply rooted in real space [geographical maps and city images] and images acted in one necessarily imagined space (virtual & augmented reality, utopian city or piranesianic spaces); images that intentionally alter the perceived reality (photographic manipulations) and images that result from deception or alteration of perceptual schemes (anamorphic representations and dysperceptive phenomena); images that make narrative paths (visual storytelling) and educational images capable to form the knowledge, the know-how and the knowing how to be (iconography and iconology didactics); images that enhance the narrative experience of the child (illustration for children), and experiential images that integrate space and time (children's drawings); images that stimulate the imagination of their user (visual design) and interactive images that support the imagination of the urban planner (processing and visualization of territorial data). The images as visual artefacts, "designed objects", perfect synthesis between Eidos and Eidolon, represent and contain entire worlds, real or imaginary, in the space of a glance. This glance represents the limit between the pre-perceptual characteristics of the image and its pre-projective characteristics. This glance is the retinal boundary between what an image is and what an image means. The conference aims to investigate this gaze, through the comparison of contributions from different scientific perspectives, with the intention to shed new light on historical questions and to draw new ideas and applications for the future of the images.

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"ARRIVALS": NARRATING MIGRATION THROUGH IMAGES. THE USE OF IMAGES IN POST-TRAUMATIC THERAPY.

Federica Cavazzoni University of Milano - Bicocca, **Valentina Siracusa, Vittoria Castagner, Yaiza Balibrea, Diego Manduri** Associazione Istituti di Terapia Familiare
TRAUMA, PSYCHOLOGY, REFUGEES, COMPLEX PTSD, IMAGES, PSYCHOTHERAPY, MIGRATION.

IMAGES' HYPERTROPHY IN CONTEMPORARY SCENIC DESIGN. FROM IMAGINATION TRANSCENDENCE TO NEW MEDIA IMMANENCE IN SCENIC PERFORMANCES

Santi Centineo Polytechnic of Bari
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ART IS THINKING IN IMAGES (VIKTOR SHKLOVSKY), FOR WHOM "ANIMAGISM" WAS A FORM OF ILLITERACY OF THOUGHT

Francesco Cervellini University of Camerino
ARS, MASTER OF ARS, PAINTING, IMAGE, IMAGINATION, DISEGNO, SKETCHING.

ARCHITECTURE, COLOUR AND IMAGES. IDEAS AND DESIGNS BY FRIEDENSREICH HUNDERTWASSER

Emanuela Chiavoni Sapienza Università di Roma
ARCHITECTURE, COLOUR, IMAGES, DESIGN, HUNDERTWASSER.

KNOWN FOR UNKNOWN. IMAGES FROM THE PAST FOR THE PRESENT FUTURE

Luisa Chimenz, Nicoletta Sorrentino Università degli Studi di Genova
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DRAWING AND COGNITION

Enrico Cicalò Università degli Studi di Sassari DRAWING, COGNITION, GRAPHIC INTELLIGENCE, GRAPHICACY, LEARNING.

AD OCULOS. IMAGES, IMAGINATION AND ABSTRACT THINKING
Alessandra Cirafici University of Campania Luigi Vanvitelli
REPRESENTATION, ABSTRACT-MATHEMATICAL THINKING,
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Vincenzo Cirillo University of Campania Luigi Vanvitelli
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Giorgia Cocco Free University of Bozen
EMOTIONS, IMAGINATION FOR CREATIVITY, IMAGINATION AS A PEDAGOGICAL TOOL.

EMOTIONS ARE THE RUDDER OF OUR LIVES. INTENSITY AND DURATION IN YOUNG ADULTS

Marinella Coco, Maria Cristina Petralia, Giulia Di Gregorio, Valentina Perciavalle University of Catania, **Andrea Buscemi** Horus Cooperative Social, Ragusa
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SEEING MUSIC, MUSIC TO SEE. INTERDISCIPLINARY RELATIONS BETWEEN MUSICAL AND VISUAL ART EDUCATION IN ITALIAN. PRE-SCHOOL AND PRIMARY SCHOOL

Antonella Coppi Free University of Bozen
MUSIC, EDUCATION, ARTS, INTERDISCIPLINARITY, SCHOOL.

THE SURVEY IMAGE. INNOVATIVE METHODS AND INSTRUMENTS FOR THE REPRESENTATION OF FORTIFIED ARCHITECTURE AND LANDSCAPE

Luigi Corniello, Andrea Improta, Gianluca Manna, Enrico Mirra, Francesco Scialla University of Campania Luigi Vanvitelli
SURVEY IMAGE, LANDSCAPE, FORTIFIED ARCHITECTURE.

A HANDBOOK FOR TAILORING CRAFTSMANSHIP INDUSTRIES. COMMUNICATE THE INTANGIBLE VALUES OF TRADITIONAL METHODS THROUGH IMAGES

Maria D'Uonno University IUAV of Venice
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Paola Damiani Università di Torino, **Filippo Gomez Paloma** Università di Salerno
TEACHER TRAINING, SKILLS, EMOTIONS, RELATIONSHIP, IMAGINATION, TELLING, PICTURE, SYMBOLIC LANDSCAPE, EMBODIED COGNITION.

DEVELOP THE IMAGERY IN ARCHITECTURE. FROM THE FANTASTIC ARCHITECTURE OF COMICS TO THE REPRESENTATION OF THE IDEA

Michela De Domenico University of Messina
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DRAWING HANDS. THE THEMES OF REPRESENTATION IN STEINBERG AND ESCHER'S IMAGES

Edoardo Dotto Università di Catania

IMPOSSIBLE FIGURES, INCOMPLETENESS THEOREMS, ESCHER, STEINBERG.

DYNAMIC URBAN PROJECTION MAPPING

Tommaso Emler Sapienza University of Rome

PROJECTION MAPPING, INTERACTIVE DESIGN, 3D MODELING, PERCEPTION OF THE CITY, DYNAMIC URBAN PROJECTION MAPPING.

TEXTUAL IMAGES AND VISUAL TEXTS. COMPARATIVE LANGUAGES

Maria Linda Falcidieno Università degli Studi di Genova

TRANSLATIONS, PERCEPTION, ACCESSIBILITY, COMMUNICATION, METHODOLOGY.

VISUAL PEDAGOGY

Roberto Farnè Alma Mater Studiorum University of Bologna

IMAGE, VISUAL PEDAGOGY, OBSERVATION, DOCUMENTATION, REPRESENTATION.

THE DYNAMICALLY SUBLIME, VISION, AND IMAGE IN ARCHITECTURE. THE RELATIONSHIP BETWEEN 3D GRAPHICS AND PHYSIOLOGY OF VISION IN THE CONSTRUCTION OF RENDERING IMAGES

Cristian Farinella, Lorena Greco Sapienza University of Rome

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Sabrina Fava Università Cattolica del S. Cuore - Milano

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THE FIERA DEL MEDITERRANEO OF PALERMO 1946 - 1975. EPHEMERAL ARCHITECTURE AND APPARATUSES DURING THE YEARS OF THE ARTISTIC METAMORPHOSIS.

Francesca Fatta Mediterranea University of Reggio di Calabria

EPHEMERAL ARCHITECTURE, ADVERTISING GRAPHICS, EXHIBITION PAVILIONS, VISUAL COMMUNICATION.

THE VIRTUAL EXPERIENCE FOR CULTURAL HERITAGE: METHODS AND TOOLS COMPARISON FOR GEGUTI PALACE IN KUTAISI, GEORGIA

Federico Ferrari, Marco Medici University of Ferrara

CULTURAL HERITAGE, VIRTUAL REALITY, 3D SURVEY, IMMERSIVE EXPERIENCE.

SURVEY AND REPRESENTATION FOR RURAL LANDSCAPE. NEW TOOLS FOR NEW STRATEGIES: THE EXAMPLE OF CAMPELLO SUL CLITUNNO

Marco Filippucci, Fabio Bianconi, Elisa Bettolini, Michela Meschini, Marco Seccaroni University of Perugia

LANDSCAPE AND IMAGE, PERCEPTION, EYE TRACKING, ALGORITHMIC SPATIAL ANALYSIS, PARTICIPATION.

IMAGES OF THE OTHER WORLD. CHRONICLES OF EXILES IN AMERICA

Caterina Cristina Fiorentino University of Campania Luigi Vanvitelli

URBAN IMAGES, IMAGE AND IMAGINATION, IDENTITY.

MATHEMATICAL OPERATIONS VISUAL DICTIONARY: AN INTERACTIVE SUPPORT TO TEACH MATH TO CHILDREN NOT SPEAKING ITALIAN

Benedetta Frezzotti Studio Platypus Milano Istituto Europeo di Design, **Giulia Natale** PubCoder, Torino

ILLUSTRATIONS FOR CHILDREN, DIGITAL BOOK, IMAGE BASED TECHNOLOGIES FOR TEACHING, UNDERSTANDING BY DOING.

FROM THE PHOTOGRAPH TO THE META-IMAGE. MY PRACTICE-LED SEARCH FOR A NEW DIGITAL EPISTEMOLOGY

Massimiliano Fusari University of Westminster London

VISUAL COMMUNICATION, VISUAL EPISTEMOLOGY, VISUAL JOURNALISM, PRACTICE-LED RESEARCH, DIGITAL ONTOLOGY, VISUAL ONTOLOGY, PHOTOGRAPHY, PHOTOJOURNALISM, PICTORIAL TURN, VISUAL CULTURES.

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Manuela Gallerani Alma Mater Studiorum Università di Bologna
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ON THE IDEA OF MONTAGE AS FORM OF ARCHITECTURE PRODUCTION

Luca Garofalo Università di Camerino
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Vincenza Garofalo University of Palermo
PERCEPTION, GRAPHIC ANALYSIS, GEOMETRIC CONSTRUCTIONS, DRAWING.

EIDOGENESIS OF THE ARTIFICIAL: THE CASE OF THE RELATIONSHIPS BETWEEN MODELS OF THE "NATURAL IMAGE" AND CELLULAR AUTOMATA

Fabrizio Gay, Irene Cazzaro Università IUAV di Venezia
IMAGINATION, DESIGN THEORIES, IDEATION, WEAK TEXTUALISM, NATURAL IMAGE, MORPHOGENETIC MODELS, SHAPING, EIDOGENESIS OF ARTEFACTS, REALISTIC THEORY OF IMAGES, SEMIOTICS OF ARTEFACTS, CATEGORISATION, SELF-ORGANISED MATTER, MORPHOGENESIS, SEMIO-PHYSICS.

INTERCULTURAL EDUCATION AGAINST BUILDING WALLS. EDUCATIONAL POSSIBILITIES FROM PICTUREBOOKS FOR CHILDREN AND TEENAGERS

Mariangela Giusti Università di Milano - Bicocca
PICTUREBOOKS, INTERCULTURAL EDUCATION, VISUAL NARRATION, LITERATURE FOR CHILDREN, INTERCULTURAL LEARNING.

IMAGINING A NEW ITALY TO CREATE ITALIANS. LE VIE D'ITALIA FROM 1917 TO 1935

Elena Ippoliti, Francesca Guadagnoli Sapienza University of Rome
GEOGRAPHIC-CULTURAL IMAGERY, VISUAL DESIGN, TRAVEL, TOURISM, LE VIE D'ITALIA, ITALIAN TOURING CLUB.

PICTURES MEET WORDS: LEARNERS OF ENGLISH DESCRIBING MOTION SITUATIONS

Martina Irsara Free University of Bozen
IMAGES IN LINGUISTICS, PICTURE INTERPRETATION AND DESCRIPTION IN FURTHER LANGUAGE LEARNING, MOTION SITUATIONS.

THE ALL-POWERFUL FREEDOM: CREATIVITY AND RESILIENCE IN THE CONTEXT OF FRIEDL DICKER-BRANDEIS' ART TEACHING EXPERIMENT

Marco Ius University of Padua, **Michaela Sidenberg** Jewish Museum in Prague, Czech Republic
SHOAH, FRIEDL DICKER-BRANDEIS, EXPERIMENTAL ART TEACHING, RESILIENCE, RESILIENCE TUTOR, CREATIVITY, EDUCATION, REFORM PEDAGOGY.

(CON)TATTO. IMAGE AND MENTAL IMAGERY IN CHILDHOOD VISUAL IMPAIRMENT

Massimiliano Lo Turco Politecnico di Torino, **Elisa Reinaudo, Andreas Sicklinger** The German University in Cairo
IMAGERY, IMAGES, MENTAL REPRESENTATIONS, VISUAL IMPAIRMENT.

ACHEIROPOIETIC ARCHITECTURE

Davide Lombardi Xi'an Jiaotong, Liverpool University
COMPUTING MODELS, ALGORITHMIC DESIGN, AGENT BASED DESIGN, ACHEIROPOIETIC DESIGN.

PHOTOGRAPHIC RHAPSODIES. PICTURES FOR DESIGNING ARCHITECTURE, ARCHITECTURE FOR DESIGNING PICTURES

Marta Magagnini, Nicolò Sardo University of Camerino
ARCHITECTURAL PHOTOGRAPHY, EDITING, MANIPULATION, MIMESIS, BIRTH OF THE PROJECT.

A 'FORTUITOUS' IMAGINATION. JOSEF FRANK. THIRTEEN FANTASY HOUSES FOR DAGMAR GRILL

Francesco Maggio University of Palermo

RANDOM, ACCIDENTAL, INVENTION, CRITICISM, IMAGINATION.

ANALYSIS OF THE LANGUAGE OF THE HISTORICAL MAPS OF ABRUZZO FROM 1550 TO 1800. BETWEEN THE OBJECTIVE PORTRAYAL AND THE READING OF UNCONVENTIONAL CODES.

Alessia Maiolatesi Università degli Studi G. d'Annunzio, Chieti-Pescara

HISTORICAL MAPS, LANGUAGES, REPRESENTATION, CARTOGRAPHY, ABRUZZO.

ENGAGING IN THE CLASSROOM. LEARNING AND TEACHING THROUGH DIGITAL STORIES

Francesca Marone University of Naples Federico II

DIGITAL STORYTELLING, VISUAL STORYTELLING, TEACHING TRAINING, REFLECTIVE LEARNING.

PAGE AS A VISUAL STORY: AN ADVENTURE IN A WORKSHOP "IMAGES DEEPLY SETTLED IN A REAL SPACE TO PROMOTE CAMBIANO CITY'S (TURIN'S AREA) ARTISTIC, CULTURAL AND TERRITORIAL HERITAGE AND THE DISTILLERIA MAZZETTI D'ALTAVILLA IN ALEXANDRIA"

Anna Marotta, Ornella Bucolo, Daniela Miron, Claudio Multari, Claudio Rabino Politecnico di Torino

IMAGE, IMAGINATION, IMAGES OF TANGIBLE AND INTANGIBLE HERITAGE, VISUAL NARRATIVE.

VISUAL IMAGES AND LANGUAGE IN ARCHITECTURE: SIGNIFIER SEMIOTICS AND MEANING SEMIOTICS

Anna Marotta, Roberta Spallone, Marco Vitali, Ursula Zich,

Massimiliano Lo Turco, Elena Marchis, Martino Pavignano

Politecnico di Torino

VISUAL SEMIOTICS, IMAGE, METASEMIOTICS, EXPRESSION PLANE, CONTENT PLANE.

IMAGES OF PERUGIA. DRAWINGS OF THE CITY OF THE SCHOOLS OF ARCHITECTURE AND PERSPECTIVE OF THE "PIETRO VANNUCCI" ACADEMY OF FINE ARTS OF PERUGIA

Luca Martini Pietro Vannucci Academy of Fine Arts of Perugia

INVENTIVE DRAWING, IMAGE/S OF THE CITY, PERUGIA.

IMAGES NARRATING PLACES

Giovanna A. Massari University of Trento

AGENCY, ARCHITECTURE OF FORTIFICATIONS, DIGITAL REPRESENTATION, GRAPHIC COMMUNICATION, HABSBURG EMPIRE, MUSEUM INSTALLATIONS, VIRTUAL RECONSTRUCTION, VISUAL SIMULATION.

MULTIPLE IMAGES. NOTES ON GRAPHIC CATALOGUING

Valeria Menchetelli Università degli Studi di Perugia

IMAGINATION, REPRESENTATION, GRAPHICAL CATALOGUING, LIST, REPETITION, MULTIPLICITY.

THE PERSPECTIVE SYSTEM UNDERLYING THE LOW RELIEF OF SANSOVINO'S ANNUNCIATION. FOR A NARRATION OF THE ILLUSORY SPACE OF THE SCENE

Alessandra Meschini, Ramona Feriozzi University of Camerino

CULTURAL HERITAGE, INTEGRATED SURVEY, COGNITIVE DRAWING, PERSPECTIVE RENDERING, 3D RECONSTRUCTION, VIRTUAL NARRATION OF SPACE, VISUAL STORYTELLING.

THE SWIMMING EYE. THE EXPERIENCE OF READING PICTURES FROM BIRTH

Giulia Mirandola

ILLUSTRATED BOOKS AND WORDLESS BOOKS, VISUAL NARRATION, GRAPHIC INTELLIGENCE, ILLUSTRATIONS FOR CHILDREN IN THE PAST, PRESENT AND FUTURE.

HOW TO EVALUATE CREATIVITY IN INFANCY. A NEW METHOD FOR 3/4-YEAR-OLD CHILDREN

Paola Molina Università degli Studi di Torino, **Benedetta Frezzotti** Studio Platypus, Milano

INFANCY, CREATIVITY, TEST, TORRANCE TEST, REPRESENTATION, IMAGE.

DIACRISIS AND MIXED EMOTIONS IN THE RELATIONSHIP BETWEEN MUSIC AND ART CINEMA

Gianni Nuti Università della Valle d'Aosta

DIDACTICS AND PEDAGOGY OF ART, VISUAL NARRATIVE, MIXED EMOTION S, THOUGHT AND REPRESENTATION, TEACHER TRAINING.

THE STATUTES OF AUDIOVISUAL IMAGES. THE PERCEPTION OF TRUTH BETWEEN "FICTION" AND "REALITY"

Federico O. Oppedisano University of Camerino

DEVELOPING AND COMMUNICATING IDEAS, THEORY OF IMAGES, STATUTE OF IMAGES, IMAGES AND COLLECTIVE IMAGINATION, AUDIOVISUAL DESIGN, MASS COMMUNICATION.

IMAGINATION AND IMAGES: FROM THE TREATISE TO THE DIGITAL REPRESENTATION. SFORZINDA AND THE BRIDGES IN THE INDA VALLEY

Caterina Palestini Università degli Studi G. d'Annunzio, Chieti-Pescara

REPRESENTATION, UTOPIA, IDEAL CITY, TREATISE, BRIDGES.

WHEN TECHNOLOGY MEETS ART. MUSEUM PATHS BETWEEN REAL AND VIRTUAL

Chiara Panciroli, Veronica Russo, Anita Macaudo

Alma Mater Studiorum University of Bologna

VIRTUAL MUSEUM, LEARNING, EXPERIENCE, VISITORS, INVOLVEMENT.

A BIRDS EYE VIEW ON HISTORICAL MEMORY FOR A NEW VISION. DRAWING AND PHOTOGRAPHY AS AN AID TO LOOK AT THE FUTURE

Ivana Passamani Università degli Studi di Brescia

DRAWING, PHOTOGRAPHY, SIGHT-SITE, LANDSCAPE, HISTORICAL MEMORY.

THE IMAGE OF THE ORDER. FIGURATIVE RECONSTRUCTION OF THE ARCHITECTURE IN THE RECUEIL ELEMENTAIRE D'ARCHITECTURE BY JEAN FRANÇOIS DE NEUFFORGE

Domenico Pastore Polytechnic of Bari

ARCHITECTURAL ORDERS, SCHEME, GRAPHICAL ANALYSIS, NEOCLASSICISM.

DIAGRAMS AS HEURISTIC TOOLS. A SEMIOTIC INVESTIGATION TO PROVIDE A THEORETICAL MODEL FOR THE DESIGN OF DIAGRAMS

Emilio Patuzzo Politecnico di Milano

DIAGRAMS, DESIGN, SEMIOTIC, K-INTERPRETANT, ANALOGY, VISUALIZING, COMMUNICATION.

IMAGE AS "PRODUCT": PROCEDURES FOR FORMING AND COMMUNICATING THOUGHTS

Cristina Pellegatta Sapienza University of Rome

VISUAL MODEL, GEOMETRICAL STUDIES, GRAPHIC SEMIOLOGY, TECHNICAL TOOLS.

THE PROJECT "INTERACTIVE TOPOGRAPHY OF DANTE'S INFERNO". TRANSFER OF KNOWLEDGE AND DESIGN OF DIDACTIC TOOLS

Luciano Perondi, Giulia Bonora, Daniele De Rosa, Giampiero Dalai, Adelaide Imperato Alpaca società cooperativa, **Rossella D'Ugo, Berta Martini** Università di Urbino

TRANSFER OF KNOWLEDGE, DIDACTICS, SINSEMÍA, INTERACTION DESIGN, NARRATIVE INTERACTION, USABILITY TESTING, CULTURAL HERITAGE, THEORIES OF IMAGES, THEORIES OF WRITING, DIDACTIC TOOLS.

INCOMPLETA REIFICERE: THE INCOMPLETE FAÇADE OF THE CHURCH OF SAN LORENZO IN MONTEDINOVE AND ITS VIRTUAL IMAGE

Enrica Petrucci, Alessandro Vannicola

Università di Camerino

CULTURAL HERITAGE, INCOMPLETE FAÇADES, VIRTUAL RESTORATION, VIDEO MAPPING.

LOREM IPSUM DOLOR. THE TEXT/IMAGE RELATIONSHIP IN THE PROCESS OF PRODUCING ANALOGUE AND DIGITAL GRAPHICS

Jonathan Pierini ISIA Urbino, **Gianluca Camillini** Faculty of Design and Art – Free University of Bozen

TIPOGRAFIA, GRAPHIC DESIGN, HISTORY OF DESIGN, TEORIE DELL'IMMAGINE, DESIGN DELLA COMUNICAZIONE, IMMAGINI DEL PATRIMONIO TANGIBILE E INTANGIBILE, NARRAZIONE VISUAL, COMUNICAZIONE DI MASSA, IMMAGINAZIONE PER LA CREATIVITÀ.

TITLE FOR FIRST INTERNATIONAL AND INTERDISCIPLINARY CONFERENCE ON THE RELATIONSHIP BETWEEN IMAGE AND IMAGINATION IN REPRESENTATION, COMMUNICATION, EDUCATION AND PSYCHOLOGY

Barbara E. A. Piga Politecnico di Milano, **Marco Boffi**, **Nicola Rainisio** Università di Milano

EXPERIENTIAL SIMULATION, ENVIRONMENTAL PSYCHOLOGY, URBAN DESIGN.

IMAGES FOR DECONSTRUCTING THE COMPLEXITY AND IMAGES FOR CONSTRUCTING THE COLLECTIVE IMAGINATION IN THE CASE OF THE ALPINE LANDSCAPE. A SELECTED OVERVIEW

Paolo Piumatti Politecnico di Torino

LANDSCAPE, PANORAMA, REPRESENTATION, DECONSTRUCTION, INTANGIBLE HERITAGE, DIGITAL MODELS, ALPS.

"SPECIAL" NARRATIONS: THE PHOTOGRAPHIC ALBUMS OF THE MEDICAL PEDAGOGICAL SCHOOL PADRE GEMELLI IN TURIN

Francesca Davida Pizzigoni Istituto Nazionale Documentazione Innovazione e Ricerca Educativa

PHOTOGRAPHIC ALBUM, SPECIAL SCHOOL, VISUAL NARRATION, IMAGINATION, EDUCATION.

FORMING CONSCIOUS CONSUMPTION: VISUAL MEMORIES FROM THE 1950S UP TO DATE IN THE MULTIMEDIA REPRESENTATION OF THE VISOSMAPPING PLATFORM

Paola Puma, **Giuseppe Nicastro**, **Stefano Oliviero** Università degli Studi di Firenze

VISUAL NARRATION, VISUAL TECHNOLOGIES FOR TEACHING, VIRTUAL LEARNING SPACES, EDUCATION AND HISTORY OF CONSUMPTION, MULTIMEDIA REPRESENTATION.

MIXED MEDIA. ARCHITECTURE AND VISUAL NARRATIVE

Fabio Quici Sapienza Università di Roma

ARCHITECTURE, STORYTELLING, MEDIA, COMMUNICATION, REPRESENTATION, VISUALIZATION, VISUAL STUDIES, IMAGES, VIDEO, ILLUSTRATION.

NEW IMAGES. IMAGINATION IN THE PROCESS OF AESTHETIC PRACTICE. THE PROCESS OF COLLAGE

Michael Renner The Basel School of Design HGK FHNW

NEW IMAGES, DESIGN PROCESS, IMAGINATION, CONFIGURATION, COLLAGE, ARCHIVE, IMAGE SCHEMA, PRACTICE-LED ICONIC RESEARCH.

THE AESTHETICS AND POETICS OF THE IMAGE IN JAPANESE CULTURE. AN EXAMPLE FROM THE LITERARY TRADITION: YUKIGUNI [SNOW COUNTRY]

Laura Ricca Alma Mater Studiorum Università di Bologna

AESTHETICS, POETICS, NARRATIVE, REPRESENTATION.

NARRATION THROUGH IMAGES. THE SOCIAL ROLE OF THE GRAPHIC STORY IN THE WORK OF FORTUNATO DEPERO

Ilaria Riccioni Free University of Bozen

SOCIAL THEORY, ARTS, AVANT-GARDE ART, IMAGES, SOCIAL CONSTRUCTION OF TASTE, INDUSTRIAL IMAGINATION.

THE IMAGE IN THE AGE OF DIGITAL REPRODUCTION

Matteo Giuseppe Romanato Politecnico di Milano

DIGITAL IMAGE, WEB-COMMUNICATION, VISUAL STUDIES, POST-HUMAN IMAGERY, DIGITAL TRACE.

FROM BULIMIC CANNIBALISM TO MASTERCHEF: PRACTICAL NOTES ON VISUAL ARCHITECTURAL ANALYSIS

Giuseppe Maria Antonio Romeo, Stefano Brusaporci

University of L'Aquila

ARCHITECTURE, DRAWING, MODELLING, PERCEPTION, DESIGN, COMMUNICATION, EDUCATION.

INTERPRETATIVE MODELS BETWEEN THEORY AND PERCEPTION: THE CASE OF THE TWO RULES OF PRACTICAL PERSPECTIVE BY JACOPO BAROZZI DA VIGNOLA

Jessica Romor Sapienza University of Rome

PERSPECTIVE, HISTORY OF PERSPECTIVE, JACOPO BAROZZI DA VIGNOLA, "DUE REGOLE DELLA PROSPETTIVA PRATICA", TWO RULES OF PRACTICAL PERSPECTIVE, METHODS OF REPRESENTATIONS, DIGITAL MODELS.

INSPIRED BY THE ATMOSPHERE. SEE THE INVISIBLE

Marco Rosa, Daniele Rossi, Roberta Cocci Grifoni, Graziano Enzo Marchesani University of Camerino

VIRTUAL AND AUGMENTED REALITY, URBAN DATA VISUALIZATION.

DIGITAL TOOLKIT FOR THE REPRESENTATION, SURVEY, PRESERVATION AND ENHANCEMENT OF MODERNISM BUILDINGS IN BRAZIL AND INDIA

Luca Rossato University of Ferrara

20TH CENTURY CULTURE, MODERN ARCHITECTURE, CULTURAL HERITAGE,

BRAZIL & INDIA.

CHAIR_LUDUS & ZOO_LUDUS. METAMORPHOSIS OF OBJECTS THROUGH SURVEY AND DRAWING TECHNIQUES

Luca Rossato, Marcello Balzani University of Ferrara

SURVEY, RE-DRAWING, REPRESENTATION TECHNIQUES, INDUSTRIAL DESIGN, FURNITURE, 20TH CENTURY CULTURE.

SHAPING VIRTUAL IMAGE

Daniele Rossi University of Camerino

VIRTUAL REALITY, ARTIFICIAL REALITY, FIRST PERSON SHOT, POINT OF VIEW, FIRST PERSON SHOT, FRAMING, HMD, PANORAMA, CAMCORDER

IMAGINE, DRAWING, REPRESENTATION. REPRESENTATION OF THE PROJECT

Michela Rossi, Sara Conte Politecnico di Milano

DRAWING, REPRESENTATION, VISUAL CULTURE, IMAGE, MENTAL IMAGE.

IDEATION, REPRESENTATION, HANDWRITING REALIZATION.

DEVELOPING HANDWRITING AND WRITTEN TEXT

Francesca Sabattini, Livia Taverna, Marta Tremolada

Free University of Bozen

HANDWRITING, REPRESENTATION, INSTRUCTION, COMPOSITION, INSTRUCTIONAL PRACTICES.

PHOTOGRAPHY AS A MEDIUM FOR URBAN REGENERATION. A CASE STUDY ON THE UNIVERSITY DISTRICT OF PESCARA, ITALY

Antonella Salucci Università degli Studi G. d'Annunzio, Chieti-Pescara

PHOTOGRAPHY, URBAN SURVEYING, EPHEMERAL HERITAGE, UNIVERSITY DISTRICT, INSTAGRAM.

RIETVELD JOINT. METAMORPHIC REINTERPRETATION, REPRESENTATION AND PHYSICAL MODELING IN THE DIDACTIC EXPERIENCE OF INDUSTRIAL DESIGN

Daniele Felice Sasso, Nicola Tasselli University of Ferrara

DESIGN EDUCATION, INDUSTRIAL DESIGN, REPRESENTATION TECHNIQUES, METAMORPHOSIS, PHYSICAL MODELING.

FOR AN ARCHEOLOGY OF THE DIGITAL ICONOGRAPHY

Alberto Sdegno University of Trieste

DIGITAL IMAGE, SCANNING DEVICE, HISTORY OF ICONOGRAPHY, SAMPLING, IMAGE PROCESSING.

A STUDY OF GENDER ADVERTISEMENTS. A STATISTICAL MEASURING OF THE PREVALENCE OF GENDERS' PATTERNS IN THE IMAGES OF PRINT ADVERTISEMENTS

Nicoletta Signoretti Free University of Bozen

GENDER'S STEREOTYPES, ADVERTISEMENT'S IMAGES, SOCIAL STATISTICS, RESEARCH METHOD.

OUT OF SCALE, OUT OF CONTEXT. THE USE OF IMAGES IN THE TEACHING OF GRAPHIC DESIGN HISTORY

Silvia Sfligiotti ISIA Urbino

GRAPHIC DESIGN, DESIGN PEDAGOGY, EDUCATION, HISTORY, CRITICAL HISTORY, DECONTEXTUALIZATION.

IN THE SPACE AND IN THE TIME. REPRESENTING ARCHITECTURAL IDEAS BY DIGITAL ANIMATION

Roberta Spallone Politecnico di Torino

DIGITAL ANIMATION, ARCHITECTURAL VIDEOS, 3D MODELING, REPRESENTATION, ARCHITECTURAL DESIGN.

DRAWING IMAGE LANGUAGE. THREE AUTHORS FOR IBA 84

Roberta Spallone Politecnico di Torino, **Giulia Bertola**

INVENTIVE DRAWING, DESIGN DRAWING, PROJECT, REPRESENTATION, TECHNIQUE OF REPRESENTATION, DRAWING, PHOTO-MONTAGE, COLLAGE-MONTAGE, LAYERING.

THE LYRIC AND IMAGINATIVE POETRY OF EDUCATIONAL RESEARCH PRESENTATIONS – THE 'DARK SIDE' OF SCIENTIFIC RIGOUR

Ulrike Stadler-Altman, Edwin Keiner Free University of Bozen

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A MAP ON THE WORLD OF PROFESSIONAL IDENTITY. VISUAL NARRATION FOR EDUCATION AND CARE WORKERS

Paola Zonca, Emanuela Guarcello University of Turin

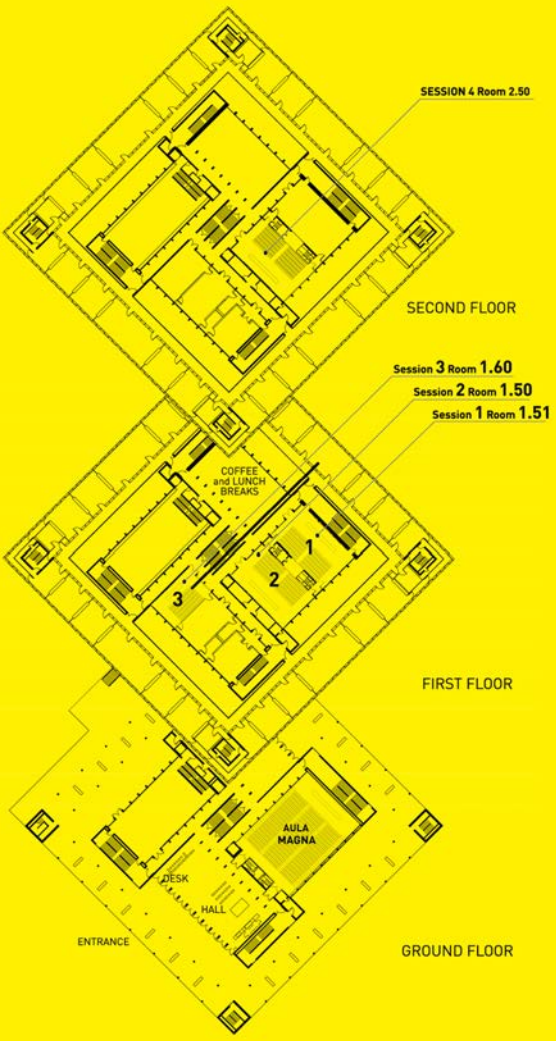
IMAGE, VISUAL NARRATION, MAPS, PROFESSIONAL IDENTITY.

THE IMAGES OF A MUSEUM. PARTICIPATORY AND EDUCATIONAL PATHWAYS BRANCHING OUT FROM A HERITAGE ASSET. THE ETTORE GUATELLI MUSEUM AS A CASE STUDY

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Mario Turci Fondazione Museo Ettore Guatelli

MUSEUM, ART EDUCATION, OBJECTS, NARRATION, DIDACTIC MUSEUM, PARTICIPATION, CONTEMPORARY ART.



SESSION 4 Room 2.50

SECOND FLOOR

Session 3 Room 1.60

Session 2 Room 1.50

Session 1 Room 1.51

COFFEE
and LUNCH
BREAKS

FIRST FLOOR

AULA
MAGNA

DESK

HALL

ENTRANCE

GROUND FLOOR

Mon 27.11

8:30	Registration
9:00	WELCOME Prof. PAOLO LUGLI, Rektor Free University of Bozen Prof. PAUL VIDESOTT, Dean Faculty of Education Prof. VITO CARDONE, UID Unione Italia Disegno Prof.ssa SIMONETTA POLENGHI, Siped Società Italiana di Pedagogia Prof. TOMASO VECCHI, AIP Associazione Italiana di Psicologia Dr. GIANLUCA CAMILLINI, AIAP Ass. Italiana Progettazione Grafica Arch. CARLO CALDERAN, Architekturstiftung Südtirol
9:45	OPENING ADDRESS ALESSANDRO LUIGINI Conference Committee Chair
10:00	LECTIO MAGISTRALIS Prof. JAMES ELKINS Chicago School of Art, USA
10:45	Coffee break
11:00	KEYNOTE SPEAKER SESSION Prof. ANDRAS BENEDEK, Budapersti University, HUN Prof. RAFFAELE MILANI, Alma Mater Università di Bologna Prof. PIETRO PIETRINI, IMT – School of Advanced Studies Lucca Prof. STUART MEDLEY, Edith Cowan University, AUS
13:00	Lunch
14.30	PARALLEL SESSIONS A1 chair Massimiliano Lo Turco A2 chair Stefano Brusaporci A3 chair Demis Basso A4 chair Chiara Panciroli
16:30	Coffee break
17:00	PARALLEL SESSIONS B1 chair Valeria Menchetelli B2 chair Enrico Cicalò B3 chair Maria Teresa Trisciuzzi B4 chair Daniele Rossi
18:00	ROUND TABLE discussant:
19:00	FRANCESCO CERVellini Università di Camerino ANDREA GIORDANO Università degli Studi di Padova ROBERTO FARNÉ Alma Mater Università di Bologna SILVIA SFLIGIOTTI Direttore Progetto Grafico TOMASO VECCHI Università di Parma
20:30	Dinner

Tue 28.11

9:00	KEYNOTE SPEAKER SESSION Prof. ANDREA PINOTTI Università Statale di Milano Prof.ssa TERESA GRANGE Università della Valle D'Aosta NICOLÒ DEGIORGIS Artist, Museion guest curator Prof. GIORGIO CAMUFFO Free University of Bozen
11:00	Coffee break
11:30	PARALLEL SESSIONS C1 chair Daniele Villa C2 chair Enrico Cicalò C3 chair Stefano Brusaporci C4 chair Demis Basso
13:10	Lunch
14:40	PARALLEL SESSIONS D1 chair Monica Parricchi D2 chair Enrico Cicalò D3 chair Daniele Rossi D4 chair Maria Teresa Trisciuzzi
15:40	Coffee Break
16:00	PARALLEL SESSIONS E1 chair Valeria Menchetelli E2 chair Massimiliano Lo Turco E3 chair Daniele Villa E4 chair Matteo Moretti
17:20	ROUND TABLE discussant: ROSSELLA SALERNO Politecnico di Milano MAURIZIO UNALI Università G. d'Annunzio TERESA GRANGE Università della Valle D'Aosta ORNELLA ZERLENGA Seconda Università di Napoli ALESSANDRA FARNETI Free University of Bozen
18:20	MEET OLIVIERO TOSCANI with Alessandro Luigini and Giorgio Camuffo
20:30	Gala Dinner

Wed 29.11

9:00	Departure for Brunico
10:30	Plan de Coronas – Messner Mountain Museum, by Zaha Hadid
11:00	Architectural Storytelling - by Architekturstiftung Südtirol
12:30	Light Lunch in Brunek
13:30	Departure for Brixen

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Inspired by the Atmosphere. See the Invisible [†]

Daniele Rossi *, Roberta Cocci Grifoni, Graziano Enzo Marchesani and Marco Rosa

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† Presented at the International and Interdisciplinary Conference IMMAGINI? Image and Imagination between representation, communication, education and psychology, Brixen, Italy, 27–28 November 2017.

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Abstract: This paper is proposed to investigate procedures which can deal with graphic formalize of numeric data relating to climatic and environmental conditions. In a scientific domain characterised by prevalence of mathematical models and statistical surveys, the possibility of making images as such becomes an additional tool for morphological research of architectural solutions influenced by environmental conditions. This methodology, along with new augmented reality technology, actually, promotes new way of dealing with the project immediately highlighting defects and weaknesses: as architectural pre-visualization has always been the architect’s domain, today, pre-visualization of environmental data becomes a useful tool for design.

Keywords: virtual and augmented reality; urban data visualization

1. Introduction

This paper is proposed to investigate procedures which can deal with graphic formalize of numeric data relating to climatic and environmental conditions. In a scientific domain characterised by prevalence of mathematical models and statistical surveys, the possibility of making images as such becomes an additional tool for morphological research of architectural solutions influenced by environmental conditions in the urban context.

Inspired by the atmosphere is a procedural protocol for the definition of a meta-project based on atmospheric force: solar radiation and the wind field; it does not provide the architects with definitive solutions, but recommendations for rapid conscious design.

The protocol develops and displays multiple solutions arranged in an orderly list based on the energy balance. The best solution cannot consider all the important aspects for the architect, who has to critically analyse all the results before the design process.

In the past architects and men of science, as Yona Fridman, Nicholas Negroponte, Thomas Maver, Robin Th’ng e Malcolm Davies [1–6] had get the potential that technology provided and have been conducting experiments to answer questions about conscious design: despite the obvious limitations that computers had in the past century, pioneers have been able to develop software that can generate different spatial configurations and estimate energy consumption by providing numerical reference values.

Given the high level of abstraction, this kind of information could only be understood by mathematicians who could interpret them.

The evolution of today’s computing and hardware models allow us to carry out this experiment by pushing beyond the raw numerical data to generate images that reveal the hidden aspects of the project.

In recent years, environmental issues have become increasingly crucial in the architectural design process, conditioning it to such an extent as to being a fundamental part of architectural

research: “It is shifting from metric design to thermal design, from structural thinking to climate-oriented thinking, from narrative thought processes to meteorological thought processes”.

Philippe Rahm, in these words encapsulates the essence of this way of designing. Who taken up this philosophy usually use very sophisticated tools that still produce numbers and graphics but are manually reinterpreted in images only in the final stages of design to explain the design choices adopted.

The opportunity to see with eyes data and urban statistics that they usually are difficult to communication, opens up to us a new scenario in which, through the image created by those same numbers, we can address the proper design already in the preliminary phase.

2. Concept

From the beginning the idea was to provide designers with a tool that could display a set of information on the climatic aspects of the site and energy aspects of the building considering the weather conditions and the effects of local climate change: although the impacts of climate change are certainly global, its manifestations and consequences begin locally. Architectural design is becoming an increasingly complex process that has to take into account a multitude of aspects and often the less visible aspects in the preliminary stages are related to energy: the challenge was to bring out these energy aspects and visualize them in such a way to be aware of them.

This tool interfaces with the user through a hardware part consisting of: a camera that will read the position of some markers, and a viewer (a compatible Google cardboard), and a PC running the software developed in the Grasshopper development environment [7].

The use of this tool offers the user, step by step, the vision of different information we can identify in two layers: the first is the representation of the atmospheric data by highlighting how the sun and the fluid operate in relation to the context and the second is the representation of a suggestion to start designing as Figure 1; This reference then provides useful information for the conscious definition of the initial concept.

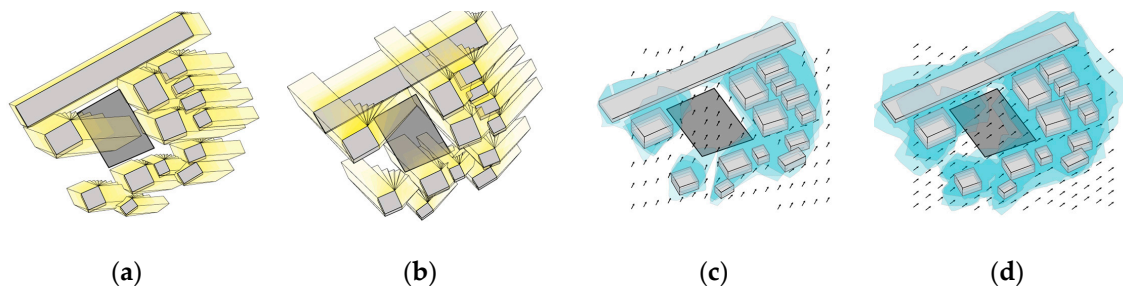


Figure 1. View atmospheric forts: (a) Shadows in summer time scenario; (b) Shadows in winter time scenario; (c) Wind field in summer time scenario; (d) Wind field in winter time scenario.

3. Looking Back

In the second half of the last century several architects and men of science have experienced the interaction between man and machine to obtain primordial schematic results which are, however, rich in meaning; They did not have large computing resources, and it was easier for them to report numerically the results of their calculations: in their work did not emerge the role of the image as that the role of the imagination.

3.1. First Attempts of Automated Morphogenesis of Architecture

Among the earliest, in 1967, architect Yona Friedman believed that through a computer, any individual have could design the ideal plan of their home; she had conceived the concept for a program called “Flatwriter” in which, through simple numeric/textual input, it could return a simplified scheme of what could be the plan of the apartment. The software was subsequently

developed in 1973 at the Massachusetts Institute of Technology (MIT) in Cambridge calling it “YONA”.

In those years, Nicholas Negroponte and his research team (Architecture Machine Group) were also designing software that allowed users to create their own projects, it was inspired by Friedman’s ideas. The program was based on the same graphic theory conceived by Friedman, but diversified from how this interacts with the user. Unlike the first one that produced a rational iteration, Negroponte proposes a fluid and perceptual dialogue: the user was required to draw a plan with his own pen; through special algorithms, the drawing was interpreted, schematized and redrafted by the machine, which proposed to the user its revision [1].

In view of this, in our case, in order to make the user’s experience more “fluid”, the user can manually move the position of the buildings and the context on a prepared maquette: a camera can read movements and interpret the result directly by showing it the augmented reality on the maquette.

3.2. From Simple Generation of Forms to Energy Optimization

One of the first experiments to remember about energy analysis tools is P.A.C.E. (Package for Architectural Computer Evaluation) developed in 1970 by Thomas Maver at the University of Strathclyde (Glasgow) within the ABACUS group.

It was defined as “an assessment system for the energy assessment of the architectural project”: unlike other instruments, it considered and optimized a wide set of parameters; it measured room management costs by optimizing building shape ratios over these [2,5].

Reporting each cost optimization calculation, P.A.C.E., unfortunately it was designed to return only numeric and graphical tables.

In the years to come, architects Robin Th’ng and Malcolm Davies, also researchers within ABACUS, developed a tool called S.P.A.C.E.S. which based the results of their own optimizations on schematic layouts, which were then proposed to the user by accosting drawing graphic elements near numbers: in this case the output was not only numeric but also visual with an image formed by simple rectangles to schematize the building [2,6].

4. The Idea That Moves the Project: The Latent Image

Always design means having the ability to imagine a different reality, pushing beyond the actual reality, knowing how to improve it and the project is the result of this vision. Designing an architecture is an act that will have to be exposed to the buyer who will appreciate the effort that, from the very beginning, will focus on the representation of the project idea: of course, in addition to the quality of the project, so that it can convince the client, it must be represented in the clearest possible way. Over time (although the tools and the computer technology at the disposal of designers for the presentation of their ideas have become increasingly sophisticated by providing synthetic images capable not only of telling the project but of carrying the individual within it) the free handheld design on simple paper has been and will be the quickest tool to communicate.

“The most important thing in an architect’s work is to give an idea: an idea that demonstrates a certain superiority over the sketch just poured out of him, or the annotation taken accidentally. The architecture arises from an image, a precise image that has fallen deep down inside us and that translates, exactly in drawing, in construction. The most important moment is really the idea of architecture. Only when you have this idea you can begin to draw it and consequently to perfect it.” [8]. Like this Aldo Rossi described the primordial gesture of imprinting the idea on a sheet.

Inspired by the atmosphere does not want to replace the designer and his intuition, but he wants to accompany this exactly as the pioneers made with simple schematic geometries.

Maurizio Unali explains how contemporary virtuality is strengthened and reinvented by computer science and is not an escape from reality, but must be read as an enhancement to it: “Virtual, in this context, means above all “broadening the vision”. Even in terms of habitable architectural space, there are no contrasts between the so-called real space and digital space, but simply field extensions and sense hybridization. In this context, the system used of augmented reality is matched

well with these concepts because it enhances the user experience by making apparent through animated snapshots of hidden reality through snapshots.

The creativity and the experience that architects can get from contemporary virtualization is, therefore, first of all the amplification of the vision and perception of the “real world look”. Magnification amplification, sometimes unexpected and alternate, of “invisible” information in our eyes but present in the DNA of real things” [9]. In this context, the system used of augmented reality is matched well with these concepts because it enhances the user experience by making apparent through animated snapshots of hidden reality through snapshots.

5. The Importance of Real-Time Graphical Output

Nowadays, the quality and quantity of digital simulation opportunities for performance research mean that these represent an important technological foundation for performative architecture. The analytical calculation techniques based on the finite volume method in which the geometric model is discretized in small, uniform and interconnected mass volumes are able to give the simulation result accurately. Managing this calculation becomes more and more complicated and the software tries to process graphic output as well as numeric. These graphical interpretations often arrive only in the advanced stage of design to verify performance, risking to overturn the designer’s expectations.

As Kristina Shea explained: “generating new forms while also having instantaneous feedback on their performance from different perspectives (space usage, structural, thermal, lighting, fabrication, etc.) would not only spark the imagination in terms of deriving new forms, but guide it towards forms that reflect rather than contradict real design constraints”. As a structural engineer, she taken as example traditional techniques for designing membrane structures (of which Frei Otto was a pioneer) as the closest example of generating performance-driven architectural forms: the shape of the membrane is dynamically influenced by the forces change that they act on the model. She observes that the techniques of research in structural engineering forms are generally limited to pure compression or pure tension structures, and it promotes the need to develop digital tools that can generate mixed structural forms [5].

In the same way our work focused on the search for a tool that reconciled the architectural needs with the atmospheric variables.

6. The Method

In our method, architectural analysis is performed with a parametric 3D algorithm divided into three main parts: input, calculation and output. All initial information about the specific geolocation of the collected project is put into system: the algorithm studies all the atmospheric parameters and finds multiple solutions of forms according to the given input. The generated 3D model is analyzed using non-stationary energy software (EnergyPlus 8.6) and all openings and other geometric properties of the building are modified and optimized [10] using Grasshopper to obtain the best energy balance solution [11].

Much importance has been given to the user’s experience that, in addition to the classic screen interface, can take advantage of the viewer to build and display a virtual maquette. Thanks to a camera placed above the work plane, each user-made shift in the composition of some planar markers will be automatically mapped and will feature the virtual maquette. From the first studies conducted in the sixties of the last century by Ivan Sutherland, modern society has come into contact with the technologies of virtual reality and augmented reality; Several decades later, thanks to the miniaturization of the technology, it was possible to use smaller and smaller viewers to use a common smartphone as a viewer.

The actions required by the user are simple and are explained in detail: Firstly, markers must be arranged that define the position and orientation of the context volumes and may represent buildings or screening of various nature; then a set of initial parameters (referring to geometries and other contour conditions) will have to be set up and you will immediately receive a screen feedback and one in the viewer where you can see the virtual model grow and modify. Once this first pass has been

completed, the calculation of irradiated zones and wind-exposed areas begins; the architect will see the results on the screen (and consequently in the viewer) on the screen, which he can then navigate and filter according to the data concerned.

At this stage, to recreate the closest reality condition, you can move the markers. This will lead to the recalculation of microclimatic effects that will be immediately visible to the architect. The second phase involves the insertion of the dimensional-functional characteristics of the architecture that you want to build: it will be required to define a number of functions that will have to be carried out within the building, how much space it will have to be dedicated to these relationships spatial linkages and the preferential orientation of one for each level of the building as Figure 2. The algorithm, acquired this information, generates a rose of cases by positioning the different “mutations” both in exposed parts of the sun and wind, and where they are absent As Figure 3; optimization based on energy balance assessment, for each mutation, will handle the position and amount of openings as Figure 4.

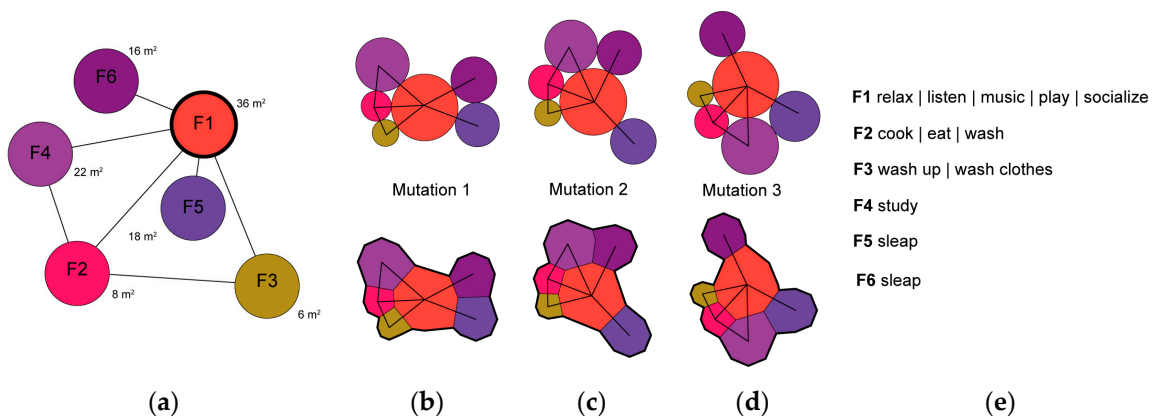


Figure 2. The example of variation keeping the same logical scheme: (a) The logical scheme; (b) First mutation; (c) Second mutation; (d) Third mutation; (e) The list of function.

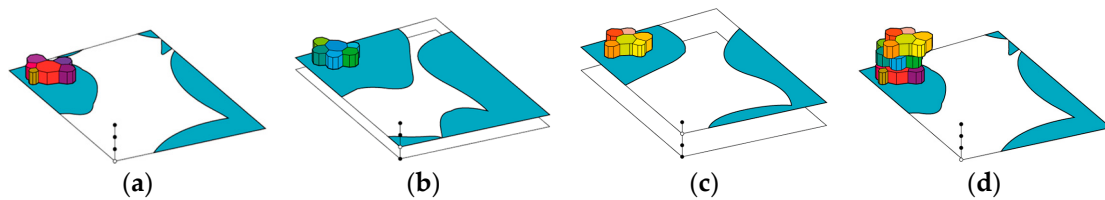


Figure 3. An example of positioning in the wind calm zone: (a) First floor; (b) Second floor; (c) Third floor; (d) The composition of all levels.

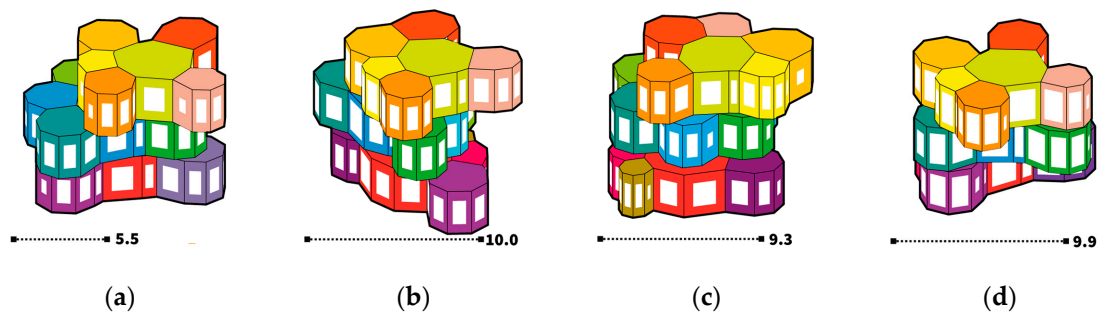


Figure 4. The energy balance result. Each solution matches a score: (a) First case with a score of 5.5; (b) T First case with a score of 10; (c) First case with a score of 9.3; (d) First case with a score of 9.9.

Even the results of this last calculation can be displayed and filtered on screen rather than navigated in augmented reality mode.

7. The Visual Experience of the User

The tool proposed in this article is born with the will to be able to “talk” with the machine as smoothly as possible by describing the objects in the scene as volumes placed on the work surface.

Essential, for the realization of the whole, was the use of a visual programming and parametric modeling tool such as Grasshopper. This approach is increasingly being used to solve complex problems because it allows direct and mutable controlled workflow [12]. In this is possible to manage communication between our software and other third-party software (i.e., Energyplus) on the same platform communicating, simultaneously, with the cardboard viewer, which is disconnected from the other equipment, allowing the user a personalized 360° experience into the virtual space.

7.1. Images in Input Steps

By positioning the markers describing the bullet volumes, the composition of the scene is gradually growing. Each object is described in a different color so that it can be easily distinguished both in the cardboard viewer and the screen as Figure 5. As a preliminary tool, a very simple graphic design has been chosen that cannot “overwrite” the user’s vision.

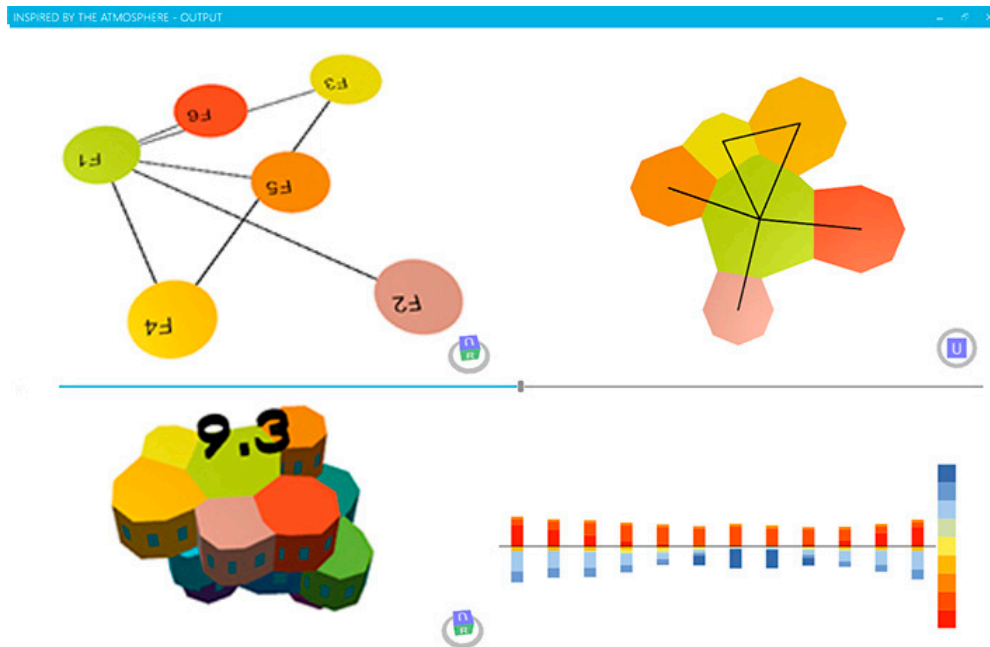


Figure 5. The visual interface: displaying of proposed mutations and Energy Balances.

7.2. Images in Output Steps

Completed the first step of context composition is being proposed to the user the first result which is the location of shadows and wind calm areas. These two atmospheric forces are graphed clearly outlining a more complete view of the scenario as Figure 6.

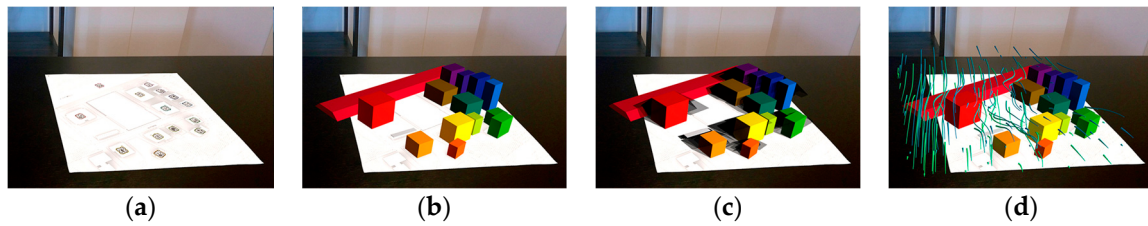


Figure 6. The augmented reality visualization: (a) Only the printed masterplan scheme on the table with markers; (b) The volumes are overlaid to the print; (c) Shadows are displayed; (d) Airflow is displayed.

In the next step, after the user has described the architectural features of the building and the calculation phase also ended, the user can choose between the different morphological results which originate from the initial logic schemes [13]. These patterns are then turned into metaball geometries (it is impossible to define them as “architecture”) and they will have to be interpreted:

- orientation of rooms;
- the amount of openings;
- the overhang of a level compared to the previous one.

8. Conclusions

“Inspired by the atmosphere” is a protocol that allows you to consider the energy and environmental aspects from the initial phase of the architectural project.

If the tips and suggestions provided at this stage are properly observed, energy-efficient buildings can be obtained. The potential of this approach also does not end with the realization of a single building: it is possible to extend it to aggregate multiple buildings in order to generate urban agglomerations in which you can control the levels of used energy and comfort or solving the problem of energy renewal of the environmental recovery of existing real estate assets by, for example, studying envelopes optimized and visually evaluated even in immersive mode.

This methodology, along with new augmented reality technology, actually, promotes new way of dealing with the project immediately highlighting defects and weaknesses: as architectural pre-visualization has always been the architect’s domain, today, pre-visualization of environmental data becomes a useful tool for design.

Author Contributions: D.R. and R.C.G. verified the analytical methods and supervised the findings of this work. G.M. wrote the chapter 6, M.R. wrote the chapter 7. G.M. and M.R. conceived the original idea. All authors discussed the results and contributed to the final manuscript.

Conflicts of Interest: The authors declare no conflict of interest

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