Atmosphere(s) for Architects: Between Phenomenology and Cognition

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a dialogue between Michael Arbib and Tonino Griffigo  
edited by Elisabetta Canepa, Bob Condia, and Mikaela Wynne  
essays by Elisabetta Canepa, Federico De Matteis, Robert Lamb Hart, Mark Alan Hewitt, and Suchi Reddy
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Acknowledgements

This book was born to host the dialogue that the neuroscientist Michael A. Arbib and the philosopher Tonino Griffero started at the end of 2021 about atmospheric experiences, striving to bridge the gap between cognitive science’s perspective and the (neo)phenomenological one. This conversation progressed due to Pato Paez’s offer to participate in the webinar “Architectural Atmospheres: Phenomenology, Cognition, and Feeling,” a roundtable hosted by The Commission Project (TCP) within the Applied Neuroaesthetics initiative. The event ran online on May 20, 2022. Bob Condia moderated the panel discussion between Suchi Reddy, Michael A. Arbib, and Tonino Griffero. The RESONANCES project (Architectural Atmospheres: The Emotional Impact of Ambiances Measured through Conscious, Bodily, and Neural Responses) was responsible for developing the editing and publishing process. It received funding from the European Union’s Horizon 2020 research and innovation program under the Marie Skłodowska-Curie grant agreement no. 101025132. The content of this book reflects only the authors’ view. The European Research Executive Agency is not responsible for any use that may be made of the information it contains. For further information, please visit the project website: www.resonances-project.com

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Interfaces investigates the interplay of architecture, philosophy, and biology through the lens of meaning in architecture. Architecture is a thread, mending the fabrics of disparate realms of comprehension. There is a fractal-like intention of this book series to expand and contract in scale of observation. It serves less as a microscopic and precise account of the science of the experience/body/building triality and more as a kaleidoscope of thought.

The allegory of a kaleidoscope seems especially appropriate when reflecting upon its construction and mechanics. A telescoping container houses three mirrors, arranged to form an equilateral triangle toward a fixed axis. When introduced to vision, an optical unfolding occurs as light, color, depth, and angle are adjusted, producing nuance and clarity with each refinement. Furthering the metaphor, our telescoping container is atmosphere; our medium of vision is meaning in architecture; our triangular mirrored prism is the reflective and mutually inclusive realms of experience/body/building — or always the sum of philosophy/biology/architecture.

Editorial policy
Interfaces began as an invention of the Advisory Council of the Academy of Neuroscience for Architecture (ANFA) to open our symposiums to the world through live performances, video recordings, and open-sourced publications. We operate here under no authority but in the spirit of academic enterprise.

Every text accepted and published in the Interfaces book series underwent an editorial review procedure that ensures high-quality content. The Interfaces scientific board is composed of academic members and experienced professionals.
# Atmosphere(s) for Architects: Between Phenomenology and Cognition

## Introduction

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob Condia</td>
<td>8</td>
</tr>
<tr>
<td>Mikaela Wynne</td>
<td></td>
</tr>
</tbody>
</table>

On Becoming an Atmospherologist: A Praxis of Atmospheres

## The Dialogue

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael A. Arbib</td>
<td>34</td>
</tr>
<tr>
<td>Tonino Griffero</td>
<td></td>
</tr>
</tbody>
</table>

A Dialogue on Affordances, Atmospheres, and Architecture

## Commentaries

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federico De Matteis</td>
<td>170</td>
</tr>
<tr>
<td>Robert L. Hart</td>
<td>186</td>
</tr>
<tr>
<td>Mark A. Hewitt</td>
<td>200</td>
</tr>
<tr>
<td>Suchi Reddy</td>
<td>210</td>
</tr>
</tbody>
</table>

The Atmospheric Architect
What Is Going to Be Relevant to an Architect
Art History, Human Affects, and Atmosphere in Buildings
The New Phenomenology of Space: Bridging Cognition and Emotion in Architecture

## Epilogues

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michael A. Arbib</td>
<td>234</td>
</tr>
<tr>
<td>Tonino Griffero</td>
<td>258</td>
</tr>
</tbody>
</table>

The Atmospheric Brain: Beyond the First Impression
Concordia Discors: What Can Atmospheres Surprisingly Do

## Appendix

<table>
<thead>
<tr>
<th>Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elisabetta Canepa</td>
<td>276</td>
</tr>
</tbody>
</table>

An Essential Vocabulary of Atmospheric Architecture: Experiencing, Understanding, and Narrating Kansas State’s Beach Museum of Art

## Authors

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>350</td>
</tr>
</tbody>
</table>

## Index

<table>
<thead>
<tr>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>354</td>
</tr>
</tbody>
</table>
On Becoming an Atmospherologist: A Praxis of Atmospheres

If atmosphere in architecture is worth study, then Atmosphere(s) for Architects: Between Phenomenology and Cognition is a germane discourse by two leading voices: Michael Arbib, a cognitive and neurological scientist interested in the relationship of brains (and bodies) with buildings, and Tonino Griffero, one of the most important philosophers engaged in applying neophenomenological ideas atmospherologically (including in architecture). This project began with Arbib’s indomitable curiosity and his inquiry to deeply understand Griffero’s neophenomenological argument on atmosphere in architecture. It was born with an exchange of ideas and turned into an invitation to build their discussion into a text that can be shared with architects and students of atmosphere. The project came to us at the Interfaces editorial board when Arbib suggested we offer insights to bring the language closer to an architect’s mind. The goal is to frame their debate such that it instructs the practice of designing and building architecture, which is not their discipline, but ours. The book became the overlapping of three disciplinary vocabularies and three ways of thinking and seeing the world: philosophy, science, and architecture. As it happens when minds and vocabularies are different, there are opportunities for explanations to be lost in translation (or experience). However, this is our first lesson in atmospherology, and learning the lexicon of atmosphere will develop the mind to be more analytical and descriptive in observation and design. Since atmosphere resides between new phenomenology’s vagueness and science’s limited hypothesis or focused expectations, the more language you command the better you can practice.

Tonino Griffero and Michael Arbib provide two perspectives on the experience of architecture through the first-person lens of phenomenology and the third-person lens of cognitive science and neuroscience.
When combined, these perspectives form a scholarly approach to understanding and designing architectural experiences through atmospheres and affordances. Of all the ends an architect seeks to achieve, the least visible, but arguably most important, is the way occupants feel within the space which can be delineated as atmosphere. It is the elusive quality of space that is always there and sometimes strongly felt. The potential for emotions and actions that an atmosphere tempts is called affordance (from James J. Gibson’s theory of affordances as Griffero and Arbib assert). Moving past Gibson’s limited definition, affordances are the action potentials (behaviors) postulated by things and quasi-things within an environment, whether it be feeling, thought, rehearsal, or real action. For example, a chair affords the action of sitting. A favorite chair brings to mind the fond feelings associated with a novel read, a story shared with friends, or holding your first-born son, in such a chair. Is it the atmosphere of a beloved chair that which affords our memories? In the architect’s reading, we will propose so.

Our experience of architectural space is formed by a multisensory engagement with the atmosphere of a place: tacit both consciously and nonconsciously. Maybe this is what architects mean when they say architecture is poetic. But what is it, architectural atmosphere? Griffero calls it a spatialized feeling and, among other names, “a quasi-thing.” Or more specifically, “as in ‘it is hot’ the heat is not a property of a thing as instead [...] a quasi-thing, not less autonomous with respect to things than a melody is with respect simple noise” (Griffero 2014, 18). Arbib says atmospheres are our feelings filling up a room. For him, atmospheres are not essential characteristics of buildings but correspond with the feelings so experienced. The debate then might be framed, as for Arbib, that atmospheres are experienced feelings. However, Griffero makes a distinction concerning the atmospheric feeling and the mood (which is also atmospheric but in a different sense) that results from the personal filtering of the atmospheric feeling. In his perspective, feelings, rather than being internal states, are forces that we feel aggressively acting on our bodies from outside (even against our will and reflection) and, in this sense, are quasi-things. In the neophenomenological sense, the body is implied as the lived body, the body we subjectively feel and experience, and not the physical-organic body. Atmosphere for the architects’ mind is a reversal where the material form reveals the quality of a room in the poetic as a thing turned inside out. It is a distinct quality of space that we feel and that acts (and is) substantial while remaining mostly ephemeral, below consciousness.

Elisabetta Canepa prefers to speak of the atmospheric dimension by way of resonance — a felt-bodily connection between our feelings and our surroundings. “In short, we can define the atmospheric dimension as the domain where the experiential vocation of architecture takes place, that which rises from the physical nature of the built environment to subsequently transcend it. Atmosphere, in fact, concerns both the measurable field of physical parameters of the built and the evanescent one of personal feelings. Even if the atmospheric aura is not instantly perceivable, we cannot separate architecture from it” (Canepa et al. 2019).

In the atmospherologist’s case, resonance is a flickering of emotions (felt-bodily) articulated with feelings (conscious sensations). For instance, one feels the presence of a spatial, architectural atmosphere, and there can be an attunement (disposition) that engages with the presence of a particular bounded dwelling. Resonance implies vibrations and harmonics in the sense that it is a non-static process, something in
constant search of balance with one’s surroundings. Carefully here, by harmonics, we infer the architect’s practice over the philosopher’s more broadly construed definition. The two stacked works by Alessandro Vittoria in [F1] illustrate such an impression, being focused and refocused anew by changing natural light and our walking towards the works. At a distance, we see the overhead relief, along with the statue, in a composition together, but as we approach, expressive details are presented in central vision where we lose attention to the room. Atmospherology is the unpacking of designed experiences as such.

For architects, our encounter with space is primarily non-cognitive. Hence, the atmospherologist realizes that emotions and feelings are different. Feelings can be articulated by a subject referring to something they have experienced while emotions are operating below consciousness, where emotion means motion, either real or in rehearsal. Humans have evolved to react to threats immediately before recognizing the danger. In this way, emotion moves people below the sea of consciousness, causing bodily reactions to stimuli that are non-cognitive and immediate. To reference Harry Mallgrave’s discussion of the James-Lange theory of emotion, he says, “today, many psychologists and biologists prefer to distinguish emotions from feeling, with the former referring to the underlying bodily changes or activity, while the latter is defined as the conscious awareness of emotion” (2013, 106). A theoretical division makes sense for the architect considering atmospheres as a fusion of conscious and nonconscious sensations and responses. As he argues in the dialog, Arbib sees our distinction differently, closer to the Oxford English Dictionary. Griffero is different still, and for him, emotions are intense yet temporary states that have an intentional structure while feelings can be less intense but more enduring and pervasive. The designerly function of what cognitive science and phenomenology arguably mean by emotions and feelings, if not definitive, recognizes a broad critique that bears on space depending on which manner of question you are asking at the moment: is the space to be studied from a first-person or third-person view or both simultaneously?

In general, the neophenomenological evaluation acknowledges everyday phenomena, like atmospheres, with much interest in seeking to reclaim everyday experience as a valuable source of expertise, especially describing involuntary life-worldly experiences (insisting on a pathic aesthetics) without necessarily explaining them causally and etiologically. Elaborated by the German philosopher Hermann Schmitz from the 1960s onward, new phenomenology is a method constructed on investigation which understands phenomena in relation to the lived body. The neophenomenological approach to atmospheres can be understood in three parts: the felt-bodily basis, the life-world, and the types of atmospheres (of which architects take special interest in the prototypical type for its overwhelming influence). Pathic aesthetics focuses on immediate and felt-bodily responses to a specific environment. Studying this type of resonance is helpful to architects as a test for the activation of the desired atmosphere. From this perspective, the architect’s designed atmosphere, so considered or otherwise, is felt through pathic aesthetics, like a first impression. Griffero terms this type of atmosphere a prototypical atmosphere. Prototypical atmospheres rely on the primordial senses shared by almost all humans. This shared basis of experience is what architects and phenomenologists seek to understand. Griffero suggests in his dialogue with Arbib, “phenomenology concerns itself with what, at least from Edmund Husserl onwards, is called the life-world. This is the world that is invariably there and is relative to perceiving sub-
A highlight enters from a window overhead to illuminate and activate the relief of The Assumption of the Virgin above the altar hosting a sculpture of Saint Jerome.

What can an atmospherologist say about this image?

The beam of light and embodied movements of the figures engage our senses. The downward gaze and tense muscular stance of Saint Jerome below the suspended relief of Mother Mary tint our first impressions. A third-person critique from an understanding of vision sets before us a composition that we can read in a dual poetic. At some distance, we see the whole sculptural composition framed within the alcove but do not have an articulate resolution of the faces (only figural or body language appears). Next, drawn by the light, our approach allows us to see faces in central vision as we lose attention to our place and atmosphere nested in the peripheral vision. We carry the emotional momentum that our first impressions formed about this place. Later, a better resolution affords many moments of sensory and cognitive experiences.
jects. The lifeworld is the grounding for all shared pre-scientific human experiences” (2023, 53). It is understood through non-expert ways of feeling, perceiving, and thinking made up of the unavoidable perceptual structures, forming a memory of habits impervious to the development of scientific knowledge. For example, when a friend says, “see you at sunset,” they mean it in the phenomenological sense. To study this lifeworld in a scientific way, Griffero introduces new phenomenology. New phenomenology emphasizes that, like gravity, feelings are forces, which we can similarly study for the effects on our bodies. In this lens, both the felt body and the physical body are the center of action where such actions are determined by feelings generated by atmospheres in space. Such a philosophy fits well into an architect’s thinking.

The lens of cog/neuroscience portrays architectural design as an attempt to provide praxic and atmospheric affordances based on studies of human behavior addressing typical human cognition as well as individualized differences. Cognitive science seeks to understand processes underlying action, perception, emotion, and memory. What is running through your mind when you decide to take one route of a maze-like library over another? It seeks, in part, to relate such processes to neural functions. Which regions or neurons within the brain are involved as you draw a book from the shelf? Combined, this science and that philosophy investigate how the space around an occupant can influence their conscious and nonconscious processes. Arbib wants to understand why a prototypical atmosphere is overwhelming and irresistible to those who encounter it. The study of the third person through research and technologies such as the VISIONS model of visual scene recognition presented by Arbib offers ways that the scientific method can inform architects. Experience is part of a perception-action cycle in which vision (and perception and planning more generally) is an act of creation. When a person sees a hammer, they see it imbued with actions and meaning that a hammer has and does. This unit of cognitive processing is called schema. Activation of schemas forms a value-rich landscape and may nonconsciously mediate a person’s first impression of a space or underwrite ongoing conscious and nonconscious experience and behavior.

Where does the architect stand regarding the third-person observations of the scientific method and the first-person arguments of new phenomenology? We suggest the two sides of the architect’s brain live within both vocabularies (see our comparison of the similar religious spatial compositions with figures [F2] and [F3]). Even a quick scan of Vitruvius’ The Ten Books on Architecture (1914 [first century BC]), the beginning of Western culture’s practice of architecture, develops the applied science and mathematics of buildings as well as machines for defense, offense, and agriculture, all the while instructing on materials of construction, structure, and design in relation to nature, site, and the human body. Medicine and astrology are likewise informed by (and informing) the embedded mythological concerns for temples and dwellers. Such dual intentions of the science and philosophy of the day, often summing opposites through hierarchy, is the basic nature of our work, at least since the Greeks and Egyptians. We will suggest, as does Indra Kagis McEwen in her book Socrates’ Ancestor: An Essay on Architectural Beginning (1993), that architecture and philosophy share the same origin in Greek text by Anaximander in the sixth century BC. Although a précis is beyond our scope here, she set forth a description of the cosmos and humans, building so within it. Philosophy and the science of the day have long combined in practicing architecture.
F2 Abbey of Saint Peter
interior of the church
tenth century–thirteenth century
restored in 1954
Assisi, Italy

F3 Crucifixion group
by Maestro di Santa Anastasia
first half of the fourteenth century
from Saint James and Lazarus Church
Verona, Italy
Now hosted in the Sculpture Gallery
exhibition space designed by Carlo Scarpa
1956–1975
Castelvecchio Museum
Verona, Italy
The similarity of first impressions in [F2] and [F3] might suggest the context of Christian truth: the agony of Jesus on the cross accentuated by the poetic observations of the sculptors. The sensation of the cable suspension enhances the tension and flight of Jesus’s pain and flight into heaven [F2]. The weight of the T mounting for Carlo Scarpa’s installation is more grounded and composed among the living: we think Mary and Saint John are set on pedestals to elevate the statues’ faces above the adult viewer [F3]. A phenomenological appraisal might say the artwork’s aura (although the same for everyone) is filtered through individual experience and preparation. The cog/neuroscientist may suggest that what you see (your first and repeated impressions) depends on what you bring as cognition and sensory engagement. The architect would have an aesthetic assessment recognizing both their bodily multisensory impressions and cognitive preparation from pious teachings. For a non-Christian, the compositions assert tension and embody pain, if not torture. The devout would accept the same works as beauty lost on others.

Architects translate programs by evoking their first-person experiences and observations, visualizing an atmosphere they will embed into a structure as a basis for others’ experiences. Griffero and Arbib correctly identify the architect’s difficult task as converting the evidentiary experience of science, combined with their own life (first-person) experiences, into a visualized atmosphere that will act as the foundation for the “further challenge of designing a building that they do expect to elicit such atmospheres. This is without claiming to perfectly plan for the desired effects, if only because all human activity is subject to the heterogeneity of ends, according to which the outcome may differ from the atmosphere sought in the architectural design” (2023, 60). Stated differently, they recognize that the trials architects encounter are making spaces in and around a building that intend to offer the myriad of individuals engaging the building a range of praxic and atmospheric affordances. Architects should adopt viewpoints from both perspectives by establishing that the felt body is the center of perception, which — while having a life-worldly basis — is dependent on an individual's experiences. Griffero brings into discussion the term “atmospherology,” as architects necessarily should be experts in perception and be able to read the behavioral description of an atmosphere. Good architecture should intentionally evoke strong prototypical atmospheres in inhabitants, and this can be achieved through the study of the dialogue which follows.

It is interesting, in this modern world where we recognize individual experience as the source of personality and psychological afflictions, as well as political dispute and ridicule of our preferences, one’s subjective experience is commonly dismissed. In our prevailing professional bias, architects and clients want to privilege data or evidence as the bases for designing buildings, as if the individual experience — what we call sub-
jective — is not a significant source of knowledge. Although good architects pride themselves on listening well to others, we suggest an atmospherologist’s vocabulary will improve practice. It is human experiences to which the usefulness and suggestive charms of a building serve. In the Arbib-Griffero dialogue, we have a neuroscientist and a philosopher agreeing that architects need to comprehend both points of view of the individual’s experience as a subject in the life-world while rationalizing the repeatable hypothesis of the contemporary neuroscientific debate. An architect needs to stand for both and not either.

To expand your vocabulary, logic, and mouth feel for atmospheres, the dialogue is adjoined by four learned commentaries and an informative lexicon from a practicing council. Each of the voices represented in our three-discipline assessment is an architect of atmospheric skills. First in sequence is Federico De Matteis, a Professor at the University of L’Aquila, Italy. Architect, renderer, and author, his interdisciplinary investigations are significant to our encounter with the contours of a material world. Robert Lamb Hart is an architect of the broadest practice — interiors to buildings to urban plans to landscapes — as well as a humanist and an author. It is crucial when a humanist of consequence brings a lifetime of wisdom to bear on the experience of spaces as he does here. Mark Alan Hewitt is a scholar-architect of spacious practice and a historian of architecture. Recently his intellect has navigated into the biological sciences, in support of an architect’s good citizenship. Next is Suchi Reddy, founder of the art and architecture firm Reddymade in New York City. Her artist’s sensibilities — wrought through experimental, full-scale installations — bring precious observations to our treatise. She stands intentionally with one foot clearly in the biological sciences of perception and the other in an architect’s aesthetics of space. Lastly, in good reply to Michael Arbib and Tonino Griffero’s deliberation, is Elisabetta Canepa. She is a scholar-architect-scientist on atmosphere in architecture. Although her most recent work is in measuring how spaces affect people at levels of emotions and feelings, here she provides a lexicon that synthesizes lessons of new phenomenology and cog/neuroscience into considered vocabulary befitting an architect’s sensibility and argument for spaces of intentional atmospheres.

Federico De Matteis asks, “what is the atmosphere of design?” He proposes that the spaces in which atmospheres are designed perhaps impart a piece of themselves into the final product. The design studio, home office, or café booth are a part of the first-person experiences that designers reference for their desired effects. Social, political, and cultural influences on the architect are other external factors that are part of the atmospheres that shape design. During a project’s development process, specific vagueness gets the designer closer and closer to the reality in which the building exists. Similarly, atmosphere is designed into a space by the intents of the architect that is met by the variant mood of the perceiver.

Robert Lamb Hart focuses on how the connection of atmospheres to human sciences can be relevant to architects: understanding the why behind architectural experience would revolutionize the practice. Arbib’s insights into the science of the human brain and body are the most relevant to architects, as the neurobiological basis of our impulses defines our most likely interactions with a space. This is part of a larger resurgence of humanism in architecture. Responding to the authors, Hart believes that if architects and scientists can communicate across disciplines and relay these scientific findings to clients in a way that ma-
Mark Alan Hewitt highlights the need for architects to find words to describe emotions in architecture which we meet in atmospheres. However, the presence of an atmosphere may not be enough to deem the architectural experience positive or negative. Research from the human sciences can offer more discernment. The discussion of atmosphere, while he considers it premature, is being used to supplement a lack of descriptors for the aesthetic experience of architecture. He argues that, as science develops to discover the neural basis of atmosphere, architects will more clearly be able to define it.

Lastly, Suchi Reddy praises an architectural approach that emphasizes feeling, and provides examples of her architectural spaces that unite emotion and cognition. Reddy designs her spaces through the thesis “form follows feeling.” She reports on an exhibit at the Salone del Mobile that helped visitors better understand their responses to differing atmospheres. The approach outlined by Griffero and Arbib can set in place an architectural practice that performs beyond what is typically expected and imparts a clear emotional impact on occupants. These affordances allow for a design that embraces the complexity and diversity of human experience in architecture.

Born an engineer, Elisabetta Canepa came to an architect’s atmosphere through practice and research. Her journey to learn how to speak to a variety of peers with insight into the universe of forms and experiences leads to her essay “An Essential Vocabulary of Atmospheric Architecture.” As she explains, she tuned her vocabulary to communicate with scientists and better understand the biology of architectural experience. She has condensed an atmospheric lexicon by framing significant terms like “atmosphere,” “resonance,” “attunement,” “emotion,” “feeling,” “arousal,” “valence,” “mood,” “body,” “first impression,” “conscious,” “nonconscious,” and “affordance,” while rejecting the impersonality of the concept “user.” We hope these notions are instructive for architects, scientists, and philosophers who wish to communicate with each other to practice atmospheres well. We dare to suggest that this is the language of the atmospherologist.

What can a cog/neuroscientist and a neophenomenologist teach architects while wrestling with each other’s terminology and professional reasoning? Much. The evidence of biology and description of phenomenology teach that architecture is an active engagement of the mind and the pre-reflective felt-bodily sensing long before cognition and feeling develop by way of affordances. But like other objects of life, a chair, a painting, a bank, or a glass of wine, what is more significant is how we can use or feel about them, or better, our improvisational dance among things. It is argued herewith that architecture, by way of its atmosphere so formed, affords the action potentials of living. Michael Arbib’s theory of schemas complements Tonino Griffero’s neophenomenological analysis to point to architecture as something we not only experience but also do. Hence, our experience of architectural space is formed by a multisensory engagement with the atmosphere of a place. Atmospheres may (but need not) be felt immediately and nonconsciously, like a first impression. The affordances that compose an atmosphere modulate the behavior of occupants, influencing their mood that resonates with the atmosphere in a certain way. The interaction of the occupant and the environment is dependent on the historical experiences of the perceiv-
er (the physical, felt-bodily, and social contexts in which the perceiver is) and the characteristics of the environment as things or quasi-things. Talking to Griffero, he asserts that “architecture is certainly spatial in the proper sense (in the geometric-physical sense as well), but from my point of view, all feelings, precisely because they are atmospheric, imply their specific spatiality (not metric but lived): anguish restricts and constricts, joy expands, envy directs attention, felt shame is centripetal, and so on.” Architects concern themselves with the potential for perception within the physical realm as a neuroscientist, but also the potential of the first-person experiences as a phenomenologist. Both personas are inseparable in the architect’s role as creator and forecaster of the spatial atmosphere (see, for example, [F4]).

A first-order lesson is that atmosphere is always about action — including emotions sometimes recognized as feelings, but also as objects of contemplation or virtual movement (of the felt, and not physical, body) — and behavior, as clues ranging from cultural bias to connoisseurship. Our professional agreement is that atmospheres have a convincing effect on people when they confront them, whether for the first time or in the familiarity of practiced repetitions. These encounters are experienced consciously and nonconsciously with certain similarities based on our primal sensory and bodily measures. Reading atmosphere as feelings and potentials for behavior that tinge our actions is fundamental to the first-person and third-person experiences. For architects, the phenomenology of atmosphere and in combination with the of lore and science that may go into achieving the desired effects for the expected inhabitants of the building are a crucial part of their craft. From this point of view, architecture is the thoughtful making of spaces thanks to a language of moods.

In Atmosphere(s) for Architects: Between Phenomenology and Cognition, Tonino Griffero and Michael Arbib discuss different techniques for assessing atmospheres as ways for architects to understand them better so that they might intentionally and successfully employ them in their work. How much intentionality an architect can bring is one of the most significant open questions. Atmospheres, while vague in definition, are solidly tangible through the feelings (and emotions) they evoke in their perceivers, our intersubjectively conveyed moods notwithstanding. They are produced by the collaboration between a witness, material things, and quasi-things in the contoured environment. Each object or phenomenon offers sensing and action potentials called affordances. Atmospheres are not solely built on affordances: they also derive from previous experience, personal preference, or special knowledge. The neophenomenological approach views atmospheres as inescapable yet felt differently by those with different moods and particularly informed by different felt-bodily natures. Human experiences are real evidence if subjective to the individual. The cog/neuroscience approach argues that different feelings constitute different atmospheres, developed by the unique nature of each person’s experience. In either case, the architect’s job is to combine knowledge from both approaches to anticipate how a specific population will experience the building. From this, architects can target the atmospheres to affect those participants while realizing that atmospheres change over time. The first impression is rooted in “pathic aesthetics,” as Griffero calls it. This is the involuntary, felt-bodily reaction between the perceiver and the space or object that occurs before cognition. However, in Arbib’s view, schemas are as crucial to a first impression as the pathic response. The perception of value-rich objects defined by nonconsciously premeditated schemas makes perception an act of construction from past learned experiences yet open to novelty through
From the Alhambra, on the path to the Court of the Lions, an atrium dappled with a controlled array of projected masses of sunlight composed within the cool shadow of the space. A remarkable work of both tension and repose, celebrating light, mystic rationalism, and structure under a master’s hand of craftsmanship. We sense the passage of time as the flow of the day and as history. The phenomenologist would celebrate the power of vagueness felt in the contrast of light and shadow. An atmospherologist may attend to the emotional delight of the colors composed, the sounds or silences (even the noise of one’s footfalls), and what bodily resonance is exerted by columns: in short, we feel an ambiguity full of details and nuances. The scientist may claim that although the room presents a day situation, it is never the same and depends solely on what the subject perceives.
learning. Both emotional and cognitive affordances influence each other to create different types of atmospheres that influence the perceivers in unique ways (see again figures [F2] and [F3] for a visual comparison of the similarities). No matter how precise the conditions the architect demands of geometric space, they can only forecast the semi-predictable and necessarily vague conditions of atmosphere in our lived space.

In conclusion, Michael Arbib and Tonino Griffero make a few suggestions for students of atmospheres.

First: they recognize the tension stretching the atmospherologist. Pulling from one side is data and evidence wrought from the reduced variables natural to the scientific method, repeatable if somehow unreal in experience. Tugging from the other is a profound vagueness of new phenomenology because only such equivocal terminology can capture human experiences of the lifeworld we share. Yet from amid such tension, architects shall assert concrete designs that harbor atmospheric substance now informed by a vocabulary including science and experience in good proportions.

Second: Arbib and Griffero ask designers, “who are atmospheres for?” As non-architects, they can be excused for not realizing the basic ethics of the architect’s professional practice: design is always hierarchical relative to the specific conditions of clients, inhabitants, site, budget, time, and culture, and it offers an atmospheric vocabulary to deeply inform your inquiry and analysis, by way of a theory of schemas, VISIONS, and the three-part neophenomenological dissection. Since all creative work emerges from the poet’s observation of life, this deeper understanding will improve aesthetic effects.

Third: we understand the architect’s medium of expression is the atmosphere recommended by Griffero and Arbib. It is something extra living above the measurable qualities, which we can, all the same, identify as collective feelings, for instance. Here we imagine the aesthetic engagement through the atmosphere that floats above in a poetic sense like in other arts where the artist’s intentionality comes from the depth of their investigation into the qualities of their work so shared.

Architecture is a practice of atmospheres. What do architects think architecture is if not the ephemeral or fluid conditions gathered up by materials of construction in specific arrangements? In this way, everything is made to order life. We bound space while our buildings sometimes recede into the background, nonconscious stages for the dances of lives. If life takes atmosphere, and architects make atmospheres, how can we discover the reality of atmosphere in the experience of buildings? What is the architect’s role in making these atmospheres that enhance our experiences with depth and spirit? To this pursuit, there is a habit of atmospheres that can be formed by a debate between first-person experiential, phenomenological accounts and third-person observational, evidentiary accounts. The lessons of atmospherology are a new language, written herewith to progress your analytical and descriptive craftsmanship in observing and designing atmospheres. Since atmosphere inhabits the space between new phenomenology’s vagueness and science’s limited hypothesis or focused expectations, the greater vocabulary you command, the better you can practice. Can a vocabulary of atmospheres help everyone discriminate between benevolent and noxious places? It seems we have always known that architects, as a profession, express through the medium, language, and poetics of atmospheres as sensation, invitation, and behavior. If one chooses to become an atmospherologist, what follows is a masterclass in learning to speak atmosphere.
Bibliography


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Figure 2: Downloaded from the official website of the Abbey of Saint Peter: www.abbaziassisi.it
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We embedded an index at the end of the book as a roadmap to navigate the key concepts, definitions, and examples provided in the dialogue.
Atmosphere and Affordances Introduced and Exemplified

Although in everyday language the term “atmosphere” can literally denote the gas envelope surrounding a planet, the understanding of architectural atmosphere is extremely fluid. The present article develops two very different perspectives that, taken together, can advance this malleable understanding. This article explores the notion of atmosphere as the intangible something that qualifies a situation as being, for example: tense, relaxed, and gloomy but also (in terms of a value judgment) favorable or unfavorable. Although the word “atmosphere” has been used metaphorically since the Eighteenth century along with some forerunners (aura, Stimmung, and genius loci), it has boomed only recently in the humanities as part of the “affective turn” as diverse disciplines (including geography, architecture, urban design, art and media studies, sociology, anthropology, marketing, and organization studies) seek to express the qualitative and vague “something-more” of a certain situation.

The core concept underlying the authors’ shared concern with atmosphere is the influence of affordances. James J. Gibson (1979, 145) introduced the term to describe the way perception finds opportunities for action and behavior in the current environment. We trace the origin of the present collaboration to a series of workshops hosted by the Finnish architect Juhani Pallasmaa for the Tapio Wirkkala — Rut Bryk (TWRB) Foundation in Helsinki (published as Tidwell 2013, 2014, 2015) [F1]. Michael Arbib has explored how the brain may mediate the interplay of nonconscious affordances (Gibson’s emphasis) and conscious affordances underlying action (complementing Gibson’s perspective). Having spoken at the first TWRB workshop (Arbib 2013), he was intrigued by the way Tonino Griffero extended Gibson’s notion to speak of affordance-based atmospheres at the second TWRB workshop (Griffero 2014, 2015).
Griffero refers in the text to phenomenology, whether or not it is explicitly marked with the prefix “neo,” while almost always using concepts and orientations more or less closely related to the so-called new phenomenology elaborated by Hermann Schmitz and his school from the 1960s onwards (see §2.1), and certainly not to the entire, vast, and extremely varied twentieth-century phenomenology.

According to classical phenomenological tradition and, especially, phenomenological psychiatry (von Dürckheim 2005 [1932]; Binswanger 1955 [1933]; Merleau-Ponty 2005 [1945]; Bollnow 2020 [1963]; Schmitz 1967, 1969) — see Griffero 2014b, 2014c, 36–47 — the notion of lived space explores the connection between space and emotional states. From this perspective, each atmospheric feeling has its specific vol-luminousness: for example, joy expands the surrounding space while sadness contracts it, envy is centrifugal while shame is cen-tripetal, and so on.

Elsewhere, Arbib (2021) has used the terminology of Gibsonian affordances for those linked to praxis (defined for their proposes as practical actions such as locomotion or manipulation) while viewing atmospheric affordances as non-Gibsonian. However, since Gibson is particularly concerned with nonconscious processes linking action and perception, we will shift to a terminology that contrasts praxic affordances (whether cognitive or nonconscious) with atmospheric affordances. Griffero’s emphasis is on first-person phenomenology. At the core of this paper’s dialogue is that Griffero’s primary concern is with how people, in certain cases, may experience an atmosphere as an immediate feeling that cannot be consciously resisted. Griffero calls such an atmosphere “prototypical.” For Arbib, some atmospheres may be irresistible, but he seeks to understand something of the cognitive, as well as the nonconscious, experience of atmosphere and how it may change over time — a third-person assessment of some of the mechanisms that underlie first-person experience. The present paper develops a dialogue between these very different perspectives as we explore the relevance of both to architects and designers. These perspectives will be spelled out more explicitly in the next section.

For both authors, the atmospheric affordances of the lived space — whether entire atmospheric situations or with an atmosphere whose affordances emerge from only some components of space — denote feeling possibilities, and these need not depend on visual input or visual input alone. They specify not possible actions (sitting upon a horizontal surface at an appropriate height for us, for example) but rather what feelings they afford (such as feeling tense before going on stage). Affordance-based atmospheres are ecological-emotional invitations rooted not only in things, including the specific features of buildings as physical things but also, Griffero (2017) emphasizes, in what he calls quasi-things. Quasi-things include particular natural phenomena (e.g., twilight, luminosity, darkness, seasons, wind, weather, the hours of the day, and fog) and relatively artificial phenomena (e.g., townscape, music, soundscape, the numinous, dwelling, charisma, gazes, and shame). Griffero asserts that these feeling possibilities are afforded through a meaning that, at first, is neither semantic nor representa-tional. The challenge for the reader, then, is to assess which kinds of meaning are relevant to the experience and design of architecture. Arbib would suggest that the balance shifts towards semantics and representation as we move from first-person experience to the architect’s design experience.

This approach focuses on atmospheres (of various kinds) and quasi-things, understood as offering affordances (or composites of affordances) that, like things in the proper sense and often even more so, possess an expressive character — attractive, repelling, protective, threatening, relaxing, contracting, expansive, or tense. The night as well as a building, for example, can express different such values: it can be sheltering, enveloping, alluring, eerie, or creepy. Griffero and Arbib, in their specific ways, aim to develop an approach emphasizing atmospherology (the study of atmospheres) that better explains these expressive qualities and social phenomena, such as collective and emotional states of mind. Future work can build on these considerations to address how collective states of mind have been subjected to the media-emotional manipulation underlying today’s aestheticization.
Gernot Böhme (2017a) has pointed out that in “aesthetic” late capitalism many goods are no longer produced to be used and consumed but to embellish the customer’s life. Such commodities no longer meet needs that can be satisfied but respond to desires which, thanks to the ubiquitous intervention of advertising and (old and new) media, are increased when met so that their exchange value is transformed into what Böhme calls “staging value.” Such a critique is relevant to an assessment of architecture and the related atmospheric “competence,” both productive (the creation of atmospheres by architects) and receptive (the experience and valuation of atmospheres by clients, users, and inhabitants).

Nonetheless, the first-person atmosphere afforded by a building varies between individuals, in that one’s perception may be drawn (even nonconsciously) to different features of the environment as one receives that initial (possibly) irresistible first-person impression of the atmosphere. Consider an impressive courthouse with a grand entrance [F2] and then, below it, a mean little door on the steps leading down to the prison beneath, symbolizing the majesty of the law and the crushing weight of justice bearing down on the guilty. The same building affords a very different atmosphere for a person walking by with no current legal concerns in contrast to a defendant expecting to be judged guilty. We will debate later whether this is a different atmosphere or only a different mood or atmospheric feeling suggested by the same atmosphere (or atmospheric). Despite this debate, in the following, we will speak of atmospheres without deciding this oscillation once and for all and, mostly, referring to the feeling felt by the percipient or, crucially, the feelings that the architect intends the users of a building to experience (whether or not this intention is fulfilled).
Consider the temple garden in Kyoto shown in [F3]. For most visitors, the atmosphere is immediately one of tranquility and relaxation, an example of atmosphere captured by first-person phenomenology. However, not all people will share this experience: the atmosphere would have further dimensions for a Buddhist, steeped in certain types of practice, whereas some Western observers find the atmosphere created by the compositions of Japanese gardens to be unsettling. What is immediately felt by one person in this exemplary case of an atmosphere that tests the existence of cross-cultural affectivity may not be experienced by another? Evocation of the architectural atmosphere involves a relationship between the perceiver and the building (or, in this case, the garden). Nonetheless, atmosphere will be one of the targets of the architect’s design process. Because of this, the architect needs an understanding not only of the first-person phenomenology of that initial impression of atmosphere (an understanding that is only hypothetical and counterfactual: “what would someone feel if I placed a window or a door here or there?”) but also a third-person understanding of how to arrange the features of the building and its setting (the setting being the emphasis of [F3]) to evoke intended atmospheres in its expected users. The architect may speak of “the atmosphere of the building” as shorthand for “the atmosphere that I expect this building to evoke in many of the people for whose use it is intended,” planning for certain relations that may emerge between the person and various spaces in the building, whether praxic affordances (i.e., affordances that invite a person to specific actions — as in, “where can I walk as I view the garden”; “where may I sit to contemplate it?”) or atmospheric affordances occasioning specific moods or feelings.

Back to the temple garden. Once we get our initial sense of the overall atmosphere, it can be reinforced as we begin to look at the way the sand
A dialogue on affordances, atmospheres, and architecture

has been raked or at the disposition of the stones and the bushes. We may then wonder about that wall at the back. Is its presence part of setting the atmosphere or is it there as a tool to separate this garden from the temple next door? We get here a strong sense of how the details have come together to give us the atmosphere of tranquility and how, once established, this atmosphere frames our appreciation of the details. In this case, the atmosphere gained on first impressions may endure as we continue to experience the setting. Thus, an interest in the first-person phenomenology of the initial impression of atmosphere does not block the importance of understanding cognitive processes that support both the architect’s design and how the perceiver’s framing experience of atmosphere may (but may not) be open to “cognitive as well as emotional modification.”

To proceed further, consider a few more examples of atmosphere, some directly relevant to architecture, others enriching a broader understanding:

a church affords/invites us to experience it in humility; some churches induce this by eliciting a feeling of awe. Whether it exerts this effect on everyone or only on those who know what a church has always been a matter of debate and worthy of further investigation;

one type of party affords/invites us to relax; another type invites us to abandon ourselves to the music while dancing. The latter effect may be increased by imbibing alcohol, bringing basic physiology into the picture;

a wooden or velvet material affords/invites us to indulge in touching it. Here the line between atmosphere and praxic affordance is...
As we shall see many times below, but especially in §2.2, the emphasis on what is felt-bodily (one’s bodily feelings, including moods and emotions that are not confined to specific parts of the body) is crucial to the phenomenological account of first-person experience. The cognitive third-person account acknowledges the importance of these feelings but seeks further to understand their relation to experience and behavior more generally and to develop possible explanations for these in terms of “processes in the head” (see §2.3).

blurred. One sometimes “sees” (in a broad sense) the tactile qualities of the perceived material and “feels” the affordances that result from them (rough or velvety fabrics, fluid or sticky substances such as water and honey, warm or cold materials such as wood and steel). They also afford precisely by supporting certain felt-bodily attitudes (for example, a viscous material that while inviting us imprisons us, prompts us to reject it, if not to be disgusted by it); a tree standing erect and resisting the powerful sway of the wind affords/invites us to feel strength and obstinacy;

an airy and well-designed space affords/invites us to occupy it and freely walk around;

the impressive entrance hall of a classically-designed major banking institution [F4] may express two very different atmospheres exemplified by two opposite situations (among many possible, of course) [F5]:

an antagonistic atmosphere of power for those who venture there in search of a loan (whence the impulse to move slowly and warily, to leave the center of the room, and take refuge in protective nooks and crannies), and

a syntonic atmosphere of proud belonging for an employee who has developed a strong esprit de corps (whence their proud strut in the middle of the hall).

A key point for the authors’ debate (as for the courthouse example above) will be that the atmosphere here can be interpreted in two ways:
for Griffero, the “same” atmosphere — an identity obviously to be understood not in an absolute-numerical sense but in an ideal-typical sense — permeates the building in both cases but is just (felt-bodily) filtered relatively differently by different people, resulting in very different moods;

for Arbib, an atmosphere is not an intrinsic property of the building but coincides with the feeling experienced: there is no shared atmosphere that precedes the different atmospheres felt by the employee and loan-seeker.

It is unclear whether it matters to the architect which view is adopted. In both cases, it results in a relationship between a person and a building that may be relatively similar for a particular group of people but may nonetheless vary between groups and change over time for the individual — as might happen to someone who is unconfident of securing a loan on entering the bank and experiences a very different atmosphere if and when the loan has been granted; and, of course, between the two opposite poles. Outside this spectrum, there may be many other atmospheres, some more nuanced than others. A landscape may invite us to contemplate it in a melancholic way, whether because of its immanent qualities or because of our previous mood (or a mixture of both). Understanding the effects of different landscapes may enrich architects’ intuitions in designing for a specific atmosphere.

Both atmospheric and praxic affordances will be of especial importance to the authors in the context of architecture. The philosopher Gernot Böhme sees the architect as primarily concerned with the structure and articulation of lived space:

 These spaces may be open or closed, narrow or wide, pressing or uplifting. They may have a center and thus a directional orientation; they may frame sights or open to the indefinite. ... [T]he architect at the same time sets “suggestions for movement,” actual movement as when the visitor steps around the space or virtual movement as when he follows lines and surfaces with his eyes. All these considerations mean that the architect when designing anticipates what sort of lived place he is constructing and how the future visitor or dweller will feel there. (Böhme 2015, 13)

Here, Böhme emphasizes how a space offers affordances for both atmosphere and locomotion. When occupants are in a building, they are not simply feeling there or just walking around — each room in a house may come with different feelings, yes, but with specific functionalities (praxic affordances) as well. Just contrast the kitchen, the bathroom, and the living room with a picture window that affords a fine view. Each has different functions but also affords different atmospheres, such as privacy in the bathroom and conviviality in the living room. Such room-by-room atmospheres, if not too dissonant with each other, may flow into an overall atmosphere of the house/home (we may say it is cozy or dysfunctional, warm or cold, kitsch or refined). In this case, there is a variety of immediate space-by-space impressions of atmosphere cohering (or not) over time into a more integrative (but not necessarily cognitive) impression of a supervenient or overall atmosphere.

The visual impact, and multisensory impact more generally, is crucial and can have strong emotional correlates. Nevertheless, the true measure of architecture is to be found not in photographs but in how people use their surrounding space; how they feel in it, and how they live in it. Architectural design intermingles atmospheric and praxic affordances for the range of actions (in a broad sense, not just movements) the occu-
pant will take within the cycle of action and experience within the space. Indeed, a building’s initially pleasant atmosphere ceases to be enjoyable if we repeatedly fail to find what we need there.

2 Two Perspectives that Ground the Dialogue

In section 2, we seek to extract lessons for architecture from two frameworks, which are mutually irreducible, and yet each offers valuable lessons. Subsection 2.1 presents general aspects of Griffero’s new phenomenology-based approach; it also alerts the reader that new phenomenology adopts some terms differently from everyday usage and clarifies the differences to avoid possible confusion in the later exposition. Subsection 2.2 introduces Arbib’s blend of cognitive science and neuroscience. Subsection 2.3 outlines how architects may benefit from considering these two very different perspectives. All this provides the background for the rest of the paper.

Section 3, “A Bouquet of Atmospheres,” introduces Griffero’s three-fold phenomenological classification of atmospheres, which mitigates the rigidly externalist stance of the new phenomenology to account for the much broader spectrum of everyday atmospheric experiences.

Section 4, “Learning from Literature and Art,” discusses writings by Edgar Allan Poe and David Herbert Lawrence and a painting by Joseph Mallord William Turner to advance the debate over how to understand atmospheres — using these examples to develop ideas relevant to architecture.

Section 5, “A Cognitive Account with a Glimpse of the Brain,” develops key ideas from Arbib’s approach to cog/neuroscience, including a cognitive account of vision that introduces his version of schema theory, which is extended to address issues in multimodal perception, action and, of course, emotions. The closing subsection 5.5 revisits the debate between the authors by addressing the question “must phenomenology resist the lessons of science?”

Section 6, “Extending the Phenomenological Perspective,” develops further ideas on atmosphere and architecture, organized around varied aspects of phenomenological atmospherology.

Finally, in section 7, “Conclusions,” the authors leave debate aside and offer the reader a summary of how each of their approaches — separately and together — can enrich the discussion of architectural atmosphere along with the experience and design of architecture more generally.

2.1 A (Neo)Phenomenological Perspective

Tonino Griffero developed an atmospherology (in Italian before 2014 and in English thereafter — see Griffero 2014c) that adapts new phenomenology (to be explained later in this section) to approach the notion of atmosphere within a “pathic aesthetics.” Pathic here means an approach to experience (especially the involuntary one) that focuses on what happens to perceivers in a pre-intentional, pre-reflective, and corporeal-affective form. This usage follows Aristotle’s distinction between nous poietikos (active mind or active intellect) and nous pasive intellect). Instead of concentrating on the judgment of art or beauty, pathic aesthetics focuses on experiences that “authoritatively” influence perceivers atmospherically — only secondarily becoming, possibly, the subject of cognitive thematization (and also excluding any use of notions
To this one might ask whether one can truly identify the life-world of, say, a European of the eighteenth century and one who is today accustomed to jet travel, electric light, images of space travel, and so much more in which the fruits of science and technology — and some of their more accessible ideas and terminology — have interpenetrated the life-worlds of so many people. The question becomes even more pertinent as one considers the diversity of life-worlds of people in different cultures and with different statuses, whether in the present day or across the millennia. But here a theory would be needed to explain whether and to what extent the sedimentation of scientific discoveries and technological innovations changes the dimension of the life-world and naive (even perceptual) knowledge. After all, it does not seem to derived from the natural-quantitative sciences). Of course, pathetic means neither pathetic-sentimentalist nor pathological but the sensing-feeling of “affected self-awareness.” This is the involvement when oftentimes the perceiver feels unable to critically react to or mitigate the intrusiveness of what Griffero means by a quasi-thing, that is something more elusive but also more compelling than the things proper. This approach defines philosophy as a person’s reflection on their finding themselves in their surroundings. Crucially, it makes the felt body (Leib) and not the physical one (Körper) the “epicenter” of all resonance and action, and — what matters most in this context — considers feelings not as something internal and private, but as atmospheric powers that permeate a certain (lived) space and involve those who find themselves there — obviously with a different degree of intensity and authority, depending on how atmospheres are “filtered” by their felt-bodily disposition.

Before proceeding, we must stress new phenomenology employs some terms in ways that differ from everyday usage. If we look at a traffic light and see it is green, we know we may cross the intersection. In everyday parlance, we would say that the color of the traffic light at that time is an objective fact (despite people who are color blind or have a different color terminology). If we contemplate a misty autumn landscape, and one of us immediately feels its depressing sadness and the other its enveloping relaxation, we would say, again in everyday parlance, that our perception is a subjective fact. However, the neophenomenologist uses the terms somewhat differently. They reserve the qualification of (absolutely) subjective exclusively to those experiences so gripping that they can only be expressed by those who actually live them. They would say, however, that the atmosphere we perceived of that landscape, even though it differs a little for each of us, is objective in the phenomenologist’s sense that we experience it immediately, even pre-reflexively, as it is a quality that “happens to us” before our different felt-bodily filtering and our separate experience as cognitive judgment-forming subjects. In an attempt to avoid confusion, we will add the prefix “neophenomenological(ly)” when emphasizing that the two terms “objective” and “subjective” are used as part of the technical vocabulary of new phenomenology.

Colloquially, an objective description of a situation would be one that most people within a community would agree upon when placed in that situation; the word “conscious” comes from the Latin con + scio, meaning “to know together.” It need not be material and quantifiable. Note, by contrast, that what a scientist calls objective may be based on the extended use of instruments followed by painstaking data analysis. Neophenomenologically “objective” does not mean material and quantifiable either, but is endowed with phenomenal evidence and affective-pathic authority independent of the subject’s constructive performance. It is so fully encompassing a first-person experience that it can be defined, without this appearing to be an oxymoron as a “subjective fact” (Schmitz 2019, 130). For example, “I feel cold” can be phenomenologically objective even when “it is cold” might not be agreed upon by people sharing the same environment.

Phenomenology concerns itself with what, at least from Edmund Husserl onwards, is called the life-world. This is the world that is invariably there and is relative to perceiving subjects. The life-world is the grounding for all shared pre-scientific human experiences. Griffero has adopted and adapted the new phenomenology developed by Hermann Schmitz from 1964 onwards, which aimed at disclosing and describing precisely the broad field of involuntary experiences and life-worldly cha-
Griffero that scientific progress, for example, has produced one more sentiment than those already known to Homer, or that we can give each other a date “when the earth has completed a rotation such that,” and not, as simply as effectively and, why not, poetically, “when the sun sets.”

6 Arbib offers a different viewpoint that emphasizes the emergence of atmospheres through the relation of the person to things, quasi-things, or situations. Griffero (see §3) emphasizes prototypical atmospheres that accord with the neophenomenological view discussed here. He also discusses derivative-relational and spurious atmospheres. For Arbib, all atmospheres are derivative-relational, with prototypical atmospheres being those where the nature of things (or quasi-things or situations) are “peremptory,” whereas spurious atmospheres are those projected onto the quasi-thing in the sense that the feeling depends primarily on the mood or emotion of the person in association with the quasi-thing, rather than its intrinsic properties.

7 For a brief overview, see Griffero 2020a.

otic situations through a method that no longer focuses on the ego’s constitutive activity and its neutral rather on its original pathetic sensitivity (see Schmitz 2019, for an overview in English). New phenomenology certainly enhances Husserl’s idea (1982) that phenomenology deals descriptively with what appears without resorting to causal explanations — and works within the limits of what appears — as well as Merleau-Ponty’s approach that makes the felt body the general condition of possibility of any being-in-the-world (2005 [1945]). However, the new phenomenology rejects Husserl’s notion of the predominantly cognitivist character of perception, the primacy of the ego in constituting reality, and his basing all content of consciousness on intentionality; furthermore, it is a rejection of Merleau-Ponty’s insufficiently elaborated and too metaphorical notion of the felt body as well as the still implicitly cognitive (not really affective-pathic) conception of perception.

Schmitz’s new phenomenology, among other things, overthrows the prejudice that, for Griffero, has always burdened both scientific and common-sense conceptions of feelings, according to which they are ineffable and internal moods that the subject possibly projects to the world outside themselves, thus anthropomorphically attributing affective qualities even to the inorganic world. 6 Feelings, instead, would be atmospheres, that is, affective powers that exist discontinuously, authoritatively fill a certain surfaceless (non-geometrical) lived space, and find in perceivers a felt-bodily resonance through suggestions of movement (an oppressive atmosphere, for example, arouses cautious and controlled movements) and synaesthetic qualities (a warm atmosphere is such because of the friendly attitude of those present, the color of the walls, the material of which the furniture is made — wooden and not metal for example —, the caressing and not sharp sound, the pleasant and in any case not excessive smell, and even the temperature due to the heating). 7 For Griffero, atmospheric feelings have absolute phenomenal evidence (e.g., “I cannot doubt that the looming black cloud is threatening per se and not my state of mind or only the meteorological forecast”) and have on their side an equally unquestionable affective authority (e.g., even if my initial fear can be mitigated by the consideration that I know where to shelter myself, I am sufficiently protected by my clothing, I know as an expert meteorologist that this type of black cloud does not necessarily cause rain).

Schmitz’s approach incorporates a radical campaign of desubjectification of all feelings — the notion that feelings are forces and powers that humans neither entirely produce nor, sometimes, can overcome. Here we are in the domain of phenomenological objectivity. For Griffero, not all atmospheres are so objective in this sense. He emphasizes — for their exemplary theoretical value — the many cases in which one may talk of an atmosphere as being “in the air,” an expression that for him is anything but metaphorical in emphasizing the fluctuating, intermittent (non-thingly) character of atmospheric feelings. When one meets two people and feels there is tension between them, one may certainly say that this atmosphere of tension is in the air, that is, in the (experienced) space of their relationship which one has entered (even if without being fully involved affectively). Similarly, feeling that someone is radiating a certain sadness, that the political situation is changing, that we are surrounded by an economic crisis, or that a certain environment is economically depressed — what Simmel (1987, 548) called the “smell of misery” — can all be in the air.

Griffero makes repeated use of the term resonance. For Griffero (2020b), perceived atmospheres are affectively experienced in the felt body, which
acts as a “sounding board” (depending on one’s felt-bodily \( \text{leiblich} \) disposition) for the feelings that permeate our pericorporeal space. Arbib will — reluctantly — use the term in this (for him) metaphorical sense even though, of course, the physics of resonance is very different from the way neural networks may learn to recognize certain patterns or control behavior. Rather than talking of “feelings that permeate our pericorporeal space,” Arbib would insist that feelings do not exist in the space apart from someone who can experience them — he would rather say that the space (and not just the space near the body) in which people find themselves offers diverse possibilities for experience, and these include feelings, atmospherics, and otherwise (cf. Griffero’s discussion of relative-derivational atmospheres in §3). A familiar example is that a patch that reflects a certain frequency of electromagnetic radiation may appear to be of a different color as the context changes, and this depends on the wiring of the human retina and brain and the visual context; not only on the light that hits the eye. A framework that addresses the impact of experience on how people see the world (and its implications for multisensory perception) appears in the next section.

Perhaps Arbib has fallen into a semantic trap here, for he claims both that the color of a traffic light is objective (in the colloquial sense) and that colors as such only exist through neural processing. However, the issue remains that human brains are wired in such a way that people may tend to respond to the same atmosphere in some cases, but in ways that differ on the basis of cultural milieu and individual experience in others.

### 2.2 Bringing in Cognition and Brain

Michael Arbib has devoted much of his career to what he calls here cog/neuroscience. This uses first-person phenomenology as a starting point, rather than an endpoint, for discussion. We not only have our own intense personal experiences, but we observe the behavior (including facial and other expressions of emotions) of others and develop intuitions about their feelings. We may observe animals and not only assess to what extent their behaviors are similar to ours but also wonder whether they experience similar feelings. Cognitive science and neuroscience offer two approaches (the complementary facets of cog/neuroscience) to explore what might explain the diversity of observed behaviors and experiences underlying them. In the process, our first-person experience becomes enriched by not only our everyday third-person experience of other people and animals but also scientific studies of various kinds:

- **cognitive science** seeks to characterize how processes “in the head” contribute to how people — as embodied and social beings — interact with their physical and social environment. It analyzes all the processes underlying experience, behavior, memory, and more, without necessarily linking them to neural data;

- **neuroscience**, the emphasis is on understanding brain data, with various efforts at various levels, from the molecular to the patterns revealed by human brain imaging. It has been possible to relate aspects of action, perception, memory, and more to the interactions of identified brain regions or neural circuits, but some aspects of cognitive science (or psychology or sociology more generally) remain unlinked to neural analysis. Conversely, detailed molecular and genetic processes currently have little relevance to the linkage of cog/neuroscience and architecture (whereas they are highly relevant to medical practice and drug design);
Crucially, cog/neuroscience addresses both conscious processes of the kind often labeled “cognitive” and a variety of nonconscious processes that are very much relevant to the present dialogue.

Arbib has long assessed brain mechanisms linking the perception of affordances and the control of action (e.g., Fagg and Arbib 1998, for manipulation; Guazzelli et al. 1998, for navigation). In *When Brains Meet Buildings*, Arbib (2021) views atmospheres as affordances, to be contrasted with the affordances he had studied earlier for practical actions. He assesses both cognitive and nonconscious affordances within the framework of a *schema theory* (as explained below) informed by cog/neuroscience while noting that schemas “in the head” are shaped not only by interaction with the physical and social environment but also by social schemas including languages, ideologies, and religions (Arbib and Hesse 1986). 8

For Arbib, the notion that architectural atmospheres are “in the air” remains metaphorical. While certain feelings are inescapable at a basic biological level — gasping for breath, bleeding out from a bullet hole in the heart, for example — one’s normal interactions with the world rest on schemas that depend on underlying neural mechanisms but are shaped by individual and social experiences. In this sense, feelings are produced by individual humans in ways that force one to qualify this appeal as an *objective* response to “what is in the air.” Nonetheless, cog/neuroscience seeks to understand what circumstances can elicit certain feelings in most people in a compelling (phenomenologically objective) way and what variations might arise from personal experiences.

But here we come to the essential tension of the present dialogue. For Griffero, a study of atmosphere should focus more on the vague and expressive *qualia* than on the quantified materiality to define semantic value. There are no illusions of defining the phenomenon exhaustively. This perspective may help us assess the atmosphere we immediately and non-reflectively experience when we encounter a situation, a quasi-thing, or a building in the “world of life,” without resorting to hypotheses and entities that only exist through laboratory analyses. Arbib would agree that there is no exhaustive definition of atmosphere 9 but would note that many laboratory tests involve human subjects describing experiences in terms of their perception, while at the same time, the scientist is measuring various properties of both the environment in which the laboratory subject is situated and various objective (in the colloquial sense) measurements of the subject’s behavior or outward signs of feeling. The experimenter seeks to develop a database of *correlations* linking subjective descriptions and objective measurements; the theorist seeks to develop *causal explanations* that might explain a diverse set of correlations from the database. For a classic example of the work of the theorist, consider the physicist Kepler’s observations that demonstrated the trajectories of the planets as ellipses with the sun as one focus, and Newton’s subsequent explanation of not only the general pattern but even the fine details of the observed orbits through his theory of gravitation.

For the cog/neuroscientist seeking to contribute to atmospherology, the challenge is to link the first-person descriptions of the experience of atmosphere to our growing (though still far from complete) knowledge of the cognitive and/or neural mechanisms of emotions, feelings, and moods.

Whether the architect has or has not attended to such scientific findings, they must make the difficult transition from *recalling* their own
first-person experiences to imagining the atmospheres they would like a building to elicit in various agents as the basis for the further challenge of designing a building that they do expect to elicit such atmospheres. This is without claiming to perfectly plan for the desired effects, if only because all human activity is subject to the heterogeneity of ends, according to which the outcome may differ from the atmosphere sought in the architectural design.

2.3 Atmosphere and Architecture

“Atmosphere is my style,” a comment made by the painter Joseph Mallord William Turner to the art critic John Ruskin in 1844, provides the epigraph of Atmospheres by the Swiss architect Peter Zumthor (2006). The challenge is to combine what we have learned — and will learn — from these two perspectives with a fuller sense of how the notion of atmosphere is understood by architects. Both approaches are relevant to architecture, which is the field that has been the quickest and most congenial in embracing the suggestions coming from the philosophy of atmospheres.

In recent years, the notion of atmosphere has been widely adopted and debated in the fields of architecture and urban design, both as a means to understand the affective dimension of lived space and as a tool for its projected transformation. By connecting to a previous strain of phenomenological thinking in architecture, “atmosphere” has been considered a fundamental category to describe the sensuous and intuitive character of lived space surpassing the technical apparatus and programmatic approach of contemporary design and building practices. [...] The scientific community’s deep interest in the topic has produced a wealth of scholarly research [...], symposia, thematic journal issues [...], and innovative pedagogic approaches for architectural education. 10 (De Matteis 2020)

Architects need to understand how people experience buildings: the experience of architecture. Here the phenomenologist can help understand what situations and kinds of lived space will evoke certain feelings in those who occupy (visit, experience, behave in and around) buildings, assessing whether almost all the intended occupants will find the same feelings there. The architect may consult their first-person perspective, but they must also develop a range of third-person perspectives to assess how to design a building that offers a range of praxic and atmospheric affordances as well as atmospheres for the expected types of users. And yet not all the inhabitants will experience the life-world as the architect does. Attempts to bring cog/neuroscience and architecture together stress that buildings have very different impacts on different people: contrasting the challenges of designing a kindergarten and a home for Alzheimer’s patients (Eberhard 2008; Zeisel 2006). When architects seek to design a space that will afford (for most of the expected “observers”) an intended atmosphere, the loop between the analytic and the synthetic is crucial. One builds towards a certain effect but then downplays the “machinery” to see if the agent responds as expected. The architect may spend part of the design phase attending to the lived spaces and their (consciously as well as nonconsciously perceived) invitations to act and feel but, in the end, must decide how to map the various ideas for an architectural experience into the geometric spaces in which construction occurs. Mark Wigley begins by asserting that

the atmosphere of a building seems to be produced by the physical form. It is some kind of sensuous emission of sound, light, heat, smell, and moisture; a swirling climate of intangible effects generated by a stationary object. To construct a building is to construct such an atmosphere. Atmosphere might even be the central objective of the architect. In the end, it is the climate of ephemeral effects that envelops the inhabitant, not the building. To enter a...
A dialogue on affordances, atmospheres, and architecture

We would reiterate that other affordances are experienced as well, not just atmosphere.

Wigley suggests that Frank Lloyd Wright held the view that architects can design atmosphere with extreme precision and right down to the details: “Wright repeatedly argued that a good atmosphere is produced by integrating every single detail according to a singular vision” (1998, 19). However, Wigley concludes that although architects hope to design atmospheric spaces, they can only design opportunities.

The magical figure of the architect only survives in the apparent play between atmosphere and building, ephemeral climate and material object. Architects work hard to create the impression of such a relationship. In the end, the main effect of their discourse is the fragile illusion that architecture is more than an effect, the illusion that atmosphere can be controlled. (Wigley 1998, 27)

There seems to be some wiggle room between Wright and Wigley. Not every detail must be integrated to provide a desired atmosphere, but the architect can modulate the interplay of diverse features with the aim (not always achieved) of creating a space that will afford an intended atmosphere for many members of a certain group of users.

Of course, the design of a bank must support various behaviors by staff and customers, whether or not it affords the atmospheres suggested in the earlier example [F6]. The architect can control the combination of style, structure, furnishings, interior airiness, and physical distancing.
between customers and staff. For Griffero, these features constitute the atmosphere of the bank, generating on everyone — even if only nonconsciously — that sensory-motor resonance (even if only virtual) which is the embryonic germ of the atmospheric feeling experienced; whereas for Arbib they constitute the diverse features on which individual perception of the atmospheres (and other affordances) may be based. The architect seeks to create atmospheres and may proceed intuitively to assemble different aspects of the space to achieve that end, or may seek to analyze what may affect that effect. Here is the bridge to the work of the cognitive scientist, if not the neuroscientist. The widespread claim that atmospheres always “escape analysis” seems greatly exaggerated. The same goes for the statement that “any specific proposal for constructing an atmosphere […] is no longer atmospheric [because] an atmosphere may be the core of architecture but it is a core that cannot simply be addressed or controlled” (Wigley 1998, 27). When it is only planned, an atmosphere — of course — does not yet exist in the real sense of the word, as it is not yet an event of the real world — an experienced feeling or something that really “happens” to someone — but this does not mean that architecture works hard to create nothing but “the illusion that an atmosphere can be controlled” (Wigley, 27). The design of an atmosphere often works perfectly, and if there is an illusion at work in planning, it is the heterogeneity of ends that affects every human activity. That can never be completely avoided. Many urban atmospheres are the nonconscious and unintentional result of planning, such as in the case of Manhattan, which offered its inhabitants “the spectacle, inscribed in stone, concrete and steel, of a way of life obeying a very different program, one answering a question quite different from that of ‘housing’” (Damisch 2001, 110), leading to results that were far from expected. In any case, whether intended or not, the affective and felt-bodily outcome elicited is still an atmospheric event. After all, as Wigley recognizes, whether the architect seeks explicitly to construct an atmosphere or insists that “planning is meant to be subordinate to reason, controlled by the line,” the outcome inevitably “constructs [possibilities for] a particular atmosphere” (1998, 26–27).

3 A Bouquet of Atmospheres

According to Griffero’s neophenomenological approach, there are three ideal types of atmospheres — prototypical, derivative-relational, and spurious — distinguished according to their decreasing objectivity, lowering intensity, and increasing dependence on the subject (Griffero 2014c, 144). The task in this section is to present these three and begin to assess their relevance to architecture.

A prototypical atmosphere is the most objective (neophenomenologically stated). It is the atmospheric feeling that one encounters involuntarily and pre-reflectively, whose causes seem unknown¹¹ and due to a condition so immersive as to be prior to any relationship between the subjective and the objective poles, which are rather the result of this immersion. Furthermore, it can be so independent of one’s state of mind that this first impression changes one’s mood completely (if that mood was different from this atmosphere) or causes one to react strongly (perhaps, for example, even moving away from the place or building one had entered). When the atmosphere encountered coincides with the previous state of mind, it is often not even perceived as an atmosphere.

A derivative-relational atmosphere is one in which the subject is as important in creating the atmosphere as the affective quality of the exter-

¹¹ Note the crucial distinction: the qualification “whose causes seem unknown” applies to the observer having that prototypical experience — not, for example, to the architect designing a space with the intention that inhabitants will feel that atmosphere.
nal world. The perceived atmosphere is felt outside oneself again, in the architectural space in which one moves, but the subject, realizing perfectly that it depends completely on the relationship between themselves, their mood, and the specific characteristics of the environment (provided that they can sufficiently understand that atmospherically generated force), is not totally involved or subject to its authority (as in the case of prototypical atmospheres). Atmospheric immersivity is here only partial, and the resulting emotional situation is, for Griffero, not the most significant example of the already mentioned neophenomenological externalization of feelings (which is why it is called not prototypical but derivative).

A spurious atmosphere is not intrinsically occasioned by the current object, space, or quasi-thing: it is the result of an external projection of a wholly subjective state of mind already present in the percipient. In this way, a drab space entered by someone who is with a companion they love may offer a spuriously positive atmosphere, but only because of the person’s feeling for their companion. It is nothing but a subjective projection of an inner affective quality on which no one agrees completely, and that does not apply to any drab space but only to that which justifies this projection. Such an atmosphere is less objective, less intense, and one whose subjective origin is easily understood: it is spurious because it does not at all exemplify the spatiality-externality of the atmospheric feelings that Griffero’s neophenomenological atmospherology aims to underline.

Pondering the above definition of a prototypical atmosphere, the architect would value the notion of an atmosphere encountered involuntarily and pre-reflectively as a first impression. However, the qualifier that it is a first impression that either changes one’s mood completely or causes one to react strongly may seem the exception rather than the rule. The rule applies to those affective situations in which one finds themselves without knowing why they are there or for how long, which can be called basic moods or attunements (Stimmungen, in German). It is not surprising nor does it require much explanation that, in life as in literature, the first time is charged with an enormous atmospheric potentiality. The architect of the temple garden in Kyoto [F3] sought to offer an atmosphere of tranquility both for those who are tranquil before they enter the garden, as well as (and here the change of mood is important) for those who enter it to find tranquility. Further, while the first impression is crucial, the architect may seek to imbue a space with an enduring atmosphere that may continue to affect the mood of the inhabitant and modulate their behavior by employing an artifice that builds up the perceived atmosphere through a blend of pre-reflective influences and cognitive considerations.

In any case, the claim is that the atmospheres that architects seek to offer are derivative-relational, and yet the notion of prototypicality offers several dimensions of atmosphere for the architect’s consideration, especially in cases where the entire list of architectural solutions and materials, including the “tricks of the trade,” does not seem to justify the atmospheric effect aroused. In Griffero’s view, the truly prototypical atmospheres are not even intentionally producible. He distinguishes the type-atmosphere as a quasi-thing — something relatively objective and independent from our feeling it so that one can notice and describe it without being involved by it — and token-atmosphere, that is, the way that type-atmosphere is concretely realized in the feeling one has, possibly even condensing on elements of the situation that are not responsible for it at all (one example may be the threatening atmosphere of a...
stopped car one sees, even if it is just because it makes them think of the
car they had an accident with). The thing or quasi-thing is simply the
occasion of the token-atmosphere as a place of condensation of an in-
dependent type-atmospheric feeling: an affective situation that, in our
awareness as well as even in our language, has an ideal-typical function.
For Arbib, the architect seeks to design a range of atmospheres, which
Griffero would otherwise classify as prototypical (without denying that,
as in the car example, inhabitants may idiosyncratically experience atmo-
spheres unanticipated by the architect).

Derivative-relational atmospheres constitute most of the atmospheric
experiences we have. Yet for Griffero, prototypical atmospheres serve as
an example of [A] the affective externalism (re)discovered by the new
phenomenology approach, of which [B] things and situations are only
occasions of manifestation. Let us clarify these two “metaphysical,” and
therefore undoubtedly controversial, points on which the neophenome-
nological interest in atmospheres largely depends.

A According to the “atmospheric turn,” as already mentioned (see
the “affective turn” in §1), prototypical atmospheric feelings are
neophenomenologically objective qualities that autonomously
permeate a certain portion of the (lived) space in which we live
and which have the power to affectively involve us, regardless of
whether we are dominated by them or we later oppose them.

B Just as many objects can be perceived as red, and diverse scenes
can be recognized as twilit, so can one recognize a certain atmos-
phere as being manifest in diverse things and situations, even
ones rather different from what one has experienced before.

We have seen that new phenomenology focuses on felt-bodily expe-
rience where the “sounding board” for atmospheres is not the phys-
ical-organic body but the lived or felt body (according to the well-
known German distinction between Körper and Leib) with its areas
of proprioception independent of anatomical organs. It does not deal
in the least with the brain or the psyche, but this focus in no way pre-
cludes other “atmospherologists” from building on insights from cog/
neuroscience, abandoning an exclusive emphasis on the phenomeno-
logical-descriptive terrain. Nonetheless, it does seem that such scholars
may have to choose to accept or reject Griffero’s notion (recall the bank
example explained at the end of §1: [F4; F5]) that, even though a lived
space may trigger diverse affordance-based atmospheric feelings, these
are always only different filterings and resonances of the “same” atmos-
pheric first impression. Whether lit candles may trigger an atmosphere
of romance in an intimate restaurant or an atmosphere of unease and
fear in a dark cellar, these are, for Griffero, just a different atmospheric
token depending on an invariant atmosphere (type) or more objective
atmospheric, as prior to the atmosphere in the more localized, subjec-
tive, and involving sense (Böhme 2001, 59–62) that are produced by
the reduction of brightness, the enveloping presence of shadows, the
desubstantialization of objects, and so on. Justifying this terminologi-
cal distinction is that, unlike the atmosphere, the atmospheric is some-
how culturally codified (blackness being mournful in certain cultures)
but also more permanent to the extent that a certain culture dedicates
novels and songs to it (the night, the spring, the wind, what glitters,
or the twilight) as well as linked to widely shared — even transcultur-
al — felt-bodily resonances (the night as a philo- and ontogenetically
distressing darkness as the topos of any fairy tale or noir). By contrast
(and consistently with the earlier analysis of the bank example), Arbib

13 In §5.5, we will see this is not so obvi-
uous to the cog/neuroscientist.
14 Such a need to oppose them fully
demonstrates their power and authority.
dismisses the notion that candlelight in a region of reduced brightness in itself constitutes an atmosphere — it may (but need not) simply provide a stimulus to light another candle. In the absence of context, this only yields an atmosphere in certain contexts. More on this in §5.

Griffero reminds us that the “apparitions” of objects may vary continually (depending on light, perspective, time, attention change, and chromatic context). But even if things are not stable and identical to themselves on the plane of continuously changing perception, he notes that a difference still exists in terms of intersubjectivity between an atmosphere of courage as exhibited by certain people and an atmosphere of a menacing storm, which is perceived by certain people but without depending ontologically on them.

Since architecture is the result of a design that is at least partially intentional, and anyway aimed at some types of individuals, Griffero suggests that the built environment cannot provide pure prototypical atmospheres but can provide derivative-relational ones that can be more or less objective. For example, the approach by Bernini’s colonnade to Saint Peter’s Basilica in Rome [F7] offers an awe-inspiring atmosphere that is in itself largely independent of the percipient, even if it may be filtered by visitors in different ways (one might travel to the square and the colonnade excited by one’s faith, or one might be a tourist intrigued by the architecture yet irritated by the power exhibited by a religion that elsewhere enhances humility but lives here in an atmosphere of grandeur and power).
The Flatiron Building in New York [F8] has an angular and sharp form. While it offers a normal affordance of protection for those inside, it expresses a clear form of exclusion for those outside.

Every fully-glassed building (as in [F9]), albeit with different materials and qualitative aspects, offers the same affordances that, making fun of any supposed “transparency,” allows those inside to look outside but does not allow who is outside to see in.

We have seen that the entrance hall of a major banking institution may convey an antagonistic atmosphere of power for some and a syntonic atmosphere of proud belonging for others. In designing such a bank, the architect may knowingly design the spaces in such a way that different atmospheres (Arbib) or moods based on a single atmosphere (Griffero) will be afforded to different categories of individuals. We agree that in many cases the perceived atmosphere may change based on the observer’s needs and dispositions, and may depend — in part, at least — on social practices and cultural conventions. Similarly, in Arbib’s approach to praxic affordances (2021, chapter 2), an affordance does not necessarily oblige one to act upon it, and whether one does act upon it varies with one’s needs and dispositions. Moreover, praxic affordances of the environment change with the subject’s effectiveness (i.e., the perceiver’s capabilities for action: see Turvey et al. 1981). Someone in a wheelchair may recognize the affordance offered to others by a flight of stairs while recognizing no affordance there for themselves — or it could also be said that the person in the wheelchair, pathically (negatively) affected by this excluding thing, perceives the same affordance (and the resulting atmospheric potentially inviting prospect) to which they cannot provide an effective response (hence their displeasure or controversy over architectural choices that do not respect disabilities).
4 Learning from Literature and Art

Before looking more deeply into the arcana of cog/neuroscience, we examine some issues concerning the extent to which praxic or atmospheric affordances are immediate (“direct”) rather than cognitive. We then turn to three examples of atmosphere (two from literature, one from painting) that increase our understanding of the issues at stake in this article.

4.1 Action and Feeling Possibilities

Griffero and Arbib’s perspective requires extending the meaning of both atmospheres and affordances, going beyond the latter’s original praxic meaning. Gibson (1979) observes that “the perceiving of an affordance is not a process of perceiving a value-free physical object to which meaning is somehow added in a way that no one has been able to agree upon; it is a process of perceiving a value-rich ecological object.” Rather than extend the meaning of “action” to include every virtual affective motion (such as motor empathy and ideomotor simulation), we adapt Gibson’s observation to view an affordance-based atmosphere as a “value-affective rich ecological object” to which one may respond in an emotional way (such as wonder, disgust, awe, and fear in the sublime). At times one can respond with a distancing or a contemplative detachment from action and with indifference — even emotional apathy — within a very dull environment. In an art gallery, contemplative (examining a painting) and praxic (moving to a new observation point) may alternate (Arbib 2021, §2.1; see also §4.2 for a discussion of aesthetic emotions).

We next assess what an explicit move from praxic affordances to atmospheric affordances may entail. Their first step is to clarify two perspectives on Gibson’s notion of direct perception. A key example is this: if
you are walking down a busy street, you may respond to an imminent collision by sidestepping without conscious awareness that a collision was imminent before you act, and indeed with no prior awareness of who or what you might have collided with. The Gibsonian mechanism for detecting such a collision involves detecting what is called optic flow and is based on cues from the peripheral retina and not the fovea (Lee 1980). Arbib had a public debate with Gibson around 1980, in which he disagreed with Gibson’s dicta on direct perception if it were to be taken to exclude neural processing. However, his approach to affordances integrates Gibson-like processes of nonconscious “information pick-up” with the recognition that behavior may also engage with affordances in a cognitive fashion (Arbib 2021, §2.2). Neuroscience can trace how optic flow is computed by the brain, with no necessary engagement of cognitive deliberation. However, if you want to walk faster, you may consciously (cognitively) scan the crowd to find a gap that offers an affordance to move forward, faster, and without collision. A full understanding of our experience of the environment must integrate affordances of both kinds, and the same is true, Arbib suggests, for the experience of atmosphere as well.

On this account, what is “phenomenologically direct” still requires interactions between perhaps millions of neurons to transform retinal dynamics into the muscle contractions of the previous example, all of which occur before we even “think about what we are doing.” To exemplify the distinction between “direct” and “indirect” in another way: if you want to get from a small town to the city, you can take the direct route via the freeway and pay little or no attention to the passing scene until you recognize that you are in the city, or you can take the indirect route through country lanes where awareness of the scenery is a crucial component of your experience. While atmospherology makes no use of cog/neuroscience notions that are at least (hypothetically) preliminary to experience — for Griffero in a causal-epistemological sense but certainly not in a lived-phenomenological sense — this does not at all exclude that it is possible to look at a perception by dissecting it in constructive processes of different levels. The issue is whether one wants to focus on the pathic experience of an atmosphere that simply “happens” (the phenomenology of what can be well described in the life-worldly language — with atmospherology a kind of deliberately naive perceptology) or on how one might achieve an intended atmosphere (the cognitive science, at least). The former, which emphasizes aspects of first-person experience that the architect should assess is fundamental for architects even as they work to achieve the third-person perspective in their design of a space in or around a building.

Two crucial notions for the cog/neuroscience approach (Arbib 1972, 1989; Neisser 1976) are that of action-oriented perception (much of our perception is directed, whether consciously or nonconsciously, to perceiving information relevant to action) and the related notion of the action-perception cycle (our current mental state affects what we will attend to and how we will act, our actions change what we can perceive and our relation with the world around us, and the cycle continues). The feeling of a novel atmosphere will play at most a secondary role to action-affordances in much of our behavior within this ongoing action-perception cycle. However, to say this is not to deny that the atmosphere of a place may on occasion be primary, as when one’s initial impression of its atmosphere decides, sometimes without even knowing why, whether or not one will enter a restaurant. Which is increasingly true: “New York restaurants now have a new thing — they don’t sell their food, they sell their
atmosphere. [...] [When people] go out to dinner [...] instead of 'going out to dinner' they'll just be 'going out to atmosphere” (Warhol 1975, 159).

When one wants a cup of coffee, one focuses on various relevant objects and acts on that basis — or, more generally, acts on the knowledge that one must move to another space to get that coffee. This illustrates a noteworthy new point: one's spatial experience may change depending on one's understanding of its relation to other spaces (what, in phenomenology, might be called the constitutive role of future-directed perceptions). The knowledge (seldom consciously acknowledged) that one can access another space where one can get coffee may improve one's (seldom conscious) feeling for the atmosphere of the same space. Similarly, a room that would normally seem pleasant may offer a very different atmosphere if one knows that someone is locked in the room with a guard stationed outside. Diverse spaces, at the same time, may influence our behavior. For Griffero, it is precisely this last example that calls into question the long-standing and unresolved problem of the intertwining of the cognitive and the affective, which even atmospherology never ceases to pose, even though it prefers to adhere to the thesis (cognitive impenetrability) that what is known does not change the physiological perception (the stick immersed in water is intact but continues to appear broken), just as it does not usually change the affective-atmospheric perception (the beautiful red sunset remains relaxing and fascinating, even auspicious, despite knowing that it can also be an effect of pollution).

Another example is that when getting on a bus, one immediately judges if it is empty or crowded before completing one’s scan in search of empty seats and subsequent choice of where to sit. But is that initial judgment “atmospheric” or “pragmatic,” or is some other label more appropriate? For Griffero it is evident that the pragmatic urgency, driven to find a practical solution to some problem and to focus on necessary details (“Will I catch the bus in time?” “Where to sit?” “Where to get off?” “Where did I put my ticket?” “Beware of pickpockets!”) certainly does not facilitate perception of the bus atmosphere in its qualitative totality, and even less so in the aesthetic nuances on which only a relaxed and even disinterested perception can “afford” to linger. An emblematic example is that of the late nineteenth-century flâneur, to whose disinterested gaze, neither cognitive nor ethical, we owe much of the most suggestive atmospheric literature of the modern age. If one wishes to emphasize the pathic qualities, one could speak of patheur, meaning the person who, without doing anything at all in the action-theoretical sense, senses atmospheres’ indivisibility, synaesthetic quality, and purely phenomenal character in a pathic way (Hasse 2012, 13). This suggests that the perception of atmospheres requires, as far as possible, an attitude that is more contemplative-pathic than active-pragmatic. It is best enhanced by both an ontological condition so nuanced as to dissolve the material world normally favored for the representational and pragmatic advantages it offers in pathic affordances (in the twilight as in fog, the contours of things dissolve and perspective depth is lost, so that the world around us becomes less controllable and more atmospherically enigmatic) and even a certain fragility of one's corporeal and felt-bodily disposition, whether transient (I watch for the first time, while half-asleep, the strange shadows cast by the curtains on the wall) or permanent (I tend to look at things without necessarily “incorporating” them autistically, but on the contrary letting myself go to the impressions I have of them and even to daydreams). In much of our experience, if we are fortunate, the two attitudes (active and pathic) will be in balance. Buildings are to be used or inhabited, not only to be contemplated.
As noted previously, affordances may engage a perceiver even when their body is no longer able to fulfill them: a person in a wheelchair may recognize a flight of stairs as offering an affordance for others yet not for themselves. This brings in the importance of the conscious dimension of affordances as distinct from the “direct” [but still neurally mediated] nonconscious perception that might guide us in climbing a well-designed flight of stairs. One may suggest a certain reasonable relativization of atmospheric effectiveness, without denying that certain spaces may be felt by most people in similar ways. While the atmosphere of a church would differ between believers and non-believers, even non-believers (or a child who knows nothing about religion and etiquette) entering a church with certain characteristics — such as incense smell, attitude and movement of others, the height of the arches and dome, and colors-sounds-scents-temperature different from the noise of the outside — will feel something special that invites them certainly not to faith but at least to a more controlled and meditative attitude. This can be applied, in the case of a child unaware of the place where they are located, probably to all the buildings that share a similar synaesthetically imposing atmosphere (shapes, sounds, colors, movement of others, and smells), whose perceived authority inhibits any disorderly and irregular behavior. In contrast, there is the example of a storefront church where only the churchgoer’s knowledge and understanding of the norms of others provide a worshipful atmosphere. Such “scaffolding atmospheres” may solidify emotional experiences that would otherwise have been inchoate and may even establish an affective appropriateness to social norms. Failing to perceive the prevailing atmosphere (e.g., a worshipful one) may yield gaffes in those who do not perceive it and enable others to socially stigmatize them, which may also have political aspects (Griffero 2020c wonders if there is a democratic atmosphere).

Consider again the example of the customer entering a bank in search of a loan [F4; F5]. Whatever the overall atmospheric charge of the bank’s grand hall, the customer still has to make a more-or-less dispassionate assessment of the praxic affordances of the space (for example, desks and teller’s windows) to decide where to go to carry out their transaction. Note, too, that sitting across a large desk from the banker, the customer may sense an atmosphere based on the space that extends across the banker’s desk, including the banker’s facial expression. The latter may affect the emotional state of the customer focused on the coming transaction, but — for Arbib — be quite separate from bodily feelings about the atmosphere of the bank’s hall. For Griffero, this affective state (even before the cognitive) embraces and pervades the atmosphere (and maybe it condenses on objects and people that have nothing to do with the transaction itself but are somehow associated). Arbib responds that if we allow this move from the atmosphere of the bank to the subjective emotional state of the person, the importance of prototypical atmospheres becomes optional rather than central. Here, we invoke Griffero’s notion of a prototypical atmosphere (see §3) as an atmospheric feeling that one encounters involuntarily and pre-reflectively so that this first impression either changes one’s mood or may cause one to react to it.

For Griffero, the atmosphere one feels when sitting in front of the banker [F4] is no more immediately under the cognitive control of the subject than the previous one. Perhaps stated better, it is as objective as the previous one but in the sense of being a subjective fact (therefore neophenomenologically irrefutable). As a subsequent atmosphere, it is somehow intertwined with the previous one (the bank as a building and the majestic entrance [F5]). However, an atmosphere is also suggested by sets of affordances of various kinds, obviously different from the
previous ones (although, for Griffé, always somehow oriented by the first one). The posture forced on us by the chair, the physiognomic expressiveness of the banker, the distance and height of the desk of the person on whom one “depends,” the nerve-racking waiting time before being listened to, the type of objects on the desk, and the soundscape of the office are all contributing to the atmosphere. It is not prototypical for Arbib and Griffé since it is the result of a relationship and not an anticipation of it, thus moving the atmosphere into the dynamics of personal experience in which there may be a reflective component. While awaiting the banker’s decision, one may be thinking “but I have a great credit score” or “this is my third attempt to get a loan,” and each explicit reflection may couple with nonconscious processes to shape the enveloping mood experienced by the customer; one very different from that of the banker engaged in the evaluation of the pluses and minuses of advancing a loan of a certain size to this customer.

### 4.2 Atmosphere in Literature

For the first example, we turn to the protagonist of Edgar Allan Poe’s The Fall of the House of Usher. He, already with “the first glimpse of the building,” feels invaded by “a sense of insufferable gloom,” [F10] by an atmosphere of “an iciness, a sinking, a sickening of the heart — an unredeemed dreariness of thought,” by something “unrelieved by any of that half-pleasurable, because poetic, sentiment, with which the mind usually receives even the sternest natural images of the desolate or terrible.” He realizes “the futility of all attempts at cheering a mind from which darkness, as if an inherent positive quality, poured forth upon all objects of the moral and physical universe, in one unceasing radiation of gloom” (1850, 298).

![One of the many visualizations of the House of Usher](From Poe 1884)
Griffero stresses (summarizing here what he has clarified elsewhere: Griffero 2018) that, for the protagonist, this atmosphere is an affective perception that is cognitively impenetrable and imaginatively unamendable. Noting that the atmospheric approach to the House of Usher [F11] is — first of all — a literary suggestion, he asks: will it be objected at this point that it is just an emphatically literary experience? The poem intensifies the ordinary experience of standing helpless in front of a striking atmosphere. The protagonist tries to react and deludes himself that a mere different arrangement of the particulars of the scene, of the details of the picture, would be sufficient to modify, or perhaps to annihilate its capacity for sorrowful impression; and, acting upon this idea, I reined my horse to the precipitous brink of a black and lurid tarn that lay in unruffled luster by the dwelling, and gazed down — but with a shudder even more thrilling than before — upon the re-modelled and inverted images of the gray sedge, and the ghastly tree-stems, and the vacant and eye-like windows. (Poe 1850, 292)

No effort of the imagination — such as making terror a feeling of the sublime, for example — can overcome the dominant atmosphere. Likewise, more reflective reasoning based on a reductionist-objectual strategy is not capable of mitigating this irresistible authority.

I endeavored to believe that much, if not all of what I felt, was due to the bewildering influence of the gloomy furniture of the room — of the dark and tattered draperies, which, tortured into motion by the breath of a rising tempest, swayed fitfully to and from upon the walls, and rustled uneasily about the decorations of the bed. But my efforts were fruitless. An irrepressible tremor gradually pervaded my frame; and, at length, there sat upon my very heart an incubus of utterly causeless alarm. (Poe 1850, 304)

Arbib agrees this is a fine example of probing first-person phenomenology and how this particular pre-reflective atmosphere is unshakeable.
But he offers two caveats. First, what we have just read is not Poe’s experience. It is his literary creation of the experience of an atmosphere, choosing words that will cause readers to feel at least the ghost of what they would have felt if they had approached the House of Usher — and if it had existed. If we focus on Poe’s act in creating the story, his work is — at least to some extent — both cognitively penetrable and imaginatively amendable. In creating a sense of atmosphere for us, the writer must (well, Arbib thinks he must) have many times added, edited, and deleted phrases. Perhaps he started with a note such as “I need to create an atmosphere of unrelieved gloom and a dreariness that is inescapable” and worked and reworked it to come up with the compelling text of his story. This notion of creating an atmosphere leads directly to the second point. Architects must be concerned not only with the experience of an atmosphere that may in many — but not all — cases be cognitively impenetrable and imaginatively unamendable. Along with this comes the challenge of designing spaces that will afford a specific atmosphere to many individuals. This design process will be a mix of explicit cognitively penetrable decisions and reasoned amendments, as well as intuitive imaginings such as “I just had an idea, I do not know where it came from, but let’s give it a try and then assess the result to figure out what needs to be changed.” Imagine an architect commissioned to build a House of Usher for a movie based on Poe’s tale. The challenge is to create a mise en scène that requires no narrator repeating Poe’s phrases to achieve that atmosphere, though it is an effort to be aided by how the camera approaches the House and any background sounds or musical scores.

For Griffiero, however, it is doubtful that an experience mediated by art (and not only) needs to be more “ghostly” than the real one. If in the most striking cases, art arouses a type of experience that one never really feels with the same purity and intensity (who can try something comparable to the atmosphere of “lost time” suggested by the example of Marcel Proust’s madeleine?), normally it does nothing but circumscribe-accentuate what happens in ordinary life (how else to explain that the artistic atmosphere is perfectly-immediately understood empathetically?). Not infrequently, it even scaffolds our subsequent experiences, which are more aesthetically conditioned than one is willing to admit. Arbib admits that from the point of view of reception, the resulting atmospheric effect would be — at least on the level of first impression — pre-reflective, irresistible, and imaginatively incorrigible, noting that architects are in some sense “artistically” creating the atmospheres of spaces within and around their buildings. Griffiero and Arbib agree that the habit of atmospheres suggested by art (nowadays especially by cinema) contributes powerfully to people’s affective education, that is to say, it acts as a scaffolding to achieve certain feelings or, at least, to better identify and define them. In this sense, atmospheric perception induced by cultural experience complements the more “natural” atmospheric experience. Griffiero would further argue that such artistic examples may be more closely linked to what he sees as primary affordances (such as attraction/aversion or expansion/contraction) and prototypical atmospheres. 

For a second literary example, Griffiero considers David Herbert Lawrence’s The Rainbow, where the “same” atmosphere of Lincoln Cathedral [F12] is experienced very differently by the two characters. Both are overcome with wonder and awe and feel the powerful genius loci, but whereas for Will “before’ and ‘after’ were folded together, all was contained in oneness” in a “timeless ecstasy,” and the church “was all, this was everything,” Anna is instead “silenced rather than tuned to the place,” so that Will’s “passion in the cathedral at first awed her, then...
made her angry.” More precisely, she feels that compared to the “pillars upwards [...] there was the sky outside,” and this

the open sky was no blue vault, no dark dome hung with many twinkling lamps, but a space where stars were wheeling in freedom, with freedom above them always higher. The cathedral roused her too. But she would never consent to the knitting of all the leaping stone in a great roof that closed her in, and beyond which was nothing, nothing, it was the ultimate confine [...] Her soul too was carried forward to the altar, to the threshold of Eternity, in reverence and fear and joy [...] But even in the dazed swoon of the cathedral, she claimed another right. The altar was barren, its lights gone out. God burned no more in that bush. It was dead matter lying there. She claimed the right to freedom above her, higher than the roof. She had always a sense of being roofed in. (Lawrence 1995, 147: italics added)

This example expresses for Griffero what he sees as a key point: the quasi-objectivity of the first atmospheric impression before it is subjectively filtered. He suggests that even though Will and Anna appear to have opposite emotional reactions, the first atmospheric impression for both is wonder and awe. What changes is that Anna “wanted to get out of this fixed, leaping, forward-travelling movement,” for example, by catching “at little things, which saved her from being swept forward headlong in the tide of passion that leaps on into the Infinite in a great mass, triumphant and flinging its own course” (Lawrence, 147). Through a growing resistance based on paying more attention to details that act here as discrepant and disturbing sub-atmospheres (or better, atmospherogenic components), she maliciously succeeds in “spoiling his passionate intercourse with the cathedral” and destroying “the passion he had.” “Strive as he would, he could not keep the cathedral wonderful to him. He was disillusioned. That which had been his absolute, containing all heaven and earth, was become to him as to her, a shapely heap of dead matter — but dead, dead” (Lawrence, 148).
For both Anna and Will, the atmosphere changes over time: for her, it does so autonomously and thanks both to discrepant atmospherogenic components and to her increasing need to rebel against a too authoritarian and flagrantly manipulative atmosphere; for him because of the powerful negative atmosphere she radiates on him. In this case, the lofty vastness, and more, of the interior of the great cathedral [F13] provide an enduring framework for the different atmospheric resonances. However, we have already moved beyond Poe’s House of Usher. There — an artificial example, insofar as it is literary, but for Griffero, as already said, is not too different from what can also happen in everyday life — the dreadful atmosphere was cognitively impenetrable and imaginatively unamendable. By contrast, the opposite emotional reactions of Will and Anna show how — whatever the remaining impact of that lofty vastness — the longer-term atmosphere is penetrated and amended differently for each of them, though more cognitively for Anna and more through the emotional impact of Anna’s reaction for Will.

In short, one’s experience of a space can change over time, and it makes a big difference in that one considers it as atmospheric, especially the first type-impressions or token-impressions later. Many of the polemics in the atmospherological field are due precisely to the underestimation of this possible distinction. However, the example considered in the next section suggests to Arbib that, over time, a cumulative atmosphere may emerge that is very different in feeling from that first impression.

4.3 Atmosphere in Painting
For another example (adapted from Arbib 2021, §4.4), the authors consider an 1840 painting by Joseph Mallord William Turner [F14]. When
we view Turner’s painting, our first impression is atmospheric, a bracing experience of beauty, a vivid sunset above a stormy sea. But, as we begin to look more closely, the mood changes. There is a ship, and it is in great distress. The storm is no longer merely bracing: there is an atmosphere of tragedy. As the details accumulate, the atmosphere becomes horrific as we become aware of the manacled hands and legs rising from the water and the sea creatures closing in on them. The back story, which contemporary viewers would have known and the painting’s title *The Slave Ship* suggests, is that the captain has thrown slaves overboard to lighten the load and reduce the risk of sinking in the storm. The slaves were treated not as humans but as mere property. Now, the atmosphere perhaps shifts again, as we recognize the beauty and the danger of the scene but also reflect with horror on the cruelty of the slave trade (whether from looking at the painting alone or also through learning more of the back story).¹⁸ Turner’s painting offers a strong social message, but the painting is atmospheric at first and only secondarily representational. That representation then “installs” a new overall atmosphere of, perhaps, righteous horror, sympathy for suffering, and indignation. The appreciation of the atmosphere and construal of the intended meaning of a painting may be more or less subjective, and the same may be said of buildings.

Griffero offers a somewhat different perspective on Turner’s atmospherics. In Turner’s painting, due to its only remotely figurative nature, the first impression is, above all, chromatic and motor-energetic but extra-representational. Using the language of the new phenomenology, he would say that one perceives first a chaotic-multiple whole endowed with a diffuse internal significance, capable of resonating in a specific way in the felt body of the percipient, in which it is not yet possible to identify the residual “figurative” details. In this case too, Griffero believes that the atmosphere that emerges over time and as a result of a more focused perception is, in some way, “guided” by the first chaotic-enigmatic figurative-chromatic impression but accompanied by aesthetic pleasure (which we do not undertake to define more precisely here). Why else engage in noticing this or that detail, if not because the initial chaotic-vortex atmosphere seems to “hide” something else? Why feel any emotional discord between the beauty of the painting and the recognition of the danger and cruelty of human history? And will not this contrast have some ethical value due to this tacit comparison, namely the awareness that the initially experienced beauty cannot entirely hide the ethical-political evil?

In any case, while noting that we have here one of the cases of possible contrast between cognitive and affective mentioned above, it should not be forgotten that, just as it is absurd to reduce the phenomenon of the atmospheric to the experience of art, it is equally absurd to reduce a complex and historically stratified phenomenon such as the work of art to its atmospheric radiation alone. Even more so if, as is almost always the case, it is experienced in a necessarily anachronistic and culturally conditioned, not to say “domesticated,” situation such as that of the museum.
For Griffero, in every non-immediate experience, the pathic (the first impression, in which the perceiver is induced to emotionally immerse themselves in colors which, as Goethe teaches, always have a moral-symbolic valence) can enter into dissonance (or consonance, but it is a less interesting case for a pathic phenomenology) with the gnostic 19 (cognitive-ethical) experience of “how one feels.” It is not important now to establish whether the overall experience is established through the preponderance of one of the two poles or a synthesis of the two, in this case including the horrific history of slavery, but Griffero suggests that those who do not know the story can still have an “aesthetic” experience 20 of the painting. In any case, it seems to Griffero that the overall-successive appreciation of Turner’s painting requires the first atmospheric overwhelming impression. That is, unless one looks at the painting with an anti-aesthetic eye, as in the case of the color chemist, the restorer called to assess the state of conservation of the picture, the teacher who wants to use the painting to only explain to the students the history of slavery, or those who are excited to reveal the “message” of the work thanks to the initially unnoticed details.

Contrasting Turner’s painting with Poe’s story, Poe gave his readers a full and enduring (prototypical or quasi-objective for Griffero, and intentional-literary for Arbib) atmosphere with his initial description of the building, whereas Turner offers an atmosphere (derivative-relational for Griffero and explorative for Arbib) that, at least for viewers unacquainted with the back story, will be transformed only as the viewer’s gaze explores the painting and attends to more and more details, changing the overall impression as well as an understanding of the various details that this emergent atmosphere frames. One may compare how the atmosphere created on first seeing a building from the outside may be maintained, layered upon, or drastically transformed as one explores the individual spaces within.

Comparison with Lawrence’s novel offers a different insight: for Turner’s viewers, the atmosphere is transformed “from the outside” by how the artist has composed the painting in a way that may guide our attention. Whereas for Anna it is a reflection on her internal beliefs and feelings that restructures the atmosphere afforded by Lincoln Cathedral, and for Will it is the person he is with that transforms his feelings.

4.4 Further Dimensions of Phenomenology

Griffero notes that the sadness of a funeral is not mitigated by the knowledge that every biological organism must die. And yet it may be mitigated by knowing that death has released one’s friend from a long and painful illness. This latter point leads Arbib to ask whether we need to consider the interplay of atmospheres in creating subtle blends of feeling. Does a spectacular mountain lake lose its atmosphericness as soon as someone tells me that it is artificial and its construction may have cost the destruction of villages and local cultures? Griffero sees precise knowledge and location of what generates an atmosphere as often triggering a relatively non-affective distancing, just as when one is not persuaded by a speech whose rhetorical structure is too obvious. But things are perhaps more complicated than that, including the caveat that his distinction between three types of atmospheres (prototypical, derivative-relational, and spurious) is artificially suggested just for theoretical analysis but never occurs with this sharpness in everyday experience. Moreover, sometimes a situation radiates an atmosphere despite what one knows (an atmosphere might please and gratify, for example,
even if it is only accidental), while at other times it even radiates an atmosphere only if one knows something. An object has an aura, for example, only if one knows that an important person used or owned it. Therefore, the relationship between the cognitive and the affective is a crucial issue that also challenges the architect to assess what potential users of a space (physical and lived) might know and what layering of effects might lead from the first impression of a space to the unfolding of further atmospheric impressions, which may or may not rest on the cognitive analysis of the participant (as was demonstrated in analyzing Turner’s *The Slave Ship*).

Griffero suggests that an atmosphere is certainly not affected by what one knows initially when one experiences the first and involuntary impression of its “appearance,” but sometimes may happen afterward when a theoretically interesting but existentially embarrassing micro-conflict between pathic and gnostic might be usually generated. There is a rich phenomenology of possible atmospheric games, according to a typology Griffero gradually enriched and problematized (for the latest version, see Griffero 2021, 29–66), which can be a breeding ground for more subtle phenomenological analysis that could be useful also in the architectural field. Summing up: an atmosphere (possibly architectural) can

1. — be so dystonic as to overwhelm us;
2. — find us in tune with it, to the point of not being recognized and felt;
3. — be recognized without being felt;
4. — elicit a mood of resistance that pushes us to change it or to oppose to this (felt as) manipulative atmosphere (think of experiences that are transgressive or at least freely randomized in opposition to what the disciplinary power wants);
5. — concretize itself even in “materials” or components that normally express the opposite, giving life to a reversed atmospheric feeling (the sadness suggested on sufferers by intolerable beauty or the restlessness produced by situations so orderly as to arouse the impression of a mise-en-scène);
6. — be perceived differently over time after the first impression. The first atmospheric impression of a photograph of one’s schoolmates of decades ago, for example, may be pleasing, yet turn to melancholy once you, looking more closely at them, realize that some of them have died. Consider also the interesting interaction between buildings that seem narrow from the outside and in whose interior the architect has instead managed to create an unexpected vastness, all the more atmospherically suggestive the more unexpected in contrast with the first (outside) impression. Here, we can even imagine layered niches of atmospheric feelings. The way a building may support multiple atmospheres (or atmospheric moods for Griffero) — such as those outside the building and within an interior space — can be enhanced by the contrast between the space that one has been in, and the space that one now enters. Here is an example from Le Corbusier:

In Broussa in Asia Minor, at the Green Mosque, you enter by a little doorway of normal human height; a quite small vestibule produces in you the necessary change of scale so that you may appreciate, as against the dimensions of the street and the spot you come from, the dimensions with which [the mosque’s interior] is intended to impress you. Then you can feel the noble size of the Mosque and your eyes can take its measure. (Le Corbusier 1931, 167)

The phenomenology of these atmospheric games could and maybe should still be further complexified (but this important task is not attempted here) since each experience of an atmosphere can also be considered a specific intersection of the ontological plane (i.e., being a prototypical, derivative-relational, or spurious atmosphere) with the phenomenological plane (dystonic, syntonic, non-involving, resisting, reversed, or time-varying).
An example of a simple and partial application of this ontological/phenomenological articulation of atmospheric experience can be shown in designing a grand church. One may seek to provide — or rather, for Griffero, rely on a situation that may occasion the occurrence of — prototypical atmospheres for both devotees and tourists. Features that may be crucial to the prototypical first impression of the devout (whether by inclusion or exclusion) may be “invisible” to the tourist, but certain features of the space will contribute to the different atmospheric moods that each visitor experiences. Griffero argues that the thesis of the cultural conditioning of perception involves a choice in favor of cognitive penetrability, which atmospherology considers to be not entirely obvious and certainly inactive in the case of prototypical atmospheres. The atmospheres are resistant to what is known, just as an optical illusion does not disappear just because one knows it is an illusion. Turning to architecture, the columns of the Parthenon appear regular, but only because the builders knew how to adjust the placement of the columns to achieve this illusion, which is perfectly operational, visually and atmospherically, on those who perceive it without knowing anything about the stratagem used to make them appear that way. For architects, both the phenomenology of atmosphere and the mix of lore and science that may go into achieving a desired effect for the expected visitors to occupants of the building are a crucial part of their craft.

It may be helpful to mention here the philosophically suggestive vagueness of atmospheric experience, which is such as both de re (atmospheres are vague-ephemeral situations) and de dicto (atmospheres are only vaguely describable). We can distinguish categories of things and actions (“dog” versus “cat” or “stroking” versus “punching”), and we saw earlier the importance of quasi-things, some of which are relatively easy to categorize if we do not ask for “sharp” boundaries and try to characterize their affective, virtually infinite nuance-based personal associations: such as twilight, darkness, seasons, wind, weather, the hours of the day, and others that are much more subject (but not entirely) to personal interpretation such as numinous, charisma, and shame. Just as we may be unable to articulate why we find one dog more handsome than another, or one face more beautiful than another, the architect will find a limit to what can be captured easily in words. Whether in the shape of a door handle or the atmosphere of a space, an explicit analysis may need to be balanced by the architect’s intuitive empathy for the phenomenological first-person experience of those who will grasp the handle or enter the space. In this way, clarity is not an absolute value but only one form of life among many others that is not even the most interesting, especially if this clarity does not depend on irresistible emotional evidence but only on methodical-experimental practice.

Griffero would never renounce vagueness. If anything, it is a matter of learning to stay in it in the right way, integrating the affective experience by a reflection — where and when the unreflected is partially conquered by the reflective — which, without being preponderant, promises critical potentialities (productive, perceptive, and receptive atmospheric competence). Nonetheless, it is worth noting the reversal of time’s arrow: for the visitor to the space, that prototypical experience precedes any analysis of the roots of that experience or the cognitive reflections that may transform it. Whereas for architects the analysis precedes the possible “tuning” of form, color, sound, tactility, and more to provide the usually precise construction details for a space that may create that vaguely-defined experience (bearing in mind the differences among people who may visit and use that space). While most people often cannot
articulate much of what underwrites our experience and behavior in the
world, the phenomenologist, in developing tools to talk about these ex-
periences, is already probing more deeply than people do. As in the case
of Poe’s description of the Usher-atmosphere, he frames the effects that
an architect needs to articulate in setting goals for a design that will (for
many) induce a specific atmosphere.

5 A Cognitive Account with a Glimpse of the Brain
The present section provides an example of how Michael Arbib seeks
to relate the first-person phenomenology of, firstly, in the case of vision,
“this is what I see” to a third-person account of what enables a person’s
brain to afford that experience, “this is how processes in retina and brain,
shaped by genome and experience, enable you to see it.” Since different
people experience the “same” situations in different ways, such under-
standing can be of importance not only to the neurologist — recall the
but also to the architect. Later these considerations are extended to ac-
tion-oriented and multisensory perception. But first, we need to summa-
rize a debate that the following cog/neuroscience exposition will address.

A major challenge for linking cog/neuroscience to architecture has been
to assess what characteristics of a built space allow it to afford a pre-re-
reflective derivative-relational atmosphere such as inspiring awe (e.g., Sil-
via et al. 2015; Brinck 2018; Negami and Ellard 2021), but this does not
preclude the importance of understanding the challenge of providing
atmospheres that either are attuned to specific classes of people or are
artfully designed to avoid disturbing the sensibilities of others. Various
aspects of space can, in some cases, prevail and change the perceiver’s
mood completely, but we have seen that Griffero asserts that, even when
two people’s moods differ in the same space, the different moods result-
ing from partially different felt-bodily resonances (Griffero 2020b) are
triggered by the “same” initial type-atmosphere. In this example, “same”
obviously does not mean mathematical identity but the essentially ana-
logical identity, which is the only one possible in life-worldly phenomen-
ology. However, as already noted in the introduction to the bank
example, Arbib disagrees. Let’s explore that disagreement briefly while
suggesting that different architects may take one perspective or another
yet succeed in developing spaces that do afford the intended atmosphere
for certain classes of individuals.

Recalling Arbib’s debate with Gibson, he agreed with Gibson’s notion
of direct perception as a phenomenological description of how much
perception bypasses our conscious awareness in affecting the way we act
in the environment — but he did insist that neural processing was re-
quired to mediate this phenomenon and that much perception affecting
behavior does have a cognitive, evaluative component. In the same vein,
he does not dispute Griffero’s insistence that in much of our experience,
atmosphere is a quasi-objective feeling experienced on the basis of dis-
positions of the felt body immediately and holistically that are related
to affective qualities of the world as affordances that in this case are
non-cognitive. However, just as Arbib argues that a fuller understand-
ing of our experience of the environment must integrate both noncon-
scious and cognitively-mediated praxic affordances, he argues that the
same is true for the experience of atmosphere as well.

It does not contradict the phenomenology to say that conscious and
nonconscious processes are both open to neuroscientific analysis and
that this “dissection of the phenomenology” may yield new insights into the experience and design of architecture. To see this more fully, we consider in §5.2 a cog/neuroscience account of perception that has been elaborated elsewhere (Arbib 2021, chapter 3) and extend the discussion to a broader look at cog/neuroscience as a basis for arguing that — like colors — all atmospheres are derivative-relational but that some spaces are peremptory (their atmosphere is prototypical) whereas there are cases where the current environment has little effect on our mood (when we are exasperated, it makes any atmosphere of our surroundings less likely to be felt). The notion of schema assemblage will be developed with the implication that, within the action-perception cycle, the current schema assemblage strongly biases what comes next. However, the authors insist that some stimuli can be peremptory (whether alarm signals call for action or prototypical atmospheres) and that emotion and learning are part of the cycle.

Conversely, perception may be dominated by the current internal state of the person. For example, spurious atmospheres (and, here, Arbib adopts Griffero’s notion without neophenomenological rigor) are almost entirely subjective, based on the subjective projection of the subject’s mood onto the external world. Griffero calls them spurious because they cannot claim to be intersubjective. Examples range from the common experience that a place or an object in which one has a special experience maintains for us a very powerful atmosphere (one remembers some experiences and places as soon as one happens to feel the smell, even elsewhere) to the case of the atmospheric value that surrounds an object long desired (whatever it is) for the collector, up to the pathological case in which the neurotic refuses red-colored food because red solicits the memory of some trauma due to the same or similar color, or immerse themselves in a certain object (the flag, the property, or the leader) and in its authoritative (if not authoritarian) atmosphere to be willing to sacrifice for it their life and that of others.  

In terms of future studies of the interaction between phenomenology and cognition, note that humans have language (as well as drawing and modeling) and reason that unlock imagination and other internal state changes that may decouple us even further from our current sampling of available stimuli. The extension of schema theory to language (Arbib, Conklin, and Hill 1987) and its implications for human biological and cultural evolution (Arbib 2012; 2021, chapter 8) are highly relevant to the present dialogue but must be developed elsewhere.

5.1 Introducing Schema Theory
Looking at Arbib’s theoretical and methodological approach, his framework for cognitive analysis is provided by a version of schema theory (Arbib 2021, chapter 3) that analyzes action-oriented perception in terms of perceptual schemas. In the example of the House of Usher [F10], the perceptual schemas support the recognition of things one may observe in a scene — in that case, sky, walls, roof, grass, foliage, and more — but also recognizes relationships between parts of a scene, and can resolve ambiguities in part by assessing whether putative interpretations of parts of scene support each other (they cooperate) or are unlikely to occur together in the observed spatial relationship (they compete). Similar processes apply equally well to the perception of quasi-things. Whether recognizing a house or twilight, one’s brain (or computer system) must mobilize diverse features to assess whether a portion of a scene never encountered before nonetheless contains, or is an instance of, some general
category. In the same way, one may pass from the first-person observation that a thing, person, space, or quasi-thing affords a specific atmosphere to the third-person challenge of attempting to assess what features in what combinations of that scene lead to that atmospheric feeling.

More generally, schema theory is concerned not only with the recognition of objects, relations, and qualities of a static visual scene but extends to multisensory experience extended in time, the recognition of the actions of others, and the activation and parameterization of motor schemas whose coordinated activation underlies one’s behavior. As seen in discussing one’s movement in a crowd (see §4.1), it is not enough to change course but one must “parameterize” the action by determining the speed and direction of the movement appropriate in the current circumstances. Further, the action taken to avoid a collision may be cognitively controlled (perceiving a gap in the crowd as the target for a change in trajectory) or elicited by a nonconscious response to optic flow. In general, conscious and nonconscious control will be coordinated — one may consciously decide to pick up a cup of coffee, where seeing the shape, size, orientation, and location of a cup handle may contribute both to one’s conscious recognition of the handle while providing nonconscious cues that help determine how one will reach and grasp it.

Perceptual and motor schemas are developed and coordinated through individual experience, but these may have a core that is shaped in part by biological substrates shared by most humans or by experience culturally evolved within a group. Social schemas shaped by such enculturation help shape individual schemas. Judgments of “sweeter” and “sourer” are biologically grounded for humans (though the judgment that something “is too sweet” may be subjective), recognition (whether immediate or not) of whether an animal is a “cat” or a “dog” is to a great sense objective (though different languages may employ different words to distinguish them), notions of “edible” versus “inedible” may be culturally grounded, while the fact that a particular song induces a strong emotion may relate to a personal projection because it is associated with a special occasion with a loved one (this again exemplifies what Griffero calls a spurious-projective atmosphere).

The issue of the innate bases on which such schemas are grounded and how they develop both through physical and social interaction with the world, and the issue of how biological and cultural evolution have served to ground and modulate these processes, has been the target of immense literature, but these topics are outside the scope of the present debate. This debate offers a soupçon of an account, at the cognitive rather than the neurophysiological level, of how the human brain may perceive what is in the environment around it. The account has been extended to emphasize the action-perception cycle, assess the impact of motivation and emotion, and explore the relevant learning processes.

In an informal experiment, Arbib (1972) presented groups of students with a list of ten words, giving them a minute to commit the items to memory. He then asked the students not what the words were, but rather which ones had been written in cursive and which had not. Almost no students had noticed the difference, let alone being able to answer the question — and yet each student had to recognize the letters that formed the words, and the necessary processing differed somewhat between the cursive and non-cursive words. This demonstrates explicitly the familiar point that what one “sees” depends on one’s current task but adds that one may have to nonconsciously perceive aspects that play no role in one’s conscious perspective on a scene.
23 Before reading on, note that many of the processes we will consider happen rapidly and with no conscious effort — a single glance may reveal the gist of a scene or situation (which may include the prototypical atmosphere as characterized by Griffio).

5.2 Understanding a Visual Scene

Arbib (2021, §3.4) looks, in detail, at one theory of understanding visual scenes — the VISIONS system (Hanson and Riseman 1978; Riseman and Hanson 1987). While focusing on vision here, we remind the reader that in §5.3 and §5.4 perception involves multimodal analysis of the environment within an ongoing cycle linking action and perception and involves learning and emotion as well. Though VISIONS was originally implemented on a serial computer, its underlying logic of competition and cooperation conceptually exemplified “the style of the brain.”

What is crucial about VISIONS, and the more general schema theory of which it is part, is that it provides a set of key concepts for our conversation about affordances and atmospheres. It seems valuable here to summarize key points of how VISIONS functions. The aim here is not to discuss VISIONS for its place in the history of artificial intelligence (AI), but rather for the perspective it offers on how processes within our human brains (and much of this account applies to other creatures) mediate our perception of the world around us. The focus here is not on the recognition of photographs of the original application (any more than architecture can be reduced to the study of photos of buildings in glossy magazines) but rather on what the analysis of such recognition tells us about our perceptual awareness as operating within our life-world experience.

To explain the approach, a two-level analysis of a picture of a typical suburban scene in Western Massachusetts [F15a] is used, but it may take further attention (and the shifts of attention may not be conscious) to perceive more of the details.
VISIONS employs a notion of “height” of processing that places the uninterpreted image at the bottom and the (possibly elaborated) conceptual understanding at the top. This corresponds to the passage of signals from the retina up to the thalamus and en route to the primary visual cortex and from there continuing up to “higher centers” in the brain. Crucially, and surprisingly, there are more fibers proceeding “top-down” from the cerebral cortex and thalamus to the retina than there are fibers proceeding “bottom-up” from the retina. This observation is crucial to understanding how much of what we perceive depends on our prior experience and our current internal state; without denying, as already noted, that some patterns of sensory stimulation are peremptory, whether in affecting our emotions and our sense of atmosphere or in goading us to a novel course of action.

In VISIONS, dividing an image into possibly interpretable regions occurs at a lower level than the processes that interpret the regions, but it can be seen that, as they proceed, lower-level processes may be affected by top-down influences.

Segmentation/low-level vision: the first observation is that our recognition (whether of an object, an action, or an atmosphere) will more often depend on a relevant part of the scene rather than the scene as a whole (recognizing the atmosphere may be more global, recognition of a car may be more local). In any case, there must be something about the disposition of colors, contours, and more local features that makes one recognize certain aspects of our environment, and our pre-attentive processes must somehow assess how these features group together in forming regions that are potentially worthy of attention. VISIONS charts a few processes whereby analysis (usually nonconscious) of local image features grows edges and regions to yield a first-pass subdivision of the image to ground semantic analysis. Neurophysiology and neuropsychology (studying the impact of brain lesions) have offered a rich body of data on how information from the retina reaches the cerebral cortex and is passed to many different regions processing their inputs and interacting with other processes to yield the unitary experiences that are the fodder of phenomenology.

Any act of perception may depend on certain boundaries and ignore others in making sense of a scene. We may see a house and yet pay no conscious attention to the disposition of doors and windows, even though the absence of them would have attracted our conscious attention. Similarly, like objects and certain quasi-things, atmospheres may segment the space of our daily life. All these points to the diversity of interactions between lower-level and higher-level vision that may evade our consciousness yet be necessary to the processing that determines what will enter our awareness. For the moment, though, our goal is to offer a glimpse of how some of the lower-level processes modeled in VISIONS populate the so-called intermediate database with representations of the color, shape, location, and more of various regions. This constitutes a working memory (WM) which will change as perception proceeds: for example, successive eye movements may bring out hitherto overlooked details while rejecting mistaken ones. As already noted, these low-level processes may operate “bottom-up” (proceeding “upward” from the image) in the sense that they may be part of bringing unexpected atmospheres or objects into our consciousness, or may be biased “top-down” by our current task, as when we search for our keys. But in neither case are the relevant neural processes open to our conscious awareness.
other brain regions implicated in action, multimodal perception, emotion, and so much more — all working together to support one’s individual experience of, and behavior-in, one’s life-world.

Considering vision mechanisms [F15] makes clear that our brain’s (as distinct from our conscious) initial analysis may be wrong. What is important is that the brain can detect errors before they reach conscious awareness. Only in rare cases will these errors “rise to consciousness” so that, for example, we may think we have seen a hummingbird before we realize that we are looking at a (much closer) flying insect. In the suburban scene example [F15b], we see that a crucial edge has been missed in this attempted segmentation, near the left end of the roofline, while some spurious edges are present, that is misinterpreting highlights as separate parts of the house, but we will see that these “mistakes” may only be corrected after the higher-level semantic analysis (described next) begins to delineate the roof and house.

For VISIONS, a perceptual schema for a type of object X provides processes sophisticated enough to recognize a viewed object as an X despite variations of size, location, and orientation, so long as the present X is not too atypical. We postulate that each person’s brain has a long-term memory (a semantic memory) that encodes a host of schemas, including how the schemas may be activated by bottom-up cues (certain cues of color and texture may increase confidence that a region is covered in grass) and top-down cues (relations between schemas that mediate competition — a cube in the middle of a fire is less likely to be ice — and cooperation — the region below a roof is likely to contain windows).

However, if we are making sense of a room (whether we are actually in the room, or examining a picture), there may be several chairs, and in understanding the scene, visual perception may keep track of the shape, style, and location of more than one of them. We use the term schema instance for the separate items in the visual working memory that keep track of the different regions associated with various schemas — not only the associated schemas but also the confidence levels (does the schema represent the object in that region?) — that can increase through cooperation and decrease through competition. Each schema instance may also encode (or link to) parameters such as shape, color, texture, and depth. Visual WM holds the current state of interpretation of the scene as an assemblage of schema instances, a representation that may change through further attention to a picture and should change as we interact with the changing world around us. Note that “confidence” here refers to the dynamically changing “strength” of a schema instance in interpreting all or part of the scene. This factor is in general nonconscious, though top-down cognitive assessments of confidence may also play a role.

As the writing memorization example shows, many of these processes will be nonconscious: we may consciously recognize aspects of a scene (in our example, recognition of letters as a bridge to the recognition of words) with no awareness of the activities in vast neural networks that made that conscious experience possible. There is no restriction that processes are only bottom-up. As hinted above, emerging (possibly nonconscious) hypotheses at higher levels may initiate top-down processes that activate further lower-level activity before the system converges on a current interpretation.

But what are schema instances?

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As already noted, a crucial edge is missing during an initial segmentation of the visual scene [F15b]. This is in part because highlights have initially fooled lower-level processes. For all its imperfections, this is enough for visual schemas to start spawning instances to check whether various segments match their activation criteria. Putting this in anthropomorphic terms (and the specific numbers do not matter — only their relative magnitude):

the “sky schema” finds a region at the top of the image having the right color and extent to create an instance with a confidence level of 0.9. This is a bottom-up process, driven purely by local data from the image;

just below the putative sky, there is a region of a similar color, fairly large but lower in the image, and this might create an instance of the “sky schema” with a confidence level of 0.4;

however, the “roof schema” can also assess the second region and find that it is not only the right shape for a roof but also in the right spatial relation with a region confidently assessed as the sky to give a roof-schema instance for this region a 0.7. Note the combination of bottom-up and top-down influences.

As VISIONS begins to interpret one part of a scene, this may guide attention to related parts of the scene in service of its interpretation. This roof schema instance will say (to continue with our anthropomorphism, while stressing that in most cases such interactions are mediated by neural processes of which we are not conscious), “well, if I am a roof then, unless this is a disaster scene, there should be a house underneath me, and so schemas should be able to detect windows or shutters in that region.”

Because such wall-related cues are located, confidence in the roof hypothesis goes up and the region below it becomes linked to an instance of the “wall schema;”

but that missing edge now causes problems — a large region has been confidently assessed as both wall and sky. However, this initiates further processing to seek the likely boundary, and a top-down query to the intermediate database triggers further low-level processing of that part of the image. The boundary is found, the large region is divided in two, and the top part is now unequivocally interpreted as the sky and the bottom part as the wall;

interpretation continues to completion, and, perhaps only then, in the case of our perception would we, in a fraction of a second, consciously see these and other aspects of the scene.

When we look at the color-coded final interpretation of the image by the VISIONS system of forty-plus years ago [F15c], we see it was able to correctly recognize foliage versus grass. It recognized the roof. It recognized the shutters and the walls fairly well, but it had not been programmed with schemas for “person” or “road” or “telephone wires,” and so these could not be part of its interpretation. As humans, we are not computers programmed to recognize different objects, quasi-things, atmospheres, and domains of interaction. Rather, it may take years of experience, with and without explicit education, to build up the repertoire of tens of thousands (or many more?) of perceptual schemas we each possess and the linkage (including conscious decision-making and nonconscious passing of parameters) to motor schemas that they support.
5.3 Beyond Vision to Multimodal Perception and Action

The above considerations apply equally well to multimodal perception (i.e., a perception that may involve any or all of vision, hearing, touch, smell, or other senses, including signals reporting on the state of one’s muscles or one’s oxygen level, heart rate, and more) in linkage with action, exploiting, or imagining sensory cues from multiple modalities in developing a coherent understanding of dynamic episodes embedded within three-dimensional space. Consider reaching into your pocket and feeling your keys and your wallet there. When you extract the wallet from your pocket, that earlier haptic perception integrates seamlessly (and without conscious effort) with the ensuing visual perception. Moreover, we may interpret regions of the scene not simply in terms of “what” they are but also in terms of “how” we might interact with them, their affordances (Griffero would also say “how we felt-bodily find in this interaction”). Arbib’s version of schema theory crucially incorporates motor schemas and started with studies of approach and avoidance in the frog (Arbib 1987, for a review), where the response to predator or prey involves no cognitive processes. More generally, it has been stressed that schema interaction may mobilize both cognitive and nonconscious processes. This establishes a key theme for this discussion. Perception may be something that “we do,” but it can also be something that happens to us even during a distracted moment. When viewing VISIONS as an account of human vision, it is reiterated that, in many cases, there will be no conscious awareness of the neural processes whereby your brain constructs your perception of the scene. In other cases, conscious attention may be required to provide top-down influences that cause lower-level processes to search out details that allow you to make sense of the scene overall.

Within the schema-theory framework (exemplified but not exhausted by VISIONS), understanding a scene is a process of construction: we do not experience the “total reality” (an implausible idea in itself). Rather, current stimuli are “made sense of” based on our brain’s ability to construct an assemblage of instances of schemas. And these schemas encode aspects of our knowledge/long-term memory/prior experience of the world relevant to our current situation, tasks, and motivations. Perception proceeds both bottom-up, extracting patterns from the sensory input, and top-down, with the interpretation of portions of the scene conditioned by context, motivation, and prior understanding of the scene established by ongoing perception. While the processes underlying perception are dynamic, with some schema instances achieving higher confidence levels and others being “out-competed” and possibly dropping out altogether, some may remain active enough long enough they may constitute an island of reliability, in the sense that for a while at least they provide a stable context for the competition and cooperation of schema instances related to other regions of the image. This in no way precludes that in due course some of these instances may be “demoted” and thus form no part of one’s conscious understanding of the scene. It should just be reiterated that these processes may be played out in a fraction of a second with no conscious awareness of the diverse possible interpretations that flitted in and out of the interactions charted here, although (as in the hummingbird example) an interpretation may enter awareness briefly before other cues lead us to feel the scene differently.

Arbib (2021, chapter 4, section “Inverting Vision”) builds on the intuition afforded by the VISIONS system to consider the role of imagination in drawings and paintings. He argues that in imagining a scene, we may begin to mentally assemble perceptual schemas but with, at best, a
5.4 But What, Then, of Emotions and Atmospheres?

Although the work on the VISIONS system focused on objects, it applies equally well to Griffero’s quasi-things. For example, whether or not we recognize the objects in an outdoor scene, we may recognize that they are swaying in the wind and that we are observing the scene at twilight. Atmosphere, like gist, may be recognized (consciously or not) as properties of the overall scene, whatever the constituent objects. Griffero, however, referring to a notion introduced by the German philosopher Gernot Böhme (2017b, 37–54), would prefer (instead of properties) to speak of ectasies (of things and quasi-things, not persons). The notion is that atmospheric qualities are generated not by properties (accidents) of things (substances) but among others by their ectasies in the sense of qualities which “[radiate] into the surroundings,” taking “away the homogeneity of the surrounding space” and filling “it with tensions and movement suggestions.” These ectasies “go out” from things and radiate into the surrounding environs by specifically tuning them. For example, the blue color of a cup is “the way in which the cup is present in space, how it makes its presence ‘felt’.” It is not limited to the cup adhering to it, but “something that radiates out into the cup’s surroundings and in a certain way colors and ‘tinges’ it” (Böhme 2017b, 37–54). Unlike properties, which exist even if they are only thinkable (the geometric ones, for example), atmospheres as a result of ecstatic radiation are phenomenal appearances “in act,” which one can only appropriately define as existing when they are purely “potential” (as in the phase of architectural design). Griffero emphasizes the importance for architects (especially of interiors) of the atmospheric potential, ecstatic, of the structures and materials they choose, as these elements “radiate” a certain affective tone on the surrounding designed environment.

Without discounting the importance of this topic, Arbib insists that it would be a misreading of his present account to reduce all perceptual properties to ectasies. Returning to the writing memorization example (see §5.1), some properties may be crucial to recognize aspects of a situation and yet have no standing as ectasies within a particular context. Similarly, processes of competition and cooperation may proceed at both conscious and nonconscious levels, and such processes will, at times, involve some pathic biasing but more often will not. To Arbib, it seems unhelpful to speak of the blueness of a book cover as being an ecstasy if one is rapidly searching a row of books for one with a red cover, and yet is an essential property to be deployed (more often nonconsciously) to ensure the rapid success of the search. Recognition of a thing need not preclude or require attention to specific properties.
Shapes, colors, textures, and other properties may be exploited by the low-level vision in segmenting a scene, and yet such properties may also activate perceptual schemas that rise to awareness but need not do so. It needs no argument to deny that our perception of a scene can be reduced to conceptual abstractions. Certainly, contour extraction enables you to recognize the face in a caricature, but we richly experience the difference between the face of a person we meet and a caricature thereof.

This leads to a key observation. As we move up the hierarchy, our brain does not necessarily discard information from lower levels, but links parts of it to higher-level representations — interpreting the former while giving meaning to the latter to yield an integrated view enriched by subtle undertones that can be brought to the fore by attention. Thus, about overall patterns of texture, shading, and color can be preserved in the final percept even though most of the details of local features operated at a nonconscious level to yield that percept.

The focus of the section on the VISIONS system should not mislead the reader into thinking that top-down versus bottom-up analysis, interaction of cognitive and nonconscious processes, shifts of attention, islands of reliability, and more are limited to the visual perception of a static scene. Arbib explicitly discusses their relevance to the analysis of the integration of action with multimodal perception (2021, §3.6). He explicitly seeks a bridge between Juhani Pallasmaa’s phenomenological analysis of *The Thinking Hand* (2009) for architects and cog/neuroscience accounts of the control of hand movements at both schema and neural network levels (2021, chapter 2). Arbib discusses how one might analyze possible praxic affordances differently according to the task (literally) at hand: grasping the handle if one intends to drink from a mug, grasping the rim, perhaps, if one wants to move the mug to a new position. The pre-shaping of the hand and the coordinated motion of arm and hand to reach the afforded region is initially under visual control while the final grasp is guided by the tactile feeling of mug against hand. Moreover, he notes the interplay of the possibly conscious planning of the behavior and the nonconscious adaptation of pre-shape and adaptation to the nonconscious perception of details of, for instance, the shape, size, and orientation of the mug handle (2021, §2.6). These observations are of relevance to architects who ask “What behaviors is the space I am designing intended to afford?” “What specific affordances must I design into the space, and how should they be shaped?” “To what extent do I want to draw conscious attention to these affordances, and what aspects of them should operate at a nonconscious level?” For example, in designing a door, one might design it to be easily identified by someone who may wish to leave the room, and one might want to design the handle to not only be visible but to alert the subject to whether this is a sliding door or one that opens on hinges — but the shape and position of the handle may be further designed to provide the comfort of grasp and ease of opening, features that rarely rise to consciousness except when they fail.

To move beyond vision as the only relevant sense and to advance the dialogue between the authors, consider someone tasting a glass of cheap wine. To a novice wine drinker, its “atmosphere” — a blend of taste, smell, and mouth feel — may be one of enjoyment, but to a connoisseur its “atmosphere” will be unpleasant because the wine is too sweet. Yet both experiences are based on the same properties of sugar content, alcohol content, viscosity, and a large range of molecules affecting receptors in the nose and tongue. The difference may be this: for Griffero, the experience of the novice and the connoisseur differ not only because
of idiosyncratic “felt-bodily filterings and resonances” but especially for their different attitude (pathic-naïve versus cognitive-expert), because the connoisseur’s tasting has too analytical-cognitive elements to be truly atmospheric. For Arbib, generalizing the discussion of the VISIONS system (competition and cooperation of schema instances seeking a coherent interpretation of a scene with selective attention engaged by bottom-up and top-down processes), the bundle of properties is not itself atmospheric, but it provides the potential inputs for a range of (conscious and nonconscious) processes that between them will yield the feelings that we label “atmosphere,” and much else of relevance to action, contemplation, and memory. As Griffero underlines, in this case, it is — by no means — certain that one can speak of atmosphere. Arbib responds that this is a potent reminder to architects that atmosphere will rarely be the aim by itself in designing a particular space.

Recall the bank example (see §1: [F4; F5]). For Griffero, the affective reaction — the mood or, if you want, the atmosphere — as the mere subjective resonance of a preliminary and instead quasi-objective atmospheric may well be different (for biographical, situational, physical, and felt-bodily condition reasons), even opposite, but be provoked by the “same” felt atmosphere, which for him is immanent to that portion of space. Consider that an adult does not tolerate a narrow space that a child instead seeks. The child seeks it precisely because of the effects that disturb the adult: it is narrow and has a (gently) contracting effect. For Arbib, this is not an atmosphere, it is an objective property that provides part of the input to the perceptual process, and different features of an object or a space may be crucial to the way it is experienced. Whereas for Griffero, the adult’s feeling for the narrowness of a confined space is an atmospheric feeling that does not strictly and only depend on geometric spatiality, but rather on how this lived space, which is also obviously related to the material dimension and the direction it affords, finds a certain resonance in the felt body. In any case, this is for Griffero an example of only one type of spatial atmosphere, the derivative-relational one, that is an in-between resulting from a relationship between subject and object (lived environment), in which both surfaces and motor directions count (here the confining narrowness).

There are other types of spatiality and, therefore, atmospheres. What Griffero has called prototypical atmospheres, stressing above all their authority, enigmatic source, and intentional improbability are feelings based on a space of a) vastness that is completely different from the b) directional and c) local one, even though it is the ontological and anthropological foundation of b and c. Some spaces are surfaceless: the voluminous space of sound, generated by rhythmic and tonal suggestions; the space of profound silence, expanded when festive or dense when oppressive; the space of weather; the space of the inconspicuous backfield utilized by our small movements (unbending, leaning backward, and stretching) and dancing; and the space of headwind, which is free of a locational change. Such surfaceless spaces are the essential precondition of our accustomed locational space, and the atmospheres based on them (unintentional and quasi-objective) are, in turn, the essential precondition of the others.

It is superfluous to emphasize that architects willing to generate a specific (pragmatic and emotional) atmosphere must consider both the affordances aroused by the metric-geometric space and the more life-worldly dimension of the lived space. Some design measures (decorations, colors, and openings) could make even a geometrically restricted space feel airy

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26 Griffero 2014a, a bit freely adapting Schmitz 1967.
27 For Griffero, who since his first writings on the subject has been committed to avoiding understanding “atmospheric” as an automatically positive qualification, situations that in everyday language we say lack atmospheres are rather permeated by cold, dull atmospheric feelings, or do not reach the perceptual threshold necessary for a real self-aware perception.

(or at least airier). It is essential to take seriously the fact that we do not live “first” in physical-geometric spaces, but in a lived space, where dimensions are more affective than strictly physical (such as high and low, left and right, front and back, near and far, outside and inside, suffocating and airy, inhibiting and inviting) are perfectly at home: a space that is felt in its affective qualities relatively independently of its material and quantitative characteristics. Place a comfortable bench, well designed and pleasant to the eye, in the wrong direction, obscuring a view of what deserves to be seen, or making it tiring to sit on, can all contribute not to the absence of any atmosphere (some affective quality is always inherent to the lived space, so there are no anatmospheric situations in the proper sense) 27 but to an unpleasant atmosphere, undesirable, architecturally wrong.

Arbib would agree — yet stresses — that even those surfaces and boundaries to which we do not consciously attend contribute to our feeling of the atmosphere of that lived space. The exposition of islands of reliability in VISIONS emphasized how the senses may offer diverse cues to understanding a scene and that these may compete and cooperate (compare the patterns of inhibition and excitation of neurons at a finer scale of processing) in a way in which various clusters of schemas may form that provide nuclei for further processing and may or may not emerge from that nonconscious processing into one’s final awareness of the scene. Only on a few occasions do people become aware of such a nucleus only to consciously dismiss it, such as when one sees the face of a loved one in the crowd only to be disappointed as you come closer. However, integration with the cog/neuroscience of emotion — a crucial link to atmospherology — has not been fully developed, and a mutually satisfactory approach remains an important challenge in developing the linkages that this paper begins to offer (see Arbib 2021, chapters 4 and 5, for steps in this direction and pointers to further references). For example, are there islands of emotional reliability that might be relevant to a cog/neuroscience approach to the holistic atmospheric experience? The distinction here might be that, for example, overflowing trash can be noted nonconsciously, but its schema instance does not survive to mar one’s appreciation of the atmosphere of calm beauty of a sylvan scene, or conversely that its presence comes to dominate one’s bodily-feeling and destroy that atmosphere.

5.5 Must Phenomenology Resist the Lessons of Science?
Griffero (2014c, 129–141; 2021, 29–66 with many literary examples: for a summary, see §4.4) develops a different “analyticity” based exclusively on what happens to us ordinarily and involuntarily (without invoking notions of schema, brain, or at least the disaggregation of experiential processes), fulfilling the original (Husserlian) phenomenological project: “no conceivable theory can make us err with respect to the principle of all principles: that every originary presentive intuition is a legitimizing source of cognition, that everything originarily (so to speak, in its ‘personal’ actuality) offered to us in ‘intuition’ is to be accepted simply as what it is presented as being, but also only within the limits in which it is presented there” (Husserl 1982, 44: italics added by Griffero). Arbib endorses this approach as one of the paths to understanding experience in a way of value to architects, but he maintains that such insights leave much room for enrichment through scientific studies.

Certainly, an expert, whose attention is focused only on assessing details, will hardly perceive an atmosphere at all, just as, to use Kant’s famous example, the botanist cannot say that a rose is beautiful (unless they
One may consider schema theory as an attempt to proceed from a phenomenological analysis to an analysis of interacting processes, but without jumping directly from the level of feeling (or action-oriented perception) to the level of neural interactions. An initial schema-theoretic account may describe schemas and schema interactions without specifying where or how they are implemented in the brain. In many cases, such an understanding will suffice. In other cases, testing the analysis against neural data (such as human brain imaging or animal neurophysiology) may be crucial to testing and improving that initial schema-based analysis.

Griffero looks to the conceptual tools used by Gestalt psychology when examining perception (we will turn to Arbib’s critique below). He emphasizes the principle of totality; the laws of Pragnanz (or simplicity) and closure are also relevant here, as is the “hermeneutic circle” establishing the continuous and undefined mutual implication of parts and whole. This principle, for the Gestaltist, asserts that the Gestalt (“form” or “configuration,” in English) as a whole is perceptually primary. It defines the parts from which it is composed, rather than being a secondary quality that emerges from its parts, which depend upon the whole in which they are embedded, but as such are only noticeable after. “In psychology [...] we have wholes which, instead of being the sum of parts existing independently, give their parts specific functions or properties that can only be defined in relation to the whole in question” (Köhler 1971 [1930], 145). For Gestalt-based atmospherology, this whole, which is not the mere sum of the parts or, at least, is something else than the sum of its parts, is an atmospheric tonality. Summing the material components of a situation risks being a meaningless procedure to describe the perceptual atmospheric whole-phenomenon, proving useful exclusively on other levels, that of understanding (only up to a certain point, moreover) how the set of elements may elicit the overall atmosphere, and that of making use of it to design something.

Back to the principle of totality as a first impression. Phenomenologically, in one’s personal experience, once one begins to analyze an atmosphere by trying to explain the effectiveness of its components, the atmosphere may (but need not) become affectively uninvoking. This seems compelling when looking at specific Gestalt exercises. One sees the square, and only later (if at all) does focus attention examine the gap at the upper left. However, Arbib’s account of the VISIONS system was at pains to stress that much of the neural processing that yields this first impression is nonconscious. The brain must nonconsciously recognize that the input is “close enough” to four approximately equal sides at right angles to their neighbors to avoid the first impression that it is a rectangle rather than a square or a quadrilateral rather than a rectangle. In the VISIONS spirit of competition and cooperation, in this case, the gap may register at the nonconscious level but not make it to conscious awareness. However, if you return to this figure later, having read this exposition, Arbib guarantees that you will not be able to avoid having that gap as part of your first impression on that later viewing.

For another example, consider reading the two words in [F17]. The Gestalt closure of the central letter is blocked by the context in reading down (THE) but enhanced in reading across (CAT). The whole and the parts can interact in yielding the overall percept. The key to the VI-
Exercise in visual Gestalt: by the closure principle, we group elements that appear to be closed shapes and figures.

Exercise in visual Gestalt: by the closure principle, we group elements that appear to be closed shapes and figures; the context enhances or weakens these perceptual mechanisms.
SIONS approach (and its wider applicability) is that the nonconscious activation of potential wholes can activate top-down possible options as to how the parts are assembled in nonconscious interactions that precede feeling the overall percept.

How can we reconcile the Gestaltist and VISIONS perspectives? To oversimplify, in much of life, perception must be fast to aid survival in a dynamic life-world. Attending to all the parts of a scene and “summing them” (whatever that means) would take too long. The issue is not summing up all the parts: it is using the most salient cues. The brain supports the development of schemas and methods of deploying them that will often yield a veridical perception rapidly and compellingly; it is the felt aspect (not the neural or nonconscious underpinnings) that Gestalt theory captured. However, further processes are required to accommodate cases where fast perception overlooks details that may be crucial to ongoing action. Something of Daniel Kahneman’s notion of “thinking fast and slow” (2011) can be seen here, but it is also worth recalling Richard Gregory’s efficiency argument (1967) for why even seeing machines will have illusions.

Intriguingly, Arbib (2021, §3.5) discusses an aesthetics rooted in the action-oriented perception that links to an account of how fields of attraction and repulsion encoded in the neural circuitry of frogs may guide their movement in avoiding a barrier while moving toward its prey. He relates this account to Rudolf Arnheim’s exploration of the aesthetics of combining fields of attraction and repulsion in his book *The Dynamics of Architectural Form* (1977). Arnheim was a distinguished art critic who had studied Gestalt psychology with Max Wertheimer and Wolfgang Köhler at the University of Berlin and applied it to art, as masterfully presented in his earlier book *Art and Visual Perception* (1974). In the newer book, he explored what would carry over from this analysis of art to architectural form though, despite the word “dynamics” in the title, his view is not action-oriented. Arbib assessed Arnheim’s analysis of Le Corbusier’s design of the Carpenter Center for the Visual Arts at Harvard University in terms of (non-cog) neuroscience analysis. This has a certain resonance with Grifferò’s account of “affective fields and the phenomenological response to challenges of architecture” in §6.2 below.

The exposition of the VISIONS system offered a cognitively accessible account of what goes on in our brains at a primarily nonconscious level as we respond to the qualities of our present environment. The processes and their cog/neuroscientific analysis must not be conflated. Nonetheless, the architect’s task is more like the cog/neuroscientist’s; to understand how to combine the parts of the building to offer certain praxic and atmospheric affordances for the eventual users of the building. The cog/neuroscience approach includes situations in which the relation between the inhabitant and the surrounding space satisfies the presupposition of Grifferò’s atmospherology, in which feeling arises in the first place as an affectively tonalized total situation, but is not limited to that case. Schmitz (for example, 2005, 17–61) thinks of it as a whole formed by a chaotic multiplicity accompanied by a *halo of significance*. What is important here is that the authors seek a hermeneutic dialogue (despite the differences) between two modes of understanding — those of phenomenology (especially new phenomenology) and cog/neuroscience — and test that understanding in assessing how it can aid architects in probing both the experience and the design of spaces.
Turning to architecture and the conscious level of perception as an ongoing perceptual process, most architects agree to the importance of detailing in enriching the perceptual quality of space; and for those who visit the space, the perception of the whole may frame later attention to the details, or it may be only conscious attention of different parts of the scene that is accumulated to develop an overall feeling for the space. Whether or not the architect feels the intended atmosphere of the building, once constructed, is a separate concern. For Griffero, the fact that they may not feel at all the designed atmosphere is certainly not a positive quality of their design, but this overlooks the fact that architects may be designing for inhabitants very different from themselves.

Griffero finds particularly useful the contribution of the Gestaltist Wolfgang Metzger, who says that the essence (or being) of properties of forms are not subjective and have a phenomenal priority irreducible to an associationist explanation, also claiming that “the theory of empathy, according to which the Gestalt qualities of perceptual things are ‘actually’ the feelings of the observer, which they somehow ‘transfer’ into those things […] is not a continuation of the theory of the Gestalt-quality of feelings, but the complete destruction of its actual meaning and a clear fall into atomistic modes of explanation” (1968, 73). This observation goes in the same direction as the (neophenomenological) externalizing approach to environmental feelings as atmospheres. Arbib insists that Metzger’s description is at best a caricature of the cog/neuroscientist’s understanding of empathy and of the (still rudimentary) attempts to relate empathy and architecture. 30

For Griffero, atmospherology is more in tune with a phenomenological descriptivism that is far from the claims of a causal and genetic explanation for which, said provocatively, the brain does not even exist, not being at all a “phenomenon” of which we experience (except through artificial-technical tools). After all, one can have headaches and feel excited (phenomena) without knowing anything about what happens in the skull or the existence of endorphins. What he radically opposes is not abstraction tout court but only the selective abstraction enforced by “a certain” natural science. Arbib, however, does not see the pursuit of cog/neuroscience as enforcing a selective abstraction in any way that should offend a phenomenologist. Leaving the architectural realm for the medical, the excursion into science may see the reasons for a specific type of headache and learn that a mixture of certain behaviors and the taking of a newly discovered drug will, statistically, relieve that headache. The phenomenologist who continually experiences such headaches needs no coercion or excursion into the underlying science to value the phenomenon that following the medical advice does indeed ease their pain, and in the process, science and medicine have changed the life-world of that person.

6. Extending the (Neo)Phenomenological Perspective

Although it is a thorny and endlessly controversial hypothesis (often due to the confusion between the pathic-descriptive and causal-explanative dimensions), Griffero points out that atmospherology does not, without critical-ideological additions, have a normative level per se, as it is almost impossible (phenomenologically) to declare that someone has a “false” atmospheric experience. We cannot make a normative distinction between “authentic” and “inauthentic” atmospheres within the limits of the third-person perspective since a feeling experienced can be said to be false not as such, but only when compared with causes and references which are extrinsic to that feeling and always outside the range
of interest of a first-person phenomenology. No one can correct us and prove the atmosphere we sense does not exist (asserting we do not feel it): they can, at the most, lead us to experiences that make us feel something different, suggest doubts about the real object or cause of our feeling, about its generators, its materials, the intentions behind those who designed it, but not about our atmospheric feeling as such (see Griffer 2020c, 45–55). Since there is no definitive a priori answer to the issue of authenticity — an extremely vague and certainly overrated concept for the inner transparency it traditionally hints at — it must be tested case by case and, by the way, based on an overall (even ideological-political) Weltanschauung (i.e., worldview). For example, while an authoritarian regime favors the collective atmospheres generated by buildings that are bombastic in their impressiveness and set clear boundaries between those in power and the masses, a democratic regime normally plans participatory atmospheres suggested by sober architectural solutions that are less conspicuous and not so imposing as to intimidate. From a phenomenological point of view (how they are felt, with what intensity, authority, and so on), the former atmospheres are no less real than the latter.

Arbib agrees. For him, the issue is that architects, through interaction with clients and consideration of the likely inhabitants, entertain various intentions about the atmosphere of their spaces. They will design each space to provide both praxic and atmospheric affordances. For clients, the design is successful to the extent that the majority of the building’s intended occupants experience the intended atmosphere. However, people may feel different atmospheres, whether because they are not part of the expected population or they bring different expectations and understandings, varying their feelings for the building’s atmospheres. To what extent, then, can one design an atmosphere?

6.1 Generators of Atmosphere

Gernot Böhme developed an aesthetics of atmospheres from the 1980s on (2017b, 2017c), which emphasizes the extraordinarily rich atmospheric competence of today’s aesthetic work (including architecture, interior design, light design, art, sound engineering, scene painting, music, advertising, and marketing research). He claimed that atmospheres understood as an “in-between” — mediating subject (lived-bodily feeling) and object (environment) and attesting their co-presence — are involved wherever something is being staged. They are generated by what he calls generators of atmosphere (movement impressions, synesthesia, scenes, and social characters).

For Böhme, the skills that architects and other aesthetic workers know well, although often tacitly, are “confined to setting the conditions in which the atmosphere appears;” in other words, to just establishing “settings” of the generators through which atmospheric phenomena could emerge. Note that the generators are properties relevant to feeling an atmosphere. There are no prescriptions here for the (possibly vague) settings and combinations of the values of the generators that will make it likely that members of a specific population will experience a particular (albeit vague) atmosphere. The idea that one can intentionally generate atmospheres led to an interesting philosophical dispute between the philosophers Hermann Schmitz (1998; 2003, 243–261) and Gernot Böhme (1995).

For Böhme, atmospheres are the result, which is at least partially predictable, of the already mentioned ecstasies of things, depending on the materials, colors, and shapes in which they are presented. In any case, architects should not shy away from tackling the (theoretical and also “political”) problem of whether the atmospheres generated by their projects
are, beyond their mere functionality and correspondence to the wishes of the clients, authentic or inauthentic, or rather manipulative or able to keep the critical capacity of the individuals awake.

If, as for Böhme, in most cases, atmospheric perception is an “in-between,” that is a relationship between a percipient and the environment in which they stay (its atmospheric generators included), it might be of some interest to architects:

to apply to the field of design the typology of atmospheres (prototypical, derivative-relational, and spurious) and atmospheric games (dystonic, syntonic, non-involving, resisting, reversed, and time-varying) elaborated by Griffero;\(^{31}\)

and also to carefully evaluate the extent to which architectural design already makes use, more or less explicitly, of the atmospheric generators that Böhme investigates (Canepa 2022b). For theorists of church architecture, “movement suggestions; further, light and twilight, stone, figures and images, the acoustic qualities of a space, colours, materials and insignia of age, and, finally, Christian symbols” (Böhme 2017b, 172) are the generators, while for every kind of atmospheric staging relevant generators include movement impressions, synesthesia, scenes, social characters, and ecstasies of things.

Leaving this disciplinary assessment to the architects themselves, let us now return to the bank example. The recognition that the building is a bank may be “intersubjective” within the community to which customers and bank employees belong, but the atmosphere that each feels reflects their different subjectivity. Despite these caveats, it is agreed that atmospheres are not the result simply of an outward projection of subjective emotional states. For Griffero, atmospheric feelings may — within certain limits — be traced back to a homogeneous set of atmospheric affordances understood as atmospheric generators in Böhme’s sense (Böhme 2017b, 92–94, 161–163). He calls the making of atmospheres the arrangement of the “conditions under which an atmosphere can appear” (Böhme, 161), that is the generators meant as technical means but not causal factors. Arbib suggests that a challenge for cog/neuroscience would be to understand better how the manifestation of generator values in sensory experience does depend on neural processes or schema/interactions that yield the atmospheric feeling, just as has been achieved for diverse praxic affordances.

As Griffero underlines, atmospheres, by using the power of their affordances, tonalize the affective space in which people (literally) enter and segment it through boundaries that are not geometrical but emotional. It goes from the conscious choice of one restaurant rather than another, precisely for the atmosphere that hovers there, to the much more non-conscious tendency to prefer walking in one neighborhood rather than another or frequenting these and not those people. Our surroundings are segmented cognitively (things, properties, and events) but also affectively (hospitable or refractory spaces, environments that make us feel better or depress us, buildings or places that it is trendy to have visited at least once and others that do not interest us at all) with many behavioral, class, and taste consequences that only proper atmosphere-based sociology could investigate more precisely. However, Griffero advocates rejecting “constructionism atmospherology,” insisting that the perception of an atmosphere is a direct perception: it is not mediated by patterns, inferential processes, or judgments, which are all to some extent “pro-

Briefly outlined above (see §3 and §4.4).
jective.” On this account, direct perceptual realism means for Griffero that perception does not need to postulate either inner processes (representations, inferences, computations, manipulation of representations) or mediated access to the world. Recall Arbib’s response to Gibson’s notion of direct perception; such directness does not preclude extensive, but nonconscious, neural processing. Once one seeks to ask, for example, “how is it that humans can experience phenomena in some ways differently from other animals?”, this notion of unmediated perception is inadequate if it precludes any reliance on species-specific neural circuitry. Moreover, once the cognitive scientist sees that different people have different first-person experiences in the same “objective” situation, it is hard not to step back and ask the third-person question of how they differ. Such variability suggests that, like affordances, ecological facts like atmospheres cannot be easily mapped out and analyzed. Nevertheless, such variations are always relative to dispositions of the perceiver’s felt body and not only, like praxic affordances, to their physical body-scaling or body schema. In this Arbib and Griffero certainly agree that affordances do not merely invite one to do something, (unless one intends “do” so broadly as to include even the slightest emotional movement) but to “feel-sense” something, possibly even lingering contemplatively over it. The authors hope this exposition encourages readers, of whatever background, to think about atmosphere in new ways. Perhaps the bridge is the way to interpret the “how.”

Where Griffero asserts that the bank, or the Lincoln Cathedral [F18] in Lawrence’s example, has (not necessarily for anyone but certainly for the two characters in the novel) a prototypical atmosphere that enacts an architectural atmosphere of imposing vastness and impressive authority that may subsequently trigger shyness or pride, Arbib would say that
recognizing a space as vast (or narrow, as in other previous examples the child) is not in itself feeling the atmosphere. That is not the point one perceives. For Griffero, the building has an expressive character in itself whether I perceive it or not, but that is just one — though possibly the most important one — of the properties that may affect one’s impression of the space. Consider the different atmosphere of a hall of equal vastness in an Amazon distribution center or a factory. Recognizing the banking hall as having impressive authority is already atmospheric in a way that mere vastness is not while perceiving “authority” is socially rooted, and whether or not the hall is impressive may rest on further conditions. In any case, the example shows that the experience within the bank (nervous customer versus proud employee) is subjective, at least in part. For Griffero, the combination of style, structure, furnishings, interior airiness, impressiveness and opulence of the materials used, the physical-psychic distance between applicants, staff, and a fortiori the bank director constitutes its atmosphere; for Arbib, instead, these elements are the diverse features (compare the intermediate database mentioned earlier for VISIONS) on which perception of the atmosphere may be based. Griffero and Arbib agree that this complex stimulates different affective reactions (only that, for Griffero, they are not completely different, being triggered by the “same” external type-atmospheric feeling).

The issue for architects is how to achieve a specific atmospheric/symbolic effect for different individuals. As an extra twist on the above dichotomy, consider the difference between an atmosphere that intimidates a customer seeking a loan and an atmosphere that invites customers seeking a place to deposit their savings. What is more, for those who neither work there nor have to ask for a loan or make a deposit but observe the bank from the outside [F4], the architect may seek to develop a façade that creates an atmosphere of strength and integrity, again making the point that a building may offer diverse spaces, each affording different practical actions and different atmospheres (or, for Griffero, different moods that filter the “same” atmosphere felt-bodily). Since the atmosphere is a feeling that permeates a certain space, the façade as a specific space does not necessarily express the same atmosphere of the interior as a different lived space. Architecture plays on this contrast and produces effects of intentional dystonia with aesthetic value: think of the already mentioned example of a building entirely made of glass [F9].

To reiterate, Griffero views an atmosphere as something more one senses or perceives “in the air,” that is inextricably linked to felt-bodily resonances and whose qualitative holistic nature, albeit largely intersubjective, is inaccessible to an epistemic-analytical perspective. This seems to Arbib to leave too much undefined. In what sense are the different atmospheres experienced by customers and bank employees “in the air”? [F5] It seems that they must recognize that the building is a bank where the former seeks a loan and the latter is gainfully employed. Neither recognition is a “felt-bodily resonance,” and each is subject to epistemic analysis. As before, Arbib notes that the assessment by architects or psychologists of what features contribute to the derivative-relational atmosphere of a space need not be engaged in a person’s own first-person experience of that space. Focusing on that first-person experience, Griffero considers the analysis, especially if epistemic, would prevent the feeling of that atmosphere. He suggests that once one knows perfectly the material-object reasons for which a certain space affords a specific feeling and the subjective conditions (corporeal, biographical, and/or social) of such sensing, the atmosphere ceases to exist, or at least loses the affective authority it previously exercised. Arbib agrees that this may be the case,
but not that it must be the case. He suggests it goes too far to assert that no designer feels the atmosphere they are setting up for an audience, or that no spectator who is analytically aware of the mechanisms put in place by those who create an atmosphere can still be subject to it. The student who has studied the score of a Mozart symphony to explore the way Mozart achieves certain musical effects may be “swept away” by the music when he attends a performance of the symphony. Nonetheless, Griffero asserts that, compared to the real affective and felt-bodily involvement, the analytic moment always sounds like an ex-post rationalization inevitably mitigating the atmospheric effect.

6.2 Affective Fields and the Phenomenological Response to Challenges of Architecture

Like any other perception, atmospheric perception develops and changes over time. As already mentioned, an initially indeterminate atmosphere can specify itself, even moving away from what can be considered its specific “anchor point” and generating what Griffero calls a field of condensation, such as when you perceptually realize that the overall atmosphere of nervousness is nothing but the field of condensation of the irradiation of a single person who makes the environment nervous (Griffero 2014c, 138–140; 2020c, 48). Sometimes a thing or portion of space that appears to arouse an atmosphere is merely the occasion for the not-yet-localized atmosphere to condense there.

We can imagine that the atmosphere that arises from the qualities of a part of the building (the intimidating office of the chief banker who has to grant the loan requested by us, or even simply the banker as a person) seems to us, instead, to be poured out and condensed already in the flight of stairs leading to that office and in the clerks who have no responsibility in the choice of whether or not to grant the loan. In short, sometimes the atmosphericity of a thing, person, or portion of space does not have its “motivation” in that thing, person, or portion of space but finds there a field of condensation (with devastating consequences in psychopathological cases, of course, think of phobias or paranoia).

To offer an example that has to do only laterally with architecture (at best with interior architecture) but that can be extended to it analogically once you change the components: think of the atmospheric anxiety that accompanies the dental examination where fear, properly generable from the eventual pain, spreads far beyond the pain itself, permeating the dentist, his instruments, his waiting room, and the magazines that are flipped through waiting for our turn (all things that are atmospheric generators of anxiety without being at all the real motivating anchor point of such atmosphere, which is easily identifiable here and is instead the pain, that may, paradoxically, decrease when one experiences it). This is the sense in which Schmitz (1969, 351–352), developing a Gestalt-psychological suggestion, distinguishes two ways of speaking about a feeling (in this case atmospheric): as a sphere or field of condensation (the place where the Gestalt’s character is collected clearly) and as an anchor point (the place from where the figure is constructed) to partially revoke the indispensability of the general phenomenological thesis of intentionality. As the temporary and fragile focus of a multifaceted and diffused affective field that determines it and by which it is in turn determined, the “centering” of an atmospheric feeling or the “condensation” of it seems to explain our daily affectivity better than a rigid subject/object intentional dualism.

32 Griffero uses this term rather than speak of “cause” in a phenomenology that tries to avoid deterministic causality.
33 “We understand by it that point, of which appears to be built from the whole, and which therefore represents also the place of the whole in its environment” (Metager 1968, 181).
In the case of the atmospheric feeling of shame, for example, the anchor point is the shameful action committed; the field of condensation is the person responsible for it (of whom the observer is ashamed even if the one who does something shameful may not be ashamed of it) and also people or things closely related to them.

Underestimation of this distinction between the anchor point and field of condensation has led orthodox phenomenology, connected to the letter of Husserl’s texts, to criticize the neophenomenological approach to feelings and beyond. It has been said for over a century that, like any mental state, every feeling also has its intentional pole, that is, is always of or about something. Intentionality would be the aboutness or directedness or reference of any state of mind to things, objects, states of affairs, and events. By contrast, new phenomenology insists that the atmosphere is not properly a pole (circumscribed, precisely identifiable) to which the consciousness is directed in a centrifugal way but a diffuse spatial quality so that what some may call the intentional pole of a feeling is often nothing more than the proximate and casual condensation zone of an atmospheric feeling, which is much more spatially indeterminate and vague. The consequence is that architects can only predict up to a certain point whether the anchor points present in their project can guarantee the desired atmosphericness, or leave the field to atmospheres that “condense” elsewhere in unwanted areas. Such effects may arise for various reasons, both architectural (project failure or environmental conditions unpredictable at the time of design) and due to the subject’s felt-bodily disposition (a sophisticated and elegant interior decor is not even perceived by a hurried passerby moved by reasons other than aesthetic appreciation).

A widespread atmospheric feeling, in sum, can also contract until it is condensed into one or more objects or, so to speak, be redirected and “poured out” into things and places, which are erroneously interpreted as the generators of that feeling. Therefore, a lover loves (atmospherically) even the doormat of her beloved’s house, or Proust’s character feels — in the atmosphere radiated by the doormat of the House of Guermantes — the threshold to access a hitherto inaccessible aristocratic world. The doormat of the beloved’s house, surrounded by a positive atmosphere, is obviously only part of the sphere of condensation of love, yet is sometimes more intensely felt than the concrete presence of the beloved person (who is the anchoring point); that is when the loved one is distant, has abandoned us. Just as one usually does not look at the sun directly but only at the things enlightened by it, one often confuses the (perhaps occasional) condensation point of an atmospherically diffused feeling with its intentional object. They are examples of the projective and, therefore, the largely subjective character governing the so-called spurious atmospheres (but not the other two).

Applications to architecture, maybe in a superficial sense, are not difficult at all. In the repeatedly cited case of the bank entrance, Griffiero finds it very likely that the fear for the phrase with which the banker will deny us the loan is “poured out” into the chair (no matter how comfortable) on which we sit, into the color of the walls (no matter how pleasant before), into the building itself, and in its beautiful (now become intolerable) architectural forms, all “objects” that it would be absurd to consider the intentional poles of our feeling, being rather the condensation field of a more general atmosphere. In more abstract terms, we may consider responsible — for the atmosphere felt in a certain building — specific parts of it which do not in themselves possess the expressive-at-
This distinction could be further explored in the field of atmospheric perception. Let’s think about how productive it could be to apply the following principle to architectural atmospheriness. “In the visible overall field, including the perceiving and acting subject, there is a whole system of centres situated in front of one another, whose coincidence or divergence and mutual relationship of weight and dependence is characteristic of quite specific states of consciousness and decisive for the nature and effectiveness of behaviour” (Metzger 1968, 194). Arbib adds that such considerations may be extended to nonconscious states and processes as well. Developing the notion of anchor point, Metzger (192) asserts “if one sees the nail on which something hangs, then the position of the anchor point is known — even if only in a very external sense that does not stand up to a more rigorous analysis. If this is not the case, then [...] its position can fluctuate and be subjectively influenced. But even then, according to the scattered observations available so far, it is by no means arbitrary. Even where the anchor point is not clearly fixed, there are only excellent locations to choose from.”

But the examples — and it is not a rhetorical exaggeration — can be much more complicated than that once we look at our daily experience. For Arbib, the aforementioned notion of a magazine in the waiting room as being an “atmospheric generator of anxiety” seems unhelpful, even with the qualification “without being at all the cause of such atmosphere.” The phrasing that the atmospheric anxiety accompanying the dental examination “permeates the dentist” seems less informative than simply observing that the patient is anxious. In a related example, but with a different emphasis, he suggests that the atmosphere of a hospital is tense precisely because we anticipate the situation to follow (the visit and the diagnosis) and remember earlier ones (further waits). “Am I going to get better or not? What’s the operation going to be? What drugs am I going to have to take?” Griffero uses this very example also to avoid the assumption of the instantaneous performance of atmospheric generators. Firstly, they undoubtedly also depend on the retention, namely the co-perception of past atmospheres (and situations), and protension, namely the presenting of expected atmospheres (and situations) that are not in act. Secondly, the ongoing atmosphere may be also the successful outcome of a design about which we can counterfactually think (what atmosphere would the patients and their families feel if there was a door there, a window there, or a view of a garden from the window?). We can imagine, for example, the architectural conditions under which the atmosphere of that hospital could be less tense. It is not an atmosphere proper (neither type-one nor token-one) but a mere atmospheric potential that contributes (or does not) to what is currently felt.

7 Conclusions
Griffero and Arbib have emphasized how new phenomenology alerts us to the nuances of the first-person felt-bodily experience of the lifeworld, including the built environment, and have even suggested that notions like generators of atmosphere and atmospheric fields may offer a measure of analysis of atmosphere that stays within the realm of phenomenology. They have also emphasized the insights into both the experience and design of architecture that flow from the third-person accounts of cog/neuroscience, taking the first-person account of experience seriously but asking: how can brain, body, and social context provide us with insights into those phenomena that a strictly first-person account cannot reveal? In this paper, Griffero and Arbib, respectively, have offered an exposition of these two approaches and argued fiercely for the merits of each for architects. They have often highlighted issues where the two approaches offered different accounts. However, despite the occasional intensity of their debate, they have not sought to convince the architect that new phenomenology alone provides the framework for the architect’s assessment of atmosphere, nor — conversely — that cog/neuroscience is the be-all and end-all. Rather, their aim in writing this paper is to enlighten architects — and each other — of the value of both approaches. Certainly, phenomenology can benefit the scientific approach if it better characterizes what phenomena are to be explained. Comparable dialogues between humanistic studies of art, psychology, and neuroscience have proved to
be enriching (Gombrich 1979; Gregory and Gombrich 1973). Cutting phenomenology off from third-person insights may be as damaging as the focus of a scientist whose specialization is too narrow to at least offer links to the relevant phenomena. In any case, Griffero and Arbib agree that it is fruitful to present the differences and commonalities in their two approaches rather than insisting that they should all accept the same view.

They have approached the study of atmosphere as a variation of Gibson’s theme of affordances. While Gibson emphasized direct perception of what they have called praxic affordances (in the realm of practical action), Griffero emphasized the pre-reflective aspect of atmospheric affordances (in the realm of feelings and moods). Arbib pointed out that the direct perception of praxic affordances involves nonconscious neural processes, but that our behavior generally rests on a mixture of conscious and nonconscious processes. Moreover, the assessment of atmosphere within the broader ambit of both praxic and atmospheric affordances reminds us that built spaces are to provide opportunities for practical behaviors as well as atmospheric feelings. In architectural design, issues of practicality, aesthetics, and atmosphere intertwine.

When Griffero and Arbib talk about atmospheres, they discuss (at least) three partially different “things”:  

- A The atmospheric (Böhme) or the non-intentionally-producible atmosphere (Schmitz), which depends little or not at all on who perceives it: a rather rare ontological condition that, however, merits the serious consideration they have given it;  

- B the designed (but not yet experienced) atmosphere, based on expertise about the atmospheric [A] and its possible creative-practical uses (such as in architecture and advertising);  

- C the atmosphere, or atmospheric mood, currently resonating differently in some percipients because it is filtered by them based on relatively different felt-bodily, psychological dispositions (retentions and protensions), cultural backgrounds, current goals, and related expectations.

Returning to the example of the hospital for a moment [F19; F20], architects can design something (atmosphere [B]) that will, for many patients, reduce that sense of fear or foreboding and instill a measure of confidence (atmosphere [C]). There is both a function of the hospital and an atmosphere of the hospital, and architects can strive to defuse the “default” atmosphere of a hospital [A] by providing conditions that, at least to some extent, relax the tension, as in a children’s hospital with murals of favorite story characters on the wall. A soothing atmosphere can contribute to the functional goal of healing through its psychosomatic effects.

Griffero centered the discussion of derivative-relational and spurious atmospheres on their relation to prototypical atmospheres: the cognitively impenetrable feelings that possess us in our first impression of, for example, seeing a painting or entering a space for the first time. To this Griffero and Arbib add, within the spirit of the action-perception cycle, that — in general — first impressions are the exception rather than the rule. Whether in or out of a building, with or without the company of others, our behavior tends to follow — at least for a while — specific goals, with
A dialogue on affordances, atmospheres, and architecture

Hospital waiting room
A mixture of cognitive and nonconscious feelings (such as frustration and satisfaction), practical understanding of our progress, and expectations of what we will experience next. Our actual feelings and actions are shaped as much by that expectation as by the atmosphere radiated by the things and quasi-things around us. This led the authors to further discussion of how experience builds on, or varies from, the mood established by prototypical atmospheres. It introduced an analysis of the challenges architects face in designing spaces in and around a building that will provide different classes of individuals with an intended range of praxic and atmospheric affordances.

In short, the study of atmosphere must include the assessment of interactions between individuals and things or spaces in terms of their dynamic effects on the mental (in this case, with the emphasis on affect/emotion) and tacit felt-bodily states of the subjects. We must consider the dynamic changes in mental states, bodies, and environments. Nonetheless, atmospheres may be relatively inter-observable and repeatable within a specific community. Architects must rely on their judgments of this inter-observability as it may hold at least for the expected users of the building while accepting that not all individuals will be affected in an intended way.

Arbib and Griffero agree that atmospheres have powerful effects on the people that encounter them (especially if for the first time and at first) and that this impact can over time — based on further knowledge, movements, and experiences (perhaps also due to previous less used senses) — change, accentuate, but also weaken to vanishing, change of sign, or even have an upside-down value (obviously at least when its original atmosphere is not strongly architecturally marked), such as when a monument erected to arouse a nationalist atmosphere becomes over time a meeting place for libertarian groups.

Architects can design the atmospheres desired by people and their clients with a certain precision, imagining counterfactually (and empathically, in the very general sense of the term) the emotional effect of the solutions adopted, but without any certainty to control the atmospheric situation that will occur. They design to achieve a potential atmosphericity hoping that their building will afford atmospheric feelings that will be experienced by the intended users. Moreover, since a building offers diverse spaces and viewpoints, architects should take into account the diverse paths that inhabitants will cross and experience, at various times and in their different internal parts. We may attribute to good architects the ability to generate a real atmospheric dramaturgy, made of a first impression but also of subsequent consonant and dissonant affective experiences, which may vary from person to person and occasion to occasion.

Architects must work on the physical-geometric space, well knowing that the space subsequently perceived, with its not quantitative but affective qualities, will be experienced at most partially in metric terms, and which will be lived in ways that are only partly attributable to the material-formal generators designed by architects (which are the necessary but not sufficient condition to generate a certain atmosphere).

Architectural space is rarely experienced in solitude and as an isolated form. This means that the atmosphere that will be produced will be in large part due to how more people together live that spatial experience, to the possible interference (or consonance) exerted by phenom-
A dialogue on affordances, atmospheres, and architecture

Finally, it is worth acknowledging the tension between scientific studies that focus on a few key variables to understand how their interrelations contribute to some phenomenon of interest. These terms are also useful to phenomenologists who choose deliberately vague terminology because they consider it the only one adequate to describe human experiences of the life-world without impoverishing their richness. And yet architects must transform vague feelings of a desired atmospheric halo into precise construction drawings from which all vagueness has been removed, even though vagueness cannot be eliminated in the percipient’s experience, not even in that of the architect when they perceive the completed work. It is in part as a response to this tension in architectural practice that the present dialogue has shown how phenomenology may draw attention to phenomena (what appears and happens just from a first-person descriptive perspective) that have been insufficiently explored within cognitive science while showing that science can enrich the terminology of phenomenology for those who wish to probe “beneath the surface” (examining from a third-person explanatory perspective what causes that which appears and happens). Griffero and Arbib hope that the analysis here will encourage architects, philosophers, and scientists to carry the dialogue forward, with results that offer both an expanded conceptual framework and a series of practical findings for architects. In conclusion, the authors note four (among many others, of course) streams of investigation that they have not pursued here.

The first is the need for further development of specific cog/neuroscience studies of factors that merit consideration by architects. For a recent review of progress to date, the reader may turn to “The Cognitive-Emotional Design and Study of Architectural Space: A Scoping Review of Neuroarchitecture and Its Precursor Approaches” by Higuera-Trujillo, Llinares, and Macagno (2021).

The second challenge may be summarized as who are the atmospheres — or other general specifications — of the building for? Will a factory be designed solely to maximize the profits of its owners, or will the factory floor offer an atmosphere conducive to the wellbeing of the workers? Is a prison to provide only an atmosphere of punishment for its prisoners, or will it — instead — offer atmospheres that support rehabilitation? Will a school offer an atmosphere of rigid discipline or one that supports children’s development through explicit instruction and playing? And all this is within the wider pressing questions of developing an architecture sensitive to the challenges posed by climate change and economic inequality. Arbib, Banasiak, and Villegas-Solís (2023) offer a preliminary analysis of these issues.

This leads to the third, more “normative,” challenge about the possibility that a theory of atmospheres can distinguish between good (benign) and bad (toxic) atmospheres. This would require that phenomenology leave its merely descriptive scope and address the question of the feared complicity between a theory that declares the omnipresence of affective spaces and the ability of economic-political powers to generate atmospheres capable of manipulating public opinion (for an application to two oppressive atmospheres like permanent emergency and the uncanny, see Griffero 2021, 175–199). This means demanding that the phe-
nomenology of atmospheres takes up some of the instances of a critical theory, applying them also to the architectural sphere, which can contribute powerfully to the affective wellbeing or malaise of the communities it addresses.

The fourth challenge lies in questioning the possibility of extending the notion of atmosphere, usually very much linked to the non-metric but relatively circumscribed spatial dimension, to indicate the mood and even the way of thinking. In short, this is often referred to as the *climate* of an entire community and historical moment (for a first overview, see Trigg 2022) and an analysis of atmosphere as a *collective feeling*, even as wellbeing (Griffero 2021, 129–173). In the case of architecture, also investigating the unforeseeable interactions [F21], no matter whether consonant or dissonant, between the affordances immanent to the building, traditions leading architects to generate them, and above all the social-historical atmosphere in which its inhabitants and/or visitors live and think.

September 2022
**Bibliography**


A dialogue on affordances, atmospheres, and architecture


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Commentaries

*Atmosphere(s) for Architects* is the masterclass on how to think and speak in atmospheres. To expand your vocabulary, logic, and mouth feel for atmospheres, we have brought together four learned commentaries and an informative lexicon enlarging this examination of architecture. Each of the voices represented in our three-discipline assessment is an architect of atmospheric skills. First in sequence is Federico De Matteis, a professor at the University of L’Aquila, Italy. Architect, renderer, and author, his interdisciplinary investigations are significant to our encounter with the contours of a material world. Robert Lamb Hart is an architect of the broadest practice — interiors to buildings to urban plans to landscapes — as well as a humanist and an author. It is crucial when a humanist of consequence brings a lifetime of wisdom to bear on the experience of spaces as he does here. Mark Alan Hewitt is a scholar-architect of spacious practice and a historian of architecture. Recently his intellect has navigated into the biological sciences, in support of an architect’s good citizenship. Next is Suchi Reddy, founder of the art and architecture firm Reddymade in New York City. Her artist’s sensibilities — wrought through experimental, full-scale installations — bring precious observations to our treatise. She stands intentionally with one foot in the biological sciences of perception and the other in an architect’s aesthetics of space. Lastly, in good reply to Michael Arbib and Tonino Griffero’s deliberation, is Elisabetta Canepa. She is a scholar-architect-scientist on atmosphere in architecture. Although her most recent work is in measuring how spaces affect people at levels of emotions and feelings, here she provides a lexicon that synthesizes lessons of new phenomenology and cog/neuroscience into considered vocabulary befitting an architect’s sensibility and argument for spaces of intentional atmospheres. As we say, it is about mouth feel.
Atmospheres and Affordances

In their dialogue, Michael Arbib and Tonino Griffi ro take us on a fascinating journey around architecture. There is always much we can learn when our daily interests are considered through analytical lenses that are not strictly our own. Both the neuroscientist and the philosopher see the space of architecture in a certain way, and their way of seeing enriches and articulates the understanding that an architect practicing design may, in turn, have. As the two authors engage in a “battle of ideas,” we witness interdisciplinarity at work.

What makes the two authors’ take on architecture helpful is their theoretical outlook: the concepts of affordance and atmosphere are addressed in a very incisive way. Architects are, most often, trained to do and make things rather than rigorously work with concepts. One could object that architectural education is balanced between theoretical and practical knowledge, following a tradition that dates back to the early twentieth century; nevertheless, the architect’s theory is usually practice-oriented and engages (sometimes cynically) selective portions of thinking that largely derive from other fields of inquiry. Philosophy has a long-standing history of sustaining architectural thought, while cog/neuroscience is a more recent acquisition of the designer’s intellectual portfolio.

Atmospheres and affordances, more specifically, address two deeply rooted and intertwined questions that have always haunted architects: why does a space make me feel in a certain way? And why does a space make me move in a certain way? We could argue that each question is a corollary to the other, and affordances and atmospheres — or atmospheric affordances — are two faces of the same coin. Yet it is in the further implications of atmospherology that the two authors point in distinct directions: where-
as Arbib believes that architects can master atmospheres and control them through design, Griffero eschews practical applications, preferring to preserve the aesthetics of atmospheres as a descriptive paradigm only.

Arbib claims that while atmospheres are borne from a first encounter, they can eventually become the object of a precise explication, identifying their point of origin and structure. They are not only about the pre-reflective experience, since beyond that there is also a semantic sphere that we can address: in the future, we may train computers to perceive atmospheric conditions just like they have become quite skilled at recognizing visual cues. In new phenomenology, on the other hand, atmospheres are considered too “fragile” to be fully understood, and, as soon as one tries to identify their causes, a sort of critical distancing mechanism sets in, making them disappear. The former model implies a full producibility of atmospheric effects — such as has been widely enacted in architectural history — while the latter, rejecting normativity, at most considers possible the establishment of the conditions under which atmospheres are more likely to appear — that “stage set” which Gernot Böhme (2013) metaphorically considers the paradigm for aesthetic work.

My feeling is that atmospheres are not entirely available for us to design: they cannot be fully grasped since a part of their entity is always on the move, coming and going in mysterious ways. As architects, we cannot precisely design them, but we can help them emerge and stabilize. Schmitz (2019, 94) provides us with a stringent definition of what an atmosphere is; on the other hand, the concept of atmosphere is often used in a much broader way. Despite these vaguer theoretical models that have entered common use, we can still instantly recognize an atmosphere when we encounter it: they are part of our life, permeating our lived bodies throughout our existence. Would it not be necessary to question how atmospheres influence the designer?

The Atmosphere of Design
Arbib and Griffero do not address one aspect when discussing architectural atmospheres: the atmosphere of design. Architectural design is a complex anthropological practice requiring theoretical articulation and practical knowledge. As Juhani Pallasmaa (2009) has masterfully demonstrated, it is all but disembodied. While engaged in the design process, the architect feels a certain atmosphere, a mood that will inevitably emerge in the project. Making architecture is certainly not a scientific, mechanical practice, something that happens only in specific moments while I am sitting at a drawing desk or in front of a computer. The creative act sometimes becomes an almost obsessive corporeal attitude, well-illustrated by the cliché of the architect doodling on any available paper surface. Design may include the third-person perspective on how to arrange the features of a building, but this perspective is, in turn, influenced by the architect’s embodied, first-person disposition.

There are some questions I would like to add to the authors’ reflections, asked this time from the architect’s point of view.

Where does design take place?

Architectural practice can happen in many different settings, from vast open-space offices of corporate firms to the romantic atmosphere of a traditional atelier. The architecture school’s studio is another typical
The atmospheric architect setting of design that is inhabited by exciting atmospheres of learning and sharing or by the menacing mood of aggressive confrontation with teachers or peers. Beyond environments formally dedicated to design tasks and creative contemplation, projects can also begin to gestate in unlikely situations: at a bar or even in the shower. One should also consider the differences in the occasions of design: the rush of a design competition, where a convincing idea must be produced within a matter of days, differs from the slower pace of a theoretical project. In any case, it is hard to detach the architect’s work from the atmosphere wherein this work is performed, which somehow remains embedded in the project.

Illustrations of the situations where design happens can give us a clue about this diversity. In Thinking Architecture, Peter Zumthor provides several instances where design comes to life. Some are bound to more formal office settings, where architecture is not only designed but also “discussed” (1999, 37). The dialectic confrontation leads to a sort of epiphany, bringing to light a latent spatial condition. Here, even the individual personality of each actor involved comes into play to shape a specific social situation that helps create a palpable atmosphere. In other pages of the same book, design thinking happens in unexpected places, including cafés, small hotels in the mountains, and urban parks: design is a form of situated thinking influenced by environmental conditions. This influence is not necessarily immediate or causal: the brief moment in which we become aware of a certain atmosphere, it may fade, only to reappear, many years later, as we are working on some completely unrelated project.

Le Corbusier’s legendary atelier in the Parisian rue de Sèvres appears in photographs as a place of Cartesian order, with the arrangement of tables almost hinting at serial production: a space of rationality, of third-person design objectivity. Yet the Master was a prolific drawer, used to design live during lectures and carry half-finished designs with him. An anecdote he recounts in his book Un Petite Maison (1954) is about this: Le Corbusier had a design for a small house for his parents in his pocket but needed to find the right place to build the house. The plot required a specific view to complement the interior space he had imagined: he eventually found it on the shore of Lake Leman, on the north side of the Alps, where the house still stands today. In this case, design is an almost experiential practice since a design scheme can only become complete while traveling and encountering the real space of the world.

Personally, I feel that spatial thinking innervates my way of being like the rhizomes of a plant. As a trained architect, a continuous reflection on existing or projected situations is always in the process of being worked out at some nonconscious level of my mental activity. Drawing, an almost automatic practice that takes up a remarkable part of my (limited) free time, serves the purpose of further investigating some form of space. All this, however, is not what I would properly call design: it is a primordial soup of configurations, conditions, situations, details, solutions, and materials that do not equate to the creation of a full-fledged project. Yet when I am engaged in actual, formalized design work, this is the repertoire from where I extract the elements of architecture, like a cook searching for ingredients in a pantry. The imagined fragments of spaces merge with the embodied memories of many architectural environments I have visited and observed over the years. Many exchanges with colleagues over time also tell me that this kind of practice is quite common among architects.
When does design take place?

Hence the question: when does design happen? Is it only that which takes place when I am committed to a specific architectural task, at a drawing board, or with CAD software? Or does it encompass far more than just that, thus including the myriad of hours spent doodling buildings and spaces? [F1]

How does a collectively perceived atmosphere influence design?

Design is a creative cultural practice imbued with anthropological resonances. It does not happen under isolated conditions, for the designer responds — more or less voluntarily — to situations and events unfolding around them. Since some of these circumstances and events are conveyed as cultural trends, it is simple to identify them: in the 1980s and 1990s, for example, fragments of architectural orders would pop up rather incongruously on buildings, around the world, due to the postmodern fascination. Each epoch has its style: but beyond the mechanical reproduction of merely visual elements or typological patterns, we find something deeper at work.

In their conclusions, Arbib and Griffero recognize the challenge of extending the spatially circumscribed notion of atmosphere to the mood and way of thinking of an entire community, identifying the climate of a historical era. How architectural making is shaped by such a climate cannot be underestimated: we may, for example, think of post-catastrophe reconstruction and of how, in such cases, designers are driven by the urgency of repairing both the physical environment and the traumatized inhabitants’ affects. Even this form of design, which should shed
any collateral implication and pragmatically focus on the emergency, may end up betraying corporeal attitudes that fill design practice with pre-reflective indeterminacy (De Matteis 2019).

In his novel *Billiards at Half-Past Nine*, Heinrich Böll (1961) illustrates a remarkable parable connecting architecture with historical atmospheres. The plot begins in 1907 when young architect Heinrich Fähmel unexpectedly wins the design competition for the abbey of Saint Anton in Western Germany, built during the years leading up to the First World War. Yet during the Second World War, Fähmel’s son Robert, who serves as an artilleryman in the German army, convinces his commander that destroying the abbey will provide a crucial strategic advantage over the enemy. In turn, Robert’s son Joseph, who is an architect like his grandfather, engages in the *à l’identique* reconstruction of the building during the years of the country’s miraculous postwar economic boom. We could consider Böll’s storyline as a token of that collective historical atmosphere that Hermann Schmitz (2011, 116) deems capable of making mountains seem higher or lower. The mood felt by German communities during the Second World War was so terrifying that even architectural design became destructive — and, instead of imagining a building’s production, one could think about its undoing.

A similar, perhaps even more somber mood animates the existential condition of Jacques Austerlitz, a central character in Winfried Georg Sebald’s eponymous novel from 2001. The man — an art historian — is a keen observer of architecture, and the book dedicates long reflections on how buildings engage public space, how they embody the capitalist era, or how they (counterintuitively) create death. The place that drives Austerlitz’s deepest curiosity is the Nazi prison town of Theresienstadt, where his mother had been interned during the Second World War, never to return. His crude analysis of this uncanny place thoroughly describes its functioning as a punishment machine, not so much intended to make its inhabitants die but rather to make their life as unbearable as possible. While the novel is set between the 1960s and 1990s, long after the war’s end, it shows how the atmosphere of collective trauma generated by the Holocaust exerted prolonged effects. Under such conditions, architectural design may cease to be a shelter and a place of comfort, becoming a fiendish tool for destruction and punishment.

*What are the corporeal and noetic conditions of design?*

Perhaps there is no definition of the architect figure so celebrated as that given by Leon Battista Alberti in the prologue to his *De Re Aedificatoria*: “him I consider the architect, who by sure and wonderful reason and method, knows both how to devise through his own mind and energy, and to realize by construction, whatever can be most beautifully fitted out for the noble needs of man, by the movement of weights and the joining and massing of bodies” (1988 [1443–1452], 3). What can appear questionable today, seen through the clarity of Alberti’s Renaissance definition, is the almost unconditioned faith placed in the architect’s rational structure and their capacity of addressing the problems of building solely through the application of cognitive means. Although Alberti’s monumental treatise becomes far more nuanced than in the opening definition, uncertainty regarding the architect’s field and modes of action remains. If architectural practice is, sometimes, criticized for its lack of solid scientific foundations, one could argue that, on the contrary, what makes the imagination of spaces altogether possible is the adoption of vague, non-semantic forms of thinking.
In this sense, the Italian philosopher Franco Rella (2004) postulates that our bias for logic and language-based reasoning is culturally trained and has a precise origin in Greek philosophy, particularly in the work of Plato. Other ecologies of thought are possible: for example, those that unfold through images rather than words or those that emerge in the oniric penumbra of sleep while remaining latent in the crystalline clarity of geometry and mathematics. Something slightly similar also appears in Zumthor’s account of design sessions, where memories and imagination come together and partially overlap in a process that is certainly not linear (1999, 45). In any case, the imagination driving the architect’s creative process is based more on spaces and images than on words and numbers, and its process is difficult — if not altogether impossible — to verbally articulate.

The process of design has many phases, each with a distinct character. For instance, the final part of project development is more technical, based on exact measurements, the production of detailed drawings and specifications, and countless interactions with other specialized technicians. Yet, in the earlier stages of design, where we address concepts and imagine spaces, the balance often tips away from technical matters towards the more creative aspects of practice. Here is the moment when atmosphere makes itself most directly felt in the design process.

If we look at how architects are portrayed in cinema, we can get a sense of this notion. We all recall the figure of Howard Roark, Ayn Rand’s stereotypical character in the novel The Fountainhead, and perhaps the forefather of all film architects. Roark challenges a hostile professional world through his oversized, manic ego but is otherwise perfectly rational when it comes to designing. Similarly, the cliché architect in movies often exerts unrelenting creativity under any circumstances. But perhaps a more interesting and nuanced film architect is Stourley Kracklite, the main character of Peter Greenaway’s The Belly of an Architect (1987). Kracklite travels from the United States to Rome to work on a grandiose exhibition dedicated to Étienne-Louis Boullée. The city’s moody, byzantine atmosphere, together with an obsession with the visionary French architect that haunts him like a ghost, eventually deprives Kracklite of his sanity and his life. What causes him to unravel as he progresses through the precise, technical work is the darkness surrounding him, which makes him fall into a dreamlike world where architecture itself becomes warped.

The Belly of an Architect presents an extreme, romanced conception of architect: yet also the contrary must be taken with caution since design activity is not performed by a “brain-in-the-vat” but rather by an incarnate subject who is pathically affected by the situations and atmospheres of the world they inhabit.

Designed Atmospheres

Whether atmosphere can be designed is a debate that, in the specific case of architecture, has a relative relevance. Empirically, we know that buildings generate moods, and that a skilled designer has the ability to modulate a feeling spatially experienced by whoever encounters it. Yet we also know that we cannot determine an atmosphere with the same certainty with which we select a floor tile: whatever situation may unfold in our architectural environment must inevitably accept the unexpected, the unwanted, the transformation over time, the aging of a building lying far beyond the architect’s control. In a nutshell,

1 Rella exemplifies this form of alternative thought with the character K in Kafka’s The Castle. As the novel’s protagonist battles against sleep, he seems to grasp the sense of the day’s mysterious events, which he could not fathom while awake.

2 We could argue that the contemporary insistence on design schematics, which attempt to illustrate in an unassailable way the steps of a process, has produced a certain stiffening of creativity: all that we cannot explain through a simplified or comic-style diagram cannot be duly designed.

3 There is some form of assonance between the names Howard Roark and Stourley Kracklite that makes me think that this is no coincidence. In any case, for more on the figure of the tragic architect see Beal 2021.
architectural atmospheres (if such a specific thing exists) can be designed, but not entirely.

The questions I have raised commonly point in one direction: design practice is not merely a third-person technique but quite potently incorporates the atmospheric conditions wherein it occurs. Design is not a purely mechanical sequence of operations — at least not in its early, creative phases before the technical side takes the lead. Atmospheres enter design indirectly: the designer experiences an atmospheric world, made of enduring historical moods and fleeting situations, and becomes affected by them. Atmospheres can be described, as becoming part of the designer’s culture, or remain corporeally embedded beneath the threshold of awareness. These atmospheres can be introduced in the design process deliberately or enforced more subtly and spontaneously through the designer’s practical corporeity. We should not consider atmospheres only an object of design but also something that, well before the design process takes place, starts to shape it like a submarine current. Design is not strictly a third-person practice: its incipient stages are distinctly first-person since they call into play the experience of space, the forms of retention that shape our daily going about the world.

Quite obviously, there are many different ways of designing, some of which are more prone to atmospheric influences, while others are endowed with a greater degree of detachment. We could argue that in the latter case, the spatialized moods that modulate our life have a limited impact on the outcome of the design process, but we can never consider ourselves “outside” of the atmospheric condition since our thinking — and our actions as well — occurs in, about, and through atmospheres (Sumartojo and Pink 2019, 72). As design is never a disembodied prac-
Bibliography


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What Is Going to Be Relevant to an Architect

Michael Arbib and Tonino Griffiero’s dialogue is “directed at architects,” and this commentary is an architect’s response to their challenge: “to assess which kinds of meaning are relevant to the experience and design of architecture.” I summarize examples of what I have found relevant and why and end with comments on the “future streams of investigation” that Arbib and Griffiero propose.

In my experience, architects are always on the alert for finding fresh ways to think about our practices and for discovering new ideas, occasionally just the latest ones, that we can apply in current and future projects. At the same time, because many of us are in business, there is the possibility of gaining a competitive edge. Recent and widely popularized examples are the search in such places as literary theory and criticism that led to deconstructionism in architecture or the cultural unease that led to post-modernism. And more recently, the profession has begun to search in the sciences of the human mind and body. This present effort to apply cog/neuroscience and new phenomenology opens new opportunities to broaden and strengthen our professional practices. All of these new ideas and insights compete for our attention, and the ones communicated clearly and persuasively will tend to be studied further and applied in architects’ day-to-day work. That is where it becomes a factor in creating the built environment.

Specifically, those of us searching in the human sciences are likely to be trying to understand how and why the structure and operations of a human mind and body produce a person’s experience of the places we design for them. Why do people respond to our creative work, consciously and nonconsciously, in the ways they do? And what gives the power to perceptions that lead them into action?
The Dialogue
I approached the dialogue having some familiarity with Arbib’s 2021 *When Brains Meet Buildings* and earlier work, and I have been trying to incorporate what I have been learning from him into the design work of my firm. As a result, the description here of the cog/neuroscience view already sounded convincing and relevant.

Phenomenology and Griffero were new to me, but the dialogue format made an efficient introduction. Nonetheless, his use of words and some of his concepts leave me doubting that I will find ways to apply his views consistently in my teams’ design processes. An example, and what seems to be a key idea, is the use in new phenomenology of the concepts of “ecstasies” and architectural qualities “radiated out” and “tuning” our surroundings. From this architect’s understanding, I would agree that I do feel that happening, just as I do with what’s called conversationally “the halo effect.” But when I stop to think about it, “ecstasies radiated out” is an evocative phrase, but it sounds like animism. Scientists in other fields are discovering that we can read the languages of non-human elements of the natural world, such as trees, as they initiate communication among themselves. But is there evidence for inanimate building materials and architectural concepts?

Another issue: I have been unable to recall or imagine a memorable experience of architecture or a design process that has not included a large and interwoven measure of what I understand is called “affective” or “cognitive” components of experience by Arbib and Griffero. A design process inevitably includes feelings and visions of actual human responses and, in parallel, the question of how, exactly, did that happen? The aesthetic experience of the dialogue’s Lincoln Cathedral episode is an example. Here much of the emotional impact is a human mind-body measuring itself against the perceived dimensions of the place, its contest with gravity, or the skill of the craftsmen. In other words, if I understand the dialogue properly, the affective is typically realized through the cognitive, without which it would not exist.

At the same time, Griffero’s “bouquet of atmospheres,” like similar classifications and definitions offered by scholars (or at times by artists) to architects, is welcome and relevant. In any case, this short list gives an order that we can analyze and alerts a designer to nuances in the distinctive ways phenomena may become a human experience. But I am discouraged by such concepts as “ecstasies” to explore this line of thinking further.

The choice of atmosphere as an architectural quality to be explored, though, seems the right kind of pursuit to uncover relevant meanings. Atmosphere is experienced primarily in terms of a mood or a predominant emotion or more likely a mix of emotions, thoughts, and proprioception. It permeates essentially every facet of an encounter with architecture. On most types of projects, an architect is likely to be thinking about atmosphere throughout a design process because it is essentially everywhere, all the time, and continually changing. The dialogue illustrates how it may be created in multiple ways and shows that there are limits to architects’ ability to be in control. Intended or not, atmosphere will happen. In addition, as noted in the dialogue, from a designer’s point of view, not all of the atmospheres that affect an experience of architecture are contained in the building itself. The approaches to a building, cityscape, and landscape setting will have atmospheres of their own. And together with weather, sounds, and scents, they may powerfully prime individuals’ body chemistry, becoming lingering moods.
shaping a person’s reactions when they enter a building. They respond in ways paralleling those outlined in the dialogue’s bank example but with components very different from the building itself. Of course, many architects organize multidisciplinary teams to try to design that complete environment.

In other words, my response to the dialogue’s initial challenge is that cog/neuroscience in Arbib’s formulation has more potential for relevance in architecture. A key point for me is the one stressed in the contrast of the courthouse example’s interpretations of atmosphere: for Arbib, “atmosphere is not an intrinsic property of the building but coincides with the feeling experienced, and so there is no shared atmosphere that precedes the different atmospheres felt by [individuals].” And further, Arbib provides a cog/neuroscience framework of thought that can incorporate the insights of other human sciences into architecture.

The dialogue becomes increasingly relevant as we keep adding to our understanding of the ways that phenomena and sensory input become experiences — how all that information is processed and perceived. Equally and often more relevant for a designer is to know why specific input has the meanings it does for some individuals. Because design is an effort to create conditions that set the stage for experience, we want to know why a particular thing or quasi-thing has triggered the specific emotions and body chemistry that shape a person’s responses. And what makes them so powerful that they dominate an atmosphere and mood?

Differently from the phenomenology-neuroscience processes described in the dialogue, evolutionary-biological-neuroscience studies have offered architects convincing, design-related perspectives on how the evolution of the structure and operations of the human mind-body underly the design and the experience of architecture. They illustrate why some affordances as atmospheres result in specific human meanings, feelings, and lines of thought and action. They also offer insights into why we select certain affordances from the array confronting us in a built environment.

As an example: such studies as those cited below explore evolved survival mechanisms that seem to underly innate predilections, human predispositions to react, decide, and act in one way and not in another. And these evolution-based patterns continue to be relevant through cultural evolution, as it has stretched the meaning of life-or-death survival to frequent, everyday decisions about more civilized “winning,” “gaining status,” or “prospering.” The source of their impressive power in guiding a person’s motivations and meanings is the echoes of their origins in the survival of the fittest. In biologist Edward Osborne Wilson’s words, “we stay alert and alive in the vanished forests of the world” (1984, 101).

Ideas about applying innate predilections to architecture, and how it is relevant to day-to-day design practice, are spelled out in architect-educator Grant Hildebrand’s Origins of Architectural Pleasure (1999). Collaborating with scientists in human physiology and psychology, he has explored and stated conditions, including metrics, that predictably lead people into sensing and responding to specific atmospheres, whether intended by a designer or not. Conducting the kind of experiments that we would like to see done is not possible, of course, but evidence throughout the built environment and in architect-client and public meetings has made the hypotheses he relies on persuasive.
In this connection, evolutionary studies linked to neuroscience and some social sciences offer an example of relevance, a one-time obsessive relevance to architects. In a helpful working hypothesis, they spell out clues to the origins of aesthetic pleasure and the meaning of beauty in everyday life, often called neuroaesthetics. The capability to experience aesthetic pleasure is shown to be one of many innate patterns of response that are latent in all of us. Most describe it as a feeling of ideals realized or a search rewarded, a spellbinding lucidity, a sense of transcendence, and typically a surging warmth. And across continents, through revolutions, and over millennia, human minds and bodies have proven so much alike that many generations of us share aesthetic judgments. Another similar innate pattern of response has been popularized by biologist Edward Osborne Wilson’s term “biophilia” (1984), referring to the human affinity for making connections with the natural world.

Beauty is something else: a word we say when an aesthetic pleasure has been triggered by a thing. That is why it is been so hard to define. We experience beauty as a property attributed not only to architecture and other arts but to excellence in daily life or craftsmanship, food, fitness-to-purpose, engineering, mathematics, ideas, microclimates, and natural settings. It is the response to an aesthetic experience filtered through the eye of the beholder. These and other sensory inputs may all be incorporated into an individual’s experience of an atmosphere, illustrating the diversity of qualities likely to be considered during the design and operation of a building’s atmosphere.

As a species, we dedicate immense human resources, time, wealth, study, and committed lifetimes to create, enjoy, and honor aesthetic experiences. The crucial point is that, like other pleasures, we experience aesthetic pleasure as a reward. It signals that we are doing, thinking, or feeling something “right,” something that enhances our “wellbeing” — a word including health, winning, prospering, and realizing our values. “Neuroaesthetics” illustrates how human sciences can be translated and woven into architecture. In any case, these are examples of the “kinds of meanings” that, for me, have proven in practice “relevant to the experience and design of architecture.”

A New Look at Humanism

The human sciences have not been a part of our professional education until, sparingly, in the past few years. Today the mainstream still tends to focus on news-worthy architects, their notable buildings and ideas, some practical parts of our craft, and the digital world the profession is entering, but not on the minds and bodies of the people who will become our clients. We pay little attention to the individuals we are trying to serve and the audiences we earnestly want to attract.

Fortunately, the rapid maturing of the human sciences is filling in for the missing formal education, giving architects ways to anticipate our clients’ and audiences’ driving motivations and meanings. My search began with environmental psychology and went on into evolution, ecology, and a range of social and cognitive sciences that were being spelled out in ways I could apply them. Each science is, of course, very different from the others. But from my architect perspective, each has the potential to help me and my colleagues design and build what we aspire to see in our communities. Ecology is included because architecture is part of its surroundings, and the massive human interventions in any ecosystem we invade make it as much a human as an earth science. My 2015 book,
What is going to be relevant to an architect

entitled *A New Look at Humanism: In Architecture, Landscapes, and Urban Design*, is one example of the work being done by architects at that time.

As I learned more, I realized I was uncovering a surge of “humanism” in sectors of the sciences, and that, in turn, was creating authoritative foundations for a new look at humanism in architecture. When I use the term “humanism” I simply mean giving a higher priority in practice to what is now known about human interests, motivations, and experiences when they encounter architecture. Much of what is known is necessarily plausible hypotheses, tested by the performance of actual buildings and places out on the land. Working together, scientists, scholars, and architects are effectively practicing forms of humanism, with design backed by the depth and clarity of scientific thinking. And we can use that combined knowledge to expand our insights into the likely origins of the design intuitions of the most creative pre-modern generations of architects and the exceptional talents we admire in our own. It is continually a “new look” because the sciences keep advancing.

The sciences have shown us how it works. When we design or experience architecture, we use the same innate structures of body, mind, and language that we employ to detect people’s qualities and inner thoughts. We “transcribe,” or “transubstantiate,” architecture in terms of ourselves and ourselves in terms of architecture. We cannot avoid thinking in anthropomorphic terms. While that may be interpreted as a “pathetic fallacy,” we cannot, or at least do not, experience and describe architecture except, almost exclusively, in terms of ourselves — or sometimes the natural world. Think about it. In practice, each individual is the context, the filter, or the lens that gives meaning to our experience.

Further Streams of Investigation

Arbib and Griffiero’s dialogue offers architects the pleasure of opening doors to new ideas and the challenge of following up with a further four streams of investigation.

The first points out the need for further “development of specific cog/neuroscience studies of factors that merit consideration by architects.” I would prioritize communication, taking into account the ongoing flows of communication of scientists and philosophers with architects, their teams, and the community. Now that many design processes are required to be transparent, we can bring into view, into our clients’ and the publics’ consciousness, the authority of the sciences that we have woven into a design.

In this connection, the Arbib-Griffero dialogue approach, comparing, side by side, two lines of thought, is one effective way to clarify an enormously complex subject matter that is necessarily spelled out in the language of an academic rather than architectural community. But a language barrier still stands in our way. Architects expect to communicate through archi-
tecture. And the dialogue discusses examples of buildings, though in necessarily less depth than its examples of ideas. Architects take pride in enlarging our ideas but our first language is still physical rhetoric. In words often attributed to creative dancer, Isadora Duncan, about understanding the meaning of her work: “if I could tell you that, I wouldn’t have to dance it.” That point has been brought home to me when I compare the informal and conversational approach of this essay to the formal, precise, rigorously defined, and more elegant academic language of the dialogue.

In any case, because relevance depends ultimately on how well we communicate ideas between our disciplines, it seems evident that we need to develop another level of science-architecture translation. Or, put another way, we need to select the points where the translation of a scientist-architect communication should be handed-off from one discipline to the other. We have a foundation for that now. A group of articulate architect-educators is already actively engaged. And in the continuing interviews of young architects, part of my firm’s business, we are learning about the efforts of architectural schools to collaborate with related scientific disciplines in their universities or broaden their curricula. With members of such pioneering groups as the Academy of Neuroscience for Architecture (ANFA), they seem likely to produce more bilingual graduates able to translate the languages and cultures of our two communities. It is promising. We also see the young architects’ and their schools’ interest in the sciences focus more on the glamor of the invading digital world and artificial intelligence. That is not surprising. As humans, we are prey, constantly searching for protection and security, but we are also predators, driven to keep searching our surroundings for new opportunities and advantages. And our ongoing evolution has created powerful predilections to explore “the new.”

The second challenge is summarized as “who are the atmospheres of the building for?” Architects tend to be aware of the need to understand their audience, but we are not educated enough to do that on our own. As a result, we are likely to depend on our client’s teams, the future operator of the building, and consultants in marketing the particular building type. They are often real estate, public relations, and other professionals who have trained their intuitions with the help of the sciences.

As an example, we are continually facing and interfacing with creative marketing and entertainment businesses and studying campaigns that have used their studies of human behavior to take on a leadership role in our society’s culture. You see their work in architecture in creating starchitects and brand identity, or defining our clients’, and their customers’ preferences — all backed up by data showing how the relevant people spend available resources of time and money. Parallel expertise in education, play, and prison experience is actively being gathered and shared collaboratively with architects as well. They will all no doubt welcome the additional scientific studies anticipated.

The third challenge raises the possibility “that a theory of atmospheres can distinguish between good (benign) and bad (toxic) atmospheres.” That, of course, raises the question of good and bad for whom, and why, and when. And any study would be led by necessarily biased human investigators in the context of rapidly changing, overlapping local, regional, and larger environments. In any case, I doubt that its conclusions would prove more than marginally relevant to architects in active practice. The issues will be clear to anyone who has followed the heated debates over a recent President’s effort to impose a historical, classical architectural style for federal government architecture. Already we base
our designs on our own, together with conflicting values amended for each project by the established values and ideas about the benign and toxic of each decision-maker on the design team. They are further modified, from the start, by the anticipated approvals processes and, finally, our understanding of the beliefs and values of the people we think will be using the building we have designed.

The fourth challenge, extending the notion of atmosphere to the “climate of an entire community and an entire historical moment,” has been met repeatedly. Among the most notable examples are places chosen by arrays of visitors who decided to spend significant measures of their energy, time, and purchasing power to experience what it is like to be there. Prominent examples are the historic cores of Paris, Venice, or in this country, the federal government district in Washington, D.C. In addition, intense Historic Preservation efforts led by national and local trusts, here and in other countries, are managing the ongoing development of notable, well-preserved towns and villages. I had, for example, a role in creating the National Historic Landmark District in Annapolis, Maryland, a red brick colonial capital city with a baroque city plan.

Further, today an active profession of urban designers, mostly composed of architects, works with metric and related non-metric techniques to create both praxic and atmospheric affordances in these historic places. Their profession focuses on functioning, health, wellbeing, and social-historical atmospheres of living communities. An example is a widely-used study, MIT urban designer-educator Kevin Lynch’s The Image of the City (1960), where he analyzed how we perceive and navigate through a city, in his case, another colonial capital, Boston, Massachusetts. Lynch has uncovered a part of another inborn capability, a navigational skill. His book is one of the first to steer me toward the human sciences. And we will all welcome the increasing interest of neo-phenomenologists and cog/neuroscientists in critiquing and advancing this kind of work.

Even more important is the opportunity for scientists and architects to bring each other onto their working teams.

Bibliography


Art History, Human Affects, and Atmosphere in Buildings

Leonardo da Vinci explained the technique for painting atmospheric effects in the middle ground of paintings as early as the 1490s in Italy. He understood the physics of light well enough to know that water particles in the air would refract sunlight so that, even on a clear day, the subjects in the middle distance would take on a blue tone. He also understood that in low light conditions, a kind of haze would cause subjects to look faded or brown. All of his mature paintings brilliantly displayed his understanding of these things.

Art historians have subsequently written extensively on how painters render atmosphere or its effects in their work. As such, the subject has been discussed often under perspective, lighting, color, and other aspects of visual perception, just as Leonardo did in his notebooks. And in paintings, particularly in views of interiors, the atmosphere portrayed has depended upon both the lighting and the point of view of the observer. There has been little question that in portraying subjects under various conditions, painters create emotional valences by manipulating subjects, light, shade, color, and other elements of their craft. The atmosphere in a work by William Turner, John Constable, or Claude Lorraine is dependent to a great extent on these things — that is on the painter’s manipulation of visual effects now understood as part of the visual system in the brain and body.

In architecture, some similar effects can be manipulated by designers, but the subject of atmosphere has generally moved beyond the concerns of painters and sculptors. Hagia Sophia and Sinan’s Blue Mosque engulf visitors in an atmospheric kaleidoscope that is indescribable for most pilgrims. Likewise, a masterpiece such as Louis Kahn’s Kimball Art Museum in Fort Worth evokes sublime reactions among most of...
Griffero explains that by talking about the body as a feeling agent, he can get around the science and move toward explaining the resonance between objects or spaces and the humans who experience them. That is all well and good, if one has some idea of how the body reacts to things emotionally. Unfortunately, Griffero does not cite the two best scientific minds on this subject, Antonio Damasio (1999) and the late Jaak Panksepp (1998). Both have done enough laboratory work to provide a fairly clear explanation of how basic emotions can lead to feelings, usually when humans or other animals are actively moving around a place. Motion, as neuroscientists have demonstrated, is the generator of both consciousness and emotion. Animals that move have large brains in order to guide their movement, from octopuses to gorillas. Griffero’s arguments would be strengthened if he, like Davide Ruzzon, cited this research. He would do well to consult Ruzzon’s new book (2022), Tuning Architecture with Humans.

A feeling such as awe can be related to activities of early humans in connection with astrology and hilltop fire circles. Research suggests that the feelings associated with climbing a hill and viewing the stars became kinematic, that is, automatically triggered by the body’s ascending motions (Ruzzon 2022, 55–94). More recent studies of awe have underlined these same affects (Keltner and Haidt 2003, 297–314).

Arbib attaches his theory of architectural atmosphere to the Gibsonian concept of affordance, one of the most powerful in his ecological approach to human perception. As such, any physical artifact or piece of a building, garden, or urban environment may be interpreted in terms of what it “affords” for those who perceive and later use it. In this way, he avoids the obvious problem of how atmosphere may exist apart from its patrons. Yet on a critical and historical level, it is possible to explain these buildings largely in terms that avoid imprecise notions of atmosphere and subjective feelings in the viewer. Standard aesthetic criteria appear to provide everything one needs to comprehend their meanings (Langer 1953; Rasmussen 1959). Why, then, should recent philosophers and architectural theorists be taking up the subject of atmosphere? On what basis do they explain their explorations of this slippery subject?

Tonino Griffero has been one of the most prominent philosophers to take up these questions in a number of works. His remarks in the dialogue considered here with Michael Arbib, a prominent cognitive scientist, mathematician, and AI specialist, are enlightening for anyone interested in the phenomenological versus cognitive/perceptual approaches to the subject. I will briefly address both points of view before concluding with my own take on atmosphere.

Griffero, as Arbib notes, suggests that atmospheres are intrinsic qualities of buildings, environments, and spaces which are experienced without attachment to semantic values, social constructions, or culture. The latter may be added to the experience of atmosphere, as when a Buddhist monk enters a temple garden in Kyoto but are not necessary and sufficient. Feelings and bodily responses are qualia that humans process through myriad perceptual mediators, leading to a lived experience that is holistic and objective. In order to show this, an investigator must use the kinds of tools laid out by Merleau-Ponty in his writings on perception (2002 [1945]), unless one accepts the premises of new phenomenology, which purports to dispense with these tools and their limitations. As such, there are no precise scientific indices for measuring atmosphere in any place or space.

1 “The shadows and lights of the countryside take on the color of their sources, because the darkness which originates from the opaqueness of the clouds, combined with the absence of direct sunlight, tinges whatever it impinges upon, while the surrounding air, beyond the clouds and shadows, exposes itself to and illuminates the same location and leads it to assume a blue color” (da Vinci as translated in Kemp 2001, 82–83).

perceptual stimuli in the environment, attached to physical things. Though a painter or poet may conjure atmospheric or emotional effects in their imaginations, architects must necessarily deal with real things like walls, roofs, and floors. Thus, Christian Norberg-Schulz might consider atmosphere under what he calls “intermediary objects” in the environment (1965), following Martin Heidegger in his writings on dwelling in buildings. Arbib presents quite a thorough investigation of various imaginative and design-centered aspects of atmosphere in his remarks. He uses theories presented in his recent book (2021), When Brains Meet Buildings, to explain how people experience buildings.

Arbib provides a simple critique of the idea that atmosphere can be a basic property of a building, space, or landscape — is the experience shared by more than one observer? As he writes about a bank lobby: “an atmosphere is not an intrinsic property of the building but coincides with the feeling experienced [by one user], and so there is no shared atmosphere that precedes the different atmospheres felt by employee and loan-seeker.” I agree. Griffero’s “bouquet of atmospheres” and subsequent explanations do not, for me, address the different ways in which individuals and groups experience the world at large. We are talking about anthropology and sociology here, and many great minds have made their contributions, including Tim Ingold (2021), probably the most relevant on this subject. Yes, any environment may have an atmosphere as generally defined, but how it may affect different observers is very difficult to verify. Why then, do we propose to use this term today? I can offer a couple of answers to that question.

First, because Modernists removed or discredited many powerful aesthetic concepts from the canon of criticism after the 1920s — beauty being the most significant. Today’s critics find themselves hamstrung when looking for ways in which to describe architecture’s emotional qualities. The various terms that art historians have employed to describe a beautiful building or space are still absolutely valid in our current world, including those used by Heinrich Wölfflin (1964), Erwin Panofsky (1972 [1939]), Rudolf Wittkower (1988 [1949]), Ernst Gombrich (2001), John Summerson (1963), and Roger Scruton (2013) — to name a few of the best observers of architectural aesthetics. The problem is that no establishment writer on architecture — certainly not the sophist Mark Wigley or his sycophantic cronies — would use anything contributed by these giants of architectural history. So, they resort to talking about atmosphere as if it were a guarantee of authentic quality in buildings. It becomes a substitute for truly powerful descriptive language and time-tested concepts.

Great buildings of all kinds are rife with emotional valences and resonances. Take, for instance, Francesco Borromini’s masterpiece, the Church of San Carlo alle Quattro Fontane in Rome. Anyone entering the main space would say that it has an “ethereal” feeling to it. Devout Catholics would say it has a “spirit” related to its patron saint. Some architects would call it dazzling and profoundly sculptural. Others would see its moldings as similar to flesh and the human body. I would call it sublime and beautiful. All of these things might be a part of the atmosphere of this church, but one does not need to pin down the singular atmospheric fragrances in order to describe the affective effects the building has on viewers.

In addition to its powerful geometric and spatial complexity and many-layered symbolisms, the building is filled with some of the most astounding...
classical ornament ever devised by an artist or architect. The ornament brightens, deepens, and increases the sensuous qualities that we perceive in the building. Ornament, as I have written elsewhere (Hewitt, in press), is necessary to all good architecture, and has been used much more often in the past century than many will acknowledge. One can analyze any kind of ornament to plumb its meaning and emotional resonance.

Second, and more importantly, the neuroscience of perception, modern social anthropology, and the “philosophy of place” have provided many more precise and powerful means of judging how buildings, spaces, and outdoor environments affect human beings. Michael Arbib outlines many of these in his text. We have the tools to explain how physical things relate to our bodies and minds, and therefore can describe in some detail how an individual space in a building might “resonate” with us as organisms. It is therefore pointless to search for a definition of atmosphere in buildings when the human sciences are providing rich ways of studying emotion and aesthetic qualities in all kinds of art and culture.

Does this mean that architects should avoid the discussion of atmosphere? No, absolutely not. It simply means that our best minds may consult all sorts of new methods and ideas that will contribute to our understanding of that elusive word as it relates to the built environment. Philosophers such as Mark Johnson (2018), Evan Thomson (2007), and Andy Clark (1997, 2013) have been doing magnificent work on how the brain and body relate to the world, and their approach to neuroscience has led away from pure phenomenology, or new phenomenology. I continue to follow their work with interest and will stay with the potential of predictive processing while it illuminates the things that I care about as an architect (Zebrowski 2008).

As humans and other organisms move about in the environment, using pre-cognitive kinematic patterns in order to avoid threats and various locational networks in areas such as the hippocampus, they also experience themselves in relation to objects and spaces and feel the presence of those things on an affective level. Science is just beginning to pinpoint the “neural substrates” of these affective states. Once it does so, architects and cognitive scientists will likely have the tools to help designers who wish to create different kinds of spatial and formal configurations that will trigger such emotional states. That is the hope and expectation of many who work in the architecture/neuroscience arena today.

Only then may we intelligently discuss atmosphere in such spaces. The writings on that subject as they relate specifically to architecture, in my view, are premature and largely off the mark. But that is the case with all kinds of current literature on “theory” and with many historical treatises that have led us through the maze of architectural history. Anything that keeps us headed in a positive direction is worth pursuing, and dialogues such as this one fuel the fire with intelligent, if conflicting, views on both current research and past wisdom.

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4 See, for example, Malpas 2018.
Bibliography


This enlightening dialogue between Tonino Griffero and Michael Arbib on the potent precursors, physical qualities, and pregnant possibilities of atmospheres in architecture encourages the practicing architect to both examine and refine the essentially synthetic process of design that as professionals we work with over the course of a career, distilling into a responsive “impulse” the problems and possibilities of a project. Generated in part as a “postmortem” exercise that dissects the built world through the lenses of both cognition and emotion, it examines the place of architecture in our experience not just of the world but as humans relating to other humans in and through the experience of space.

This latter view exposes the larger potential of architecture and its ability to shape human experience more actively than passively, and the potential of this dialogue between Griffero and Arbib on elucidating “affordance-based atmospheres” to offer the practicing architect a new tool that can amplify architectural potential or perhaps just clarify it. Their contrasting viewpoints on affordance-based atmospheres as “ecological-emotional” invitations created by both the physical characteristics of a building (referred to as “things”) and the natural phenomena such as light and shadow to mention just a few (“quasi-things,” as Griffero describes them), as well as the feeling states of the perceiving subjects or groups, bring to light the need for a cognizance and a sensitivity to design that is often lost in practice, and could perhaps be rekindled through engagement with this dialogue.

At the heart of this conversation is the ability of architecture to engender prototypical atmospheres or feelings in the perceiver (Griffero), that is unmediated, immediate feeling states that create the experience of lived space. To the layperson, I would argue that this is most easily un-
The new phenomenology of space is understood as similar to the experience of being in nature, with no special skill or focus needed for the feeling state, except a receptivity to the information delivered by the senses. With 95% of our time being spent in built environments, it follows that the same mechanism that produces the first-person phenomenology of the unmediated response to nature is still at work in our bodies and minds when we are in the built world, and can be produced and amplified by architectural atmospheres, arousing what could be deemed an “authentic” response to our surroundings. Determining whether this atmosphere exists independent of or without the relationship of the perceiver to the building may not, on the other hand, be of much use to the practicing architect whose intention to generate an emotional response or “memory signature” of a space accepts the presence of the perceiver as part of the building.

Given the complexities of human societal and functional structures, overlays of human-to-human interaction introduce a cognitive layer to the experience of lived space that muffles the prototypical response. It is the architect’s challenge to anticipate and accommodate these complexities of experience, to allow for the unexpected within those accommodations, and manipulate or work with the “praxic” affordances to create really “good” and clearly legible architecture that can restore the volume of the signal that only meaningful architectural space can offer. A deeper understanding, study, and elaboration of the new phenomenology that Griffero postulates of the human response to things and quasi-things could be extremely useful and fascinating here, particularly with regard to the possible hierarchical and proportional value of these elements in the holistic experience of space. I would argue here that “the social-historical atmosphere in which we live and think” can be treated as a variable constant in the equation of creating space, defined by the specifics of locales, local histories, clients, and user groups.

Here too, a deeper understanding and further insight into the cognitive-neurobiological triggers and states that contribute to bodily feelings that this prototypical atmosphere engenders would be of great use to the architect’s ability to articulate space regardless of the typology of the building in question. Arbib’s consideration of “schema” as an analytic framework is enlightening and useful but begs the study of multiple overlapping and intersecting schemata, which in reality define both the complexity and the shape of an architectural project.

A particularly interesting and thought-provoking case study referenced in the dialogue between Griffero and Arbib is the examination of a bank building measured through the feeling states of different users: a client in search of a loan and an official with the power to grant or deny that loan. While the dialogue (Griffero) suggests that the outcome of the transaction affects the perception of the architectural atmosphere, or at least creates the possibility of the perception of several different atmospheres in one space, it could be argued that the prototypical atmosphere in this case, or at least the one the architect can intentionally design for, is one that highlights or amplifies the importance and integrity of the transaction in question for all users of the building, be it the fearful client or the powerful official. The example of the atmosphere of a courthouse, experienced both by a powerful judge and a person about to be sentenced, can be viewed similarly. While the feeling states experienced by users of the building could range from empowerment to disempowerment, it can be argued that the prototypical atmosphere of the building (and the architect’s intention) is to reflect and highlight the
importance of the communal contract, to be respected by all regardless of the relationship we find ourselves in towards it. We can consider the prototypical atmosphere, that which is in the architect’s purview, to be the variable constant here, providing the container for the emotional, social, historical, and political happening that we call life. Design is always political.

Insofar as they educate us about the existence and elucidation of prototypical atmospheres, Arbib’s and Griffero’s differing viewpoints are valuable to a practicing architect, creating the space and the argument for a built world that privileges feeling. For the lessons learned from this dialogue to be a fruitful tool for architects, we need an expansion from the concept of atmosphere as an affordance that is part of the assessment of the built product into the process of design that leads to the creation of the container of the prototypical atmosphere. The reference to architectural design as a third-party understanding of how to arrange things — since an architect’s experience is separate from the person’s own lived experience — discounts the conversations and discussions between an architect and their client and also the architect’s ability (honored through study and experience) of interpreting clients’ wishes and creating spaces that can create an expressive or favorable architectural atmosphere depending on the brief. This part of the design process also allows the architect to acknowledge and address multiple feeling states that can be anticipated and the need for their accommodation or non-accommodation. In the case of the bank, both the trepidation of the client and power of the official can be modulated through architectural atmosphere, and in the case of the courthouse, the power of the judge and the fear of the disempowered plaintiff, while able to be considered as the brief or the “material” of the project, can also be modulated by the architec-
As a practicing architect guided by the mantra “Form Follows Feeling,” I draw encouragement from the linkages offered in this dialogue, and look to see how we can apply these linkages in practice. In 2019, my team and I created a project where we tried to illustrate the effects of atmospheres through recording and decoding multimodal perception in a dynamic “lived” environment [F1; F2]. We designed three different spaces with the same function (living and dining), with three distinctly different “atmospheres” in which we measured each visitor’s bodily responses to each of the three spaces. Their responses were reflected back to them in the form of a graphic that showed “excitation” and “calm” as feeling states affected and amplified by the space visited. The project was conceived in collaboration with Google, the International Arts + Mind Lab at Johns Hopkins University Brain Science Institute, and the Danish furniture company Muuto. Titled “A Space for Being,” the project sought to make the point to the thousands of visitors during the week of Salone del Mobile in Milan, that our human response to space is not purely subjective and that design can be an important tool that affects our body and feelings — design matters on more levels than we consciously appreciate.

The experience was introduced to visitors in a “neutral,” white space with high ceilings, plenty of light, and didactic text that was inscribed into the wall [F3] to awaken a response to texture, light, and color (quasi-things, to use Griffero’s term). Visitors were introduced to the technology of the wristband (created especially for the project by Google) that they would wear as they visited the three spaces or atmospheres, and made aware that their data as recorded by the wristband would
The new phenomenology of space

be deleted in front of them as soon as it was interpreted and printed for them. The wristband measured heart activity, respiratory activity, skin temperature, and skin conductance, and the data was decoded as a watercolor ring that showed cool and warm colors indicating *calm* and *excitement* respectively, and flares in the ring that highlighted moments of excitement or heightened interest. The visitors were required to remain silent and to refrain from the use of digital devices, so as to fully engage in reading, looking, touching, and just being or resting in each space. Each space was separated from the next by a small dark anechoic chamber designed to act as a sensorial palate cleanser, before entering the next environment.

The *first space* [F4; F5] recalled our origins in caves with earthen walls, wood, and pebble floors, textural wool felt art dyed with the essences of flowers, lighting that came from the ground to wash the curving walls, and even an 80-year-old cactus. Books were provided on subjects like poetry, cooking, making, and weaving in an attempt to engage both the brain and the body in earthy imagery. Scent and sound were also curated to enhance this feeling state. The *second space* [F6; F7] was designed with brilliant walls of graded color, animated with angular lighting, and the furniture was brightly colored with accessories placed in unexpected and asymmetric compositions. Playful objects such as pop-up books provided activities, and bossa nova music completed the experience. The *third space* [F8; F9] was calm and purely textural, with light pouring in from above along the edges of the room in a hidden and sublime fashion [F10], and the walls and surfaces were made of ribbed concrete-like paper, with large etched charred wood sculptures on the walls. Activities included books on contemporary abstract art, and the fronds of plants
F4  A Space for Being
April 2019
Salone Internazionale del Mobile
(Milan Furniture Fair)
Milan, Italy
Exhibit: first space (concept)

F5  A Space for Being
April 2019
Salone Internazionale del Mobile
(Milan Furniture Fair)
Milan, Italy
Exhibit: first space

Designed by Suchi Reddy (Reddymade) in collaboration with Google, International Arts + Mind Lab at Johns Hopkins University Brain Science Institute, Muuto
A Space for Being
April 2019
Salone Internazionale del Mobile
(Milan Furniture Fair)
Milan, Italy
Exhibit: second space (concept)

Designed by Suchi Reddy (Reddymade) in collaboration with Google, International Arts + Mind Lab at Johns Hopkins University Brain Science Institute, Muuto
The new phenomenology of space

**F8** A Space for Being
April 2019
Salone Internazionale del Mobile
(Milan Furniture Fair)
Milan, Italy
Exhibit: third space (concept)

**F9** A Space for Being
April 2019
Salone Internazionale del Mobile
(Milan Furniture Fair)
Milan, Italy
Exhibit: third space

Designed by Suchi Reddy (Reddymade)
in collaboration with
Google,
International Arts + Mind Lab at Johns
Hopkins University Brain Science Institute,
Muuto
were the accessories. Emerging from this last space, the visitors took off their wristbands and were provided with the decoding of their experience, and the reaction of their bodies to the atmospheres was described in the image they received [F11].

The project received 7,500 visitors and 2.9 billion digital impressions; we collected anecdotal impressions as visitors exited. What became clear was that the spaces they were comfortable in were not always what they expected. Equally importantly, their state of mind as they entered each space and hence their bodily experience was conditioned by their political histories, socio-economic status, and expectations. The project brought to life the crux of this dialogue between Griffé-ro and Arbib on atmospheres, and all the aspects of brain, body, and social context that can in interaction account for our total human experience in space. Their work underlines what we saw “objectively” in this project, and what we now continue to explore in others, with the hope of collecting and being able to keep more of the data collected to allow us to support the phenomenological view with the cognitive/neuroscientific view.

In my practice, we are now expanding our horizons into “immersive spaces” with a stronger digital component that can allow for atmospheric “exaggeration” more easily and flexibly to allow us to assess spatial variability more easily. We are currently at work on a multimodal space for the reduction of stress of healthcare workers that uses this approach, and the hope is to take what we learn in dynamic real-world environments and extrapolate in scale to generate a greater appreciation of the power of architecture, felt though our bodies and unmediated by transitory measures of style.
The new phenomenology of space

Treating architecture as a found object while useful in analysis, in practice offers no more than the value of a precedent. As important as that is, to truly affect the way we work, what is needed is to recalibrate the process of the making of architecture towards the prioritization of feeling in space. What Griffero and Arbib remind us of in this dialogue is the potential of architecture to be a catalyst of feeling, whether explored through new phenomenology or cognitive/neuroscientific methods. In the tradition of Hans Georg Gadamer and his theory of hermeneutical aesthetics, if we could from this dialogue extract practical strategies for deepening one’s experience of architecture that are communicable to clients through elucidation of the new phenomenology and the cognitive/neuroscientific experience of architecture versus or perhaps in addition to, categorizing its effects and nature, we could perhaps capitalize on architecture’s capability to expand the limits of what our culture has come to expect from it and accommodate and celebrate experiences that are both different and the equitable.

No architectural work is born without numerous conversations between the architect and the client or commissioning body, and depending on the complexity of the project, multiple user groups who have purchased in the outcome of the project either directly or tangentially. The danger in this process, which regrettably so much of our built environment becomes subject to, is the tendency for design to be created for the “least common denominator.” Could we perhaps explore both Griffero and Arbib’s views here, of atmosphere as an affordance, to further the idea that affordances should be part of an equitable design process, in order to create work that is not designed to satisfy the lowest expectation of function, but to acknowledge and celebrate the complexity of human experience and feeling in space?
I am reminded of the powerful scene in the film *La Grande Bellezza* by the Italian filmmaker Paolo Sorrentino, in which a Japanese tourist collapses, presumably upon succumbing to the vision and experience of the architectural beauty of the city of Rome. While the extreme effects of Stendhal Syndrome may not be every architect’s dream or intention, what we work towards every day is a dialed-down version of that possibility [F12]. Arbib and Griffero’s examination of atmosphere in architecture expands our understanding of how good architecture can achieve that.

**Figure Credits**

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Figures 3, 5, 7, 9, 11: © Emanuel Hahn, 2019.
Figure 10: © Suchi Reddy, 2019.
Epilogues

Following the dialectic spirit embedding this book, Michael Arbib and Tonino Griffero have responded to the four commentaries on their conversation, emphasizing the opportunities and challenges of their respective approaches: cog/neuroscience and atmospherology applied to architecture.
The Atmospheric Brain: Beyond the First Impression

Introduction
Two paradoxes lie at the heart of the essay “A Dialogue on Affordances, Atmospheres, and Architecture” by Tonino Griffero and myself, henceforth referred to as Dialogue:

- the cognitive scientist and the neuroscientist seek an objective account of subjective experience;
- the architect consciously attends to the design aspects of a building even if they primarily affect the inhabitant nonconsciously.

In what follows, I will develop my cog/neuroscientific perspective, stressing its relation to architecture, in response to the much appreciated commentaries on Dialogue by Federico De Matteis, Robert Lamb Hart, Mark Alan Hewitt, and Suchi Reddy. Griffero’s response emphasizes the neophenomenological perspective. At the outset, however, I insist that these efforts should not be seen in competition, but rather as a shared effort to increase architects’ understanding of architectural atmosphere.

For Reddy, elaboration of new phenomenology’s account of the human response to things and quasi-things, including its concern for atmosphere, will help us explore their hierarchical and proportional value in the holistic experience of space. Yet Hewitt cautions architects to avoid such imprecise notions as atmosphere, stating that “standard aesthetic criteria appear to provide everything one needs.” Moreover, he asserts that “science is just beginning to pinpoint the ‘neural substrates’ of [relevant] affective states. Once it does so, architects and cognitive scientists will likely have the tools to help designers who wish to create different kinds of spatial and formal configurations that will trigger such emo-
tional states. *Only then may we intelligently discuss atmosphere in such spaces*” (added italics). Contra Hewitt’s claim, my message is that cog/neuroscience needs to be in conversation with architects to define questions for affective science in ways that will be relevant to architects — a translation requires a rich understanding of both languages.

To exemplify this conversation, I next discuss opportunities and challenges for an empirical approach to the cog/neuroscience of architecture. I then explore the “paradox of phenomenology” that, despite its emphasis on first-person experience, we study it through third-person analysis of the experience of others. With this, I assess Reddy’s dictum that “form follows feeling” (2022) and offers a perspective on Louis Sullivan’s “form follows function” (1896) to suggest that we can learn from both to conclude, unsurprisingly, that “form is informed by feeling and function” in turn. In particular, I recall that the notion of atmospheres as affordances was motivated by James J. Gibson’s notions on practical affordances, and argue that architects continually develop the interplay between affordances of each kind. Finally, I return to schema theory and suggest how we must extend the VISIONS model of visual scene understanding from §5 of Dialogue to briefly explore the relation between the first-hand experience of a building and the architect’s process in designing a building that affords such experience.

Opportunities and Challenges for Empirical Approaches to the Cog/Neuroscience of Architecture

Reddy describes an intriguing project, *A Space for Being*, designed for the 2019 Salone del Mobile in Milan. The project sought to demonstrate to its visitors that “design can be an important tool that affects our body and feelings [...] on more levels than we consciously appreciate.” To this end, she designed three spaces that sought to establish different feelings or atmospheres. Each visitor was provided with a wristband that measured heart activity, respiratory activity, skin temperature, and skin conductance as they visited the three spaces. The data were “decoded as a watercolor ring that showed cool and warm colors indicating calm and excitement respectively, and flares in the ring that highlighted moments of excitement or heightened interest.” As Reddy observes, “[...] we collected anecdotal impressions as visitors exited. What became clear was that the spaces they were comfortable in were not always what they expected. Equally importantly, their state of mind as they entered each space and hence their bodily experience was conditioned by their political histories, socio-economic status, and expectations.”

But a valuable opportunity was lost here. The data “recorded by the wristband was deleted in front of [each visitor] as soon as it was interpreted and printed for them.” No anonymized data were preserved. Alas, given the absence of analyzed data, it was impossible to tease apart the “universal” from the “particular” in these responses. However, Reddy does tell us that new projects are underway, “with the hope of collecting and being able to keep more of the data collected to allow us to support the phenomenological view with the cognitive/neuro-scientific view.” A current effort focuses on a multimodal space for the reduction of stress of healthcare workers that uses this approach, aiming “to take what we learn in dynamic real-world environments and extrapolate in scale to generate a greater appreciation of the power of architecture felt though our bodies and unmediated by transitory measures of style.”
The broad challenge is to make sense of data from subjects free to act in a real physical environment with all its complexity. For the scientist, possibly an environmental psychologist rather than a neuroscientist, the approach may focus on changes in response that can be related one or two key variables in a simplified environment. The previous volume in the Interfaces series (Canepa and Condia 2023) introduces relevant studies by Elisabetta Canepa and Zakaria Djebbara that allow subjects to freely move around their (possibly virtual) environment.

Canepa (2023) studied priming, the way in which the light color of a corridor leading to a room might affect the judgment of the atmosphere in a room even though that room itself had not changed. The subject walked through the spaces, but what they saw as they walked was provided by virtual reality. This allowed a strict correlation of what the subject was seeing with the electrophysiological measurement employed (skin temperature, heart rate, and skin conductance response recorded from the subject’s hand). In that room, they browsed a (virtual) art installation before replying to a questionnaire. Thus, the study combined the first-person assessment of feelings through the self-report of the questionnaire with the third-person time series of electrophysiology.

Djebbara (2023) added measurement of brain activity, employing physiological measures as well as mobile electroencephalography (EEG) in combination with virtual reality to adjust properties of the environment through which the subject was walking. His study approached atmosphere indirectly — looking for changes in brain activity when the subject is confronted by a door that is very wide, one that is just wide enough to allow free passage, and one that is too narrow. Presumably, this “Goldilocks” problem has an atmospheric component ranging, perhaps, from a sense of freedom in the first case to frustration in the third. He measured the event-related potentials — scalp-recorded voltage fluctuations that are time-locked to an event and reflect stages of information processing in the brain. In this way, he has begun to assess how perceptual and motor-related processes were affected by changing affordances. Even here, we see the challenge of teasing apart the praxic and affective contributions.

In these two studies, the subject moves naturally, but the environment is virtual and highly simplified to assess the impact of one key variable. An alternative is to present a series of images or videos of architect-designed scenes. Keeping the subject immobile permits the use of functional magnetic resonance imaging (fMRI) to assess how changing visual experience of detailed environments may affect the relative activity of different areas of the brain. Julio Bermudez et al. (2017) developed an fMRI study of how brain activity of architects differed when viewing sequences of images for approaching and entering a well-known and respected “contemplative space” versus images of undistinguished scenes of US buildings. In When Brains Meet Buildings (Arbib 2021, henceforth WBMB, §4.5), I assess the strengths and weaknesses of this study to offer suggestions for future research on the neural correlates of atmosphere. More recently, as part of a larger program to relate atmospheres to neural activity as signaled by fMRI, Lara Gregorians et al. (2022) developed a dataset of valenced videos of first-person views of travel through built environments. They used them to clarify the relationship of core affect (valence and arousal) and three key psychological dimensions of architectural experience — coherence (the ease with which one organizes and comprehends a scene), fascination (a scene’s informational richness and generated interest), and hominess (the extent to
The atmospheric brain — previously correlated with aesthetic ratings of built environments (Coburn et al. 2020). Current research is how first-person judgments in any one of these dimensions may link to third-person fMRI assessments of how a change in a specific dimension may be related to changes across a distinctive set of brain regions. One may compare the notion of “dissecting” phenomenology (WBMB, §1.5).

In partial response to Hewitt, then, Reddy’s Salone del Mobile Project and this brief review of recent studies suggest that new insights into atmosphere that will enlighten designers are more likely to emerge from ongoing interaction between architects and cog/neuroscientists than from a postponement of architectural discussion of atmosphere until scientists uninterested in the impact of the built environment reach some lofty plateau of insight into the cog/neuroscience of aesthetics. In charting the way forward, recall Hart’s observation that Hildebrand’s exploration, in his Origins of Architectural Pleasure (1999), of metrics that predictably lead people into sensing specific atmospheres was based on his collaboration with scientists in human physiology and psychology.  

The Paradox of Phenomenology

The paradox of phenomenology is that, while focused on first-person experience, it develops through reading and hearing about how others describe such experience. However, having the first-person experience (E1) of reading or talking about an experience (E2) is not the same as having a first-person experience of E2. Thus, architects bringing their first-hand experiences to bear on a project may also invoke the experiences of others, but these are second-hand or third-hand experiences. In terms of the conversations between atmospherology, cog/neuroscience, and architecture, Hart observes that some “architectural schools [are beginning] to collaborate with related scientific disciplines or broaden their curricula” and suggests that “along with members of such pioneering groups as the Academy of Neuroscience for Architecture, they seem likely to produce more bilingual graduates able to translate the languages and cultures of our two communities.” He adds a cautionary note: “we also see the young architects’ and their schools’ interest in the sciences focus more on the glamor of the invading digital world and artificial intelligence.”

For Reddy, seeing architectural design as a third-party understanding of how to arrange things “discounts the conversations and discussions between an architect and their client,” but — as suggested above — coming to understand the experience of others is a use of third-person experiences to augment the architect’s first-hand experience. For De Matteis, “design is not strictly a third-person practice: its incipient stages are distinctly first-person since they call into play the experience of space, the forms of retention that shape our daily going about the world,” but this reminds us that one’s own first-person experience helps ground one’s ability to understand the experience of others.

With Griffiero, one might ask what hints about atmosphere one might get from art and literature, and then, going further, try to extract some suggestions for the architect to consider about the interaction of personality, circumstance, and architecture that contributes to diverse experiences. A crucial skill of the architect is to imagine how different others will experience new spaces. Thus the long-standing interest of architects who turn to neuroscience to learn more about the learning patterns of
young children in a kindergarten (Eberhard 2008) or how failures of memory might be accommodated in homes for Alzheimer’s patients (Zeisel 2006).

Hart reminds us that “architects expect to communicate through architecture [...] our first language is physical rhetoric. In words attributed to creative dancer Isadora Duncan about the meaning of her work: ‘if I could tell you that, I wouldn’t have to dance it.’” We should distinguish our first-person experiences within and around a building if we visit it from the third-person experience we get from seeing photographs or reading articles about it, although both can feed the architect’s imagination. De Matteis offers the intriguing suggestion that “in the future, we may train computers to perceive atmospheric conditions just like they have become quite skilled at recognizing visual cues.” However, one must stress that (as for movie recommendation systems such as those employed by Netflix) it is unlikely that an “atmosphere recognition system” could predict how individuals will feel about a space — rather, they will make predictions based on profiles assessed for a wide range of users. More tellingly, there is no consensus yet on what set of “atmospheric descriptors” might best be used as the output of such a system (and see the discussion of [F1] below) — perhaps another challenge for psychological research. Atmosphere is subjective, even if the architect attempts to devise an atmospheric effect that most users of a specific category will feel.

Form Is Informed by Feeling and Function

Hewitt asks us to consider Borromini’s Church of San Carlo alle Quattro Fontane, suggesting how various observers may find its main space ethereal, dazzling, sublime, or beautiful. One can agree that these might be a part of the “atmosphere” of this church. However, he also suggests that some would see it as profoundly sculptural or see its moldings as similar to flesh and the human body — qualities that seem, to me at least, less atmospheric. He further notes that devout Catholics would say it has a “spirit” related to its patron saint, an “atmospheric response” that others are unlikely to share. Nonetheless, he concludes that “one does not need to pin down the singular ‘atmospheric’ fragrances in order to describe the affective effects the building has on viewers.” On the one hand, I see this as implicit support for my concern contra Griffiero’s invocation of a single prototypical atmosphere underlying different feelings experienced by people entering the bank (e.g., employer or loan-seeker) or viewing a courthouse straddling a mean entrance to a prison (though Reddy does support Griffiero’s analysis of these examples). On the other hand, it seems to me that Hewitt’s example should not be used to argue that architects should avoid the term “atmosphere” until scientists complete their analysis of emotions, but rather that they should accept that the atmosphere cannot be reified and that diverse people will have varied feelings in their experience of a space.

Hart reminds us that “on most types of projects, an architect is likely to be thinking about atmosphere throughout a design process because it is essentially everywhere, all the time, and continually changing. The dialogue illustrates how it is created in multiple ways and shows too that there are limits to architects’ ability to be in control. Intended or not, atmosphere will happen.” De Matteis states “Arbib believes that architects can master atmospheres and control them through design, Griffiero eschews practical applications, preferring to preserve the aesthetics of atmospheres as a descriptive paradigm only,” though perhaps this is not so
much a disagreement as complementary foci for investigations of parts of the problem. However, when De Matteis later cautions that “buildings generate moods [and] a skilled designer has the ability to modulate a feeling spatially experienced by whoever encounters it. Yet we also know that we cannot determine an atmosphere with [...] certainty,” I am unclear whether he considers this a correction to my viewpoint rather than being part of what I argue for. When he says that “Arbib claims that while atmospheres are borne from a first encounter, they can eventually become the object of a precise explication, identifying their point of origin and structure,” I insist that this is a misreading, as my analysis of Joseph M.W. Turner’s The Slave Ship shows. My point (WBMB, §4.3; building on Thibaud, 2014) is two-fold: experienced atmospheres may change over time; architects may nonetheless seek to design spaces that afford a certain atmosphere to many of those who inhabit that space. However, the attempt to provide forms that support a given atmosphere need not (and probably will not) involve precise explication.

As I took a cruise through the waterways of South East Alaska in June 2023, I found myself questioning whether the diverse scenes I witnessed (as typified in [F1]) had different atmospheres (now of the natural, rather than built, environment). Again and again, my vocabulary — awe-inspiring, breathtaking, majestic — proved inadequate. Perhaps new phenomenology could describe the atmosphere in and of itself in ways that would distinguish these four scenes and extend such descriptions to capture the atmospheric subtleties of architected spaces. Yet I remained unconvinced that even a more subtle vocabulary could distinguish the atmosphere each scene created. I should add that these photos cannot do justice to the physical experience of being there, of the ever-changing views as the ship moved along its path, or the appreciation of the immense scale of mountains rising thousands of feet, of glaciers a mile wide. Function is not relevant to the aesthetic experience here, but one’s appreciation of each scene is enriched by the diverse forms of the hillsides, mountains, glaciers, and vegetation, and the relation of hills and mountains to each other, the water below, and the clouds above.

This led me to question how to interpret Reddy’s dictum that “form follows feeling” (Reddy 2022). I am not making the trivial point that no intended atmosphere entered the formation of the wonders of Alaskan landscapes [F1]. The issue, rather, is whether Reddy’s claim is that “the architect must first delimit the feelings (atmosphere) that a space is to elicit and form will follow therefrom” or that “the architect must first delimit the feelings and bear this in mind in designing the forms that will define the space.”

Analysis of Louis Sullivan’s (1896) dictum “form follows function” (WBMB, §1.1; based on discussion with Robert Hart) may point to the latter, that feeling informs rather than defines form. Sullivan argued that a tripartite division of functions of a skyscraper into those for ground floor, intermediate floors considered together, and top floor implied that a distinctive form be employed for each, but examination of Sullivan’s designs shows that his dictum was consistent with diverse variations of form. Bringing Reddy and Sullivan together suggests that, contrary to Reddy’s claim for the prioritization of feeling in space, neither feeling nor function is privileged over the other. The challenge for the architect is to delimit both the feelings (atmosphere) that space is to elicit and the functions it is to serve, bearing both in mind in designing the forms that will define space (and often changing those initial decisions in the process). The Dialogue with Griffiero comments that “the
F1 Alaskan atmospheres
Stikine River and Tracy Arm
Southeast Alaska, United States

The atmospheric brain
Atmosphere(s) for Architects

3 After an assessment of Jørn Utzon’s design of the Sydney Opera House and Frank Gehry’s design of the Bilbao Guggenheim Museum in chapter 9 of WBMB, chapter 10 discusses the challenge to neuroscience of understanding how the hippocampus, in interaction with other brain regions, can serve not only navigation but also episodic memory.

4 Recall Hart’s insight that “the rapid maturing of human science is [...] giving architects ways to anticipate our clients’ and audiences’ driving motivations and meanings. [Hart’s] search began with environmental psychology and went on into evolution, ecology, and a range of social and cognitive science that was being spelled out in ways [he] could apply them.” Perhaps studies teasing apart the interplay of biological and cultural evolution will give us insight into what atmospheres are “prototypical” in the modified sense (slightly adapting Griffero’s, but dropping the notion that this must be a first impression) that most humans will perforce feel them, while culture and personal experience may offer widespread variations on such themes. Architect need to be sensitive to such interplay.

Flatiron Building in New York has an angular and sharp form. While it offers a normal affordance of protection for those inside, it expresses a clear form of exclusion for those outside.” However, I doubt that the architects started from a feeling of exclusion — rather, what came first was adapting the form to the acute angle at which the streets abutting the building site meet.

I should add that a concern for praxic, as distinct from atmospheric, affordances requires us to consider function at a much finer grain than Sullivan’s tripartite example (consider, for example, all the affordances, storage areas, and utilities that we must provide in a functional kitchen, without denying the aesthetic dimension that may distinguish kitchens with similar functionality). In such ways, we can honor Reddy’s call to “acknowledge and celebrate the complexity of human experience and feeling in space.”

Bringing Praxic and Atmospheric Affordances Together

Hewitt observes that “as humans and other organisms move about in the environment, using precognitive kinematic patterns in order to avoid threats and various locational networks in areas such as the hippocampus. they also experience themselves in relation to objects and spaces, and feel the presence of those things on an affective level.”

This is the only mention of a brain region in the four commentaries. However, the crucial point for this section is that Hewitt reminds us that we do not just experience atmospheres in and around buildings: we move and — I stress — we act. However, in discussing Borromini’s church, Hewitt considered only feelings, with no regard to how well the church works as a place to pray, preach, perform sacred music, or get baptized, among many possible activities. Crucially, though, considering atmospheres as affordances (Griffero 2014) was inspired by Gibson’s original consideration of affordances as opportunities for action. Despite the primary goal of the Dialogue and related commentaries being to explore the concept of atmosphere and its importance in architecture, I feel it paramount (as sketched in the previous section “Form Is Informed by Feeling and Function”) to reiterate that architects continually bring praxic and atmospheric affordances together.

Too often, feelings are considered without regard to their implications for behavior. Since the neuroscience of emotion is outside the scope of this contribution, I refer the reader to WBMB (§4.2). It stresses the “action-oriented” nature of emotion in terms of its internal (individual) and external (social/communicative) aspects. It also sketched, although briefly, an evolutionary path from the primordial emotions (Denton et al. 2009) — basic drives of behavior such as hunger, thirst, fear, and sex — via such emotions as anger, sadness, and even Schadenfreude to the aesthetic emotions (Scherer 2013) — including those evoked by art or music that may have little overt relation to action but come closest to those that have entered much of the discussion of atmosphere.

With Griffero, Reddy sees the ability of architecture to engender prototypical atmospheres or feelings in the perceivers — unmediated, immediate feeling states that create the experience of lived space — as the heart of this book’s conversation. However, she adds, crucially, that “determining whether this atmosphere exists independent of or without the relationship of the perceiver to the building may not [...] be of much use to the practicing architect whose intention to generate an emotional
response or ‘memory signature’ of a space accepts the presence of the perceiver as part of the building.” I have argued that, as in the bank and court examples, the notion of an immediate atmosphere independent of different types of building users is less helpful than claimed by Griffero and Reddy. In our Dialogue, Griffero asserts that “I feel cold” may be an objective statement even though the ambient temperature is high, and this seems to me a concession of the subjective nature of atmospheres.  

This in no way impairs Reddy’s aim to have the first encounter with a space elicit a similar atmosphere for many of those expected to encounter it, but my concern here is to reiterate that — in general — architects design a space within which people will engage in diverse activities and so the process of design must take account of how both praxic and atmospheric affordances come into play for different people experiencing and behaving in the space in various ways. Where Reddy concedes that “overlays of human-to-human interaction introduce a cognitive layer to the experience of lived space that muffles the prototypical response,” I would downplay the notion of prototypical responses (but consider the range of classes of emotion sketched above), while agreeing with Reddy that “it is the architect’s challenge to anticipate and accommodate these complexities of experience, to allow for the unexpected within those accommodations, and manipulate or work with the ‘praxic’ affordances to create really ‘good’ and clearly legible architecture.” The key points are the concession that architects must take the “cognitive layer” into account (whatever one’s judgment of prototypical atmospheres), and that praxic affordances come into play. As a result, the experience of and behavior in the building is a dynamic process in which, accordingly, atmosphere and feelings, too, are dynamic whether or not they play out in a fashion based on first impressions.

Schemas for Experience, Schemas for Design

A key feature of WBMB is that it studies both conscious and non-conscious processes at the level of cognitive science and environmental psychology, noting that this level may generally be the one of most relevance to architects, while stressing that neuroscience can enrich our understanding of this level and architectural phenomena. This section exemplifies this by returning to VISIONS, the schema-theoretic account of the understanding of visual scenes offered in §5.2 of Dialogue, and assessing its utility and shortcomings in offering a way forward in the cognitive science of the experience and design of architecture.

Reddy sees my schema theory as “an analytic framework [that] is enlightening and useful” but suggests that it “begs the study of multiple overlapping and intersecting schemata, which in reality define both the complexity and the shape of an architectural project.” This seems to be a misreading. The example of processing of the image in [F15a] of Dialogue (§5.2), showed how the possibility that sky and wall overlap in a region is resolved. It also showed that a region can simultaneously be recognized as a roof and a part of a house and, as such, directs processing (nonconsciously) to the area below the roof to assess that features there support the house hypothesis. However, this VISIONS example fails to clarify the “harmony” or otherwise of diverse elements at different overlapping scales, nor does it link to the dynamics of atmosphere exemplified in discussing Turner’s painting (Dialogue, §4.3).

While VISIONS offers insights into the interaction of top-down and bottom-up processes in visual perception, it is crucial to go further in two ways: One is to extend our understanding from vision to schemas for multisensory perception (WBMB, §3.6) so that we can explore the...
impact of audition, smell, and other senses for our experience of architecture, even developing an architecture for blind people. The other is we not only perceive buildings: we behave in them, and so WBMB (from §1.1 onward) stresses the notions of action-oriented perception and the action-perception cycle: much of our perception serves as the basis for updating (consciously or nonconsciously) our plans for behavior and recruiting and adjusting the relevant motor schemas. Moreover, responding to Reddy’s overall concerns, we must extend our analysis of perception, whether action-oriented or contemplative, to better understand how the forms and relationships of things and quasi-things create harmonies or disharmonies expressed as feelings. This relates to the assessment of the way in which a building may support or inhibit social interactions.

Finally, consider the difference between experiencing a building and designing it. For example, WBMB augments the discussion of affordances for action to consider “scripts” (§2.1) for general patterns of behavior and “inverted” the analysis of navigation and wayfinding (§6.2) to consider how architects create spaces that, among other things, aid the formation by users of the building of the cognitive maps they need to support their navigation in the performance of diverse behaviors (§10.4).

In the context of vision versus drawing, a dichotomy relevant to that of experience and design, WBMB discussed “inverting vision” (§4.4), stressing that this involves diverse schemas beyond those that would be involved in “running VISIONS backward.” An intriguing example of this distinction reminds us that neurology can dissect not only the phenomenology of someone experiencing the environment but also of the artist (and, presumably, the architect) in their approach to a project. I have already mentioned the way architects may need to go beyond their own first-person experience to address the neurodiversity of populations for whom their buildings are intended. MacKisack et al. (2022) have taken up the issue of neurodiversity for the artists as distinct from those who view their work. They studied the difference between artists who have hyperphantasia (the ability to have vivid visual mental images) and those who have aphantasia (the inability to form visual images). Susan Aldworth and Matthew MacKisack curated an exhibition, Extreme Imagination: Inside the Mind’s Eye, of the artwork of six hyperphantasics and twelve aphantasics. This exhibition (enjoyable online) not only shows the variety of styles of these artists but also pairs a photograph of each artwork with an intriguing statement of how the artist uses or circumvents visual imagery. Hyperphantasic artists could imagine their painting in detail before they set brush to canvas (and similarly for those working in other mediums). Intriguingly, though, MacKisack et al. report that

There seemed to be little connection between imagery vividness and the nature of the artworks themselves. [...] What was distinctive, however, was how [the artists] described the processes they employed to produce an artwork. [For] aphantasic participants there was an externality to the composition process. [...] Where some start with preexisting [i.e., external] images, others start by making a mark or marks on the blank surface, which will serve as a stimulus or a material to [the] work. [One artist] described how she applies the material “blindly” (i.e., without an intended final image) to the surface and “gradually, shapes, and colors evoke essences of meaning.” Only in the process of making the picture did she recognize it as [...] a depiction of “distressing events” that she had been preoccupied with but unable to visualize. She concludes that “a figurative representation of them emerged unintentionally.” [Judging] from [these] artists, the level of realism in representational work has nothing to do with vividness of internal imagery and everything to do with artistic intention and the learned ability to realize it. This works in both directions. A detailed and “realistic” depiction does not
mean the artist images vividly, and “seeing” a scene vividly in one’s mind eye is independent of the ability or desire to render it graphically. [...] [W]e cannot say the work is a certain way because of the artists’ experience of imagery. (MacKisack et al. 2022, 79–80)

A corresponding study of architects in terms of the extent to which they can visualize spaces in detail, imagine the atmospheres their designed space might create, and assess the activities their project might afford before sketching them as a basis for pre-evaluating the outcome of their design processes — might yield valuable insights for architectural education, learning how a psychological assessment of students along these lines might help them better play to their strengths. In this regard, contrast the doodles of De Matteis, with their strictly rectilinear forms that convey little if anything of atmosphere, and Reddy’s atmospheric splashes of color, whose relation to the final designed forms remains mysterious to me. How intriguing it would be to gain insights into the very distinctive mental and neural processes each architect employs in proceeding to first sketches and on to design.

Bibliography


**Figure Credits**

Figure 1 © Michael A. Arbib, 2023.
I knew to “play away from home” in accepting the tempting and friendly dialogue with Michael Arbib. Not that a dialogue with philosophers would have been easier since, as a rule, each philosopher jealously defends their theories and hardly welcomes approaches and lexicons foreign to their own. But in the case of dialogue with a cog/neuroscientist like Arbib and with architects (no philosopher, much less an aesthetologist, is among the commentators), the risk of misunderstanding is greater.

Fortunately, I have been dealing with such a naturally interdisciplinary topic as atmospheres for many years. This has trained me to seek points of contact with scholars from other disciplines, to smooth out certain asperities and speculative “extremisms” (in philosophy quite usual), and to evaluate even my ideas based on their (at least partial) practical applicability and not to expect that my interlocutors share the specific (in this case neophenomenological) vocabulary I adopt. Importantly, I must also honestly admit that it was precisely the easily verifiable theoretical gap between Arbib and myself that helped me to clarify some ideas I had expressed in earlier works and to subject them to that critical scrutiny that one does not feel the need mistakenly for when discussing within one’s disciplinary field.

However, this theoretical gap due to our different “background metaphysics” involves several misunderstandings, which I would like to clarify here preliminarily. The first is the way, only partially coincident with what I intended, in which my distinction among three types of atmospheres was understood here. Just to give an example: I certainly appreciate that my notion of prototypical atmospheres is partially accepted by my interlocutors and sometimes considered useful, but I cannot remain silent that my meaning is different from the one assumed by them. It
indicates not only an effective first impression but a somewhat transcendent dimension of affectivity into which the individual is thrown without their own responsibility and which, precisely because of this, exercises an authority that cannot be escaped (friends and colleagues, less open to this rate of “metaphysicality,” struggle to accept this assumption).

The second misunderstanding is more general and concerns almost all the conceptual vocabulary adopted. To really understand each other in depth, I would have to raise doubts about almost every concept of my interlocutors. They take for granted notions (such as sensory input, culture, body, feeling and emotion, subject, perceiver, and organism), often uncritically accepting meanings they have in ordinary language, which are naïve and apparently “neutral” but affected by scientific language and especially its commonsensical outcome. Even the seemingly innocent formula “fruitful tools for (architects, in this case)” may sound too dependent on so-called instrumental reasons (means/ends) for a philosopher and prompt them not to use it to reject its ideological-theoretical background.

Yet, I have no illusions that an “authentic interpretation” of certain notions would suffice to dispel the points of disagreement, which are based, far more profoundly, on a very different theoretical approach both to the tasks of reflection in general (in terms of its relationship to science and praxis) and to the needs of a critical view of the mainstream culture. If we add to this the predictable disagreements between European culture (in my case, inevitably pervaded by late Romantic, existentialist, and at least partly anti-rationalist traits) and American culture (more naturally confident in the progress of objective science and distrustful in the principle of the solutions proposed by past cultures), the picture of my tensions in the dialogue between Michael Arbib (and others colleagues) becomes clearer. I want to thank Arbib for having confidently insisted, despite my initial resistance, that this dialogue should continue and turn into the nice book you have in front of you. Seen today, printed and accompanied by the beautiful images chosen by the editors, the book seems to me a good result and a project of some “use” (absit iniuria verbis).

In my reply to the kind commentators, I intend to clarify other relevant points of my neophenomenological approach to atmospheres. Others, while important, will necessarily remain in the background. They are issues like the cognitive penetrability of an affective perception, the intrinsic vagueness of the atmospheric feeling, and the holistic centrality of first impressions. Although, in their diversity and without the need to choose architecture-based examples, it is clear that my explanations should also concern architecture, considering both those who design spaces and those who experience them.

Let us now come to the points that the four commentaries allow me to clarify.

To Federico De Matteis
Federico De Matteis’ contribution gives me an opportunity to clarify the issue of atmospheres’ possible production. The neophenomenological approach does not at all exclude analytical work to explain how atmospheres can be planned and intentionally generated, but while doubting the true success of any (too) intentional design, it leaves this task to the professions that devote themselves to it (what Gernot Böhme calls “aesthetic work”), only taking an interest in the receptive situation, namely the pathic felt-bodily experience of naïve perceivers.
Anyway, De Matteis’s suggestion that we also should reflect on the atmosphere (or the combination of atmospheric situations) that governs and makes the architectural design possible is welcome. A deeper analysis of the situations where the architect’s embodied design brings to light (places of design, timing, or the relationship with colleagues and clients) is of primary importance. Part of atmospherology (applied to architecture) should be devoted to analyzing the architect’s remaining embedded in their projects — even though Le Corbusier’s example turns this upside down. First, he designs, and then he looks for the appropriate place to build: in my opinion, this means that the architectural design does not seem to make any use of the genius loci, working without being in tune with the atmosphere prevailing there and somehow culturally “crystallized” (and this cannot be a problem?). Can design disregard trying to enter into dialogue and be attuned to the affectivity inherent in the lived space in which it has to intervene (renovating or scratch building)?

However, understood as situated thinking, design is — in turn — indebted to a first-person description: that of the architect’s affective and embodied first-person experience, intrinsically shaped by a given context (there is also an atmospherology of workplaces that we should explore further)\(^2\), no matter how difficult to verbalize.

To Robert Hart
This commentary seems more distant from my approach and is marked by a diversity difficult to overcome.

A The first issue stems from a distinction (repeatedly mentioned in the dialogue with Arbib) between atmosphere per se and the fact of being involved in and by it. If it were true, as Hart proposes, that atmospheres exist only when we experience them and are grasped by them, we could not explain the countless cases in which, on the contrary, we can recognize the presence of a specific atmosphere without being grasped by it (the euphoria of a stadium even for the non-football fan or the captivating atmosphere of Riefenstahl’s film *Olympia* [1938] even without being a Nazi sympathizer). Furthermore, designing architectural atmospheres would be impossible, in principle, since designers do not fully coincide with their affective essence to the point that they correct, redraw, and maybe even trash their attempts. Whether one distinguishes between “the atmospheric” and “atmosphere” (Böhme 2001, 45–46) or between the feeling as an only perceived atmosphere and our being grasped by it (Schmitz 2014, 86–87; Griffiero 2021, 50–51, 92–94), these are distinctions going in the same direction. On the one side, we have more permanent, predictable, and somehow culturally codified atmospheres (e.g., blackness being mournful in some human societies) and, on the other, we have atmospheric resonances that are more subjective insofar as they are affectively and individually involving.

B A second issue stems from an excessively uncritical acceptance of the results of evolutionism and neuroscience (as if they were the only sciences with which atmospherology needs to be confronted), as well as the idea that architects should anticipate their “clients’ and audiences’ driving motivations” — a wise-practical warning that, if exaggerated, would make architectural design a work lacking creativity, criticism, and unexpected solutions.
The distance is even greater with the third issue. The idea of *ecstasy* seems to Hart undue animism. But can we deny that objects and forms, even if not animated, exert an influence on the space that surrounds them? That a color enters into harmony or dyscrasia with others? That a symbolically meaningful building gives its contest an affective value? It is not animism but recognizing that the world we perceive is animated by affective and axiological qualities, which segment it by giving a different salience (for me, mainly affective, in a broad sense, and later as meaning). Space, only if charged with some salience, becomes place (in the proper sense). I can clarify Böhme’s ontological notion of the ecstasy of things here. Things and spaces are “ecstatic,” not their perceptors. These ecstasies are affective qualities that “go out,” radiating into things’ surrounding space and taking away its homogeneity by filling space with affective tensions and motor suggestions (namely, tonalizing our surroundings in a certain way). Think about the color red. When you see the red color at a traffic light or as a stop sign, it suggests an atmosphere of restraint; when you see it in an apple, it offers an invitation to start eating. Is it possible to deny that red arouses a bodily resonance per se (exciting, soliciting attention, no matter what) before any different sensorial and pragmatic uses? Why would we choose red for traffic lights, a flashy party dress, Pompeian houses, or a book cover wanting to attract attention? Crucially, whereas the perception of these ecstasies or affordances can also be ecologically incorrect (misperception) or give life to “false” affordances, for atmospherology, the mismatch between the atmospheric space and its subjective felt-bodily resonances cannot be considered a mistake but only a different way of sensing the “same” atmosphere. To speak of “falsity,” it is necessary to assume that there is a “true” atmosphere to which our perception would be inadequate. What is the true atmosphere? The one desired by the architect? The one expected by those who live in that space? Is the atmosphere socially more appropriate? The one commissioned by the client? The specific atmosphere you feel now or the one you will feel later on?

I am pleased — but not surprised — that for architects, the most inspiring part of my atmospherology seems to be where I attempt an analytical distinction between the different types of encounters between subjects and atmospheres. I will clarify more extensively what I mentioned on pages 99 and 136 to show better what my atmospherology intends to account for the multiple nuances of atmospheric experience.

A An atmosphere can overwhelm the perceiver (ingressive-antagonistic encounter), completely reorient their emotional situation, and be refractory (as a real antagonist) to their more or less conscious attempt at a projective, reflective, and amending interpretation.

B An atmosphere can find perceivers attuned to it (syntonic encounter) to the point that, whereas others may even remain upset, they do not realize they have entered this atmosphere. We explain this apparent absence of atmosphere with two scenarios: a (Gestaltist) insufficient contrast between figure and background, causing in subjects an embarrassing affective and social sense of deficiency; and a felt-bodily disposition so compact as to prevent them from abandoning themselves to that specific
situation. What if the most powerful atmospheres were those lying in the background and providing tacit and contextual conditions of transitive-focused perceptions?

C Sometimes one recognizes an atmosphere in its “objective” roots (mere observation) without being felt-bodily involved. This emotionless recognition shows better than anything else the failure of the projectivist thesis, that is, the idea that any affective quality perceived in the external world would be nothing more than a projection of the mood of the subject perceiving it (a subjectivistic projectivism already excluded by praxic affordances theory). After all, if the projectivist hypothesis were always valid, one would only perceive atmospheres with which one is already previously attuned.

D An atmosphere can also elicit resistance (mood protest), which prompts the perceiver to leave or act in a way that tries to change the existing “climate.” The intensity of this emotional reaction is another proof of the objective effectiveness of atmospheric first impressions one reacts to.

E An atmosphere, which is always supervenient on its (material and immaterial) generators, may sometimes be aroused by elements that usually express completely different moods (reverse atmosphere. It happens, for example, when our self-disdain is strengthened by the beauty of a landscape whose relaxed atmosphere sounds somewhat offensive to those who cannot abandon themselves to it; or, more architecturally speaking, when a building designed to impose authority on those who enter appears, instead, ridiculous to those who know the background of the activities taking place there: the perceived atmosphere is displeasing precisely because the contrast with the desired atmosphere that the building at first glance is striving to create can be perceived perfectly.

F Although the exemplary atmosphere is the one suggested by our first impressions, the subsequent ones may give rise to relatively different moods (however influenced by the first one). There are various reasons: perceptual and climatic changes, end of sensory illusions, change in the perceiver’s physiological conditions, contrasts between a given atmosphere and its unwanted sub-atmospheres, additional and divergent cognitions, purely idiosyncratic experiences, and focusing on misleading fields of condensation (also involving objects that are not directly responsible for that feeling such as the example of atmosphere of fear of the dentist, mentioned in my dialogue with Arbib). Though this atmosphere can change over time, and the perceiver can filter it through new evaluations, this does not mean we must embrace a projectivistic relativistic approach. And for good reasons: if people always perceive something as merely subjective, no atmosphere could surprise and overwhelm them.

G Lastly, an atmosphere might elicit an active feedback loop to the extent that perceivers (for example, the spectators of a performance or the participants in a sporting or political event) reinforce the staged atmosphere by coordinating themselves with it.

These reflections briefly show the analytical potential of my atmospherical approach and its sensitivity to a range of possible experiences
that are very different even if conveyed — positively or negatively — by the “same” first atmospheric impression.

To Mark Hewitt

Mark Hewitt’s commentary marks the maximum detachment from my approach and, more generally, from my cultural background. Significantly, the only philosophers he mentions are Mark Johnson, Evan Thomson, and Andy Clark, as if philosophy had only been born in recent decades and only in English-speaking countries.

Let’s start with a few brief details. First, it is not at all true that I completely forget the influence of semantics and culture on buildings. Instead, my (new) phenomenology places itself on a consciously different plane from any cultural constructionism and prefers to delve deeper into the example of prototypical atmospheres (for me, effectively and largely foreign to the historical-social conditioning). Second, Hewitt criticizes the notion of atmospheres, considering them only an expedient to attribute some authenticity to a specific building and assuming the term atmosphere in the banalest nobilitating meaning. Atmospheres should not be considered automatically apologetic-ennobling since there are also negatively disturbing atmospheres. Third, it is incorrect that I would not say anything about the body as the resonance of atmospheres. I have written extensively on the subject (Griffero 2017a, 2017b) and am dedicating a whole book to it (forthcoming).

In this context, we could not say much more than underline how neo-phenomenologically atmospheric perception sometimes produces a resonance effect in the subjectively lived body (and not necessarily in the physical body).

Hewitt’s commentary allows me to clarify further aspects of my neo-phenomenological approach to make it at least more understandable, if not acceptable.

A  My neophenomenological analysis aims to elucidate and describe something conscious and familiar but, for some reason, not well or yet focused. It means that descriptions almost always reveal something surprising as they reveal habitualized aspects of everyday experiences and verbalize them through a language helping us to come closest to an adequate description of our (often wordless) felt-bodily experience.

B  Even when two or more perceivers do not experience the situation identically in terms of intensity or length, their embodied-pathic experiences show a common structure that connects their experiences. Although triggered by a first-person experience, new phenomenology tries to capture “types” of experiences, commonalities, or invariants and their ontological (in my case, also felt-bodily) conditions. When I refer to the “same” atmosphere, I think of a kind of relatively invariant and shared affective-atmospheric experience that precedes and guides the subsequent subjective filtering, which gives more subjective nuances to our atmospheric experiences.

C  New phenomenology aims at accounting not for pure facts (in the objectifying sense) but absolute (namely, subjective) facts. Nevertheless, it does not count on a fully solipsistic introspection. It provides intersubjectively verifiable descriptions that we cannot do without if we want to talk about the experience. A
A phenomenological (especially neophenomenological) approach is interested in subjectively experienced phenomena encountered in the world — whether these phenomena can be scientifically explained or not. Let’s be clear: I have nothing against experimental science, provided that it is not wielded as a dogmatic cudgel or considered the only form of “truth.” I do not ascribe any unquestioned truth to it, nor, above all, do I believe experimental science gives a really conclusive explanation for lifeworld experiences. Facts experimentally examined since inaccessible to consciousness and therefore unsuitable for first-person accounts are not necessarily more scientific than others. Not everything that is recordable and subject to representation under laboratory conditions enters into a real relationship with our qualitative and ecologically valid everyday experience. Nearly all depends on the questions we ask. One should not expect phenomenological explanations of nonconscious or preconscious mechanisms nor a description of the perceiver’s everyday experience from scientific-causally explanations. It is pointless to answer the question, “how is it like to experience a certain built space or house” by searching for “what parts of my brain are stimulated when I enter, contemplate, or move into that place.” Nor am I ever aware, in a phenomenological sense, of the increase in blood sugar level and the firing of mirror neurons as possible physiological-neural causes of my experience. Between embodied, lifeworldly consciousness and biological-neural processes, there is an insurmountable categorial “explanatory gap.”

Finally, cognitive and neuroscience accounts focus exclusively on physical phenomena and the objective-anatomical body (Körper), overlooking the subjective-felt body (Leib) as the “real” site of experience, which phenomenology (especially the new phenomenology) refers to. The felt body is something different from the physical body (bones, brain, nerves, and neurons). Provided that for natural sciences, what we cannot measure does not exist, they cannot (and do not want to) account for non-measurable experiences. Yet, as a consequence, they ignore some of the most precious aspects of our lifeworld experience — in our case, the experience of atmospheric feelings as affects whose sounding board is the subjectively lived-felt body. To better identify (but not measure) atmospheric feelings from a phenomenological perspective, we could also resort to new phenomenology’s theory of felt-bodily communication. Briefly said, it assumes that, as long as we are not hindered by an embodied condition hostile to “letting go,” we immediately feel environmental “bridge-qualities” (motor suggestions and synaesthetic characters) and communicate with them through felt-bodily dynamics made up by elements that can be combined
For an introduction to this dynamic, see Griffero 2017a and 2017b, as well as Schmitz 1965 (briefly 2011, 29–53).

We know brain’s color images inhibit people’s critical approach (see Weisberg et al. 2008).

(such as narrowness/vastness, contraction/expansion, direction, tension, dilation, intensity, rhythm, privative expansion/privative contraction, and epicritic/protopathic). Each atmospheric experience can be examined as a kind of felt-bodily resonance due to a specific combination of these elements.

Hewitt’s commentary ends in the sign of a predictable naive scientific optimism: only once it has clarified the neural bases of our affective states would it make sense to talk about atmospheres “intelligently.” It reminds me of a well-known geneticist who, attending a humanistic conference on the cultural-experiential-symbolic significance of pain in Western civilization, came out saying that we were wasting time because medicine would soon be able to eliminate any pain, rendering useless any discussions about it (and thus millennia of religion, philosophy, and art). This naive scientism is difficult to answer in theoretical terms. If Hewitt’s theses were true — vaste programme! — 99% of our daily life experiences would not deserve to be investigated. Falling in love or enjoying the taste of chocolate and then “understanding” what kind of emotional and felt-bodily experiences they imply would require waiting for someone to explain and illustrate their neural bases and, perhaps, manipulate our consent through the rhetoric use of fMRI.

To Suchi Reddy

I agree that determining whether an atmosphere exists independently and without the relations of the perceiver to their surroundings may not be very helpful to the practicing architect, whose intention is to affect the emotional responses of their future inhabitants. However, this does not mean that architects, as soon as they abstract from their practical task, cannot wonder what a feeling is (an atmospheric feeling, in this case) and why feelings cannot be invented — those described by Homer almost three thousand years ago are still substantially ours — and admit that atmospheric feelings are other and more than occasional relationships between perceivers and their environments. Of course, we are addressing a “philosophy of architecture” more than architecture practice.

Nothing to object to the thesis that the social and functional aspects of the architect’s work “soften” the experience of prototypical atmospheres, acting as a constant variable of their actions. The experience of prototypical atmospheres is very rare and so disturbing-unexpected that we would even lack words to describe it adequately. Several times in my dialogue with Michael Arbib, I have pointed out that the most common experience is that of derivative-relational atmospheres. The admission of how rare is experiencing something that transcends the simple subject-object relationship (more precisely: precedes it) and in which one is immersed without any causal basis-explanatory is and remains essential for those who do not agree to crush philosophy in total immanentism.

I am happy to have had a dialogue with scholars whose training and interests are far from mine. An anecdote is well known according to which Sigmund Freud, when he arrived in New York City, said to Carl Jung, “they don’t realize we’re bringing them the plague” (Lacan 1996, 336). Without elitist continental hubris, I conclude by saying I hope “they realize that we are bringing them instead a (theoretical) gift maybe merely clarifying what they have always (implicitly) felt.”
**Bibliography**


Appendix

Elisabetta Canepa

An Essential Vocabulary of Atmospheric Architecture: Experiencing, Understanding, and Narrating Kansas State’s Beach Museum of Art

Abstract
Informed by (new) phenomenology and cog/neuroscience and grounded in the architectural discipline’s expertise, atmospherology (namely, the study of affective atmospheres in space) can benefit from a shared lexicon to encourage mutual understanding and knowledge construction. A basic language of atmosphere helps cultivate an affective education that makes architects capable of articulating tacit experiences and designing atmospheric qualities. Fifteen essentials are discussed: affordance, arousal, atmosphere, attunement, body, conscious, emotion, feeling, first impression, generator of atmosphere, lived space, mood, nonconscious, resonance, and valence. Lastly, this essay develops an atmospherological critique of the Marianna Kistler Beach Museum of Art on the Kansas State University campus in Manhattan (Kansas) to evaluate the accuracy, coherence, and adaptability of the lexicon’s concepts.

Keywords
architecture
phenomenology
neuroscience
atmosphere
atmospherology
affective education
tacit experience
language of atmosphere
Kansas State’s Beach Museum of Art
Atmospherically Thinking, Architecturally Speaking

Nearly all literature about architectural atmospheres mentions their inherent vagueness, ephemerality, and elusiveness (Böhme 1993; Rauh 2017; Canepa 2023). Nonetheless, atmosphere constitutes “architecture’s most immediate communicative dimension” (Bressani and Sprecher 2019, 2). In a nutshell, atmosphere is the medium to describe what we feel about our surroundings and how space affects our being-in-the-world, priming our emotions, behaviors, and appraisals. Nesting on individual perspective and sensibility, its expressive force “has the advantage of relying on immediate experience, providing an accessible way to speak of architecture” (Bressani and Sprecher 2019, 2) [F1]. That was exactly my case: a young, trained engineer approaching doctoral research in architectural design and theory, worried about effectively communicating with her peers. Atmosphere became my language — a personal filter to observe, experience, and comprehend the universe of forms (Canepa 2022a).

Atmospheres establish a strong relationship between the built form — made up of “the most permanent components of architecture” (von Meiss 2011, 11) — and the human body, which is “our tool of tools,” “the crucial medium through which architecture is experienced and created” (Shusterman 2013, 7; 2012, 227). As with any other expressive system, atmosphere is live, porous, and constantly mutating. The genesis and semantic evolution of the term “atmosphere” prove its fluid essence (Canepa 2022b, chapter 2 “Roots”). Although it is a relatively recent neologism (dating from the seventeenth century), “the idea of a building’s emotional resonance has always been central to architectural practice,” as Harry Mallgrave explained during his 2023 Interfaces lecture in which he reconstructed the historical background of the atmospheric phenomenon (2023, 133).
As my Ph.D. research progressed, I began tuning my vocabulary to better communicate with scientists, as I wanted to understand the biological bases of architectural experience (Canepa 2019, 2022b). The following condensed lexicon is an attempt to craft terms like “affordance,” “body,” “resonance,” “attunement,” “emotion,” “feeling,” and “mood” into a thesis of atmosphere for architects that we can apply to theory and practice. This application is twofold: first, as dwellers of the world who continuously and inescapably move across a sequence of built spaces, “experienced primarily through the atmospheres it generates” (Janson and Tigges 2014, 26); second, as designers of the world who work “to anticipate a certain reception, including certain bodily responses” (Bressani and Sprecher 2019, 3). Indeed, if “the visitor and user, the customer and the patient are all touched or moved [by] atmospheres,” it is an architect who “creates them, more or less consciously,” as remarks the philosopher Gernot Böhme (1991, 36). Atmosphere is an architectural duty. Architecture is atmosphere.

**Atmospheric Education**

Juhani Pallasmaa, one of the most popular architectural authors on the so-called “atmospheric turn” ¹ (1996, 2008, 2009, 2011), promotes a definition of atmosphere as the sixth human sense (1994, 2016). Furthermore, he updates the list of multiple intelligences developed by the American psychologist Howard Gardner (1999), who rejects single decoding of intelligence as a cerebral category. Alongside the types accredited by Gardner, ² Pallasmaa flanks four varieties (2015, 61–62), among which are emotional intelligence and atmospheric intelligence. These skills are as essential as the logical-mathematical ones, for a long time considered superior and preferred in scholastic tradition (Galimberti 2021) as much as in architectural education (Mallgrave 2023), given that the logical-mathematical intelligence is a feature typically masculine and easily teachable thanks to demonstrations and evidence. Emotional intelligence is equally valuable and — although instinctive — it is cultivatable with appropriate practice. As we will see in the following section, there is a difference between emotions and feelings: emotions are born from nature, being nonconscious, bodily changes dynamically regulating our responses to stimuli, both external (such as those produced by our physical and social contexts) and internal (such as memories, reveries, and mental images); feelings manifest from culture, being cognitive functions consciously processing emotional and physiological information. Affect (encompassing emotions, feelings, and moods) is central to deciphering how we think and behave (Damasio 2021). We need to learn how affect works; how to recognize what we feel; and how to identify affective phenomena. In brief, we need an affective education.

Humanistic culture, through myths, literary works, visual arts, and performing activities, is the primary source of our affective education. For many children, our first education as malleable and permeable individuals is listening to fairy tales and interacting with parents and others as a basis for understanding those stories better. This step is crucial for building our abilities to shift from first- and second-person to third-person perspectives. Since affective events are always situated in temporal, spatial, and social contexts, we develop intuitive skills to read the world that enacts our emotional sensibility. As Michael Arbib and Tonino Griffiero highlight in their dialogue, “the habit of atmospheres suggested by art (nowadays especially by cinema) contributes powerfully to people’s affective education, that is to say, it acts as a scaffolding to achieve certain feelings or, at least, to better identify and define them” (2023, ...
It is worth pointing out that non-expert inhabitants, just like professional designers, have strong intuitions about how they can generate affective atmospheres, thanks to constant interactions with space in their everyday lives.

The upcoming section will explain the notions of arousal and valence.

The neuroscientist Lisa Feldman Barrett claims that people “differ considerably in their [emotional] experience” (Barrett et al. 2001, 713) and are not the same in comprehending, recognizing, and articulating what they feel. Albeit “how are you feeling?” is one of the most ubiquitous questions in our culture,” replies may vary extremely, based on “differential attention to feelings” or “differential attention to the properties of words” since “people use the same emotion words in very different ways to communicate their feelings” (Barrett 2004, 266). Barrett coined the expression emotional granularity to describe individuals’ abilities to discriminate the specificity of their affective states, which they can report in several manners (Canepa 2023).

As we mature from adolescents to adults, we grow more and more sensible to the affective potential of atmospheres before becoming the architects responsible for giving atmospheres substance. Knowing how to feel atmospherically is a way to perceive, share, and make architecture. It is vital for both clients and designers: the first, even if only to the extent that they understand what they desire, can communicate their emotional expectations to designers effectively; the latter, only if possessing — inborn or trained — listening aptitude, can get in tune with the requests of their interlocutors and transform their impressions into design results. Expectations must turn into orchestrated atmospheres replete with affective meanings (Pérez-Gómez 2016).

The upcoming section will explain the notions of arousal and valence.

5 Interceptive sensitivity is our ability to perceive visceral information from the body (such as heartbeat, respiration, gastroesophageal sensations, itching, and pain) and interpret related physiological changes. Interception influences our capacities to recognize and experience emotions (Barrett et al. 2004; Zamariola et al. 2019). The hypothesis is that people who are more interoceptively sensitive (that is, more attuned to their internal body signals) are more accurate in perceiving and understanding their surroundings (Murphy Paul 2021). So far, however, it has not been confirmed whether our inside-body perspective influences how we perceive the outside world (Baiano et al. 2021).

Since emotional intelligence may sway our atmospheric sensibility to resonate with our surroundings and grasp their affective potential, we wonder — as designers — whether and, if so, how we can improve our competence in feeling space. Preliminary research assumes, for example, “contemplative practices contribute to cultivating beneficial emotional granularity” (Wilson-Mendenhall and Dunne 2021, 5), but this hypothesis has yet to be tested experimentally. The architect-philosopher Sarah Robinson, who has written extensively about the centrality of our body as the privileged medium to experience and conceive architecture (2011, 2015, 2020, 2021), confirms that she practices meditation to strengthen her corporeal, emotional, and spatial awareness. She laments that, too often, we are not fully present in our bodies; technology tends to worsen this disconnection from our physical selves (see the interview in Buondonno 2023).

Even if “it is already difficult to verbalize our feeling of the height of a room,” as the architectural historian Ulrich Conrads admits (in dialogue with the sound-space artist Bernhard Leitner: 1985, 29), architectural background and expertise somewhat inform designers’ capacities for feeling and consequently being influenced by atmospheric affordances. The architect’s voice, probably their most essential tool, becomes more powerful thanks to the density and consistency of the identification of felt pleasure), both impacting our overall emotional granularity (Barrett and Bliss-Moreau 2009). Arousal focus is supposed to correlate with our interoceptive sensitivity (Barrett et al. 2004) whereas valence focus seems to link to our efficiency in perceptually processing affective stimuli within our environments (Barrett and Niedenthal 2004).
An essential vocabulary of atmospheric architecture

Architectural phenomenology is “the phenomenological study of architectural experiences and meanings as constituted by qualities and features of both the built environment and human life” (Seamon 2017a, 247). Designers must fine-tune their inclination for phenomenological analysis to improve their fluency in qualitative descriptions and interpretations of reality. Knowing how to look at architecture (Zevi 1993 [1948]) promotes a virtuous circle (Seamon 2017b): the more we observe our surroundings, the more we develop our visual and aesthetic sensibility. Making an effort to articulate what we see intensifies the level of detail we can grasp. How we see the world shapes, in turn, how we communicate our perceptions and feelings. In this way, we come to a more comprehensive and solid understanding of human experience, encompassing even ineffable aspects of life, however invisible, which ultimately determine the quality of our spatial interactions. Atmospheres are an ideal example of these tacit qualities (Zumthor 1998, 2006) we should study better.

Learning how to read, describe, and imagine the tacit dynamics of our experiences co-originating in a specific place helps us to cultivate our atmospheric design sensibility and conceive profoundly affective situated projects. According to David Seamon, who teaches how we may apply a phenomenological approach to architecture and environmental design (2023), phenomenology emphasizes “the crucial importance of finding ‘fitting language’ to present the experience and meaning” (2017b, 68: table 5.1). Our atmospheric education must therefore sprout from an appropriate and shared language: the language of atmosphere.

The Language of Atmosphere
The essentials for a language of atmosphere here proposed take inspiration from the “Dialogue on Affordances, Atmospheres, and Architecture” between the phenomenologist philosopher Tonino Griffero and the computational neuroscientist Michael Arbib (2023). However, it yearns to be autonomous: it is an architectural lexicon composed by an architecture scholar to speak to and be utilized by other architects. Please refer to the index at the end of the book to identify the same terms and see how (new) phenomenology and cog/neuroscience interpret them. Lexemes in bold italics benefit from a focused definition. I suggest a track that can accompany the reader from contextual concepts to more applicative details without following alphabetical order. Although some words, above all “atmosphere,” seem relatively clear, there is a dearth of entries in architectural dictionaries and textbooks.  

Lived space
Lived space is the space of our embodied and affective experiences, which we feel in the first person, grounding on our body. We can only perceive and resonate with a fragment of the world surrounding us, and this particle does not have boundaries or surfaces but embeds affective affordances. Lived space is, indeed, “radically different from physical and geographical space” since it is “structured on the basis of the meanings and values projected on [the outside reality] by an individual or group, either consciously or unconscious-
For further information on the philosophical history of the concept of *lived space*, from Martin Heidegger to Hermann Schmitz, see Griffiero 2014a. A building, from a phenomenological standpoint, is a constellation of lived spaces connected to people’s experiences, that is, how they perceive, feel, and act in a specific moment, in a precise place, and under a given circumstance. Cf. John Dewey’s idea of a “pervasive unifying quality” of immediate experience we often feel (1931, 1934).

Atmosphere

Atmosphere is “a combination of space and activity — something [co-]produced by the people within the space” (Thibaud 2014b, 71). It arises from the immersive and integral contact of the perceiver with their architectonic context. *Atmospheric space* is, thus, the space for *emotions, feelings, and moods*, where our *bodies* “play a central role” (Morselli 2021, 302: original italics). By incorporating the (neo)phenomenological legacy into architectural research, we can synthetically describe atmosphere as the “sensuous and intuitive character of *lived space*” (De Matteis 2021, 80), the “something more” transcending its material foundation (Griffiero 2018). It is “the life of a place” (Schönhammer 2018), its unifying essence; what we immediately and pervasively *feel about space*. Atmosphere is the whole of affective qualities conferring identity and meaning to a situation, event, or context that influences our experiences, eliciting a state of *resonance* and possible *attunement* to our surroundings. For architects, it is “a phenomenon of significance and potential within [the] built environment” (Nielsen, Friberg, and Hansen 2018, §4) that they can trigger and inspire, but not entirely control, through the orchestration of spatial *generators* (Canepa 2022c). Architectural culture, over time, molded a rich landscape of design interpretations and approaches to atmospheric dynamics: for example, atmosphere as indoor microclimate, decoration, aura, *genius loci*, *Zeitgeist*, metaphor, collector of memories, mood, or *Stimmung*. The impression is that atmosphere is never a single experience but an intersection of similar meanings.

Resonance

Resonance unfolds our innate predisposition to be emotionally affected by the external world. It is the first stage in *atmosphere* dynamics, potentially followed by *attunement*. There is, indeed, a distinction between perceiving the presence of an atmosphere (*resonance*) and being affectively involved in it (*attunement*). Resonance is the immediate activation of *first impressions* that shape our spatial experiences by interacting with affective *affordances* enacted by an environment. Our adaptation responses can be *nonconscious*, affecting our bodily *emotions*, or reach the awareness threshold if particularly moving, evoking conscious *feelings*. “Through its resonance, the body functions as a medium of emotional perception” (Fuchs and Koch 2014, 9: original italics). For example, as soon as we join a party, we bodily grasp its essence, resonating with the emotional force of all its atmospheric *affordances* in unison. We perceive the affective signature of our surroundings and filter it through our current body-mind state (tinted by transient factors of both environmental and personal origin). We would probably feel pleasurably activated, namely joyous (experiencing high *arousal* and positive *valence*); or not, feeling disagreeably disconnected (with high *arousal* and negative *valence*) if we contrast our bad *mood* to the cheerful disposition of the other guests and the overall festive ambiance.
Attunement
Attunement is the potential act of appraising an atmospheric experience that follows resonance mechanisms if particularly relevant to the subject. We evaluate the affective content of a specific atmosphere relating the external world to its effects on us. We assign affective meaning to our surroundings, grounded in whatever resonance suggests to us, modulating our emotional engagement and attachment. We can feel in tune with a given atmosphere, remain insensitive, or even reject it. Immersed in a party atmosphere and resonating with its vibe, we may, for example, realize the merry situation is unpleasant and uncomfortable because it does not suit our current body-mind disposition. Attunement appraisals inform our actions and behavioral readiness. We may (desire to) leave the party or go to another spot in the room. The concepts of consonance and dissonance represent the two extreme points on the spectrum of possible attuning responses: tuning into and tuning out. In between is a range of nuances. Affective attunement contributes to the consistency of our atmospheric experience. While resonance describes our visceral sensitivity to be affected by atmospheres, the attunement dynamic relates what we feel to our externally oriented perception. We understand our affective connection to the world surrounding us. Atmosphere is, therefore, revealed to be the medium between our body and reality mediated by architecture; it is a process of sense-making that builds meaning upon perception.

Emotion and feeling
Our emotional responses, extensively studied but not univocally explained by affective science, are temporal dynamics implying antecedent motivations (e.g., concerns, expectations, and goals) and modulating cognitive processes (e.g., attention, memory, and decision-making). Emotional episodes are associated with a specific circumstance, quickly prime our body to react to it, and orchestrate multiple components translating into physiological, behavioral, and cognitive mechanisms that operate on nonconscious and conscious levels (Delplanque and Sander 2021):

A emotions are internal somatic and visceral feedback, nonconsciously developed, even if sometimes consciously recognizable (when we feel our body changing);

B expressions are outward signals, mostly nonconscious (detectable by observers of the one who is undergoing the emotion through their facial, vocal, and postural changes);

C action tendencies are behavioral correlates of emotion, often nonconscious;

D feelings are cognitive feedback of the emotional experience as consciously felt.

Emotions, expressions, and actions are bodily correlates of cognitive feelings, mutually interacting at different levels and timescales. For example, we may sense our heart pounding [A], our face flushing with eyebrows twitching [B], an urge to leave the room [C], and consciously feel nervous [D]. Emotions are “thoroughly embodied,” but this does not mean changes always occur in every component: the copresence of all the manifestations ([A], [B], [C], and [D]) is typical when emotions are the most accentuated and notice-
Arousal and valence

Understanding our ongoing emotional states is not an easy task since they interact with a world of personal meanings. Several theories exist regarding how and why we experience emotions, and several models propose how to conceptualize and categorize their differences. One of the most studied paradigms is the circumplex model (Russell 1980), which posits people primarily process and articulate their emotions as points within a continuum space based on two basic pan-cultural dimensions: arousal and valence. Briefly, arousal defines the intensity of the emotional state, that is, how strong the reaction is; valence describes the extent to which an emotional state is positive or negative, that is, pleasant or unpleasant. Their relationship is a still-open empirical question (Colombetti and Kuppens 2023), but their combination provides an effective way to compare emotions among each other. Arousal and valence are features of our lived experience and neurophysiological activity, accessible in conscious and nonconscious ways, constituting the core of our emotional complexity. In contemporary affective science, multiple meanings and uses of these concepts have been proposed over time, even if not always clearly distinguished, such as bodily changes, felt experiences, behavioral directions, and affective appraisals. The circumplex approach refers to how we subjectively experience arousal and valence, adopting a two-dimensional domain [F2] that measures arousal on the vertical axis (self-rating how much we feel activated) and valence on the horizontal one (self-rating how much we feel good). If we are joyous, as in the party example, experienced arousal is intense and experienced valence is pleasant [F3]. Arousal and valence are also applied to identify the intrinsic character of objects, scenes, and atmospheres, evaluated as ranging from calming to exciting (arousal) and from positive to negative (valence), passing through neutral conditions. In this case, the arousal/valence of the perceived stimulus depends on the arousal/valence experienced by the perceiver (Canepa et al. 2019). Arousal and valence are notions fundamental to structuring a dialogue between architects and future inhabitants to sound out how they usually feel in a certain space and what they want to experience. If coherently described and understood, we can try to design atmospheres tuned to people’s body and feeling expectations.

Mood

Emotional states have a short duration to ensure the necessary adaptive flexibility demanded by an ever-changing environment: bodily emotions are immediate, developing in milliseconds — a speed, in general, too fast to be consciously perceived and interpreted; feelings come a bit later, ignited by cognition. If the parabola of an emotional state persists in time, going beyond the threshold of extemporaneity, it constitutes a mood. Moods are “long-term conscious experience[s]” (Schreuder et al. 2016, 4), slow to shift, and less...
How are you feeling?

A graphic reinterpretation of the circumplex model of affect:
see the original formulation in Russel 1980

A simplified taxonomy of affect-descriptive terms:
see the original study in Russel 1980

The “joyous” adjective, for instance, corresponds to an emotional state with high arousal and positive valence.

Valence: the extent to which an emotional state is positive or negative, that is, pleasant or unpleasant.

Arousal: the intensity of the experienced emotional state, that is, how strong the reaction is.
The Norwegian architect Thomas Thies-Evensen, Christian Norberg-Schulz’s pupil, recalls that also “Le Corbusier saw moods as the essence of architecture” (1987, 15), quoting a passage from his book Towards a New Architecture: “you employ stone, wood and concrete, and with these materials you build houses and palaces. That is construction. [...] By the use of insert materials and starting from conditions more or less utilitarian, you have established certain relationships which have aroused my emotions. This is Architecture” (Le Corbusier 1986 [1923], 179: original italics). Here Le Corbusier talks about function and atmosphere.

The duality living/lived has different semantic nuances, each with a distinctive meaning, grounded in the two words German uses to refer to what we indiscriminately call “body” in English: Körper and Leib. Körper, translated here as living body, can be called corporeal body (Fuchs 2002), physical body, biological body, organic body, or sensing soma (Shusterman 2006). Leib is the lived body or felt body (Griffero 2017).

Body

Resonance and attunement mechanisms influence our bodies and moods together. The premise is that “we are embodied beings whose minds, bodies, environment, and culture are interconnected at sundry levels” (Mallgrave 2013, 7). By the term “body,” we refer to the holistic complexity of our corporeality: the biological organism (the living body, anatomical infrastructure responsive to sensory impressions) is completed by life experiences that make every individual unique (as embedded in the lived body, which allows the perceiving subject to grasp the personal nature of the world with which they interact). We both have living bodies and are lived bodies (Shusterman 2006, 3). The distinction between living and lived is a perceptual distinction: we undergo a physiological change and our body may feel that change (Gallagher 1986). From a methodological perspective, the study of architectural atmospheres has been dominated by a phenomenological approach grounded on observing the lived body as consciously felt in the first person (Canepa 2022b). What has changed in recent years is a greater biological emphasis on the living body, promoted by breakthroughs in cognitive science and neuroscience. They may shed new light on the lived body by looking into the living body, of which the brain and the autonomic nervous system are constituent parts (Arbib 2021). As Harry Mallgrave noticed, “the idea of atmosphere reemerged within the context of recent (and quite major) advances in the biological, psychological, and philosophical sciences” (2023, 150), which introduced a new way to investigate how we perceive the designed environment thanks to concepts like embodiment and embodied simulation. It is what we feel and experience as entangled lived-living bodies that allows us to explore the atmospheric phenomenon in its unique complexity (Canepa 2023). This unity encompasses the overall relationship existing between our experience and physiology, conscious and nonconscious behaviors, first-person and third-person perspectives, as well as phenomenological observations and cog/neuroscientific experimentations.

Conscious and nonconscious

Like affect, consciousness is a widely debated topic in philosophy, psychology, and neuroscience. There are many expressions used to define our state of not being aware of what happens around us, such as “unconscious,” “nonconscious,” “subconscious,” “subliminal,” “implicit,” “automatic,” and “pre-attentive.” The neuroscientists Marco Tamietto and Beatrice de Gelder (2010) explain the difference between two terms that are commonly interchanged in this “terminological jungle”: unconscious and nonconscious. The first term “is rooted in the psychoanalytical tradition and postulates the existence of an active mechanism of psychodynamic suppression of conscious information”; the second term, instead, “is rooted in the experimental psychology tradition and indicates a perceptual state in which the subject does not report the presence of a stimulus or of one of its attributes (for example, its emotional content) even though there is evidence (behavioral, psychophysiological, or neurophysiological) that the stimulus has in fact been processed” (Tamietto and de Gelder, 698). As other architecture researchers recommend (Canepa 2023; Djebbara 2023), the “nonconscious” form fits phenomenology and neuroscience of atmospheres better.
A crucial capability of humans is being able to override first impressions when responding to them could be harmful (see Kahneman 2011). The key idea was known to nineteenth-century neurologists and has been explored in comparative neuropsychology.

The gist may be misleading: see Arbib’s analysis of Turner’s The Slave Ship painting to note how further attention may change our perceived atmosphere of a scene (Arbib and Griffero 2023, §4.3).

The human eye performs two perfectly integrated visual processes: central vision, which focuses on specific points, details, and objects; and peripheral vision, which offers a primary structural representation of reality, building its big picture. Simply stated, central vision is what, and peripheral vision is where. Any element falling outside the fovea range (namely, the area with the maximum visual acuity) feeds the peripheral sensitivities, which detects contours, contrasts, and movements. Central vision brings into focus a limited portion of our surroundings, which approximately corresponds to two degrees of the entire viewable field. To have better schematization, extend your arm in front of you and raise your thumb showing the ok gesture: the surface covered by your fingernail rounds to the fovea focus. Atmospheric dynamics are, instead, strongly mediated by our peripheral visual system (Pulasmaa 2014, 2019; Rooney, Condia, and Loschky 2017), letting us experience our environs with a “borderless eye” that reads space not in every single component but by grasping its complex essence.

**First impression**

Atmospheres instantaneously affect the overall impression we have of space since “we perceive atmosphere through our emotional sensibility — a form of perception that works incredibly quickly, and which we humans evidently need to help us survive,” as Peter Zumthor states (2006, 13) in one of the most cited quotations ever about atmospheric perception. First impressions are profound and beneficial events providing us with personally meaningful information about our surroundings, with just a glance and without necessarily analyzing each detail or involving conscious evaluations. Their extreme speed, multisensorially nurtured, is essential for our interaction with reality, as science demonstrated (Bar, Neta, and Linz 2006; Djebara et al. 2019). We can, for example, detect the presence (or absence) of a static or in-motion element and make global semantic categorizations of our surroundings (such as it is a park, house, or party) “within an eye blink” (Glanemann et al. 2016, 1566), which lasts for 100–150 milliseconds, that is less than a quarter of one second (Burr 2005). We immediately capture the gist of a real-world scene informed by the whole configuration of its components, even if they are part of our peripheral vision field, the domain par excellence of atmospheric effects. Gaining a deeper understanding of how we first engage the built environment is a key objective for architectural phenomenology (Seamon 2017b).

**Affordance**

The concept of affordance, coined by the American psychologist James J. Gibson in the 1960s (1966, 1979), clarifies the intrinsic interrelation and complementarity of our body and our environment that influence how we act based on “the ‘fit’ between the agent’s physical structure, capacities, and skills and the action-related properties of the environment itself” (Clark 1999, 346). Ecological meanings serve behavior depending on what the environment offers and what we can perceive suitably to our effectivities (sensory/cognitive/motor capabilities), intentions, past experiences, as well as sociocultural traits and norms (Rietveld and Kiverstein 2014). A flight of stairs is the typical example: if we were in a wheelchair or were toddlers, stairs do not afford us to climb. This idea of Gibsonian affordances can, as suggested by Griffero (2014b) and discussed with Arbib (2023), be extended and involve the overall interdependence of action, perception, and feeling. How we may act, perceive, and feel is conditioned by the affordances embedded in our environment, working as “embodied predictions” (Djebara, Fich, and Gramann 2021). If praxic affordances are bodily-activating triggers oriented to do something (e.g., going up steps), atmospheric affordances are possibilities to emotionally resonate with our surroundings, without “necessarily [reacting] with a given behavior” (Griffero 2020, 102). They disclose the expressive character of an architectural element (or a composition of them), the so-called generator, that primes our affective resonance.

**Generator of atmosphere**

The German philosopher Gernot Böhme points out that “architecture and design have focused overly on creating things without acquiring an explicit awareness that architectural and design forms are generators; to wit, they must radiate something and contribute to the production of atmospheres” (2001, 178: original italics). Architectural generators are the set of spatial components, ambient
qualities, and their mutual interactions architects design to stage the intended atmospheric experience, despite what future occupants of that space will actually perceive moving around it. The term “generator” helps emphasize the enactive existence of affective affordances in architectural substance. It is a strategy to read the fundamental elements of architectural composition through an affect-based perspective. To roughly schematize, we can visualize the interrelated dynamic between architecture, affordance, and atmosphere adopting this correlation: architectural elements + affective affordances = atmospheric generators. Interpreting Böhme’s taxonomy of atmospheric characters (2013), we identify three main types of architectural generators of atmosphere (Canepa 2022c):

A **gestural generators** (such as dimensions, proportions, forms, and geometries), distinguished by their ability to suggest movement and kinesthetic impressions (e.g., sensations of volume, load, and density, which can render a space oppressive, solemn, or poignant);

B **sensorial generators** (such as light conditions, colors, materials, and textures), which produce specific sensory inputs (e.g., visual effects, sounds, scents, and tactile feedback) that transpire from the architectonic materiality through their sensuous force and are initially perceived as a whole synesthetic experience; and

C **contextual generators** (such as a sense of home, power, or wealth), manifested with culturally significant details that situate the project into a given historical, social, and geographical context, incorporating well-recognizable, conventional meanings.

Atmospheric generators are the design tools architects craft to engage our **body** and sway our **emotions and feelings**, priming the affective processes of **resonance** and **attunement** that tint our **mood**.

**User**

Lastly, I want to wrap up this essential atmospheric vocabulary by suggesting renouncing a hackneyed word: **user**. A user does not have an individual identity, a feeling body, and an emotional richness. Users are not real. From a phenomenological perspective, “a building is a constellation of experiences, actions, situations, and events, all generated by and related to the individuals and groups that [enliven] that building” (Seamon 2017b, 67) according to their distinctive **identity**: designers, builders, residents, workers, visitors, architectural critics, and so on. Each possesses a **body**, interactive and mutually constitutive with its surroundings. Atmospheric design sensibility promotes improved attention to corporeality (Canepa 2022b), emphasized in its composite, dynamic, and multisensory uniqueness (Tvedebrink et al. 2022). Architects conceive people’s body in a variety of shades, often undervaluing it (Imrie 2003): they can neglect the body’s physical presence, chase ideal representations, adopt the human scale as a tool for proportioning geometric criteria, consider only normalized standards, assume their own persona as privileged point of reference, or image spaces for stereotypical categories of users with unified purposes and conformist behaviors. We must target the **body** and **mood** of the individuals we design for, fine-tuning our empathic skills to gain an experiential understanding of their **lived spaces** and possible emotional **resonances** with proposed **atmospheres**. Versatile scenarios are better than customized but inflexible solutions.
F4  Marianna Kistler Beach Museum of Art
    Kansas State University, Manhattan
    Kansas, United States
    original building and addition
    north façade
    watercolor sketch

Phase 1 — museum: 1995
    Moore/Andersson Architects from Austin
    (design architects)
    Wiedeman Architects from Kansas City
    (architects of record)
Phase 2 — addition: 2005
    Andersson/Wise Architects from Austin

An essential vocabulary of atmospheric architecture
PART II: ATMOSPHEROLOGY APPLIED TO ARCHITECTURE

Kansas State’s Beach Museum of Art
Inspired by Michael Arbib’s and Tonino Griffo’s lessons about atmospherology (2023) and grounded on the lexicon here crafted, I will apply what I have learned to analyze an architectural case study: the Marianna Kistler Beach Museum of Art [F4]. This building is nestled among the trees growing near the southeast edge of the campus that welcomed me for the last two years: Kansas State University (K-State) in Manhattan, Kansas — a college town known as the “Little Apple” of the United States. It is one of the most iconic campus edifices, inaugurated in the fall of 1996 and born as a special unforgettable present (Crawford et al. 2021). The businessman, rancher, and banker Ross Beach provided the lead gift for its construction, naming the museum as a tribute to his wife, Marianna Kistler Beach, on their golden wedding anniversary. The couple were Kansas State alumni: he graduated in engineering in 1940, and she obtained her degree in industrial journalism one year later. In the 1990s, K-State was the only large university in Kansas without an art museum. 28 The mission of its opening was dual: first, the need to host the permanent collection, established in the late 1920s, consistently grown over the years but scattered on campus among public spaces and private offices; and second, the aim to acquire, preserve, and celebrate works of art reflecting the cultural identity and tradition of Middle America, by displaying authors raised in Kansas or with any connections to the state. 29 Both the permanent collections and temporary exhibitions pursue a balance between historical and contemporary vocation.

The museum spaces provide a free home to a diverse population: students, professors, staff, and visitors of the campus, pupils of any age, citizens of the region and the state, and artists in residence or from the college departments. This building offers entertainment, cultural enrichment, inspiration, creativity, and a strong sense of history and belonging to the local community. Tours of the galleries and outdoor installations are integrated by educational and public programs including summer and after-school youth workshops, family activities, theatrical performances, film projections, concerts, ladies’ night events, exhibitions by alumni or faculty artists, scholarly symposia, and fundraising galas. It is a place for life and shared experiences, making the Beach Museum the ideal setting for an atmospherological critique. The perspective is the first-person account of an architect who did not grow up in Kansas but has been working on K-State campus over the last two years.

Atmospherological Critique
Being a member of the college community is significant for several reasons. The first factor has to do with how I typically approach the site. Coming from Seaton Hall, home of the Architecture Department [F5], I cross the campus sidewalks and lawns, slowly walking and passing by limestone buildings. On my way to the Beach Museum, the last encounter is the massive McCain Auditorium, which I can circumvent twofold: on the left or right. In the first case, I am received by the hug of the museum’s north façade [F6], whose two wings encompass the meadow sown in 2011. This green oasis stages a landscape of native Kansas grasses, wildflowers, and plants, designed by a multi-departmental team, which was coordinated by Katie Kingery-Page, today’s associate dean at the K-State College of Architecture, Planning and Design. By evoking the image of the prairie cyclically burning to restore its health, function, and beauty, the meadow was born to substitute for a sculpture de-
An essential vocabulary of atmospheric architecture

For further details about the meadow project, see Owen 2013.

Cf. how David Freedberg and Vittorio Gallese (2007) explain the implications of the discovery of mirroring mechanisms and embodied simulation for empathetic responses to works of visual art.

Mary Jarvis was the first woman to graduate in landscape architecture from Kansas State University in 1942.

Over 10,000 items now make up the museum’s collection, which was less than 1,500 when it first opened in 1996. The 17,000-square-foot addition connects to the original 26,000-square-foot structure via a curving wall and courtyard. Andersson/Wise Architects desired to pursue a sense of continuity between the existing and new buildings still proposing a solution harmoniously distinct. The two-story wing

If I choose, instead, to turn on right when I face the McCain Auditorium [F5], I can admire my favorite perspective all around the campus. The Beach Museum is an architectural structure unlike any other building, especially the west segment (named Mary and Morgan Jarvis Wing), completed in 2007 after the decision to expand the exhibition spaces taken on their fifth anniversary. Arthur Andersson, founding prin-
An essential vocabulary of atmospheric architecture

Marianna Kistler Beach Museum of Art
north façade

Marianna Kistler Beach Museum of Art
the meadow
principal of Austin-based Moore/Andersson Architects (now Andersson/Wise Architects), designed the museum and its addition, respectively in 1995 and 2005. Andersson studied architecture at the University of Kansas and started his professional career in Kansas City: he is familiar with this land’s distinctive characteristics, atmospheres, and colors. With his partner Christian Wise, they had an outstanding mentor for a phenomenological approach to design: Charles Moore, a post-modern icon and author of the book *Body, Memory, and Architecture* (Bloomer and Moore 1977). The southwest corner of the Beach Museum has an archetypal aspect [F8; F9; F10]: its limestone base evokes sunburnt grass, the earth concrete walls propose an abstract interpretation of the big sky, and the pitched roof mimics the geometry of prairie barns and huts (Moser 2008, 6) [F11]. Proportions and forms strongly resonate with me, offering a scale in harmony with my embodied European urban standards and in contrast with the limitless Kansas open spaces. In front of these elevations, I rebuild my measuring system and tune my sensory disposition. Some construction details, such as the concrete pillar nestled in the window edge, recall my hometown (Canepa 2021), although far away. If the limestone veneer matches with the surrounding façades, reinforcing the texture and character of the place, it is the copper metal surface of the roofing, gutters, and downspouts to attract my first impressions: their material essence affords a sense of time, dynamism, and authenticity. I will return to this atmospheric spot later, when I describe the outdoor sculpture gallery.

Both trajectories are unusual since the museum’s main entrance is on the south side of the building facing the parking lot. Driving is the privileged movement experience in the Midwest, more than walking, which is odd for a native Italian like myself. An archway in the old wing wel-

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35 To recap, phase 1 — Marianna Kistler Beach Museum of Art (1995) engaged Moore/Andersson Architects from Austin (as design architects) and Wiedeman Architects from Kansas City (as architects of record); phase 2 — Marianna Kistler Beach Museum of Art addition (2005) was realized by Andersson/Wise Architects from Austin.
An essential vocabulary of atmospheric architecture

Marianna Kistler Beach Museum of Art
2005-wing (addition)
west façade

Marianna Kistler Beach Museum of Art
2005-wing (addition)
south façade
An essential vocabulary of atmospheric architecture

comes visitors. Its intrados is adorned with glossy emerald ceramic tiles, and five trapezoidal windows surround the extrados: this charismatic element attracts guests to the mass of the edifice [F12]. It conceals two glass doors with chartreuse-green frames: on the right is the entrance to the activity center, which is often closed; on the left are the administrative offices, always locked. I have never been afforded to open one of these two doors since the presence of the arch is imposing and seeping into its void is inescapable. Its proportions embrace the human body, its colors prepare our visual connection to the meadow, and its geometries create a strong sense of continuity with the tree canopies [F13].

This archway works as the southeastern gate of the campus, greeting people from Aggieville, the historic commercial district of Manhattan, and tacitly inviting them to pass through. The main entrance fades, frequently unnoticed or misinterpreted. Talking to Linda Duke, the director of the Beach Museum from 2011 to 2022, confirmed my ideas. Visitors struggle with entering from this threshold and do not intuitively climb up the stairs that lead to the galleries, feeling lost. The elevator confuses further since the landing on the first floor takes place behind the reception desk, within a tiny lobby enclosed by sage-green lockers. Duke added a reception station on the ground floor to welcome and help guests, but, every time architecture needs this kind of support, it fails in its essence of being an act of staging experiences and informing behaviors for people. The main entrance shows the side effects of poorly designed praxic affordances. We should attune more to our bodily sensations and trust our first impressions primed by the place’s affordances, getting under the arch, immersing in the meadow, and slowly traveling along the curvilinear ramp nested in the north façade, which brings us up to the second-floor foyer and galleries. It is a worthy walk that triggers a richer experience [F14].
An essential vocabulary of atmospheric architecture

Marianna Kistler Beach Museum of Art
1995-building
Dan and Beth Bird Archway
north façade

Marianna Kistler Beach Museum of Art
1995-building
Dan and Beth Bird Archway
viewing toward the meadow
Notwithstanding the potential initial bewilderment, the building has a simple two-story structure: the ground floor [F15] contains (in addition to the museum entry) administration offices, workspaces (such as a small library, an artworks examination room, and a carpentry shop), art storage areas (separated for paintings, prints, sculptures, and crates), and technical rooms; the second floor [F16] (directly accessible from outside through the north entrance) hosts public functions: the reception hall, gallery spaces, education units, a theater, and an outdoor sculpture garden. No matter whatever entrance you choose — the back ramp [F14], the staircase with the orange blown-glass chandelier [F17], or the elevator’s gloomy niche [F18] — you will have a very appealing and pleasurable experience in the foyer (namely, intense arousal and positive valence). The double-height volume, perfused with sunlight reflecting on the concrete floor, white plaster, and sage-green matchboards, enchant us by creating a space that constantly changes. The disarranged geometries of the ceiling, the varied array of windows, and the contrast between the sleekness of smooth concrete and the comforting sense of domesticity irradiated by the wooden moldings make us feel welcomed — protected from the outdoor weather and hustle. The wonder easily turns into a calming experience, emphasized by the predominant silence (the Beach is, after all, a small campus museum). The last time I came, I was nervous and overwrought, but I immediately felt my body relaxing and breathing without haste; I resonated with the entryway’s muffled atmosphere and got attuned to its pace. I took a break for a few seconds and exhibited a timid smile. Even if the lobby host was absorbed by her laptop and did not greet me, my instinct was to move toward the reception desk, shielded under a sophisticated concrete trunk embedding the elevator and generating two arched portals [F18].

Dale Chihuly, Chandelier, 1996. This artwork evokes the flames flaring up when the prairie burns and turns into a warm lantern as night falls.
F15  Marianna Kistler Beach Museum of Art
addition project
as-built drawing
plan, ground floor

Designed by
Andersson/Wise Architects, 2005
Marianna Kistler Beach Museum of Art
addition project
as-built drawing
plan, second floor

Designed by
Andersson/Wise Architects, 2005
**F17**  
Marianna Kistler Beach Museum of Art  
Founders’ Gallery  
second floor  

Dale Chihuly, 1996  
the orange blown-glass *Chandelier*  
hung over the stairs

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**F18**  
Marianna Kistler Beach Museum of Art  
reception area and elevator lobby  
second floor
The gallery hallway is airy and well-lit, affording me to walk along its nave as if simply sliding along a floor washed by the rays of sunshine [F19]: wandering becomes an act of learning more than knowing. The exhibition spaces are atmospherically more silent, disappearing to emphasize the artworks [F20]. Two architectural characteristics stand out: the geometry of the longitudinal section and the presence of a “room within a room,” namely a solitary smaller gallery. Only after some time has passed does one notice the strip of clerestories, which the museum management obscured to preserve exhibits from UV exposure. The wooden flooring and the rounded upper edge of the perimetral wall (theoretically functioning as light baffle) accent our soft movements. I believe I can easily remember many construction details because the aesthetic quality of the galleries’ atmosphere is not so engaging. This design decision respects and valorizes the art display.

Windows are authentic atmospheric experiences, even if — as typical in a museum — they were born from a compromise between architects and curators. Their sculptural forms capture my attention, yet the light filtering through the glass moves my body. Natural light is a spiritual quality bringing spaces to life, especially the galleries conceived as pure masses of shadow. Two windows are extraordinary. One is carved into the curving lobby wall for temporary exhibits, a full-height surface facing east that stages a niche [F21], where two atmospheric generators borrowed from Peter Zumthor’s poetics shine: the equilibrium between composure and seduction (2006, 41–45), which makes architecture a spatial and temporal art, letting us attuning to the praxic and affective affordances of its details (such as a concrete bench); and the tension between interior and exterior (2006, 45–49), communicated by the view over the meadow.
F20  Marianna Kistler Beach Museum of Art
Donna Vanier Gallery
permanent collection
second floor

F21  Marianna Kistler Beach Museum of Art
Mary and Morgan Jarvis Wing
temporary exhibits, second floor
niche window
The second window momentum, more contemplative than bodily-felt resonant, happens in the final temporary exhibits’ gallery, where a west-exposed crack is accommodated within a white volume with sloped surfaces fixed on the north wall [F22]. Intrigued by its eccentric presence, I learned this narrow slice of light is “a spirit window.” Inspiration came from “American Indian weaving patterns that left a gap in the border of their works for spirits to escape” (Moser 2008, 6). Even if artworks are in the spotlight, the spirit window nonconsciously magnetizes my bodily emotions and tints my conscious feelings.

Due to its prominence in Kansans’ life, landscape has historically been one of the preferred subjects for artists influenced by this region. Prairie’s sea of grass immediately comes to mind, which is so unique and wild, but another landscape impresses me the most — something unexpected since I thought I already knew it well: the sky. Kansas skies are different from my home skies: they are more extensive — not compressed between buildings and cropped in thin strips; they are more powerful — shaken by clouds, winds, and tornados; and they are more colorful — inflamed by sunsets, thunderstorms, and the Milky Way’s halo. I live on the west side of Manhattan, close to a gas station, and the view I admire every evening when I leave the campus recalls the paintings of the American artist Edward Ruscha, born in Omaha, in the neighboring state of Nebraska. Inside the Beach Museum, the celebration of the landscape’s atmospheric majesty takes place in the outdoor sculpture gallery, whose roof is the sky offering an ever-changing canvas. This urban-character room is the campus spot that can most effectively translate corporeal and feeling expectations of my lived space into built forms. Quoting again Peter Zumthor (2006), here I find a well-orchestrated synergy of his praised generators of atmosphere: the
An essential vocabulary of atmospheric architecture

body of architecture, composed of elementary geometries and archetypal volumes [F23]; the materials’ compatibility, radiated by the cast-in-place architectural concrete, paving stone, copper sheets, and mirrored glass; the sound and temperature of the space, not forged using acoustic insulation and air conditioning; the surrounding objects, namely vibrant pieces of art; the equilibrium between composure and seduction, which afford me to relax, surprise, or activate, according to the weather and light conditions; the tension between interior and exterior, speaking through the sky’s voice; the levels of intimacy, which draws a delicate balance of proportions, masses, and gravity sensations, tailored to my corporeal scale and sensibility; the light on things, which reveals the real essence of materials, surfaces, and details; architecture as human surroundings, becoming an integral part of my days, a loved experience, and a maker of memories; the coherence among all the parts that make up the whole, integrating place, function, and aesthetic; and, lastly, the beautiful form granting my affective expectations and nudging me to return here.

The theater, frequently empty but open, is the final room in this atmospherological analysis. The pale colors, suffused sunlight, and sinuous section of the ceiling tune a gentle atmosphere. Aside from my current corporeal state or mood, it resonates with my body peacefully. Its soothing essence (delicate in terms of perceived arousal and intrinsically pleasant as valence) provides comfort, even if a storm is raging outside. We know lived space is never neutral, but this silent and bare room, lacking semantic or social cues, counterbalances the bank example discussed by Michael Arbib and Tonino Griffèro (2023). I sense the weight of the void, sift it through my body, and fill it up with my emotional contents. It is a fluid scenario that transversely matches many circumstances, body-mind dispositions, and personalities. As a theater it needs an over-
all remodeling, but as an atmospheric environment [F24], it communicates clear praxic and affective affordances: I want to stay, rest, and contemplate my thoughts. When the former director, Linda Duke, was interviewed, she revealed that she loves to welcome visitors by acting as the host of a tea ceremony, a tradition she studied in college. Her goal is to offer a unique aesthetic experience to the visitors, staging an ad hoc experiential narrative: “the word ‘aesthetic’ means things that we learn through our senses,” she explains. “Think about the tea room, the garden path that they take to get to it, the fragrance of the incense, the painting hung on the wall, the flower arrangement, the way you make the tea and serve it to them, the taste of the tea — all of those things” (Witter 2019). Duke is (non)consciously talking of an atmospherology mise-en-scene. Liking art is not necessarily the point, but empathizing with human experiences belonging to some other time, place, or culture. Saying we did not appreciate an art show is still helpful if we can comprehend why we have that opinion. The theater’s space works as the final step of our atmospheric narratives: the last time I came here, I tested a meditation break to attune to my bodily emotions and ponder over my lived feelings because that experience will never happen again in the same manner. Since entering the building, my mood has changed, revealing the Beach Museum accomplished its task as meaningful architecture.

**Lessons of Atmospheric Composition**

This essay assumes that mastering how to read, understand, and articulate our spatial experiences can help to fine-tune our design sensibility and develop profoundly affective situated projects. Tonino Griffero’s first-person phenomenology of atmosphere and Michael Arbib’s cog/neuroscience of architectural design and experience provide a dialectic
scaffolding (2023) to outline the framework where an architectural language of atmosphere may take shape. I am aware to have metabolized a synthesis and simplification of their speculative axioms to serve the applied art of architecture. As designers, we must draw inspiration from theory and evidence and translate their insights into design principles.

Arbib and Griffero, for example, efficiently explain the difference between praxic and atmospheric affordances: the first invite us to move, act, or do something; the latter are opportunities for our bodies to feel and resonate with our surroundings. How do designers conceive and give substance to affordances? Through architecture — that is designed solids and voids. Hence, the assimilation “architecture is atmosphere” (Canepa 2022b) since architecture “produces atmospheres in everything it creates” (Böhme 1991, 36). It might sound like a provocation; still, it is a vital reminder for designers to place our (lived and living) bodies at the center of the project process instead of faceless users. For architects, due to the inherent vocation of their profession, separating the atmospheric dynamics from the physical world would be contrived. Architecture is the skillful combination of affordance-based atmospheres and behaviors. If we situate this reasoning in the Beach Museum case study, windows help us to understand better. Windows are one of the essential elements of architecture (Koolhaas et al. 2018), made of matter and enlivened by light energy. Determined by how architects design them and depending on countless contingent environmental and personal factors, windows afford several motor and affective opportunities orchestrating a specific atmosphere, in addition to accomplishing design functions (such as light control, thermal comfort, view framing, and interaction between inside and outside). As the Swiss architect Pierre von Meiss stated, “eye, mouth, nose, and
ear concurrently [the window] is not only a determining feature in the building’s appearance, but also the intermediary which allows the occupants of a building to see, hear and feel the place of which they are part” (2011, 3). The Beach Museum’s windows overlooking the buzzy campus, meadow in bloom, or infinite sky become powerful generators of atmosphere through their embedded affordances that invite people to stop by and re-energize during the galleries’ tour [F25]. Each window triggers a physical, emotional, and cognitive break emphasizing the nature of the building as a place to spend time — as sought by artists, curators, architects, donors, and not least visitors.

Thanks to concepts like “affordance,” “generator of atmosphere,” “mood,” or “body,” architects may design better window experiences — conceived as opportunities for being in a certain emotional disposition. In other words, they interpret the fundamental elements of architecture through an affect-based perspective. Even if windows are typically struggling situations inside art galleries (it happened in the 1995-wing, whose clerestories are vanished now), the Beach Museum shows a sophisticated collection of atmospheric windows — ultimately the medium that can most convey Kansas landscape and art but also support designers in coloring our emotions. This is only one example of possible applications of an atmospheric approach to architectural design, proving to be a valid tool of analysis that promotes an affective reading of space. Lived space, being the space of our experience, is largely pre-verbal: mastering a language of atmosphere is essential in bringing to light understanding and meaning. It is the preliminary stage in deciphering how body and space are mirrors of each other. As designers, we must go beyond a phenomenographic description by translating words into architectural forms that realize and enrich our descriptions in novel ways.

Centuries of architectural history, culture, and experimentation provided us with the necessary knowledge to design and build. What atmosphere can mainly accomplish is improve our skills to observe, feel, read, and narrate — a crucial lesson preparatory to compose architectural elements and orchestrate praxic and affective affordances.

The atmospherological critique of the Beach Museum offers a personal account of how I experienced its atmospheres, intertwining first impressions and renewed memories, besides comparing insights received from privileged inhabitants who have enlivened that space for a long time, day by day. I interviewed the former director Linda Duke and two exhibition designers, Lindsay Smith and Marvin Gould, who recently retired. A challenge for future analysis is comprehending the architects’ design intentions and expected atmospheres to discuss the gap or overlap between their attempts and what I have felt. As Michael Arbib and Tonino Griffero emphasize (2023, §4), there is a plurality of phenomenographic practices to describe our experiences in space. They are never exactly like the genuine experience since every duplicate of reality has its autonomy due to the atmospheric effects it creates. The language of atmosphere acquires strength and richness through the words crafted and simultaneously the expressive mediums adopted. Architects’ watercolors [F4; F8; F14] are blurry and less defined than construction drawings [F15; F16]: paradoxically, “the more an image appears visually ‘indeterminate’ the more it is able to evoke a similar or enhanced emotional and synesthetic excitement of a real perception in action” (Morselli 2021, 301–302: original italics). Designers, thanks to the applied, aesthetic, and multisensory vocation of their discipline, master a variety of means to convey atmospheric experiences: this is something — extremely valuable — we can teach phenomenology and cog/neuroscience to bolster our conversation together.
Bibliography


An essential vocabulary of atmospheric architecture


An essential vocabulary of atmospheric architecture


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Index

Action 289, 297
Action-oriented perception 77
Action-perception cycle 77
Action tendency 289
Aesthetics of atmosphere 135
Affect 281
Affect-based perspective 336
Affective education 87, 277, 281
Affective event 281
Affective meaning 288
Affordance 10, 80, 285, 286, 296, 298
atmospheric affordance 43, 148, 171
Gibsonian affordance 38
non-Gibsonian affordance 38
praxic affordance 43, 73, 148, 334
primary affordance 87
Affordance-based atmosphere 39, 75, 211
Anchor point 143
Anthropomorphism 114
Architect 171
Architectural phenomenology 284
Arousal 287, 290, 291
Arousal focus 282, 283, 291
Artificial intelligence 196, 241
Atmosphere 9, 10, 25, 27, 31, 37, 44, 58, 60, 64, 95, 98, 103, 122, 135, 137, 141, 148, 149, 152, 153, 172, 182, 189, 201, 202, 203, 211, 242, 243, 244, 248, 264, 265, 266, 267, 268, 277, 279, 280, 286, 287, 288, 291, 294, 296, 298, 337
Atmospheric 148, 334
atmospheric competence 101
atmospheric dramaturgy 153
atmospheric education 280, 285, 291
atmospheric feeling 55, 122
atmospheric game 98, 136
atmospheric perception 87, 94, 136
atmospheric space 286
atmospheric turn 68
Atmosphericity 143, 153
Atmospherogenic component 89
Atmospherology 21, 39, 51, 59, 132, 133, 171, 277
Art 11, 67, 286, 287, 286, 288, 294, 299
Aura 11, 37, 98
Authenticity 134
Bank 46, 48, 62, 64, 69, 73, 81, 82, 103, 122, 136, 138, 140, 142, 190, 213, 243, 331
Beauty 192, 204
Being-in-the-world 54, 279
Body 285, 288, 289, 291, 294, 296, 299
Bottom-up analysis 117
Brain 17, 23, 37, 56, 57, 58, 69, 76, 102, 107, 113, 201, 218, 227, 238, 239, 271, 294
Built form 279
Casual explanations 59
Climate 154, 156, 176, 198, 266
Cog/neuroscience 27, 56, 58, 295
Cognitive science 57
Coherence 239
Collective feeling 156
Conscious 289, 290, 295
Consonance 96, 153, 288
Cooperation 108, 113, 117, 119, 122, 127
Courthouse 40, 46, 190, 213, 214, 243
Derivative-relational atmosphere 65, 68, 70, 149
Desubjectification 55
Direct perception 75
Dissonance 96, 288
Ecstasy 86, 119, 264
Embodied memory 175
Embodied simulation 295, 305
Interfaces 5 is a masterclass about architectural atmospheres where the philosopher Tonino Griffero and the neuroscientist Michael Arbib contrast first-person insights of the (neo)phenomenological approach with the third-person analysis of cog/neuroscience, arguing sternly for the advantages of each for architects.

—- The editors

What can a cog/neuroscientist and a neophenomenologist teach architects while wrestling with each other’s terminology and professional reasoning? Much!

—- Mikaela Wynne and Bob Condia

Atmospheres and affordances address two deeply rooted and intertwined questions that have always haunted architects: why does a space make me feel in a certain way? And why does a space make me move in a certain way? We could argue that each question is a corollary to the other, and affordances and atmospheres — or atmospheric affordances — are two faces of the same coin.

Yet it is in the further implications of atmospherology that cog/neuroscience and new phenomenology point in distinct directions: whereas Michael Arbib believes that architects can master atmospheres and control them through design, Tonino Griffero eschews practical applications, preferring to preserve the aesthetics of atmospheres as a descriptive paradigm only.

—- Federico De Matteis

Could we perhaps explore Michael Arbib and Tonino Griffero’s views of atmosphere as an affordance to further the idea that affordances should be part of an equitable design process — in order to create work that is not designed to satisfy the lowest expectation of function, but to acknowledge and celebrate the complexity of human experience and feeling in space?

—- Suchi Reddy