

CAPTURING AND CREATING ATMOSPHERES: A SENSORY DESIGN APPROACH FOR EDUCATION, ENTERTAINMENT, AND PARTICIPATION

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Atmospheres, intangible yet perceptible dimensions of spaces, profoundly influence human experience. This article explores how atmospheres can be consciously captured through sensory approaches and translated into tangible experiences using methodologies that combine sensory games, poetic narratives, performances, walks. This approach impacts educational and participatory practices. Case studies: lectures, co-design workshops, and sensory concerts demonstrate how sensory practices foster

deeper connections between individuals and their environments, transforming spaces into emotionally resonant places, i.e., atmospheres. Contributions from diverse disciplines, such as architecture, philosophy, communication, and the performing arts, provide a multidimensional understanding of atmospheres and the associated feelings. The findings highlight the potential of these approaches to inform inclusive practices, offering innovative tools for pedagogy and design of participation.

Like archaeologists, children are drawn to what cannot be seen but is there, and, like an ultrasound that exists in the inaudible, they seek that pregnant silence because they can sense a presence in all things. (Guidi, 2024, p. 28)

INTRODUCTION

What is an atmosphere? Peter Zumthor (2006) suggests that it is an immediate emotional feeling, a quality perceived almost instantly upon entering a space. Tonino Griffero (2013), after Schmitz (2006), describes atmospheres as *quasi-things* that permeate spaces, influencing emotions and behaviours. This article investigates how designers, educators, and communities can capture and interpret these elusive qualities, moving beyond the visual to embrace multisensory dimensions through what the author defines *sensory design practices*. Atmospheres are also dynamic entities, shifting when light, sound, materials, and human activity vary. A marketplace exudes a vibrant atmosphere at midday or an abandoned one when it is empty; an empty cathedral evokes solemnity and reverence. Sensory experiences are deeply embedded in cultural and personal narratives, making the study of atmospheres both universal and context-specific. Atmosphere is the invisible force that lingers in memory, shaping the essence of a place through sound, light, and materials (Kuhtz, 2024). Swiss artist Philippe Rahm uses places as organisms, altering and sometimes optimizing their environmental characteristics. His experiments are a form of *body-arch*, where body and architecture form a single, continuous, and perpetually transforming organism. In *Built Atmospheres*, Rahm operates on the principle that humans experience reality from within, and produces atmospheres. Rahm's subject does not observe space externally, but internally (Barbara, 2015). We all experience these intangible yet perceptible qualities we call atmospheres. Can we consciously capture and create them?

METHODS – SENSORY DESIGN – EMBODIMENT

Sensory design emphasizes the integration of all senses in experiencing and interpreting spaces. Juhani Pallasmaa (1994) advocates for an architecture of the senses, where touch, sound, and smell are as crucial as sight. Sensory design integrates sensory, emotional, relational, playful, participatory, and social dimensions to achieve a nuanced understanding of the world, the society, and the human being from multiple perspectives. A key effect of sensory design games is the encounter with other participants, fostering playful and joyful interaction. Bateson (1979) argued that play is a mechanism through which individuals explore the universe, an essential learning process; learning to play is a working method. Sensory perception is a universal human experience, often automatic and unconscious. The senses are fundamental to how individuals perceive the world, a process that continues throughout life. As sentient beings with material bodies, we are thoughts, emotions, experience, fatigue, and senses. Meaning resides as much in rational value as in associated feelings. Experiences, emotions, and moods constantly influence our actions and thoughts, acting as implicit guides. Body equals senses, senses equals perceptions, perceptions vary depending on posture and movement.

Maurice Merleau-Ponty (1965) states that our bodies do not exist in space but inhabit space, perceiving it with all senses through intentional movement, living it, and internalizing it within mental space. Sensory design employs sensory games, poetic writing, and walking, as primary means of coaching the body to perceive, capture, describe, and re-create atmosphere.

Sensory games

To be creative means to become fully human. (Ferrucci, 2018, p. 115)

Sensory games deepen the experience of embodiment in space, focusing on perceiving atmosphere and defining its fundamental ingredients.

The key to effective sensory games is to create a playful and engaging atmosphere while encouraging focused attention on specific sensory inputs. These exercises can be adapted to different contexts and age groups, offering a versatile tool for exploring and understanding atmospheres. The combination of planned activities and spontaneous reactions to the environment makes each experience unique and valuable. These games encourage participants to actively engage with their senses, moving beyond passive observation to active exploration and interpretation.

Here are some examples of sensory games the author used in various contexts, including workshops, educational settings, and community engagement activities – as described in paragraph *Applications*:

- Blind Walks/Urban Treks: participants are blindfolded and guided through a space, relying on their other senses to navigate and experience the environment. This elicits awareness of sounds, smells, textures, changes in light, temperature and air currents, and spatial dimensions. Variations include:
 - Sound Mapping: focusing on identifying and mapping - the different sounds encountered during the walk;
 - Texture Walks: paying attention to the surfaces touched along the route – e.g., walls, pavement, plants;
 - Scent Walks: noticing and describing the various smells present in the environment;
- Sensory Hunts: participants are given a list of sensory experiences within a specific area – e.g., find something rough, find something that smells like nature, find a sound that repeats, find beauty – and draw what you touch while blindfolded. Next step is to write metaphors on the experience. This encourages active exploration, focused and lateral attention to sensory details; sharpens tactile, olfactory, and auditory perception;
- Soundscapes Composition: participants record sounds and then create a soundscape. This develops listening skills and encourages creative interpretation of sound;

- Sensory Drawing/Writing: participants are asked to draw or write about a space based on their sensory experiences, without looking at the paper or relying primarily on visual memory. This encourages them to translate non-visual sensations into other forms of expression;
- Space Mapping: participants trace the outline of the space they cannot see. This helps to connect physical sensations with spatial perception;
- Guided Imagery/Visualization: participants are guided through a visualization exercise that focuses on specific sensory details of a place. This can be used to evoke memories, create a sense of presence in a distant location, or imagine potential future environments.

This approach facilitates the recreation of atmospheres. The so-called sensory concerts are immersive experiences designed for audiences that end up being immersed in an atmosphere – intentionally designed by the author – that evokes surprise, emotion, magic and attention. During these events, participants explore space through sound, scent, and touch, developing a richer understanding of the place, therefore perceiving an atmosphere.

Creating atmospheres can also be an educational method to elicit deep experience. The author uses this method in lectures of basic design, aesthetics, and communication. “Students, blindfolded, are guided through sensory exercises to heighten their awareness of soundscapes, tactile surfaces, and olfactory cues. This fosters a deeper understanding of space as a multisensory phenomenon” (Kuhtz, 2024, p. 54). Playful, explicit, and distinct sensory stimulation broadens codified experience; for designers, architects, landscapers, sensory and sensual experience is –or should be– part of the education process.

Poetic narratives

Narratives and poetry serve as tools for creating and capturing the intangible qualities of atmospheres. Gaston Bachelard’s (1957) concept of *happy spaces* highlights how

poetic imagination can reveal a place's emotional resonance. Various projects have used participatory storytelling to map collective memories and atmospheres. "Poetry intertwines with design, enabling participants to envision and articulate the sensory dimensions of spaces" (Kuhltz, 2023, p. 112).

In participatory workshops, participants describe spaces using metaphors and haikus, connecting sensory experiences to vivid imagery and writing. For example, a participant might describe a narrow alley as 'a whispering tunnel of stone' evoking both its physical and emotional qualities. These narratives are compiled into a collective atlas, creating a layered, multifaceted representation of atmospheres and of a territory.

Pen, pencil and paper are mandatory. Writing is embodied; it is the most sensitive element of the word, a bodily practice of a body moving across the page, through the hand. The life of thought moves onto the page when it is expressed; writing becomes embodied, an extension of the body, a sign, a design.

Poetry is not a break from everyday life, a flight of fancy, but a way to reconnect humans with the essence of dwelling and living, and with a way to recreate an atmosphere with words and voice. The principles for encountering poetry are the same as those for encountering an atmosphere. Poetry resides in the lives of places and people. It encompasses breath, precision, physicality, and also beauty, mystery, magic, hidden in the invisible.

The poet chooses precise yet evocative words to create a spellbinding formula; the poet requires emptiness to create. Like a house, a vase, an armchair, a garment, the word must be inhabited from within.

Immersive-scapes – the walks

Confronting the world, man is never simply an eye, an ear, a hand, a mouth, or a nose, but rather a gazing, a listening, a touching, a tasting, a smelling; in short, an active engagement (Le Breton, 2006, p. 5).

Since the late 1960s, R. Murray Schafer, a musician, composer, and professor of Communication at Simon Fraser University in Burnaby, BC, Canada, studied the fundamental importance of hearing and the influence of the sonic environment on humans. He developed the term *soundscape* as “the sonic environment as perceived by and understood by the individual, or a society” (Schafer, 1977, p. 274), a concept initially introduced to assess the negative effects of noise (Schafer, 1967). The soundscape is, therefore, the sonic environment – the omnipresent collection of sounds and noises with which we coexist everywhere. Soundscapes, as defined by Schafer (1977), encapsulate the auditory identity of environments. Schafer was concerned about children’s diminished listening skills and advocated for integrating listening practices into national elementary school curricula. He developed *ear cleaning exercises*, including soundwalks – walking meditations of sound awareness (Schafer, 1967). The soundscape approach emphasizes the user experience of a place’s acoustic atmosphere. “A soundscape is a collection of sounds, almost like a painting is a collection of visual attractions” Schafer stated in a video for the 2009 Governor General’s Performing Arts Award. “When you listen carefully, the soundscape becomes an enchantment; when you carefully use all your senses, your life becomes richer”.

Karen Van Lengen (2014) defines the soundscape as an intersection between a space’s container and its inhabitants, an intersection that is never static. Therefore, an urban atmosphere is constructed by the people who use a place, their mutual interactions, their relationship with the space, and their senses and moods. An urban atmosphere engages all the senses. Walks are immersive-scapes. As described later, the author uses walks as sensory and sentimental explorations where participants are blindfolded and focus on auditory, tactile, and other non-visual elements of their environment. These walks are used in both university classes and co-design practices. Then participants share their impressions, revealing how senses shape their emotional

and spatial understanding, and how a visually unappealing panorama can become beautiful when experienced through non visual experiences. Shifting the focus of attention to different senses expands the experience of a place.

“Walking without seeing allows participants to know the city through immersion and contact –ears, touch, smells– spaces become embodied and acquire depth” (Kuhtz, 2023, p. 110).

As Jeremy Naydler (2009) underlines ours is a visual society, but this is not a recent phenomenon. For the ancient Greeks, sight was the noblest sense, equating the verb to see with to know. Greek texts describe Athena of the bright eyes’ and her wide-eyed owl’. Philosophers from Plato to Saint Augustine used visual metaphors. Even common scientific terms reflect a preference for vision: *theoreo* –I observe– is the Greek root of *theory*. McLuhan emphasized how printing changed human behavior and perceptual patterns as the written word became the dominant exploratory method, while the spoken word and hearing declined. Some ethnographers suggest that Western peoples have less developed hearing. Some Amazonian populations hear the song of fish; in the Kamayurá language, *anup* –to listen– evokes a deeper understanding than *tsak* – to see; relying solely on sight is considered antisocial. Continuous training in subtle listening allows this community to thrive in a challenging environment by attending to subtle signals. Perhaps we once possessed similar capacities for listening ecology; we have since ceased tuning in to listening and to non-visual cues (Bakker, 2023).

APPLICATIONS

I love all human beings who dive deep. (Melville, 1960, p. 78)

Over the past twenty years at the University of Basilicata, and of Firenze, Polytechnic of Bari, and in co-design and participatory workshops, the author has developed experiences using poetry, theatre practice, and the senses. By

paying attention to the small details that poetry portrays and becoming aware of sensory capacities, individuals awaken to the beauty of everyday life, to the atmosphere.

Social design strategies and public initiatives centred on sensory atmospheres offer a powerful framework for exploring and interpreting the complexities of a place. By engaging with the sensory dimensions of spaces –such as soundscapes, textures, and scents– these approaches reveal diverse and multifaceted perspectives that might otherwise remain unnoticed. Participatory processes uncover the layered narratives embedded in a location, reflecting the collective memories, cultural identities, and emotional connections of its inhabitants. This multidimensional understanding enriches the perception of a place and fosters a deeper sense of belonging and inclusivity within the community.

Education

Engaging the senses stimulates creativity and enhances spatial understanding. Lectures incorporating sensory walks and poetic writing help students develop a more comprehensive and sensitive grip on reality. The body becomes a tool for sensing space, experiencing that for example different positions or movements can completely alter the perception of a place (Kuhtz, 2022).

Fostering sensory awareness should be an integral part of any curriculum, as it is fundamental to human experience. The author has developed experiences for design, architecture, landscape and engineering degrees, as sensory awareness significantly influences aesthetic judgment of spaces, products, and decisions. By crafting experiences that effectively engage multiple senses harmoniously and intentionally, we can enhance individuals' quality of life while creating immersive, biophilic, and memorable designs (Algargoosh et al., 2022; Li & Kang, 2019; Cain et al., 2013). Therefore, integrating a thorough understanding of sensory atmospheres is essential, providing students with hands-on experiential exercises and practices that emphasize the

Fig. 1 Students engaged in sensory games outdoors, UniBas Campus, Mt. (photographs by S. Kuhtz©)



Fig. 2 Students engaged in sensory games in the classroom, Design campus UniFi (photograph by S. Kuhtz©)



multisensory nature of places and their beauty. This research has resulted in an in-depth process involving students – Architecture and Landscape degrees, UniBas Matera, Italy; Politecnico of Bari; Design degree, UniFi– in a learning path that combines technical and perceptive aspects in courses of Aesthetics, Basic Design, and Communication. Attending a lesson is one experience; engaging with sensory games is another. Blindfolded students are asked to draw without looking at the paper or walk on campus or in the city. Similarly,

a site visit is one experience; a site visit with a blindfolded companion is another. Inhibiting one sense alone changes the experience, multiplying the fun and discovery. Proposing open-air sensory games in an urban setting provides new knowledge for the activities of future professionals (Figure 1 and 2). The exercises often begin by isolating one sense, such as focusing solely on auditory inputs. Students are encouraged to describe and write about the nuances of what they hear – the distant hum of traffic, the rustling of leaves, or the echo of footsteps. By deepening these perceptions, students begin to map the auditory identity of a space, an essential component of its atmosphere. Subsequently, other non-visual senses are engaged, as described in paragraph *Sensory games*. The training comprises different phases, including at least three sensory sessions and various revisions to complete a project work, that implies a more than visual output – i.e. a soundscape, poetry writing, photography. At the end of the course, participants complete questionnaires about their experiences. For most students, this is their first sensory-based experience.

Community

Participatory design is another field where capturing atmospheres can be transformative. Engaging communities in creating emotional maps or designing sound installations can foster a sense of belonging and strengthen the bond between individuals and places. In marginalized areas, deep listening and immersive experiences are more effective than simply addressing common complaints. Moving away from a top-down approach toward a collaborative and participatory model that prioritizes understanding the lived experiences of marginalized communities recognizes that true and lasting change requires genuine engagement and a deep understanding of complex realities. Capturing the atmosphere of a periphery using the methods described in the section *Methods – Sensory Design – Embodiment* requires empathy, patience, and a willingness to move beyond preconceived notions. Immersive experiences, such as

Fig. 3 Community and writing atmospheres, Venice (photograph by S. Kuhtz©)



Fig. 4 Community and listening atmospheres (photograph by A. Semplici©)



participatory observation, community events, or other forms of direct engagement, further deepen this understanding by providing first-hand insights into daily realities. *Inhabit Poetically the City* sensory workshops explore how different groups perceive and interact with urban spaces, aiming to capture and transform their atmospheres. Participants follow a provided map and itinerary, venturing off the beaten path to engage in deep listening. The workshops combine structured exercises –sensory games, blind walking, listening while

writing, and shared reflections on beauty— with the flexibility to incorporate experiences encountered during the walks. In a periphery of Matera –Italy– active citizen participation enabled the reinterpretation and enhancement of the city's cultural heritage with residents of a social housing estate as part of a participatory urban greening project. In this neighbourhood, sensory workshops integrated soundscapes and poetic reflections to reimagine urban spaces. Participants engaged in blindfolded exercises, exploring the tactile and auditory qualities of parks and streets: “The sensory workshops transformed perceptions, fostering connections between residents and their environment” (Kuhtz & Tizi, 2023, p. 280). Personal narratives and collective memories shape a city's atmosphere. For example, one participant described a neglected square as ‘a silent witness to forgotten celebrations’ highlighting both its current state and its latent potential for revitalization. Workshops included poetic exercises where participants described spaces through metaphors and sensory impressions, enriching their understanding of the local environment. One participant compared the sound of wind through trees to ‘a symphony of whispers’ transforming a mundane experience into a poetic reflection (Figure 3 and 4).

A series of such sensory workshops were conducted in 2021 and 2022 in Conversano –BA, Italy– and from 2022 to 2024 in Matera – and in Comano Terme, TN, Siena, Florence, Rome, Venice, Bari, Taranto, among other locations. Sometimes, participants encounter musicians and live musical performances previously organized in well-known yet previously overlooked corners of a periphery, transforming these spaces into gems of wonder and splendor. “Through soundwalks and deep listening, residents rediscovered the beauty and identity of their neighborhoods, transforming perceptions of neglected areas” (Kuhtz, 2024, p. 60).

Sensory concerts

The setting resembles a typical concert with music and voice, featuring musicians, singers, and actors. The novelty

is the approach Poesia in Azione group, has been using for the past twenty years: the audience is blindfolded for most of the performance. This serves several purposes: to focus listeners on the audible, creating conditions for concentrated listening; to induce relaxation and curiosity, fostering openness to novelty; to create a protective, magical atmosphere, allowing listeners to explore surprise and beauty; and to foster the rediscovery of a place's inherent atmosphere. The concert also invites participants –any age group– to listen with all senses. Performing arts synthesize complex ideas and communicate them to non-specialist audiences in an engaging way by creating an atmosphere. Sometimes, the concert addresses specific issues: climate change, the future, sustainability, energy shortages.

This sensory experience emphasises non-visual perception through carefully crafted stimuli and a focus on small details. By minimizing sight, the sensory concert encourages participants to see with their other senses and experience the world anew. The combination of spoken word, music, and other sensory elements evokes emotions and creates a transformative experience, focusing attention on small details. The magic lies in enhancing senses often neglected in daily life. This genuine reversal allows one to see with the ears, hands, and nose: a kind of apparent blindness in which one sees and feels with one's imagination (Figure 5).

Words extracted from the written page, with the distillation of the voice in dialogue with music and senses, can arouse emotions and sensations, sometimes creating new experiences for participants who allow themselves to be carried away with simplicity. All these elements create an atmosphere. Sensory concerts are sometimes integrated into lectures or used as a performative tool for participation.

Poetry for Architecture – Poetically We Inhabit, Editorial Collection

The developed creative experiences of exploration and relationship between citizens and the city, using poetry, walking, performance, and the senses (Kühtz & Parentini



Fig. 5 Sensory concert, Trento Museo Storico (photograph by S. Kuhtz©)

2023; Kühtz 2022), have also inspired the creation of an editorial collection of booklets. They aim at recreating atmospheres via poetry and photographs and different sensory choices—QR codes with auditory tracks, or the choice of different types of paper for the printed version. The goal is to intertwine the architect's language with other languages to propose a multidisciplinary, multi-sensory reflection that captures the most intimate, sensitive, and human aspects of inhabiting an atmosphere and reproducing it.

The poet and the designer, imagine things that do not yet exist. Poetry is the metaphorical construction in words of what is not yet, the power of a possible act, an internal vision, immersive participation, evokes atmospheres.

Architecture and design speak through drawings, using the codes of lines, and surfaces, renderings and photography; the purpose is to foster feelings and well-being of future inhabitants, to cultivate and create the right atmosphere.

What would happen if, in addition to standard design drawings and texts, the architect also included texts written for the project by a poet?

Poetry, with its evocative, metaphorical language,

could enrich project communication, moving beyond mere technical description to offer more emotional and personal interpretations. Drawings and floor plans show how the building will be; poetry could communicate *what* it will feel like to inhabit it, what emotions it evokes, and what atmosphere it exudes. Poetic language, despite its richness and complexity, can be more accessible to a non-technical audience than architectural language. Including poetic texts could encourage greater community understanding and participation in the design process. This idea has culminated in the editorial collection *Poetically We Inhabit*, an experience that since 2020 blends languages, including photography. The poetic text takes both written and oral forms, available in the series via QR codes. These codes facilitate access to oral content, suggesting the possibility of experiencing poetry through listening, perhaps in conjunction with a site visit. This emphasizes the performative and sensory dimension of this editorial series. The first volume of the series that features the city of Genzano di Lucania, in the South of Italy, and is concentrated on Palace Fiore, served as a guide during a site visit to the palace with a group of citizens, becoming the subject of a design action and immersive participation. The second volume tells the story of the life and recovery of the medieval complex that became the Tower Art Museum, a contemporary art museum in Matera, Italy.

This approach integrates various forms of expression –architecture, poetry, photography, performance, etc.– to enrich the understanding and experience of a place and its atmosphere. Photography with poetry becomes an active tool for interpretation and the creation of new narratives.

CONCLUSIONS

This research demonstrates the potential of a multisensory and interdisciplinary approach to atmospheres. By integrating sensory design, poetic narratives, and participatory practices,

we can move beyond visually-centric paradigms and create environments that resonate emotionally, culturally, and socially. The exploration of atmospheres –those intangible yet perceptible dimensions of space– becomes a powerful tool for fostering deeper connections between individuals and their surroundings. The methodologies presented offer practical ways to capture and also to re-create atmospheres. Sensory games elicit awareness of non-visual cues, while poetic narratives provide evocative language for articulating sensory experiences and collective memories. Immersive walks, particularly those conducted without sight, allow participants to rediscover familiar spaces through new sensory lenses, revealing hidden layers of meaning and transforming perceptions of even neglected or marginalized areas. Sensory concerts further amplify this effect by creating carefully crafted multisensory and artistic experiences that evoke powerful emotions and create a shared experience.

These approaches have significant implications.

In education, sensory training equips students with a more comprehensive and sensitive understanding of space, influencing their aesthetic judgments and design decisions. For instance, blindfolded walks and sound-based exercises encourage students to perceive space in novel ways, fostering creativity and empathy; they experience and become aware of an atmosphere.

The periphery is not simply a marginal space; it holds the potential to become a powerful sensory experience. The sounds of daily life, the emotions of its inhabitants, the stories passed down through generations, and the diverse voices contribute to the unique character of an atmosphere. The shared experience of inhabiting or interacting with this space further amplifies its distinctive atmosphere. Participatory approaches benefit significantly from these considerations. Involving communities in mapping and interpreting the sensory dimensions of their environments fosters a sense of ownership and belonging. This approach is particularly effective in revitalizing neglected or marginalized spaces, also

through performances, such as sensory concerts.

The editorial collection, *Poetically We Inhabit*, born in 2020, exemplifies this integrated approach by intertwining architectural and poetic languages, offering both written and oral forms of poetic expression accessible also through QR codes. This encourages a deeper engagement with the sensory and performative dimensions of a specific place, its atmosphere. The combination of architectural drawings with poetic texts and photographs provides a human-centered understanding of design, communicating not only how a building will be, but also what it will feel like to inhabit it.

The research highlights several key findings:

- Sensory engagement enhances learning and creativity: University lectures incorporating sensory training equip students with the tools to design spaces that are not only functional but also emotionally engaging. Blindfolded walks, sound-based exercises, and other sensory explorations encourage novel ways of perceiving space, and its atmosphere; fostering creativity, empathy, and a more nuanced understanding of the multisensory nature of places. This has proven effective in teaching different subjects: Aesthetics for future architects, Communication and Basic Design for future designers and landscapers;
- Participation and atmospheres: involving communities in mapping and interpreting the sensory dimensions of their environments fosters a sense of ownership, belonging, and inclusivity, particularly in marginalized areas. Deep listening, immersive experiences, and co-creation of sensory maps and narratives reveal hidden layers of meaning within urban environments, strengthening the social fabric of communities and contributing to the revitalization of neglected spaces;
- Poetry and narratives: integrating poetic texts and storytelling into the design process enhances communication, moving beyond technical descriptions to evoke emotional and personal interpretations. This approach fosters a deeper connection between inhabitants

and their spaces, promoting a sense of place and belonging, captures an atmosphere;

- The periphery as a space of potential: the periphery, often perceived as marginal, emerges as a rich sensory landscape filled with sounds, emotions, stories, and voices. Shared experiences within these spaces amplify their distinctive atmospheres, transforming them into places of wonder and discovery.

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