

The Sign and the Word. Exploring the Art of Emotional Communication

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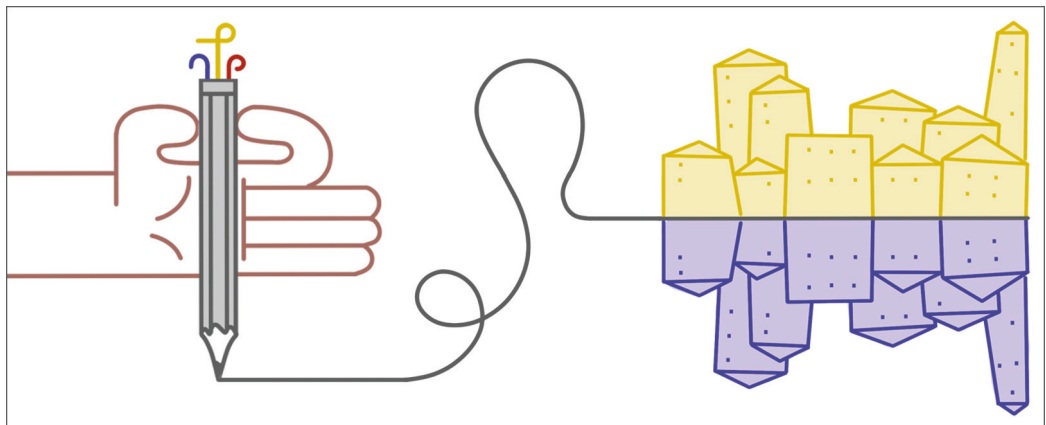
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Abstract

In the fall of 2024, the P.A.T.H.O.S. project (Perception of Architecture, Territory, and Heritage. Observation and Sensation) was launched as a collaboration between the University of Genoa and the University of Pisa. The research aims to explore the emotional relationship that inevitably develops between an individual and the territory, as well as the communication of this emotion through its representation. Drawings and texts –either in the form of keywords or extended expressions of the subject's sensations and observations– created by students from the two universities were chosen as the means of communication. These drawings and words were presented to external observers through an online test and will undergo specific evaluations to identify the elements indicative of emotions, as well as to determine what worked most effectively in terms of graphic and verbal representation. The goal is to fill gaps in the psychological scientific literature, which lacks specific categories of words, emotions, and images related to the urban-architectural environment.

Keywords

Emotions, Words, Drawing, Perception, Psychology.



PA.T.H.O.S. Workshop
logo (drawing by G.
Leandri).

Introduction

The emotion evoked by a work of art, such as a painting or drawing, a photograph, or even by a place, represents a field that is difficult to investigate precisely because of its elusive and multifaceted nature.

For this study, we chose to explore emotional responses through two human activities that most directly connect us to our inner feelings: artistic expression through the act of drawing and textual expression through the writing of words and short texts.

These two methodologies of expression are already widely employed in psychological therapy. Furthermore, they are complementary and can be studied either individually or in combination.

The type of text we refer to aligns with the concept of *ekphrasis*:

“*Ekphrasis*: ἐκ-φράζω, refers to the literary and rhetorical trope of summoning up –through words– an impression of a visual stimulus, object, or scene” [Squire 2017]. Similarly, the *Treccani* dictionary defines it as: “A term used by Greek rhetoricians to denote the description of an object, a person, or the detailed account of an event, and more specifically the description of places and works of art rendered with a virtuously elaborate style that strives to rival the expressive power of the object itself” [Treccani s.d.].

In other words, it is a verbal description of an object, a work of art, or a place, with the particular ambition of competing in expressive force with the object itself [Hefernan 1991].

On the other hand, drawing is essentially the main way an individual organizes and uncovers their perception of the world.

Le Corbusier once stated: “I prefer drawing to talking. Drawing is faster, and leaves less room for lies” [Simpson 1988, p. 78]. Essentially, drawing is a means that allows us to clarify aspects of our experience that cannot be reached through words or language.

For an observer, a drawing is immediate and evocative, yet it leaves room for personal interpretation [Massironi 2001].

For this reason, the experiment described below, whose complex results are still being analyzed, explored these two paths, seeking in the primary channels of human communication –drawing and language– the first clues to uncovering the mysterious world of feelings and emotions.

Emotions, images and the missing words

The study of psychological responses to images has been approached for several decades as one of the primary methods of assessment for various types of psychiatric, psychological, or behavioral disorders.

Over the years, several databases have been tested and validated, such as the International Affective Picture System (IAPS), the Open Affective Standardized Image Set (OASIS), Fear Inducing Pictures (SFIP), and the Image Stimuli for Emotion Elicitation (ISEE). These sets, which contain hundreds of photographic images, are widely used in psychological research [Kurdi, Lozano, Banaji 2016; Michałowski *et al.* 2017; Kim *et al.* 2018]. However, given the extremely complex nature of the relationship between representation, emotion, and its definition/interpretation, these databases are still being expanded and refined, with many experimental areas yet to be explored.

For example, there is no specific set of images dedicated to architecture or the real urban and territorial heritage, nor have responses to drawings versus photographic images been thoroughly investigated.

For the most part, the validation of these image sets relies on the ratings of the emotions elicited by each picture, based on the assumption that emotional assessments can be explained through the three dimensions of valence, arousal, and dominance.

The challenge in validating these databases is not only related to the images themselves and, often, the lack of analysis of their expressive form, but also to the words presented

to participants. Like images, the definitions of emotions, their nomenclature, and their categorization into specific groups were validated years ago in psychological literature. Yet, there are no emotion categories –expressed through words– directly linked to architectural heritage and, consequently, to the images representing it.

This gap is critical, as an increasing number of sectors, from psychology to urban planning, are addressing issues related to cities and the human life within them.

To identify and address these issues, aiming for more sustainable urban development that respects human psychology, both images and words are still missing.

The PATHOS Project. Perception, Observation and Sensation

In this context, the Perception of Architecture, Territory, and Heritage, Observation and Sensation (P.A.T.H.O.S.) [1] project originates with the intention of analyzing the role of architectural representation in the study of the relationships between built heritage and individual emotions, aiming to bridge the methodological and instrumental gaps that limit the possibilities of conducting scientific studies of a quantitative or mixed-methods nature. Specifically, the PATHOS workshop is oriented towards identifying how participating students discern specific emotions in particular urban contexts, and how they decide to represent them in order to transfer these emotions to the observer of their representations. The production of these drawings opens multiple avenues for analysis, the preliminary results of which will guide the definition of more ambitious and consolidated research objectives in this complex field of inquiry.

The research was structured in multiple phases, some of which were carried out in parallel. Based on the initial drawings created by the students, various types of analyses are conducted, ranging from image and word-based quiz analyses to those that will be carried out in the neurophysiology laboratory using electroencephalography (EEG).

The initial workshop spanned two days, during which students from Genoa and Pisa –the authors of the drawings forming the basis of the research –were given the opportunity to explore the two cities independently. The only binding requirement was to create a freehand drawing (using any materials and style) based on an assigned emotion. The task was twofold: to identify a city view perceived by the student as corresponding to the given positive or negative emotion, and to produce a freehand drawing that somehow expressed that perception.

Given the lack of an established vocabulary validated for expressing emotions in relation to architectural or urban images, we began by focusing on primitive positive emotions (joy and calmness) versus primitive negative emotions (sadness and anxiety). Emotions were assigned to students to ensure equal group sizes for each emotion, with each participant switching from a positive to a negative emotion or vice versa on the second day of the workshop.

The workshop involved 18 architecture students in their first or second year, 7 from Pisa and 11 from Genoa, aged between 19 and 27 years. Prior to the drawing sessions, several validated diagnostic tests were conducted in the classroom: the Mini Mental State Examination for general cognitive assessment, the Benton Visual Retention Test for perception and visual memory, the 'Reading the Mind in the Eyes' test for emotions and mood recognition, Raven's Progressive Matrices for logical reasoning and intelligence, and the Attention Test. The sample was identified as cognitively healthy.

The drawings were then created over a 3-4 hour period, during which the individual locations of the students were recorded along with climatic conditions, environmental factors, and ambient sounds (figs. 1, 2).

During the drawing session, students were asked to describe in words their sensations upon seeing the chosen location –sensations they attempted to translate into their drawings and, consequently, to communicate in graphic form. This exercise was requested for two main reasons: the first was to allow them to 'free themselves' from the constraint imposed by the given emotion, or rather, the assigned word. In some cases, the word was perceived as 'limiting' compared to the feelings experienced.



Fig. 1. The first day of the workshop in Genoa (photos by M. Castaldi and E. Pupi).

By using two categories of words, 'emotions' and 'adjectives', students were able to specify and expand their description of their sensations regarding the image of the location or simply repeat the assigned word if they found it sufficient.

The students' words were grouped according to the urban areas chosen for the drawings and the positive/negative categories.

Tables 1 and 2 show the emotions/adjectives written by the students and some of the drawings representative of these word groups.

For the second part of the study, 20 drawings from both cities were selected to create an online quiz. The test was sent to a broad and diverse audience in terms of age, background, and occupation. Participants were asked to associate one emotion of their choice, from the same set used with the students, with the displayed image. This will help identify



Fig. 2. The second day of the workshop in Pisa (photos by M. Castaldi and E. Pupi).

the graphic elements that proved to be powerful communicators and also understand how we interpret the words used to describe the emotions conveyed by an image. Online participants were also given the opportunity to add additional words, adjectives, comments, and interpretations related to both the graphic and textual content.

In a subsequent phase, international students from two other degree programs were involved. Specifically, the workshop was repeated with 20 third-year architecture students from Florida International University and 42 first-year master's students in Architectural Composition at the University of Genoa, coming from various countries (Albania, Belgium, China, Korea, France, Germany, Iran, Poland, Russia, Tunisia).

Similar to the first workshop, the students were assigned an emotion (translated into English) and asked to create a drawing of the city. In this case, no time limit was imposed, allowing them to familiarize themselves with different areas of the city and freely choose the view to represent. Unlike the first group, these students did not simply provide a list of words but preferred to describe their impressions of the location in greater detail, often offering very precise descriptions of architectural elements and their associated sensations.

Further developments in the research included analyzing electroencephalograms recorded while viewing the drawings and conducting experiments with artificial intelligence.

A Personal Emotional Experience. Results and Future Developments

Despite the predominant role played by drawing and the urban territory in the research, the true protagonist is the interpretation of the word that expresses emotion. The word functions both as a suggested lens for interpretation and as a spontaneous expression that accompanies and reinforces the drawing.

Tab. 1. Drawing, emotions, and adjectives related to the historic center of Genoa to describe the negative emotions 'sadness' and 'anxiety' (drawing by Dimitri Tollot).



	Emotions	Adjectives
GENOVA OLD CITY CENTRE (VICOLI AREA)	6 Malinconia Scorciato Nostalgia	6 Cupo Abbandonato Infelice
	7 Preoccupazione Soffocamento Tensione Paura Inquietudine	7 Opprimente Schiacciante Snervante Imprevocabile Illogico
	8 Scorciato Paura Ansia	8 Lugubre Buio Solitario
	9 Inquietudine Angoscia Agitazione	9 Inquietudine Opprimente Snervante
	10 Malinconia Solitudine Quiete	10 Silenzioso Immobile Eterno

Tab. 2. Drawing, emotions, and adjectives related to the place Lungarno Pacinotti (Pisa) to describe the positive emotions 'joy' and 'calmness' (drawing by G. Spartano).



	Emotions	Adjectives
PISA LUNGARNO PACINOTTI	5 Quiete Conforto Leggerezza	5 Rilassante Accogliente Chiaro/Limpido
	6 Serenità Euforia Entusiasmo	6 Allegro Spensierato Radiante
	7 Felicità Allegria Spensieratezza	7 Allegro Vivace Felice
	8 Gioia Serenità Allegria	8 Chiaro Luminoso Aperto
	9 Calma Serenità Pace Tregua	9 Silenzioso Meditativo Bilanciato
	10 Gioia Allegria Vivacità Serenità	11 Colorato Giocoso Luminoso
	11 Gioia Calma Nostalgia	

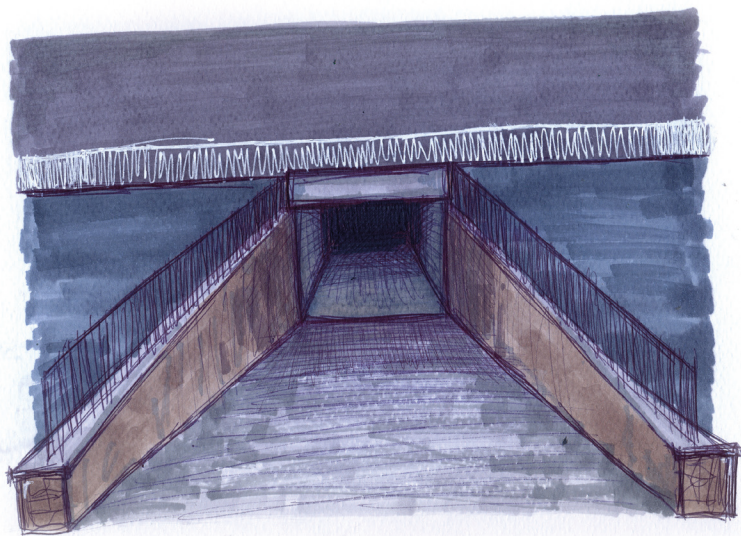


Fig. 3. Drawing related to the emotion 'anxiety', created in Pisa (drawing by A. Xeka).

Positively received by the students, the assigned emotions were not perceived as constraints but rather as keys to interpretation and inspiration, serving as stimuli to freely express their personal interpretation of the semantic content of the given word (figs. 3-6).



Fig. 4. Drawing related to the emotion 'joy', created in Genoa (drawing by E. Segatori).

Thus, an inverse path to *èkphrasis* must be undertaken to trace back to the visual elements that evoke a specific feeling, which is then expressed as an emotion and ultimately in words. The word becomes visual art in an act of 'translation' that seeks to evoke the same expressive power in a different communicative form.

The participation of international students further highlighted the limitations of standardizing images, emotions, and words on a global scale. For instance, American students attributed a different emotional value to 'joy', associating it with historical places such as the alleys of Genoa's city center –an emotion tied to 'sadness' for Italian or other international students.



Fig. 5. Drawing related to the emotion 'sadness', created in Pisa (drawing by S. Paoni).

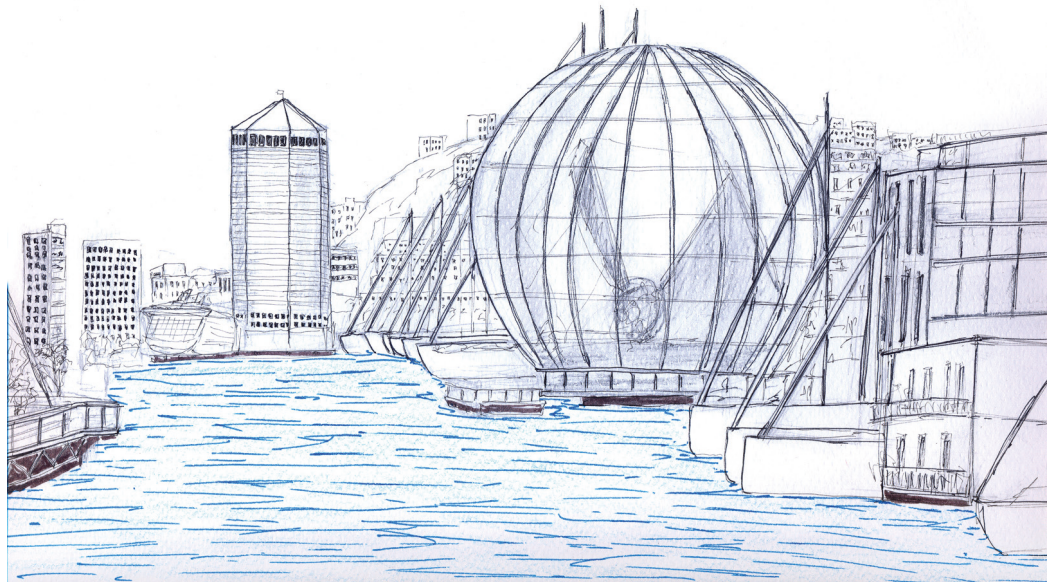


Fig. 6. Drawing related to the emotion 'sadness', created in Genoa (drawing by A. Batistini).

International students linked their textual descriptions to memories of familiar places back home, illustrating how crucial familiarity and prior experience are in our processes of interpreting and reading a place, and therefore in conveying it (figs. 7,8).

The findings from this study have provided valuable insights into the emotional relationship between individuals and urban heritage, as mediated through drawing and textual expression. The drawings revealed specific graphic elements that were consistently associated with particular emotions, both positive and negative. These elements included line quality, color use, and compositional choices, which acted as potent visual communicators.

Both the student-generated words and the responses from the online quiz highlighted the variability in how individuals interpret and connect words with emotions and images. This underscores the subjective nature of emotional perception and the potential influence of cultural and linguistic factors.

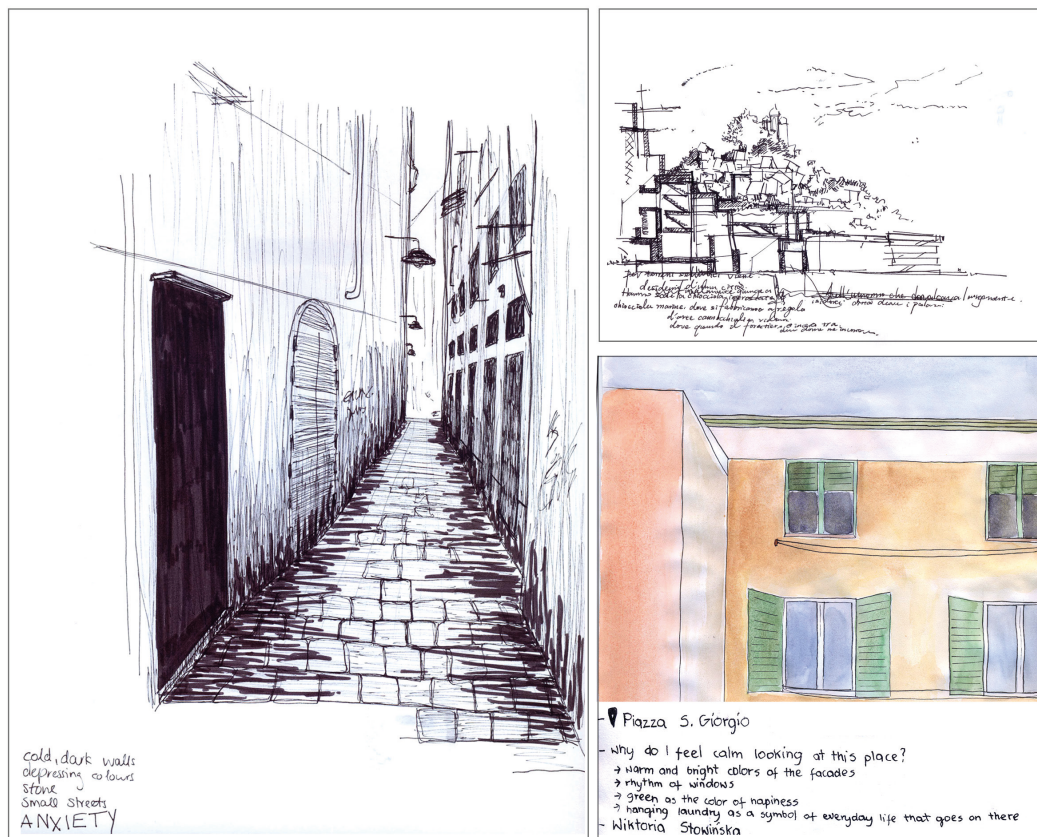


Fig. 7. Drawing of Genoa inspired by 'sadness' and a descriptive text of the place and the emotions it conveys (drawing by T. Samkharadze).

These narrow streets of Genoa and especially this place reminds me of my hometown, Tbilisi. These dark natural colours and plants are important part and character of this place. It's the same in Tbilisi. It's like perfectly describe features of this city.

Sadness is this big black shadow, which is the center of attention. These buildings are sad humans, their parts, some of them are covered with windows and they are the main facades, when you look. Because of human emptiness. Some of this building's facades are empty. These facades, where are the windows are human's faces, how they show and store their emotions with us, but everything is in the deep (on the facades) shadow has it's own form, shape, because in human's sadness is shaped as in it's own form too.

Fig. 8. On the left, drawings and texts on the theme of 'anxiety' (by M. Bertram). On the top right, 'sadness' (by F. Yuchen). On the bottom right, 'calmness' (by W. Stowinska).



The involvement of international students demonstrated notable differences in how various cultural backgrounds influence the perception and representation of urban spaces and emotions.

In the future, it is proposed to replicate the research experience with different participants in the same locations to increase the statistical sample and in various cities, maintaining the same methodology. The methodology used in this research project also allows what is produced in the classroom, as a didactic activity, to be directly incorporated into the research and laboratory phases, involving students in all stages of development and enabling the continuous expansion and updating of the materials used for the investigations. By collecting an increasingly broad set of images and words, it will be possible to create reference databases for the artistic, architectural, and psychological fields.

These databases could further contribute to the complex exploration of human interpretation of images and words, where the only constant remains the emotion evoked.

Aknowledgements

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Note

[1] The research project proposal P.A.T.H.O.S. received a special mention at the Vito Cardone Award competition organized by the Unione Italiana Disegno in 2024. It has since been carried forward by the Department of Architecture and Design at the University of Genoa, the Department of Energy, Systems, Territory and Construction Engineering at the University of Pisa, the Department of Architecture and Design at the Polytechnic University of Turin, and the Department of Neurosciences at the University of Genoa. Scientific committee: Maria Linda Falcidieno, Enrica Bistagnino, Giulia Pellegri, Gaia Leandri, Martina Castaldi (Università degli Studi di Genova), Marco Giorgio Bevilacqua, Piergiuseppe Rechichi (Università degli Studi di Pisa), Roberta Spallone, Enrico Pupi (Politecnico di Torino), Lucilla Vestito (Dept. of Neurosciences, IRCCS San Martino, Genoa).

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