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SIGN
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LANGUAGES

AESTHETICS
EXPRESSION
VISUAL

TRACK CHAIRS

Nicolò Ceccarelli,
University of Sassari, Italy
"Exploring the cultural power of the visual language to engage audiences with wit, reason and passion... conveying ideas and emotions so to actually touch people and make them think."

Chele Esteve Sendra,
Polytechnic University of Valencia, Spain
"A visual language that launch from its genesis to build its own boundaries and manage transformations towards new aesthetic proportions."

Spartaco Paris,
Sapienza University of Rome, Italy
"Within the heterogeneous post-modern world of languages, we are looking for investigations which could still consider the materiality and consistency of things as matter of expressions and challenge of technologies and tools."

Merav Perez,
Shenkar College of Engineering and Design, Israel
"In the detection of rising design accents, we are looking for explorations of the expressive possibilities offered by evolving mediums, technologies, and visualization tools."

DC(S)

Beyondstories. People Narrative makes a Territory

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Abstract | Beyondstories is a system to rewrite the historical and becoming identity of a territory from an internal point of view, through inhabitants' experiences, voices and anecdotes. Urban stratification is revealed by translating recorded voices of citizens - the physical "human data" - through a digital visual grammar. Stories mixed with history come back to the context with cultural narrative paths that use architecture as a substrate for immersive technology.

KEYWORDS | SYSTEMIC DESIGN, COMPLEXITY STRATEGY, DIGITAL CULTURE HERITAGE, IDENTITY, TERRITORY, SELF-REPRESENTATION, NARRATIVE, LANGUAGE, GRAMMAR, CONTENT ANALYSIS, COMBINATORY, AUGMENTED REALITY, DATABASE, VOICES, AESTHETICS, EXPRESSION, VISUAL

1. Introduction

In our research, we started from the conditions of territories and the relationship between people and territories in the age of complexity. Urban areas are rapidly changing due to gentrification, globalization, and mass tourism phenomena. In a lot of cities, especially in Mediterranean, identity "is not perceived as an alive and shared feeling" (Casalini, 2016) anymore.

"Polis is a web of relations" (Lledò, 2019) and identity is related to the people that live a specific territory and to the way they connect and communicate with each other. Territory is made of language. In a complex system, "to know is always a result of a dialogic combination." (Morin, 2019). In semiology, "umwelt" is our subjective universe, a perceptive environment of my surroundings. "When two umwelten interact, this creates a semiosphere" (Semiosfera, 2019), a habitat where it is possible to reach common sense from different expressions. Territory is always an interaction between languages. We give meaning to what we perceive thanks to the encounter with the other.

Encounter is a bedrock for the development of a community. We feel belonging to our territory if we live together with other people and we socially identify with our habitat. The endurance of our relational web depends on the empathy that we feel for our neighbours. In the past, myths and classical literature let people be able to recognize neighbours' feelings. Narrative archetypes worked as other "recognition figures" (Galimberti, 2019).

Nowadays, we lost some of these narrations and we do not socially identify with each other. In order to rebuild this relationship, we need to produce new narratives about territories or to find a way to revitalize existing ones. Our design strategy therefore identified narrative as a method of regenerating urban macro and micro territories and stimulating the recovery and maintenance of identity belonging.

Narration is the act of telling a story, where the language is a medium. Narrative is rarely investigated as a way to spread a new language. In our research, we studied how narrative can develop territory belonging and diffuse a sense of recognition in a community. In a story timeline, normally there is a transformation, a passage from a state to another. The sequential nature of narrative could be a way to express identity, intangible entity in perpetual change. People are "stories-holders" (Marcolini, 2019), so territory identity can be expressed by stories of people collected within the context.

We focused on how to promote human life stories, morphing a stratified maze of data in a connected network. In the 4th Industrial Revolution era, we view big data management as a chance to weave a network of stories, people and places. Our goal was to structure a solid system that could inject some life back into cultural heritage, involving people in terms of imagination and civic participation and supporting the local economies.

The main purpose of designing a system is to design a process that could proactively involves people and fits across time and in different spaces, as a sustainable format.

Following a systemic approach, we gave birth to a grammar structured in acquisitive, compositional and compilable logics held together by a team of experts and relationships that provides cyclical interventions on the context. The results are shown up in the form of concepts able to translate the grammar and logics designed. Systemic design was used as a method capable of giving life to a project in which the technological component (digital or material whatever it is) is always accompanied by a strong human presence. Culture cannot be separated from its context and from the language of those who live the context and experience culture. Beyondstories is a project that shows how expressions from the contexts can be a driving element of the cultural process.
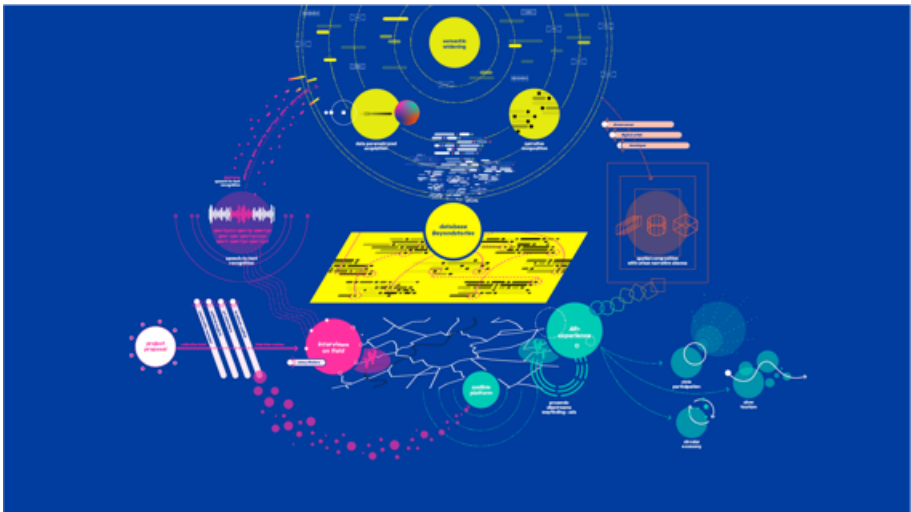

Figure 1.   Beyondstories: Systemic map that shows actors, logics and the circular process from context to context.

Figure 2.   Beyondstories: Parameter Emotion. The poles from which the infinite emotional nuances spring up concern the perceived sensation (vital-nefarious) and the temporal connotation (present-expected) of emotions.

2. Beyondstories: A Narrative System

Beyondstories is a framework to rewrite the historical and becoming identity of a territory from an internal point of view, through inhabitants' experiences, voices and anecdotes. Urban stratification is revealed by translating the physical "human data" through a digital grammar, coming back to the context with narrative paths that can be experienced by audience through immersive channels (e.g. nowadays geo-located podcast, videomapping or augmented reality). Narratives are set up starting from a database composed of the stories told by the inhabitants of the context, collected, processed and translated according to a set of design logics.

Each people' specific stories are modules brought together in a composed collective history. As a language, every single part interacts with each other and creates new elements. The recurring and shared elements are highlighted, maintaining the heterogeneity of the singularities. The entire process must be iterative: the onward addition of new points of view will shape an open story. New looks will produce new meanings, keep track and take care of emerging behaviours.

Finally, the composed narratives are re-proposed to the inhabitants through physical-digital channels: a network of paths that can be experienced through augmented reality and an interactive geo-located podcast platform, an open use of the database to the public.
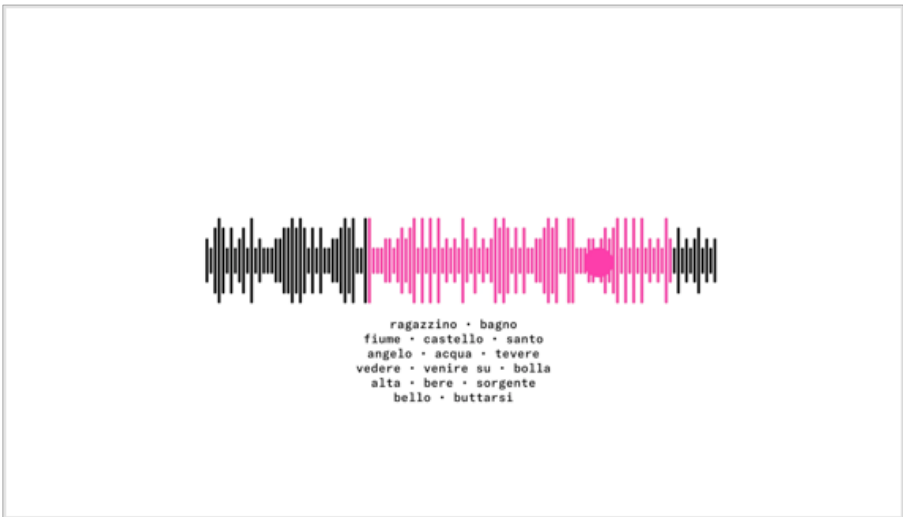

Figure 3.   Beyondstories: Putting keyframes on recording audio isolates a micro-story from the entire interview.

3. Beyondstories: Territories Acquisition Through Stories

The distinctive character of a territorial context lies in its human heritage, a community that must be preserved, enhanced and narrated, in order to bequeath its peculiarities and keep its identity dynamic. Due to its nature, a context should be depicted mixing history (universal and verified facts) and stories (particular and specific anecdotes).

Beyondstories makes facts, events and people not historicized talk, enhancing the peculiarities that emerged from historiographic research and freeing the canonical tourist routes from mass crowding. The cultural use of a context would thus extend to any stratified street, square and corner, without remaining closed in the habitual monuments and points of interest.

As a first step of our research process, we focused on specific areas and topics to be explored. After that, we established that stories should be searched using a field research method, looking for direct expressions from the context and about the context itself. In the end, we looked for patterns and recurring elements from the collected data that can become parameters of a wide and structured model.

3.1 Focused field research

The Beyondstories system starts with a co-design process, in which designers have roles as mediators. Designers map the urban context chosen, in order to highlight topics and places where the research will be focused on.

Results are discussed with experts of various disciplines concerning a relationship with territory and ethnography. Art historians will help in rebuilding the historical urbanistic context, anthropologists will give advice on how to approach the context inhabitants, community managers will be the spokesman for the needs and suggestions of the neighbourhood committees or civic associations.

From this collective briefing designers draw an interview canvas out that will be assigned to the story-finders, figures who will be in charge of seeking stories through research sessions on the field. The stories from the context will be acquired as audio recorded material, through narrative interviews sessions organized in the research context.

The narrative interview is a methodology theorized by Robert Atkinson (Atkinson, 2002) based on an empathic ascetic process that establishes ever deeper levels of confidentiality with the interlocutor. Every single story is the result of a relationship that is established between the interviewer and the interviewee, and takes shape between a smile, a commotion and any other emotional nuance.

We tested narrative interviews on field, acting as story-finders in our field research prototype. Referring to the artistic design philosophy of J.M. Basquiat called Boom for real, we introduce ourselves to the people interviewed as a research group named Boom for

Rome. As Basquiat breathed and absorbed signs, smells and sounds of his city in order to express them in his artworks, we tried to enter the Roman urban substrates in order to absorb stories, emotions and cultures.

The prototype Boom for Rome was organized in several interviews sessions that have been collected in places in Rome that share a high grade of sociability, current or in decline, and historical stratification. Our choices fell on the social and habitative center Spin Time Labs in Via Santa Croce in Gerusalemme, on the area of Rione Ponte and on the areas surrounding Piazza Navona.

The questions of the interviews were designed to encourage people to tell stories about their relationship with the territory across the timeline past / present / future. As an example, we asked "Why are you here?", "How was this place twenty years ago?", "What does this place remind you of?", "What would you change or add to this place?".

Each person interviewed shared precious stories and anecdotes, which contributed to create more specific and focused questions. We worked on how to interview. Every time that we came back on field, we fixed our interview process, and we found recurring topics and patterns. Analysing the results of empirical experience, we have thus designed guidelines that can be applied to different acquisition tools and models

3.2 Qualitative voice recognition

Nowadays, automatic speech-to-text recognition and manual unwinding are the main ways to get a transcription from a recorded audio. Speech-to-text recognition is fast and increasingly precise, but it has limits in the restitution of a narrative content, not providing indications in emotional terms. The unwinding allows a more qualitative analysis of a text/audio, but it is a slow and expensive process.

In order to provide technological support to the physical action of the story-finder, we designed a model divided into steps, with the aim of obtaining qualitative and narrative data from voice recognition.

1. During the interview, the story-finder puts keyframes of fixed duration (2-3 minutes). The keyframes are parts of the entire story that become autonomous micro-stories, with narrative value and - if possible - a self-concluding sense. Each micro-story is an agglomeration of the words that composed it;
2. Each micro-story is analyzed by voice recognition, enhanced by the addition of three parameters: Time, Narrator and Emotion.

- **Time:** Compared to the time x of the interview, what time y does the narration refer to? The "present" axis is not at the centre because - based on field research results - it emerged that memories are prevalent within an interview;
- **Narrator:** Does the person talk about himself (selfdiegetic), his context (homodiegetic) or with an observer's eye (heterodiegetic)?

- **Emotion:** Towards which axes does the emotional substrate of the narrative tend? Emotions are shown as configurational situations, resonances of human behaviour, not polarized and with a nuanced nature. The poles from which the infinite emotional nuances spring up concern the perceived sensation (vital-nefarious) and the temporal connotation (present-expected) of emotions. Time and narrator parameters come from Genette's studies on narratology ("Gerard Genette", 2019). The emotion parameter is a union between Lisa Feldman Barrett's neuroscientific studies (Della Rocca, 2019) and Umberto Galimberti's philosophical analysis (Galimberti, 2019).

3. Adding the three parameters, every word of each micro-story is categorized and expanded semantically. Each word will have a wide range of connections with other words and at the same time a more specific connotation depending on the parameter. All the micro-stories, divided by topic and categorized by parameters, create the Beyondstories database.
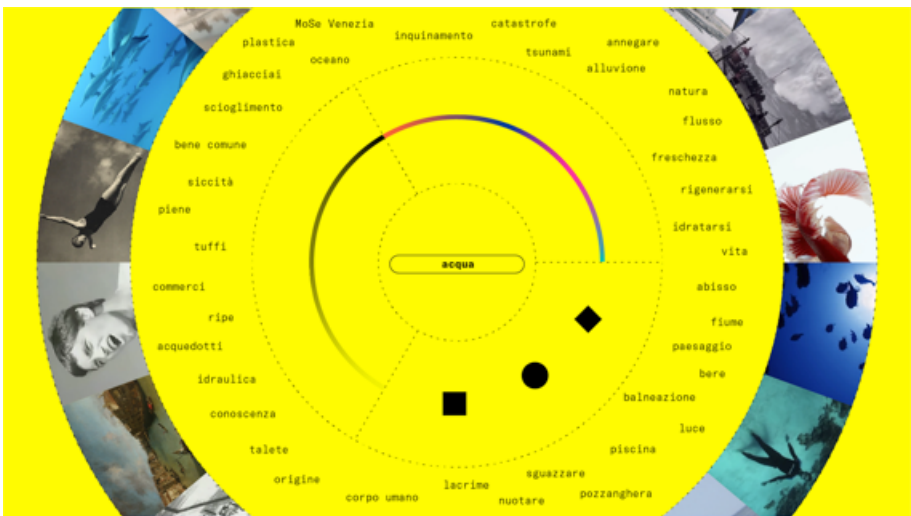

Figure 4. Beyondstories: Semantic widening. Each word will have a wide range of connections with other words and at the same time a more specific connotation depending on the parameter.

3.3 Visual code

To deal with the amount of information contained within a single audio file, it was necessary to develop a visual code that took into account all the acquisition parameters and easily concentrated them in a graphic display. A micro-story is represented as a cloud of words. The single word is represented by a long stroke and a short stroke. The amplitude of the long stroke is determined by the semantic connections of the word, while its transparency is dictated by the temporal parameter (the more a word is linked to a past tense, the more transparent it will be).

The morphology of the short stroke communicates the type of narrator: square if selfdiegetic, circle if homodiegetic, rhombus if heterodiegetic. The gradient of the short stroke transmits the emotion parameter: gradient from blue to green refers to the present-expected axis, the gradient from magenta to orange refers to the vital-nefarious axis.

To ensure a rectangular morphology and the slender shape of the module, the words are arranged on six vertical lines with a fixed horizontal line-spacing. The short stroke is located on the right of the long stroke. The distance between short and long strokes and between individual modules is constant. The final configuration of each micro-story is a pattern of lines and points that resembles a cloud, a slipstream.

Figure 5.   Beyondstories: Each micro-story is an agglomeration of the words that composed it. Through the visual code, the final configuration of each micro-story is a pattern of lines and points that resembles a cloud, a slipstream.

3.4 A narrative database

At the end of the acquisition phase, each micro-story will be composed of parameterized and semantically expanded words. Collecting an unlimited number of stories, a narrative database comes to light. "Database and narrative are natural enemies" (Manovich, 2002), but they are joined together by the language as an "archive of elements from which people assemble the linear utterances of speech" (Lupton, 2015). Micro-stories so become the elements of the new language of the territories.

From the elements, to the speech. By transitive property, the connections between words also become connections between micro-stories. Database starts being not only a way to gather parameterized fragments, but also a way to easily join a various number of them united by the same topic in a wider screenplay: the "beyond-story". The continuous update of fragments makes the narrative combinations infinite.

Facing an indefinite number of contents coming from reality, Joyce and Woolf's a-synchronic narrative (Gorlier, 2019) and the combinatorial narrative studies of Calvino and OuLiPo (Martines, 2019) inspired us on how to translate a multiplicity into a composite narrative flow with meaning.

The next step is to move from an intangible database to a concrete experience. A beyond-story becomes a physical narrative path. The connections between micro-stories become connections between places. Urban aesthetics supported by a non-invasive technological intervention becomes the ideal medium for narrating stories of the context.

Figure 6.   Beyondstories: In the database, connections between words also become connections between micro-stories.

4. Composition: Stories through Space

Considering territory as an open narrative entity, we faced how stories could remain and contribute to amplify memory context itself. Generally, memory has an organic and configurational nature (Yates, 1972): memories set up and fixed on places where they took origin (Yates, 1972). In the same way, composed narrations should return to the place from which originated.

Coming from different voices and times, various stories coexist in the same place. That place becomes a heterotopia, a "different place" (Foucault, 2011) where pairs of opposites - e.g. inside and outside, real and imaginary - coexist within a "habitable threshold" (Moca, 2019). The threshold takes on a dual and ambiguous nature, a conscious dream *reverìe* (Moca, 2019). Enhancing beauty and potentiality of urban thresholds as architectural discontinuity and patterns, cultural heritage pass through an augmented reality itinerary in stages.

In the composition phase we focused on space. Every beyond-story must be translated from audio to visual language and then laid down on reality. We built a grammar, an abacus to give a set of possible narrative configuration of the space, to let the architecture talk. Stories become markers, digital-physical checkpoint that can be experienced along the urban context through an audio-visual immersive path.

Figure 7.   Beyondstories: Stories become markers, digital-physical checkpoint that can be experienced along the urban context through an audio-visual immersive path.

4.1 Urban Narrative Abacus

A composed narration needs a dynamic grammar, whose elements can be combined according to flexible rules of narrative composition. The Urban Narrative Abacus is a set of possible compilations of the space available to the digital artists who will have to design the augmented reality visual experience.

In designing this new grammar, we took into account the pre-existing urban and architectural scheme and we looked for analogies between physical space and narrative cases recurring in a narrative. Heterotopias have been the medium for imagining the kind of interaction between content, spectator and background. As an additional level of translation, we assigned rhetorical figures on the level of meaning to each element of the abacus.

The digital artists associate the contents of each micro-story with an element of the abacus and creates 360° visual compositions for every checkpoint of the entire beyond-story. The digital artist will be supported by a developer for the final implementation phase of the process. Depending on the main parameter of the narrative, digital artists can treat stories with different styles corresponding to different tones of voice. As in Queneau's Exercises de style (Queneau, 1983), each path can be narrated with a different narrative genre.

ABACUS ELEMENT	NARRATIVE CASE	FIGURE OF SPEECH	HETEROTOPY
RHYTHMIC LOOP	area, set, circumstance	periphrasis	inner/outer proximity/distance
RESONANT ECHO	history, narrative layers	iteration, anaphora	space/time body/place
PROJECTIVE EXTENSION	imagination, dream	chiasmus	real/imaginary expressible/unutterable
SEQUENTIAL LAYER	chronicle, sequence	hysteron proteron	space/time expressible/unutterable
SCALABLE ADJACENCY	transformation	oxymoron	real/imaginary expressible/unutterable
REVEALED DEPTH	revelation, deepening	synecdoche	inner/outer real/imaginary

Figure 8.   Beyondstories: The Urban Narrative Abacus is a set of possible compilations of the space available to the digital artists who will have to design the augmented reality visual experience.
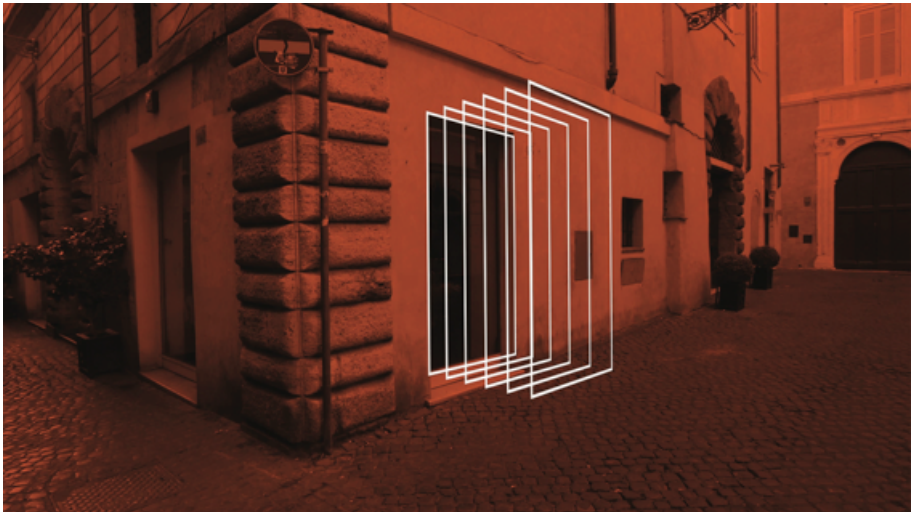
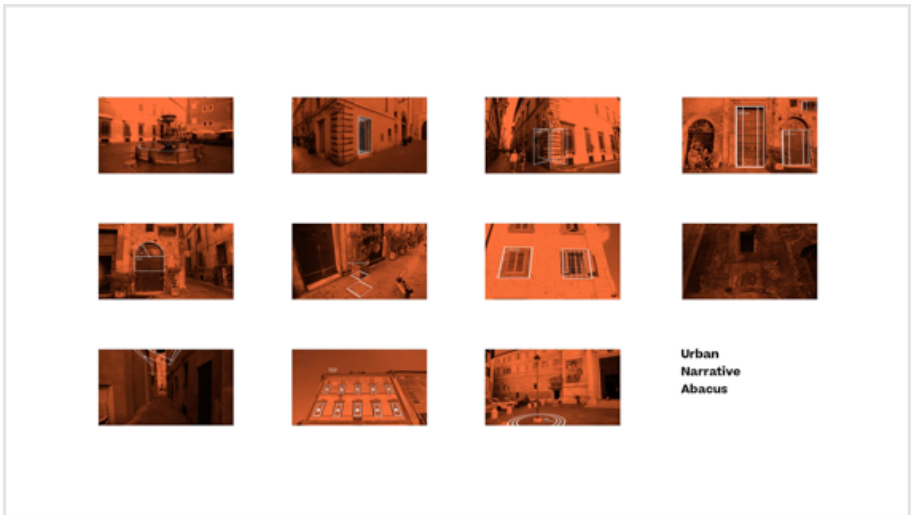*Figure 9.   Beyondstories: Resonant Echo, one of the Urban Narrative Abacus elements.*

Figure 10.   Beyondstories: The eleven elements of Urban Narrative Abacus.

4.2 Augmented reality experience

The first practical application of our system is an augmented reality experience proposed to the public through thematic itineraries in the urban area. The path winds through the physical checkpoints of the territory where the narrative development of the individual micro-stories will take place.

We faced nowadays not invasive technologies and chose augmented reality as the best one to make people aware of the stratified context where they live using themselves contributes.

Stories are composed and overlay to reality starting from the same motifs grabbed in the gathering of stories. Spectators discover a new context that evokes futures, echoes memories and encourages an imaginative approach to everyday life. Ordinary becomes extraordinary through sensorial assonance (Winkowski, 2019), showing how behind data there are real human stories (Lupi, 2017).
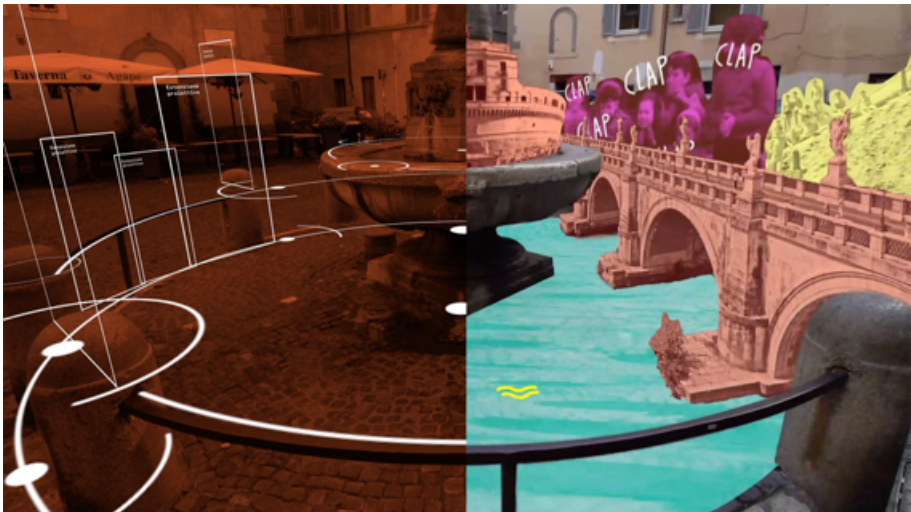

Figure 11.   Beyondstories: Translation from abacus to augmented reality experience.

The street becomes a museum, a vibrant place of life and anecdotes, in line with the principles proposed by the theory of eco-museums ("Ecomuseo", 2019). As in an eco-museum, cultural experience is proposed in the same context where the stories are born.

Technology allows us to let the spectators live first-hand the experience in an audiovisual synaesthetic sphere. During the experience, visitors are attracted to multiple points of interest, free to evolve their own path freely.

Every micro-story is related to a visual slipstream. Slipstream move on the adjacent planar surfaces: flooring, walls, facades. The direction of the slipstreams is the micro-story checkpoint, so visitors can follow them during their walk. The closer the spectators get to the checkpoint, the more concentrated and denser the slipstream becomes.

Acoustically, the slipstreams drag pieces of the audio of the respective micro-story, disturbed by gradually less intense interference signals when spectators approach checkpoint. A plaque with information about micro-story appears once spectators arrive.

Figure 12.   Beyondstories: A plaque with information about micro-story appears once spectators arrive on the checkpoint.

After enjoying the experience, visitors could be able to live again a context by listening to the beyond-stories as podcasts. The stories database can be used independently through an interactive sound composition platform. The platform allows to keep track of the configurations proposed by users and their feedback can give important advises for organizing the next acquisition session.

From context to context, through digital and physical channels, the main aim of the system is to promote the birth of a cyclic ecosystem.
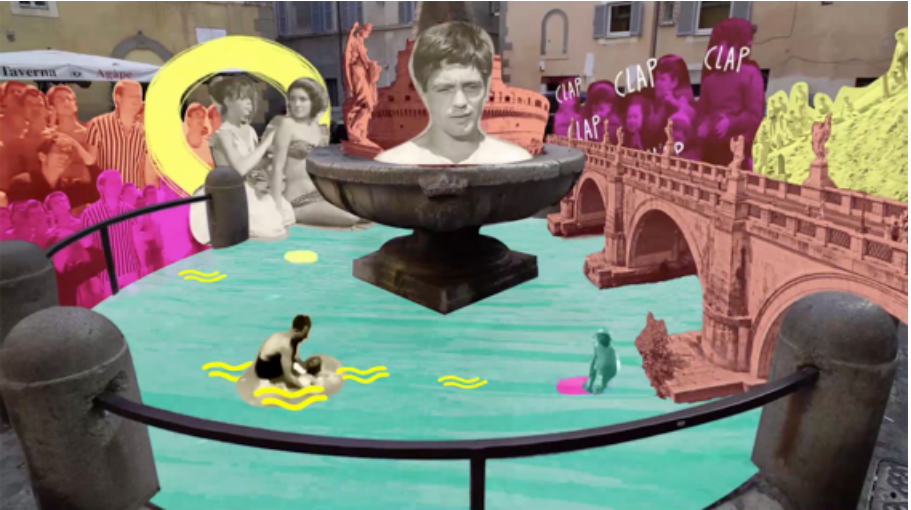
Figure 13.   Beyondstories: A frame from the augmented reality experience.

Figure 14.   Beyondstories: From the same story is possible to change tone of voice. Same topic and voices, different style

5. Scenarios

We believe that this approach to narrative could open to different scenarios.

We aim living as part of cultural heritage, in order to contrast massive tourism with quality cultural routes. Furthermore, we think that a territory should self-represents itself to trigger a renovated sense of belonging and civic participation and to give life to a support economy for local activities. Immersion in reality through stories provokes empathy for the context. Empathy stimulates people to make their own contribution, to explore other micro-territories within the macro-territory and to participate civically.

These could be the next steps to carry out research in terms of feasibility tests and interaction design prototypes:

- Design of physical devices and interfaces that translate the acquisition and composition logics in terms of user experience;
- Introduction of interactive logics during the augmented reality experience, providing objects capable of directing and modifying the stories path;
- Qualitative approach to the translation of stories in another language, in order to maintain dialect and the emotional charge that only an actor figure could faithfully reproduce.

The branches of the system open up to other possible longer-term scenarios, regarding tourism, civic engagement and circular economy.

5.1 Tourism

The new international trends are moving towards the search for emotional and experiential tourism. Despite the tourist is looking for authenticity, in Italian cities mass tourism is concentrated in a few places compared to the potential that our territory would offer. Self-representation according to the Beyondstories model can become a direct channel for presenting a territory, spreading the boundaries of cultural heritage.

Looking also at the representation of the territory and reiterating the concept of identity as a changing entity, the design of a coordinated image could be cyclically supported by a preliminary phase of coordinated investigation of the territory to be narrated. People's stories would become raw materials to express the real nature of a context to those who discover and explore it with an external eye.

5.2 Civic engagement

For some years, many cities (above all Bologna with the Urban Innovation Foundation and Barcelona with Decidim) have been equipping themselves offline and online platforms to mediate the relationship between citizens and the public administration. Cities are intended as a common good to take care together. Citizens are asked to be active and say their

thoughts participating to events or taking part to co-design workshops. Community managers are important figures in this process: they have the task of stimulating, collecting and preserving shared ideas.

The future of the territories is also at the core of universities' projects, particularly in the faculties of architecture and design. Universities have always carried out research on feasible ways of intervening in a context to improve their critical issues. Students start from a research about the context and then they are free to design with imagination.

Beyondstories can assume a role of narrative support to universities and coach managers, through representing projects and proposals hitherto fixed on paper or communicated through photorealistic rendering.

5.3 Circular economy

A territory is the result of exchanges and relationships that occur within it. The sustainability of a territory passes through its economic flows. Local actors produce goods, internal and especially external actors bring currency. Today a lot of historical commercial activities are closing due to the spread of standardized gadgets and the research for low quality souvenirs.

Marketing 4.0 theory said that the future economic scenario will shift the focus from value to relationships (Kotler, 2019). Any company should seize the addition of external factors as an opportunity to expand and grow its pre-existing vision and narrative.

Beyondstories could be an active part in the development of a support economy to protect the general economy of the context. While narrations are opened, it is possible to extrapolate characters, anecdotes, figures and situations from them: iconic material that lends itself to be attached to any product sector. The historic craft activities could find a quality circuit, promotion channel and source of collaboration in the development of representative memory objects of the territory.

6. Conclusion

The narration of a place has a threefold goal across the time: narrate the past in order to maintain, collect and create memory; narrate the present to inform and therefore take care; narrate the future to observe, imagine and then propose (or simply dream).

The construction of the narrative must be facilitated with a grammar that provides guidelines, constraints and ideas for the participation in the narration. We need to connect the languages of different actors and different cultures and to create a positive experience that encourages users to constantly and spontaneous sharing.

A new grammar should also enable people to "develop the ability to react creatively to the visible" (Rodari, 1972) to create an open narrative of the territory.

We want to trigger collaborative and participatory storytelling processes with the aim of developing the shared identity of an environment-territory.

Design is medium for maintaining heterogeneity and building new experiences to identify oneself as part of a community. The designers must take on the role of "architects of relationships" (Bottà, 2019) and arrange the exchange from "me" to "us" and from "us" to "others". Beyondstories system spreads the practice of mixing, connecting and uniting, creating a common sense that starts from ambiguity, diversity and differences.

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