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Shadow Street Art: from walls to streets between projection and invention

This paper aims to explore shadow in Street Art by collecting and testing shadow street artworks as main tools to investigate interaction between man, urban environment and social identy as psychogeographic manifestation. Psychogeography, introduced by Debord in the 1950s, studies correlations between psyche and environment, challenging classical geography and supporting the creative re-definition of urban space. According to these premises, *Shadow Street Art* can be considered as an alternative form of Street Art thanks to the strong psycho-environmental dimension and involvement generated by exclusively monochrome, colorless graffiti and sudden, evanescent projections. Furthermore, the main goal of street artists who work with real shadows is to design 4D works: time is the main parameter to control the whole process. Parametric-generative digital tools allow to simulate dynamic projective process and perspective anamorphic transformation of shadows on walls, streets or squares according to specific environmental (geographical, temporal parameters) and technical (light design) parameters. From projection to invention, the aim of this contribution is to decline Shadow Street Art trough artifacts in which shadow is both an artistic expression, a narrative tool and a research object, providing references to inspire new creative works for non-invasive enhancement of urban places and buildings.

Keywords:
shadow; psycogeography; projection; invention; generative tools

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1. INTRODUCTION

Perception, memory and transformation are integral features of creative explorations which find in urban places the ideal context to spread their socio-cultural message. The aim is to add value to a place and elements, figures and objects, which populate it, sharing a collective visual experience with inhabitants or passersby, emphasizing or evoking current, past or future events through a direct impact on communities and places.
Street Art animates urban places, reveals their hidden features, adding them alternative identities, quite often drawings attention to social issues. As a manifestation, street artworks induce inhabitants and passersby to focus on effective experience of being in a place, sometimes revealing its story and exalting its identity. Almost inspired by theories about shadow expressiveness claims by japanese writer Jun'ichirō Tanizaki [1], *Shadow Street Art* can be considered as an elegant, alternative form of Street Art thanks to the strong dimension and psycho-environmental involvement exclusively generated by its monochrome, colorless graffiti.
Therefore, shadow is reinterpreted as active urban object: through its ephemeral, symbolic identity, it becomes a link between artifacts, artifices or real elements connoting the urban context (walls, streets, squares, urban furnitures, etc.) and people. In *Shadow Street Art*, continuous apparitions and disappearances elect shadow as a perfect tool to communicate a message: joined to reference elements, it consists in a complementary element, a signifier to express a meaning. When the artwork matches a real projection, the artifice will become four-dimensional: thanks to the Sun, time flows and manifests itself to reveal the meaning of the work by automatically extending the dimensional perception of reality to which human elements and beings belong.
As Linda Dalrymple Henderson states, «*the possibility of a fourth spatial dimension has suggested that our world could simply be a shadow or section of a higher dimensional existence*» [2].
In shadow street artworks, color is usually ab-

sent: attention falls on the shape as real projection, deformed or imaginary profile, enhancing its symbolic function and geometric identity.
The aim of this contribution is to decline *Shadow Street Art* by identifying artifacts in which shadow is both an artistic expression and a research tool, providing ideas and applications to inspire new creative works for non-invasive enhancement of urban places and buildings.

2. SHADOW STREET ART: PROJECTIONS VS INVENTIONS

Between science and art, the suggestive power of shadow, sacred instrument for measuring time and distance, is linked to multiple symbolic meanings assumed over the centuries (Boffito, 2009) and materializes itself through the projective identity of its evanescent face. Therefore, followings artworks confirm the importance of «*recovering a heritage of ancient knowledge, still useful for several reasons*» (Candito, 2009).
Shadows exist because beings, objects and places exist. Shadows are projections, therefore immaterial elements: what would happen if they existed regardless of the presence of corporeal elements or if they rebelled against them?
If this happens, it would be possible to get in touch with an alternative dimension to the concrete one, going beyond the third dimension to communicate new meanings and generate new, parallel daily experiences.
John Fekner, street and multimedia artist, born in 1950 in New York, says: «By immersing oneself in uncertainty, artists face *new challenges and may discover innovative solutions in unexpected ways* [3]». Shadow silently accompanies beings, marks the passage of time and, therefore, it can be transformed into an useful social tool. Light as shadow allow to portray real and imaginary world: terms *skia-grafia* and *photo-grafia* link words φῶς *(phaos/phōs* - light) and σκιά (shadow) to the word grafia. Shadow artworks show how shadow is a perfect tool to convey a given message in a given context, being itself a "signifier", a social experience, a reminder of a historical

event, despite its zero impact on host contexts and objects. They consist in sudden, deformed, grotesque shadows of real subjects, which artists use to involve, surprise or deceive unsuspecting observers or passersby in a metaphysical, confused game, made of fake characters projected or drawn on the facades, along streets or squares, as pleasant or threatening presences.
This paper aims to decline Street Art through three main categories of shadow street artworks: human shadows (evocation of real beings), deformations (graffiti of imaginary, sometimes grotesque shadows) and projections. Most of street artists, or artists, like Fabrizio Corneli, Božidar Katić, Herbert Baglione, Alex Senna and Damon Belanger, have provided or authorized images shown in this paper and some of them told about approach and reasons of their works.

3. SHADOWS AS DRIFT TOOLS

The shadow drawn by street artists evokes memory of a place or stimulates alternative imaginary reality, both non-existent conditions, transforming them into viewable elements.
In order to understand its role as alternative communication tool, we need to refer to Psychogeography science and studies on "drift". In 1956, Guy Debord, in *Théorie de la dérive* [4], defines drift as «a*ffirmation of a playful-constructive behavior, which from all points of view opposes it to the classic notions of travel and walk*», a known space crossed and enjoyed by the observer through new eyes, free from any prejudice and aimed at grasping elements previously not visible or perceptible. According to studies about Psychogeography, the experience of *drift* aims at «*recognition of the psychic effects of the urban context on the individual and his behavior*». More specifically, Psychogeography, defined as «*study of the precise effects of the geographical environment, whether consciously or not, which acts directly on the affective behavior of individuals*» is a science about correlations between psyche and environment, challenging classical geography and supporting a creative redefinition of urban space.

According to these theories, street artists propose to insert previously or never existed elements in urban environment by projecting or drawing real, grotesque and impossible profiles, deliberately referring to a manifestation of human existence aimed at generate new reactions from the unsuspecting pedestrians who enjoy them. Therefore, unpredictable effects generated by shadow artworks clearly favor psycho-geographical experiments, which Debord would define «*a game and at the same time an effective method to determine the most suitable forms of deconstruction of a particular metropolitan area*», on the perception of passersby and inhabitants of a place.

Therefore, drift is induced as composition of imaginary spaces and relationships by shadows of elements no longer existent, or never existed, drawn on urban surfaces to deliberately transport passersby in a past or imaginary reality, alternative then the real one. In this case there are not spontaneous behaviors to gather new feedback, as happens for classic drift proposed by Debord, rather a *déja vu* or flashback about experiences lost for those who have lived the urban condition evoked by shadows or deliberately induced for those who have never experienced a given situation.

4. TALKING SHADOWS: URBAN IDENTITY

Among shadow street artworks there are drawn shadows: difference and complementarity between projection and drawing are clearly revealed. Richard Hambleton, famous canadian artist of twentieth century passed away in October 2017, is considered one of the fathers of Street Art together with Haring and Basquiat.
Hambleton is famous above all for his early 80's *Shadowman*, to whom he owes the nickname *Mr. Shadowman*: in those years, New York and Manhattan counted hundreds of black silhouettes scattered throughout the city.
They were extensively documented by photographer Hank O'neal in New York City between 1982 and 1986 and they are now collected on the street artist's official website. Considered as Banksy's

predecessor (fig. 1), each of his urban paintings represents a black silhouette belonging to mysterious people, a sketched shadow of a real being: «*Hambleton's army of shadow silhouettes are reminders of human life—vulnerable and intense*» [5]. Some silhouettes hide behind emblematic corners of the *Big Apple* (fig. 2), in the dark alleys, scaring passersby and amplifying nocturnal dimension of a declaredly dangerous cities like New York (fig. 3).

Fig. 1 - Banksy graffiti Richard Hambleton is considered as Banksy's predecessor.

Fig. 2 - *Shadowmen*, by Richard Hambleton (1980s). ©www.untitled-1.com

Fig. 3 - *Shadowmen*, by Richard Hambleton (1980s). ©untitled-1.com

Curiously, the *Shadowmen* series had been anticipated by his *Image Mass Murder* series, representing red bodies profiles on the sidewalks so convincing as to wonder if a murder had really occurred in that place. Hambleton also painted his *Shadowmen* in other cities, including Paris, London and Rome, and even a series of life-size figures in 1984 on the east side of the Berlin Wall, later he also decorated the west side.

Božidar Katić is the author of numerous street artworks: three of them are about shadows aimed to animate empty and lost places. His work deals memory of social past identity of forgotten, unused, destroyed and isolated spaces. *MIRAGE*, realized in 2011, consists in a public, social intervention after Yugoslavian war, when mainly the Croatian part of Mostar (Bosnia-Erzegovina) was rebuilt and devastated, and part of the *Spanish Square* became the stage of his shadows (fig. 4a). *FUTUREPAST*, also realized in 2011, is a public intervention to remember past social life of Točka lost cultural centre, an important landmark then evacuated and closed down by local authorities (fig. 4b). *PLAYGROUND 0.175*, a suggestive public installation realized in Eugen Kvaternik Square of Zagreb, Croatia, in 2009, consists of shadows cut out of carpet, sounds of people and local scents [6].

Katić states that «*transformations mades it (the square) unapproachable, with few pedestrian crossings [...] it gives an impression of a deserted island. [...] It was unpresentable, but it was a place with a soul, a soul that has been taken away by this renovation. I decided to react, to do this work*».

Fig. 4 - 4.a. *MIRAGE*, 4.b. *FUTUREPAST,* by Božidar Katić (2011).
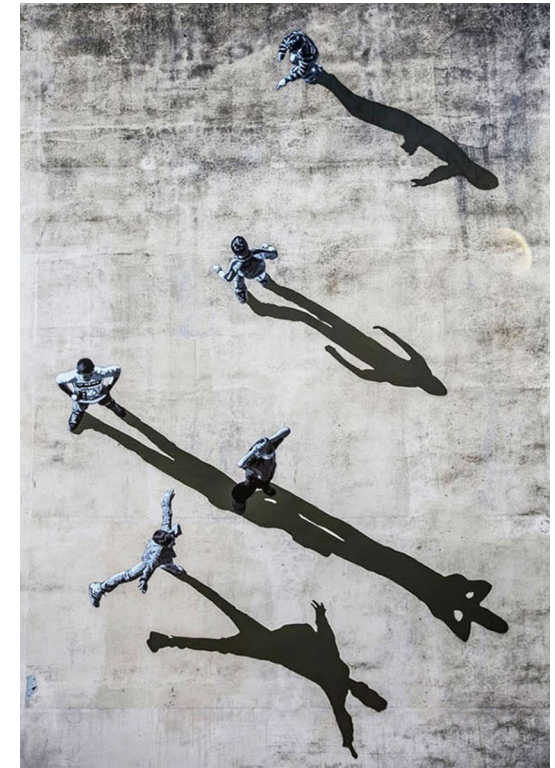

Fig. 5 - 5.a. *Shadowy Optical Illusion Mural,* by Anders Gjennestad, alias Strøk (2014); 5.b. *Shadow Puppets Graffiti Mura* , by Street Art Melbourne.

Other artists who spread swarm of shadows on walls and streets are Street Art Melbourne, with their *Shadow Puppets Graffiti Mural* series (fig. 5a), or the norweigan stencil artist Anders Gjennestad, also known as Strøk, who has painted *Shadowy Optical Illusion Mural* on the facade of an old school for the Italian Street Art festival *Memorie Urbane*, in the heart of the Pontine coast, between Lazio and Campania regions (fig. 5b).

5. IMPROBABLE SHADOWS: DOUBLE IDENTITY

Shadow artworks deliberately painted as grotesque and deformed figures exalt the psychogeographical role of Street Art in the overlap between reality and representation. Humans have always perceived shadow as a visible and intangible double of their own being and surrounding things. Deformation signite wonder and disturbance in the observer's mind at the same time, inevitably generating emotional involvement. Best samples of this interpretation are street artists Alex Senna and Herbert Baglione.

The brazilian street artist Alex Senna has produced a large amount of monochromatic graffiti, adding excessively elongated shadows to the subjects, common characters, protagonists in daily life, represented on the buildings facades of numerous cities in the world, like Detroit, New York, Dubai, São Paulo (fig. 6). Despite color absence, his subjects evoke lightness, cheerfulness, simplicity: these features distinguish Senna from most other shadow street artists, for whom shadow mainly plays a nostalgic, surprise, denunciation role, always linked to its enigmatic dimension. «*Black and white art that records the everyday life of ordinary people, often with references to social issues such as the coexistence of people with different cultures, has surpassed the borders of his homeland, Sao Paulo*» [7]. Unlike Senna, Herbert Baglione proposes *1000 Shadows* series, in Frankfurt (2013), where he populates walls and the streets asphalt with restless, almost alien shadows swarms. This artist strongly works on the interaction between incorporeal, threatening beings and urban envi`onment, involving passersby (fig. 7).

Little different is the series entitled *Gorgo* (2013), created inside an old disused psychiatric hospital near Parma, in Italy (fig. 8). Baglione's shadows seem to instill restlessness in passersby, trying to encircle or drag them into a parallel world separated from reality by an asphalt filter and populated by tormented souls, almost recalling distressing landscapes and characters of Munch's expressionism [8] (fig. 9). On the contrary, for her series *Shadow Project*, street artist Katie Sokoler seems to cut out simplified humanblack silhouettes, clearly defined, attached to the walls and sidewalks of Brooklyn or New York, waiting for people to joke with them, taking a photo when passersby overlap these fake shadows perceived as their extension while performing a totally different action, hence causing alienation as for Baglione's artworks, but not at all dramatic (fig. 10).
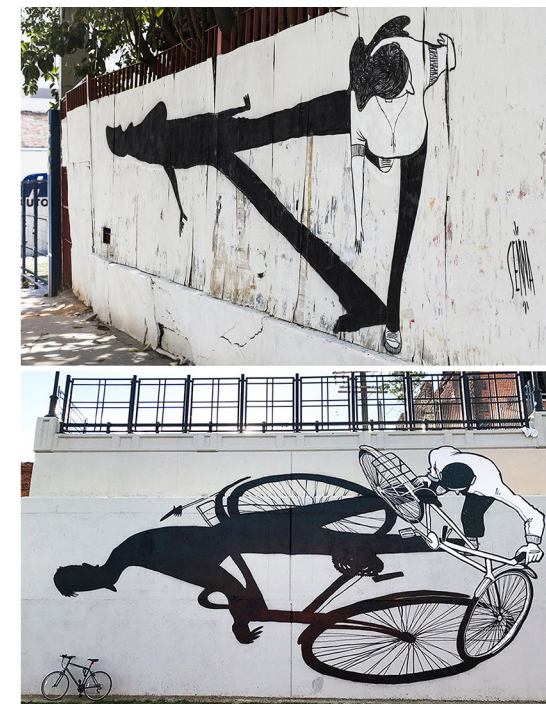

Fig. 6 Street works by Alex Senna (from the left: artwork in New York, Soho, Manhattan).

Fig. 7 - *1000 Shadows Series*, by Herbert Baglione (2013).

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Fig. 9 - *1000 Shadows Series* (details), by Herbert Baglione (2013).

Fig. 10 - Shadow Project, by Katie Sokoler.

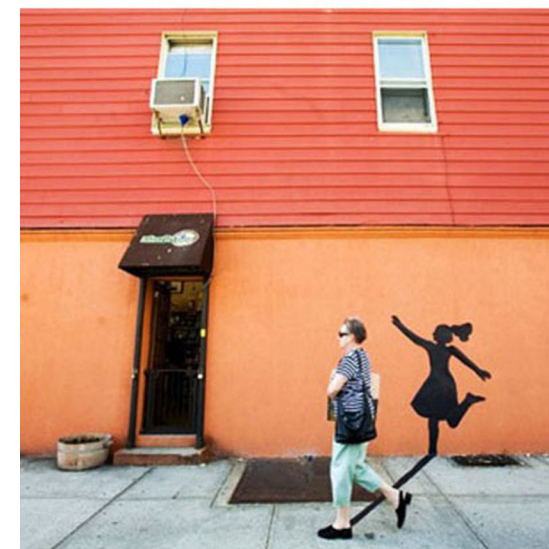Fig. 8 - *Gorgo* (detail), by Herbert Baglione (2013).

Fig. 11 - *Shadow Art Project*, by Damon Belanger in Redwood City, California, USA (2017). ©damonbelanger.com/
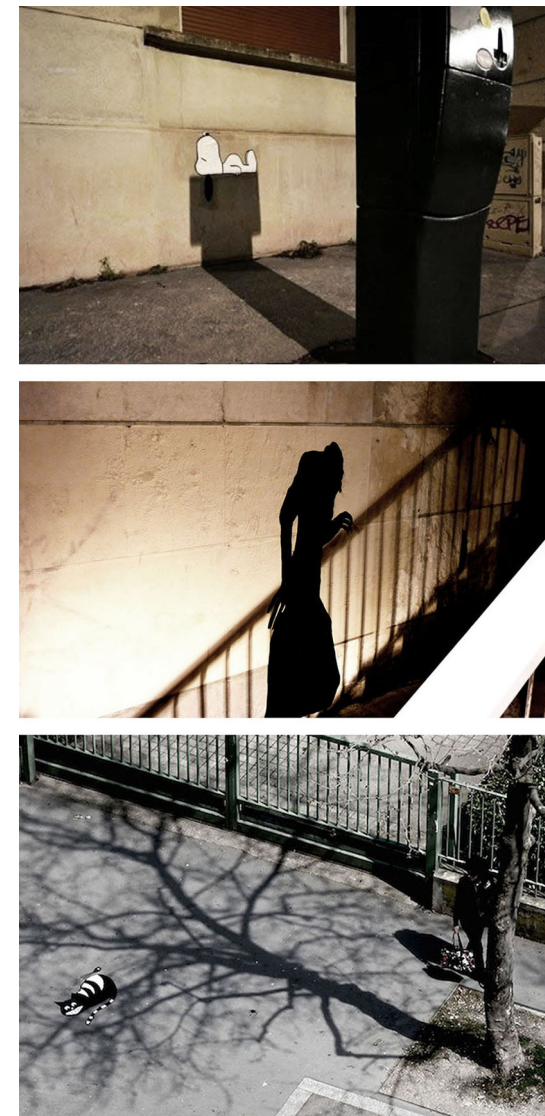
Fig. 12 - *Peanuts* (2015), Saint Etienne, France; *Nosferatu* and *Alice in Wonderland* (2010), by Oakoak. ©oakoak.fr/
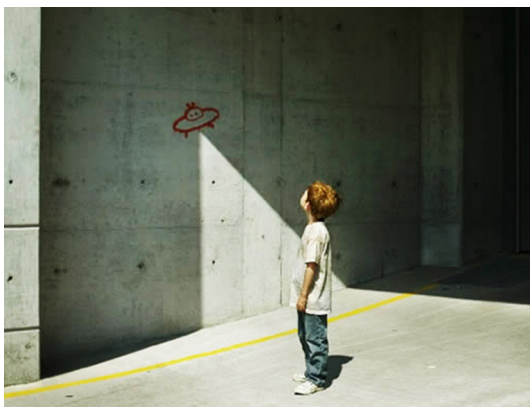
Fig. 13 - Sketch by Joe Baran.

Moving from imaginary to grotesque, another street artist ventured on this experience with his naive creations is the american graphic designer Damon Belanger. He created twenty fun street works involving the urban furnishings distributed along the streets of downtown Redwood City, California.

He transforms ordinary shadows of benches, mailboxes, railings, poles into flowers and imaginary beings, animating them: traced on the ground with chalk and then painted with a shade of gray very similar to real shadows on the asphalt, his work confuse and amuse passersby, enhancing marginal urban areas (fig. 11).

6. REAL SHADOWS: FLEETING MOMENTS

Sometimes, Sunlight, lampposts or projectors, reveal significant cutsand shapes in buildings, or unexpected profiles of common objects which reach exisiting graffiti to complete a message. *Street artists* OakOak (fig. 12), Joe Baran (fig. 13), Morfai (fig. 14), Above (*Break Dancer*), DOSJOTAS (*Pole man*), Roadsworth (*Tigers Behind Bars*) o Trase One (*Shadow Skaters*) reinterpret reality, reaching a complementary game between graffiti and shadows of urban objects involved. These experiences strictly depend on temporary overlap between real shadow and subjects added by artists. On the other hand, these cases express great imagination and deep and sharp spirit of observation by the artist directly inspired by surrounding ordinary environment.

Likewise, anamorphic shadow can be considered as the extension of real shadow. Beyond urban dimension, shadow artists, including the best known Kumi Yamashita, Tim Noble, Sue Webster, Fred Eerdekens and Larry Kagan, generally play with at least three variables connected to-

Fig. 14 - *Seeder*, by Morfai.

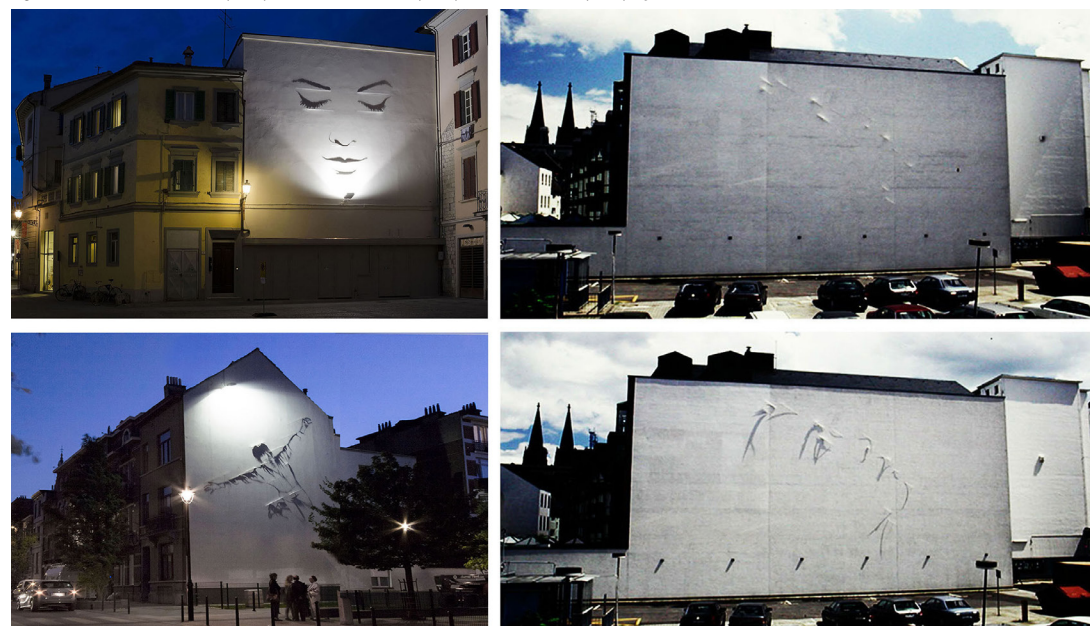Fig. 15 - *GRANDE SOGNATRICE* (2014),*GRANDE VOLANTE III* (2006) and *AUGENBLICK* (1997), by Fabrizio Corneli.

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Fig. 16 - *NOCHMAL (NIGHT)* and *NOCHMAL (DAY)*, by Fabrizio Corneli (2008).

Likewise, Fabrizio Corneli replied «*I do not use any digital instrument, it is not a try and error process [...] in my exhibitions I never expose preparatory drawings, which I consider almost a gap: I'm only interested in the shadows, the drawings (all well defined) would be misleading*». The following paragraphs are about parameterization of these artifices aim to explicit and semplificate this process.

7. 4D STREET ART: SHADOW PREDICTION

In the anamorphic artworks cited above, "point of view" coincides only with light source, then independently by the observer. Shadow is function of all the parameters involved in the projective process: shape, position and size of the shadow on the support, exposure of the support (facade, street, square), position of the lighting/projecting source (height and distance from the shadow image), power of the light source and light angular amplitude (lighting features, in the case of artificial light), direction of light source (inclination of sun's rays in relation to space and time). Moreover, mutual position between projector and profile will depend on light angular amplitude and viceversa. Algorithmic-generative tools allow to simulate and control this morphing process. Main steps are: place one or more two-dimensional silhouettes on the same or different planes; project them from one or more light sources (directional light or indirect lighting); intersect projective prisms or pyramids, extract 2D/3D profile or object deriving from the intersection; install and project profiles or objects from light sources located on the support. This approach allows to simultaneously check all the listed parameters to achieve infinite possible results for any profile according to the same reference system. This process shows a gradual transformation of 2-dimensional figures into 4-dimensional elements. Therefore, shadow could be interpreted both

gether to create shadow sculptures: a projector, an apparently meaningless object and a generic support placed beyond the object. Likewise, street artists use anamorphosis to transform a simple composition of unrecognizable elements, whose presence on the facades of buildings is barely discernible, in a recognizable shadow. This approach allows to create zero-impact street artworks, involving built cultural heritage without invasive interventions. The italian artist Fabrizio Corneli authored numerous indoor and oudoor installations, also declining lights and shadows in street version [9].

His installations, composed of thin sheets strategically distributed on building facades, work thanks sunlight or combination of natural and artificial light: *AUGENBLICK* (1997) in Cologne, *DUETTO* (2007) on the wall of the Sannomya Tower in Kobe, (Japan), *AMA* (2011). Works such

as *GRANDE SOGNATRICE* (2014), *MICAT IN VERTICE* (2005), different versions of the *GRANDE VOLANTE* (2002, 2006, 2010), *BAGLIORI* (2001), belong to *SUNLIGHT* and *OUTSIDE ARTIFICIAL LIGHT* series (fig. 15).

Some of them are installations with a double identity depending on whether they are observed during the day (natural light) or at night (artificial light): this is the case of *NOCHMAL (NIGHT)* and *NOCHMAL (DAY)* (fig. 16).

However, a limited disclosure of these artworks could depend by the combination of a series of parameters difficult to control using traditional tools. Several forum about this topic report comments of artists looking for digital strategies or tools to optimize these processes. A Kumi Yamashita's team member says «*she does not use computer or digital tools to design her shadow works. It is an analog process*».

passive and active element. Passive shadow is the cast shadow as projection from a direct or indirect light source. On the contrary, "active shadow" generates the object of which it is projection: it can be fixed or changeable over time (4D). Three-dimensional (3D) space is a mathematical extension of bi-dimensional plane (2D); four-dimensional space (4D) is a mathematical extension of three-dimensional space. Two-dimensionality (2D) requires two dimensions to describe an object, three-dimensionality requires three of them. Fourth dimension has a much more complex definition. Theories and experiments of mathematicians, philosophers and artists demonstrate the decisive role of projective geometry to develop current mathematical ideas, approaching contemporary space-time models through interesting applications in art, mathematics, physics and computer visualization fields. In 1880, british mathematician and writer Charles Howard Hinton, popularized Riemann and Le Rond d'Alembert' theories about 4D in his essay *What is the fourth dimension*?, where he suggested that points moving around in three dimensions might be imagined as successive cross-sections of a static four-dimensional arrangement of lines passing through a three-dimensional plane [10]. 4D can be immediately approached by observing simplest four-dimensional objects: 4D cube or tesseract. A hypercube derives from the translation of cube faces along different directions and joining the vertices of the original cube (t0) and the translated one (t1). Likewise, by intersecting projective prisms and pyramids it is possible to enclose and shape the empty space. The whole process can be summarized as follows: profiles (2D), direct or indirect projections by prisms/pyramids (3D), profiles (2D) or solid figure/intersection (3D), projection (4D). Shadow coincides with the face of prism built along a specific direction: time generates this prism continuously transforming it. Therefore, shadow changes or even disappears. Shadow projected by indirect natural light is directly dependent on both time and space. The position of the object does not change, while the direction of source (Sun) apparently changes with time as well as the

shadow cast on the walls or street. The main goal of street artists who work with real shadows is to design 4D works and not shadows as simple projection: therefore, time and space are the main parameter to control the whole process.

Fig. 17 - Shadow anamorphosis. Geometric reference system.
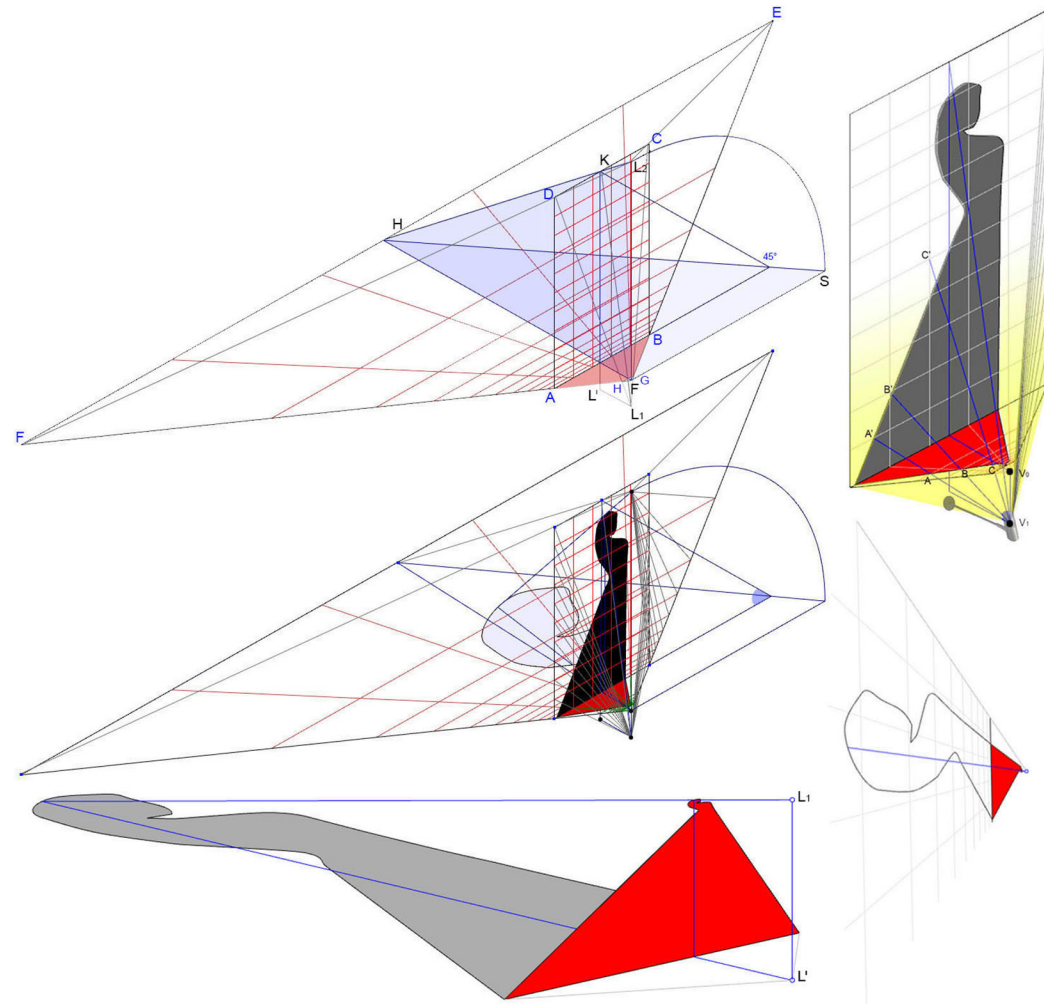
8. DIGITAL TOOLS FOR PARAMETRIC ENTITIES

Shadow is a parametric entity: generative digital tools allow to explicate, control and modify its projection. Anamorphosis is a distorted image clearly interpreted only if perceived from a specific point of view (Candito, 2010): likewise, it is possible to trace the amorphous projection corresponding of the expected shadow, first tracing a silhouette (shadow) on the facade, wall or street, then projecting it onto a planar or curved surface from one or more light source. Hence, shadow takes on a recognizable image if it coincides with the projection of an object whose profile derives from its deformation. Therefore, it is possible to talk about shadow prediction.

Figure 17 shows the geometric reference system: shadow (silhouette) is inscribed within a quadrilateral ABCD orthogonal to the plane containing the anamorphic projections from two different centers (L1 and L2) inside two homothetic trapezoids ABEF and ABGH. Point L1 (like point L2) coincides with a light source (centre of projection): therefore, the amorphous profile belongs to the smaller (or larger) trapezoid while its shadow is projected into the regular rectangle and it coincides with the reference silhouette (anamorphosis) [11].

This parametric definition allows to automatically define transformed profiles according to the position of the centers (light sources distance and height) relative to the frame containing shadow (reference silhouette), (fig. 18). The smaller profile will be manufactured using a minimum thickness (milling/laser cutting or 3D printing), not bulky or visible, generating a greater surprise effect in passerby, not affecting supports (e.g. facade) to which it is anchored (fig. 19a). Corneli's artworks, showed in previous figures, are exemplar applications of this approach. Likewise, subtracting the amorphous profile from support anchored to the wall, as well as a bench or a canopy, shadow will coincide with cut profile and light will cross the empty region, projecting a silhouette of light on the wall (fig. 19b). Moreover, the same process allows to achieve more shadows from the same object or sculpture conceived as the
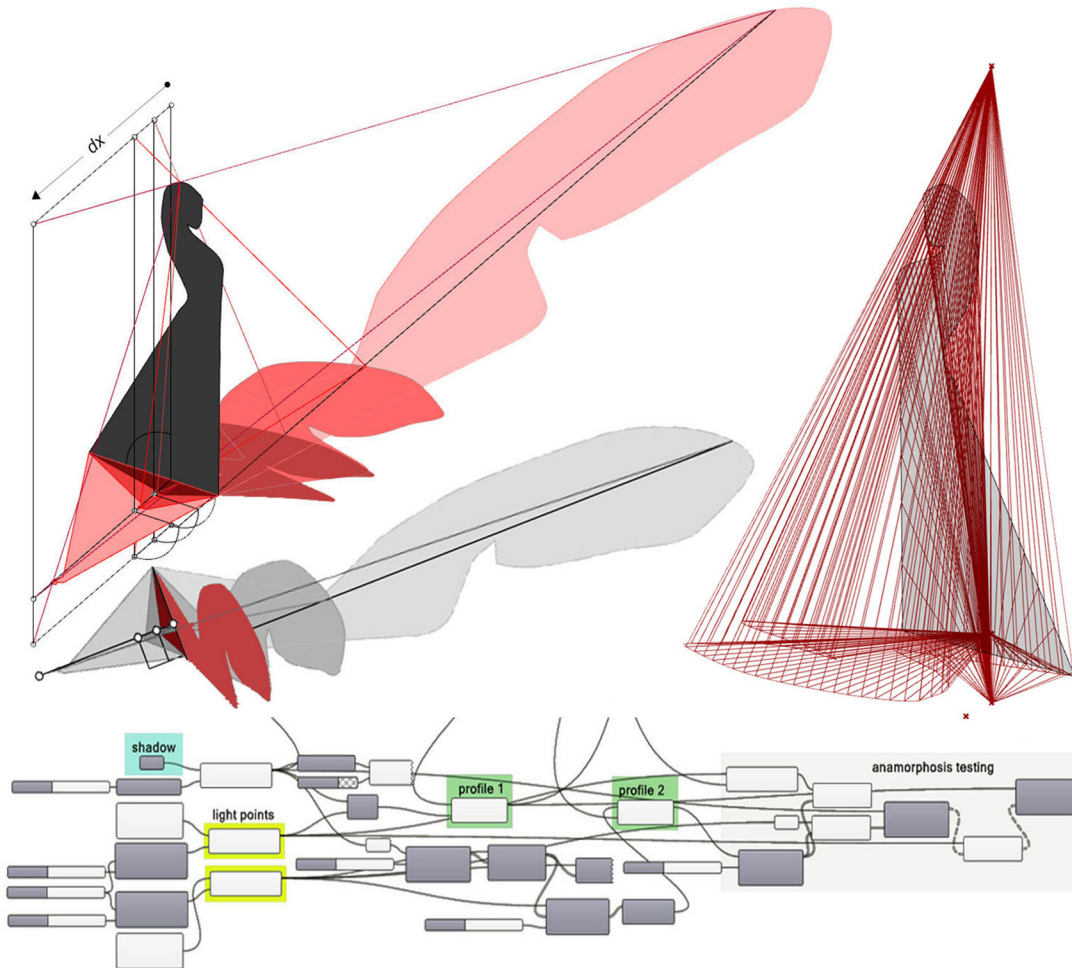

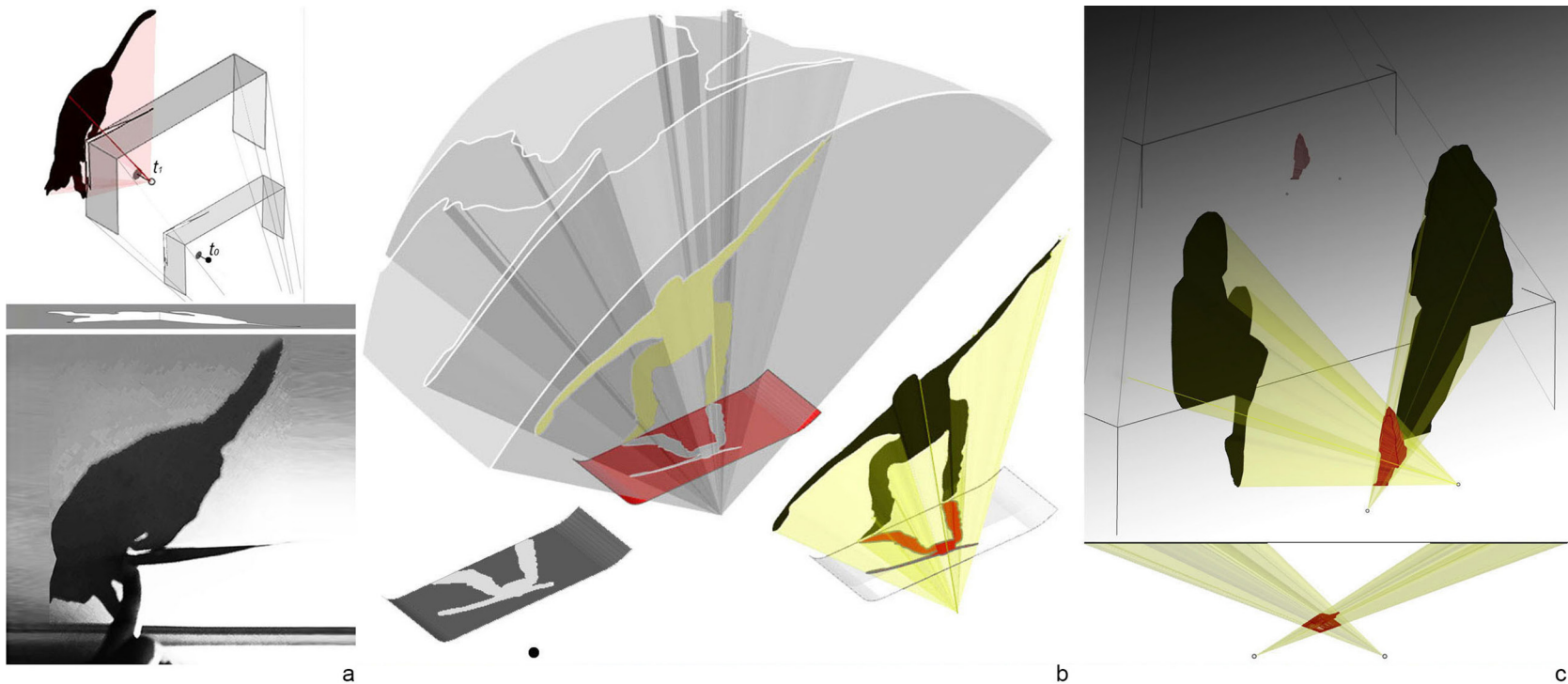Fig. 18 - Parametric anamorphosis. Algorithmic-generative definition

Fig. 19 - 19a. Testing anamorphosis parametric definition design, cutting and projection of a cat shadow; 19.b. Shadow and light sculpting; 19.c. Projection of an amorphous sculpture from two light points.

intersection of more projecting cones: hence, we can talk about light-sculpting (fig. 19c). The intersections between *n* projective cones identify the correspondent 2D or 3D elements to which they will correspond *n* shadows on one or different surfaces (fig. 20).

Using artificial light, projection do not change over time, while projection from natural light changes and each shadow will appear only at a given time t or in a given interval t - t1. Therefore, shadow actively plays its role in whole projective process as generating element and final product: 2D or 3D objects are function of future shadow (4D). Sun (parallel projection) is a necessary and sufficient condition to introduce time as parameter for these installations. Working with sunlight, special tools allow to mix more complex environmental parameters, e.g. orientation and position of the support, direction of light sources and distances. Algorithmic-generative tools need physical data to automatically and consciously manage environmental parameters as input elements. These software allow to import and analyze real weather data .epw (*Energy Plus Weather*) to automatically trace Sun path (its declination, therefore its height) according to the latitudes of a given geographical area. This tool simulates the ecliptic [12] and allows morphing process generated by Sun's apparent motion, therefore the *n* directions (stright lines) representing «*the immaterial contact between Heaven and Earth*» (Pagliano et al, 2012): this process allow to materialize time in space as abstract sculpture composed by intersection points of light rays. Therefore, each silhouette corresponds to a specific direction. The artifice works when the projection matches a naked-eye intelligible figure. Figure 20 shows the shadows (in this case stylized alphabet letters) of an abstract sculpture from multiple light sources (artificial or natural) deriving from Boolean intersection of projective cones and/or prisms from a light point or several sunlight directions.
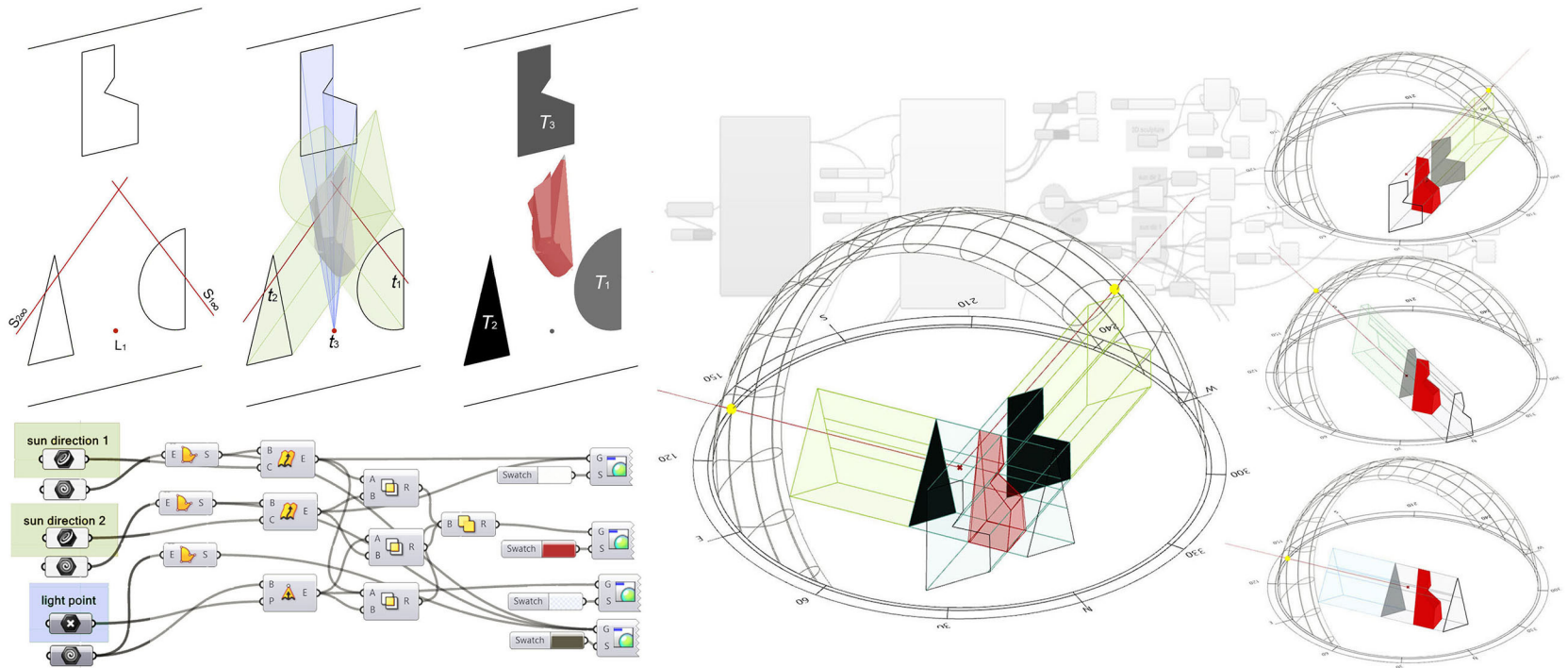
9. CONCLUSIONS AND PROPOSALS

In *Lezioni americane* (1988), Calvino says: «*The scientific and poetic attitudes coincide: both are attitudes of research and design, of discovery and invention*».

Shadow Street Art, between nature and artifice, surprise and confusion, confirms this assumption: all the experiences described lead pedestrians to the drift theorized by Debord.

Shadow confirms concreteness of human beings and things. Unknown, sudden, real, fictitious shadows, met on the street, along a wall, around a corner, invite as to look around or behind, inevitably paying attention to our position, to the place where we are and we cross, thinking about our time. Social, artistic messag-es are not impetuously communicated on the walls, on the streets, through explicit, colored subjects, rather they are veiledly transmitted through silent vehicles. Shadows involve historic heritage according to a non-invasive way as interesting and not expensive installations. By mixing natural and artificial light, it will be possible to display the same shadow at any time on any place on Earth, communicating the same message at the same time. Furthermore, hours could be indicated by projecting, time after time, different figures to involve passersby and inhabitants.

From Peter Pan to Peter Schlemihl [13], losing shadow means losing oneself: but what does it mean to transform it? And add more? Adding new shadows, populating a place with new presences, means thinking on our identity and places, so adding new, alternative experiences, communicating a content, merging our reality, to imaginary, or past, parallel worlds, looking for something beyond our space and time.

Fig. 20 - Shadows of an abstract sculpture from multiple light sources (light point or Sunlight directions): parametric tools allow to simulate Ecliptic.

NOTE

[[1] Cfr. Jun'ichirō Tanizaki, (1933).

[2] Dalrymple Henderson, L. (2013).

[3] Fekner, J.2020.

[4] Debord Guy, (1956), p.6.

[5] *Richard Hambleton Masterworks*. richardhambletonofficial.com/studio-art

[6] Bozidar Katic. *Playground 0.175 public installation*.www.bozidarkatic.net/Playgorund-0175.html

[7] www.alexsenna.com.br/about

[8] herbertbaglione.com.br/

[9] *Fabrizio Corneli*. fabriziocorneli.net/

[10] In the frontispiece of the book *The Fourth Dimension* (1904), Charles Howard Hinton shows representations of tesseract.

[11] Cfr. Di Lazzaro Paolo, Murra Daniele, Pietro Vitelli (2019). *Le immagini anamorfiche in un viaggio interdisciplinare tra arte, storia, geometria e attualità*. ENEA. National agency for new technologies, energy and sustainable economic development, p. 15 and Mathematical appendix 1, p.33.

[12] The Ecliptic is an imaginary line on the sky that marks the annual path of the sun. It is the projection of Earth's orbit onto the celestial sphere.

[13] Peter Pan is the literary character created by Scottish writer James Matthew Barrie in 1902, *Peter Pan in Kensington Gardens* (1906) and *Peter and Wendy* (1911), as well as Peter Sclemihl is the protagonist of *Peter Schlemihls wundersame Geschichte* (1914), a novel by the German poet and botanist Adalbert von Chamisso: both characters share loss and search for their own shadow, hence their soul and identity.

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