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A dialogic tricontinental: Niemeyer, Molyvann and Zevaco: cutouts of modern architecture in Brazil, Morocco and Cambodia

Uma tricontinental dialógica: Niemeyer, Molyvann e Zevaco: recortes da arquitetura moderna do Brasil, Marrocos e Camboja

Christian Pedelahore de Loddis[1], Felipe de Souza Noto[2]

[1] École Nationale Supérieure d'Architecture de Paris-La Villette, Paris, France.

[2] Universidade de São Paulo, Faculdade de Arquitetura e Urbanismo, Departamento de Projeto. São Paulo, SP, Brazil. *Correspondência para/Correspondence to*: felipenoto@usp.br

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Abstract

The understanding of modernity as a global and symbiotic event is what justifies this paper. It is global because, as a cultural outgrowth of the Industrial Revolution, it reached all corners of the world more or less connected to the world order, and symbiotic because, despite the hegemonic Eurocentric discourse, we declared the constant feedback of the processes of artistic experimentation that equate all continents' continents. We will discuss comparatively the work of Oscar Niemeyer (1907-2012), Jean-François Zevaco (1916-2003) and Vann Molyvann (1926-2017) in an essay organized in two sections. The first seeks aspects driven by the reading of the territory, understood as the conjunction of physical and human factors of the place in which architecture develops, pointing out strategies for accepting the vernacular contribution and its interpretation in the light of modern instruments. The second advances on the constructive terms of architects' thinking, locating structural contextualism as a deliberate plastic action.

Keywords: Comparative Architecture. Brazilian Modern Architecture. Moroccan Modern Architecture. Cambodian Modern Architecture. Architecture Design.

Resumo

O entendimento da modernidade como um evento global e simbiótico é o que justifica este ensaio. Global, pois, como desdobramento cultural da Revolução Industrial, alcançou os rincões mais ou menos conectados com a ordem mundial; simbiótico porque, apesar do discurso hegemônico eurocêntrico, declaramos a constante retroalimentação dos processos de experimentação artística que equiparam as experiências de todos os continentes. Discorreremos comparativamente sobre a obra de Oscar Niemeyer (1907-2012), Jean-François Zevaco (1916-2003) e Vann Molyvann (1926-

2017), em ensaio organizado em duas seções. A primeira busca os aspectos dirigidos pela leitura do território, entendido como a conjunção de fatores físicos e humanos do lugar em que se desenvolve a arquitetura; aponta estratégias de aceitação da contribuição vernacular e de sua interpretação à luz do instrumental moderno. A segunda avança sobre os termos construtivos do pensamento dos arquitetos, localizando o contextualismo estrutural como ação plástica deliberada.

Palavras-chave: *Arquitetura Comparada. Arquitetura Moderna Brasileira. Arquitetura Moderna Marroquina. Arquitetura Moderna Cambojana. Projeto de Arquitetura.*

Introduction

Our work, conducted between research and teaching, has been an effort to foster knowledge of liberation architecture, which emerged culturally and physically in Latin America at the end of the 1920s. This architecture followed paths that were previously underestimated but were highly interconnected with those of other non-aligned regions, forming a tricontinental modernity of the Global South: vigorous, liberating, and extraordinarily creative and diverse.

Our disciplinary challenge is, therefore, to bring to light, document, concretely articulate, and theoretically consolidate the advances and achievements of the modern movement in Southern countries, which are, at the same time, both specific and universal.

Our interconnected investigations focus on demonstrating the need for a decolonization of architectural thought. In this regard, we proceed by illustrating and documenting endogenous concepts such as the centrality of the periphery and the irreversible and irrepressible potential of the invisible (Mariátegui, 2015).

The understanding of modernity as a global and symbiotic event justifies this essay. It is global because, as a cultural extension of the Industrial Revolution, it reached regions that were more or less connected to the world order. It is symbiotic because, despite the hegemonic Eurocentric discourse, we assert the constant feedback loop in artistic experimentation processes that equates the experiences across all continents.

Africa, Asia, and Latin America were sidelined in the modern historiographical construction sponsored by central capitalism and their contributions need to be revisited. The choice of singular figures from Brazil, Morocco, and Cambodia exemplifies a more complex and comprehensive process, summarized here in points of comparative analysis that seek to identify both coincidences and divergences.

We will comparatively discuss the works of Oscar Niemeyer (1907–2012), Jean-François Zevaco (1916–2003), and Vann Molyvann (1926–2017), in an essay organized into two sections. The first explores the aspects shaped by the reading of the territory, understood as the conjunction of the physical and human factors of the place where architecture develops. It highlights strategies for embracing vernacular contributions and interpreting them through the lens of modern tools. The second section delves into the constructive terms of the architects' thought, identifying structural contextualism as a deliberate plastic action.

Oscar Niemeyer was born in Rio de Janeiro in 1907. His first significant contribution was as part of the team that designed the Ministry of Education and Health, coordinated by his professor Lucio Costa, based on the blueprint by Le Corbusier. In the early 1940s, Niemeyer was invited by the mayor of Belo Horizonte, the future president Juscelino Kubitschek, to design a set of buildings around Pampulha Lagoon, where he established his distinctive plastic language, combining the celebration of the flexibility of reinforced concrete with references to the cultural foundations of

Brazil's colonial past. Elevated to international icon status by the MoMA in New York[3], Niemeyer became the foremost reference in 20th-century Brazilian architecture.

Zevaco was born in Casablanca in 1916 but studied architecture in Paris. He was a student of Auguste Perret and interned in Marseille with Eugène Beaudoin during the Nazi occupation. Upon returning to Morocco, his first recognized project was the Villa Suissa, a private residence that demonstrated his keen eye for modernity—here filtered through the Californian experience, perhaps already indicating a sensitivity to climate as a necessity. He began his career heavily influenced by the international highlights of modernity in the 1940s, with Oscar Niemeyer among them. He later revealed an influence from the Berber construction tradition, characterized by an inclination toward enclosing buildings from the outside and establishing a materialized relationship with the ground through carefully considered structural support solutions.

Vann Molyvann was born in Sihanoukville, Cambodia, in 1926. He moved from the countryside to the capital, where he secured a scholarship to study in France. Upon his return in 1956, he became the first architect in the country with such training, which positioned him as the primary collaborator of the ruling regime until the 1970 coup d'état. Molyvann carried out numerous public works commissioned by the central government, driven by the spirit of modernity and influenced by the desire to celebrate the historical grandeur of khmer[4] civilization. This historical legacy served as the foundation and justification for his architectural approach.

The first point of convergence between the three architects, as described in this essay, is the development of an essentially modern working methodology that incorporates contextual data. It is notable that even in their early projects—predecessors of their mature phases and international recognition—their architectural strategies integrated the nuances of their respective territories into the rationalist framework.

The notion of context here is taken in its broadest sense: it encompasses the physical data of geography and climate as the first layer, but also calls upon human interpretations and adaptations. It is in this realm that the reference to the vernacular, popular knowledge, and the construction traditions that bind human complexity to its site becomes relevant.

Without aiming to construct a chronological reading of these processes, it is important to point out that three more or less recognizable phases exist in the work of these architects, with distinctions related to their methodological mechanisms for interpreting context. The first phase draws on the territory as a source of symbolic reference, invoking icons of tradition as part of an architectural discourse that aimed to be attentive to context. This approach is based on explicit representational devices, a Figuretive appropriation of elements from local traditions. The second phase involves a typological approach, incorporating vernacular strategies into spatial solutions, meaning the recreation of formal solutions derived from local tradition.

In summary, the first phase maintains an evocation of context in the more superficial and explicit layers of the project, with clear discursive responsibilities, while the second phase brings these references into the deeper layers of design conception, dissolving figurative intentions into spatial solutions.

We arrive, finally, at the description of a third phase in the work of these architects, where the associations are forged in the intellectual realm, without direct physical demonstrations of affiliation.

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[3] With the realization of the Brazil Builds: Architecture New and Old, 1652-1942 exhibition, organized by Philip L. Goodwin in 1943 (Goodwin, 1943).

[4] The majority ethnic group in Cambodia, responsible for an empire that dominated most of Indochina at its peak between the 9th and 12th. centuries, is the Khmer

There are no longer explicit references, but rather an existential alignment with a certain cultural order, which amplifies the formal freedom of the works while maintaining the contextual effort in a secure, though abstract, framework.

These three stages do not outline a linear or exclusive process; they are merely analytical categories that guide the reflections presented in this work. In the following sections, we will explore aspects of the architects' works in parallel, establishing the points of contact that are of interest.

Contextualism and National Identity

We begin in the Americas. For Niemeyer, the architectural discourse always aligned with the cultural identity forged in modern Brazil, characterized by the idea of a festive and sexualized nation that faces the hardships of colonization with lightness and joy. This is the Brazil of Bossa Nova, the "cordial Brazil" of Sérgio Buarque de Holanda, more invested in the promising idea of the future than in the effective confrontation of inherited inequalities (Holanda, 1995). This is the intellectual context to which Niemeyer is connected, with the necessary caveat regarding his political stance: he was not a man at ease with Brazilian social violence, but rather incorporated this unease into a positivist action, believing that architecture designed for everyone could indeed be appropriated by everyone.

Regarding urban culture, Brazilian modernity aligned itself with what was available: the European urban tradition, more specifically Mediterranean, filtered through Portuguese colonialism. As Giulio Carlo Argan reminds us (2003, p. 170):

> [...] Brazilian architects did not seek inspiration from the fascinating nature of their country nor from the primitive indigenous customs. Instead, they understood that architecture is a cultural phenomenon, tied to a specific culture, and they deemed it essential to elevate themselves to that cultural level. In doing so, they explicitly expressed their intent to be part of the European cultural community, rather than the American one.

Unlike the civilizations in the northern parts of the continent, the indigenous populations of the southern cone developed in small, isolated communities, without movements toward centralization of power and, consequently, without significant urban agglomerations.

It is in this context that Lucio Costa's early theorized alignment with European urban culture can be justified, a connection made effortlessly by Brazilian architects. Júlio Katinsky highlights an urban condition that is particularly and repeatedly pursued by them: the secular, ecumenical void of the Mediterranean tradition, that is, the portion of urban space dedicated to social interaction (Katinsky, 1981). Additionally, Brazilian architects absorbed the perception that the chances of a radical modern transformation in cities were remote, and therefore, it was up to architecture to provide the desired transformations for cities, even if only in a fragmented manner.

Oscar Niemeyer incorporates the square as an organizing element in his architectural complexes, both in his discourse and practice, reflecting the virtues of the informal, every day, and spontaneous meeting space of Mediterranean tradition. A notable example is the tension faced during the design of the United Nations Headquarters in New York (1947). The young Brazilian, invited to join the project development team, had his version celebrated by his peers: three functionally distinct blocks, each facing the East River, arranged around a central void, the United Nations Plaza. However, Le Corbusier, also a member and undoubtedly a central figure of the team,

insisted that the highlight should be the General Assembly building. As a result, the plaza was discarded, and the Swiss architect's solution prevailed.

In the projects developed in France, perhaps with heightened attention due to the responsibility of working as a foreigner, Niemeyer reaffirms this same motivation by proposing solutions that begin with the empty space. In the headquarters of the French Communist Party (Paris, 1965), the primary challenge seems to be creating a mediating solution between the desired square and the strict Haussmannian grid of the block. With a highly contextual intervention, Niemeyer designs a building responsible for transitioning between these two extremes a curved block that aligns with the two streets that define the site. The corner is freed up to create the desired square, which supports the auditorium block, a structure that—perhaps echoing Le Corbusier's lesson at the UN—receives the prominence it deserves (Figure 1).

Figure 1 – Headquarters of the French Communist Party (Paris, 1965). Oscar Niemeyer.
Source: Author's photograph (2023).

In Le Havre, Niemeyer was invited to design the city's Cultural Center and faced what seemed to be a more complex challenge. Rather than creating a respectful counterpoint as in Paris, the approach was more integrative with the urban fabric developed decades earlier by Auguste Perret during the city's reconstruction. However, the square remained the organizing element, although in Niemeyer's discourse, it appeared as an environmental control feature (lowered, it was defended by the architect as a strategy to protect against the wind). This design emphasized the urban void as a place of passage, not just for accessing the created programs, but as a square for everyday use (Figure 2).

Shifting to Asia, in a similar vein, Vann Molyvann also drew on the ancient urban tradition as the existential compass of his projects, guided by the symbolic recognition of the Angkor complex. Discovered in ruins in the jungle by a French researcher just a few decades earlier, Angkor sparked global curiosity and interest due to its impressive array of temples, built in the 12th century, in an agglomeration that housed around one million inhabitants.

The movement was one of national affirmation, manipulating an identity-based sentiment to reclaim the glories of the past; as usual, architecture was called upon to materialize this phenomenon. Phnom Penh, the capital of the country, was redesigned during the post-independence period as a showcase for the new regime, simultaneously promoting the symbolic power of *Khmer* tradition and alignment with the global avant-garde, represented by modern architecture (Ross; Colins, 2006).

Figure 2 – Le Havre Cultural Centre (Le Havre, 1972). Oscar Niemeyer.
Source: Author's photograph (2023).

Cambodia, however, was predominantly an agricultural country; the investment efforts in the capital aimed at initiating an urbanization process, but it was clear that the urban tradition in the country was a novelty, sketched only during the French colonization. It is within this context that Molyvann shifted his focus, directing the construction of his urban references to what had been the country's only great city: Angkor.

A closer examination of Angkor Wat, the main temple of the archaeological site, reveals a sequence of columns forming a kind of continuous external gallery that runs along the entire defensive perimeter of the structure. Unlike similar situations found in Europe such as in Italian loggias or the covered walkways of medieval France the gallery faces outward, not toward a contiguous square. The covered walkway is therefore suggested as part of the access route, requiring visitors to pass through several layers of filtering before reaching the temple, which is protected by a series of concentric walls and colonnades that emphasize the effort of this pilgrimage. As is common in Hindu tradition[5], there is a celebration of the interval between exterior and interior, between sacred and profane, much like what is seen in Indian ceremonial wells (baori), where access to the object of worship—water, in this case—is preceded by multiple and intimidating stairways.

[5] Angkor was originally constructed as a Hindu ceremonial complex and was later converted to Buddhism.

The hypothesis proposed is that this spatial experience of transposition impacts Molyvann's design process, particularly in his composition of unoccupied ground floors. The design of the Preah Suramarit National Theatre (Phnom Penh, 1958-1967) is an example. In the context of cultural affirmation, a theater is strategic a temple of culture that must be celebrated as such. The access is a celebrated feature: the open ground floor ensures a gradual approach, from sunlight to shade, open and with a view of the river; from the ground level to the upper floor, still without temperature control, filtering only ventilation and light; from the grand foyer to the performance hall. The journey recreates the ceremonial access to Angkor Wat, adapting it to the proportions of the new program (Figure 3).

Figure 3 – Chaktomuk Conference Hall (Phnom Penh, 1961). Vann Molyvann.
Source: Adaptor-Plug.

However, it is with the design for a complex of 100 houses in Tuk Thla (Phnom Penh, 1965-1967) that Molyvann reveals his strategy more explicitly, particularly by interpreting a popular typological model without relying on the more commonly recurring references to noble architecture in his work.

In the Tuk Thla project, we see an almost literal recreation of the traditional *Khmer* wooden houses, with the reproduction of spatial typological solutions adapted to updated construction techniques, notably the use of concrete structure. The challenge of large-scale construction, aimed at a more general audience, forces the architect to seek solutions that are justified by common sense, in this case recognized in the validation of tradition.

The particularity of a completely unoccupied ground space, originally derived from climatic factors (elevating the floor to protect it from potential moisture, creating a ventilated

buffer between the ground and the house, and, above all, protection from occasional flooding), is recreated in light of Corbusian principles. The pilotis establish a transitional space between public and private, giving a ceremonial character to the vertical access to the house, while also returning the projected area of the building to collective use—not entirely public since it consists of urban houses, but serving as a shared space among the residents.

The access route, as in the traditional model used as a reference, requires a threshold spatially expressed in the form of an upper-floor veranda, particularly useful in tropical climates. All the rooms open onto it, simultaneously converting it into both a circulation hub and a filter for the more intimate spaces. A second staircase, directly connected to the more private section of the living room, reinforces the idea that the veranda serves as the social, more public access, while a restricted connection is allowed between the pilotis and the private area via a duplicated path.

This description almost inevitably leads to a comparison with a project by Lúcio Costa, referenced here due to his paternal connection to Oscar Niemeyer. In describing his design for the Parque Guinle apartment complex (Rio de Janeiro, 1954), Costa states the following:

> [...] The aboriginal culture influences the early Brazilian house in only one aspect—its floor plan. The feitorias were the first houses, essentially open verandas, where cooking and sleeping took place. The fire in the central part, with cots or hammocks around it, mirrors the layout of the indigenous house. With the enclosure of this covered area for protection and defense, two open segments were preserved, one at the front and the other at the back, corresponding precisely to the two openings of the native oca (Costa, 1995, p. 205).

In a kind of intellectual exercise, Lúcio Costa manages to import a relationship with indigenous architecture through the duplication of the veranda space covered but without complete enclosure from the exterior. In the apartments of Parque Guinle - besides offering the exception that validates the rule interpreted by Argan - he proposes a larger, more social veranda near the main entrance, and a second, more domestic one, connected to kitchen activities and reserved for the residents' use. The veranda, as a mediating space for access, is employed in several other projects, serving as a typological reference to Brazilian architecture - whether indigenous, *bandeirantes*[6] or the rural coffee aristocracy.

Certainly influenced by his first mentor, Oscar Niemeyer carries the veranda concept into some of his works, initially reproducing material language references (such as balustrades and wooden enclosures) and later refining these stylistic elements into a more sophisticated typological spatial proposition. This solution also aligns with the modern aspiration to blur the boundaries between exterior and interior, a goal more easily achieved in geographic contexts that do not have to contend with harsh winters. It is worth noting that this modern pursuit was a direct result of technical advancements in construction, which allowed for the separation of structural elements from the enclosure, celebrated by openings that could, at last, extend across the entire surface of façades. Additionally, as a comparative point, it is important to recall that Asian architecture has long separated structure from enclosure, a feature that became a source of admiration for European modern architects.

The programmatic revival of verandas is, therefore, a strategy with dual appeal in Niemeyer's work, as it simultaneously addresses the desire for contextualization and affiliation with the new modern tradition. In projects such as the *Grande Hotel* (Ouro Preto, 1938), the veranda reclaims the

[6] *Bandeiras* were movements aimed at expanding the occupation of Brazilian territory during the colonial period, primarily focused on the capture and enslavement of Indigenous peoples. The *bandeirantes*, men who participated in these expeditions, were portrayed by dominant historiography as the greatest representatives of the bravery and entrepreneurial spirit of the inhabitants of the southeastern region of the country.

role of intermediary space, as noted by Costa, serving as a public destination reached by a ramp - also functioning as a veranda - that navigates the slope of the street (Figure 4).

In Brasília, the ceremonial nature of the palaces designed by Niemeyer elevates the veranda to a monumental status, without losing its role as an intermediary between public and

Figure 4 – Palácio do Alvorada (Brasília, 1958). Oscar Niemeyer
Source: © Heitor de Bittencourt.

private, between exterior and interior. At the same time, it is embraced as a formal solution for disconnecting the structure from the enclosed prism of the building. In the *Palácio do Planalto* (1958), the seat of the federal government, the veranda completes the ascent of the access ramp and allows for a covered walk to the speaker's platform (*parlatório*), highlighting symbolic stages in the choreography of power transitions between presidents. In the *Palácio da Alvorada* (1957), the official residence of the president, the two verandas of Parque Guinle are revived; in this case, the noble character is reaffirmed with an abundance of aristocratic finishes on the public veranda, contrasting with the subdued logic of the private veranda, aligned with the simpler enclosure system. In both cases, the void created by the veranda brings the structural elements into focus, detached from the enclosure planes and extending the spatiality to the entire perimeter of the building, reminiscent of the peristyles typical of Athenian temple.

We now arrive in Africa. Jean-François Zevaco is one of the few 20th-century architects who was able to explore in a contextualized and thus secure manner the spatial matrices of the *casbah*, the housing typology of Berber urban centers. In doing so, he fulfilled a desire expressed by many of his contemporaries, from Le Corbusier to Aldo van Eyck.

As Jean-Lucien Bonillo states, North African typology has been part of the architectural reference horizon since the revivalist movements that followed the first insurrections against academicism, passing through the highly personal universe of Corbusian language, to the phenomenological investigations of the Team Ten movement (Bonillo, 2006).

The revivalists' approach remained at superficial levels, with the reproduction of symbolic references, reflecting European architecture's hypnotic affection for Oriental citations, but without any associated spatial investigation. For Le Corbusier, however, the *casbah* – particularly that of Algiers, to which he devoted great attention - had a deeper impact on his theoretical framework. His work reveals clear appropriations of constructive criteria found in North Africa that reinforced his modern formulations: the flat roof, the sober volumes and materials, and the attention to color under sunlight.

Le Corbusier's greatest praise for Berber urban culture, however, concerns the human density that these agglomerations enable, and the diversity contained within a defining formal piece that forces individuals to coexist within a universe structured by architectural design. This idea is clearly reflected in his *casbah*-inspired projects, such as the Roq and Rob housing complex (1949) and the linear building of the *Plan Obus* (1930).

Lastly, following Bonillo's reasoning, the architects of Team Ten borrowed from the *casbah* the urbanistic notion - also applicable to architecture - of a network-like arrangement, where elements are organized polycentrically, enhancing the dynamism in the relationships between various parts. This can be seen, for example, in Aldo van Eyck's Amsterdam orphanage project (1960).

Zevaco navigated through these three types of experiences: he incorporated explicit signs of local tradition, negotiated with light and enclosure, and finally invested in the multiplication of centrality poles in some of his projects. We begin with the most evident aspect of this approach: the effort to internalize the architectural experience. His architecture rarely offers references to desired landscape views or openings toward the horizon; following the Berber vernacular tradition, he treats the exterior as a threat.

By definition, the *casbah* is a fortified structure – or group of structures – with very few openings to the outside, serving as a response to both human enemies and the dramatic interactions with nature (sandstorms, excessive heat, and sunlight). Unlike European medieval fortifications, which simulated unprotected urban life within the walls – with squares and public spaces for social interaction – the *casbah* takes protection to the extreme, often becoming a habitable wall itself. There is little concession to transitional elements, with a clear and minimized boundary between interior and exterior (Figure 5).

This condition is celebrated by Zevaco: the façade, as an element of enclosure rather than a representation of transition, becomes the driving force behind design decisions. It serves as the foundation for the most significant architectural expression in projects like the post office headquarters (Agadir, 1963) and the Societé Marroc office building in Rabat (1989). In this context, Zevaco feels free to distance himself from the purist frameworks of the modern movement and employs decorative devices that echo the celebratory discourse of enclosure: the building is opaque, with limited transparency and minimal accessibility from the street, yet presents itself to the city as a sculpted rock, becoming part of the landscape. Just like the *casbah*, which, built from adobe blocks— material derived from the very geological conditions of its surroundings becomes inseparable from the horizon that contains it.

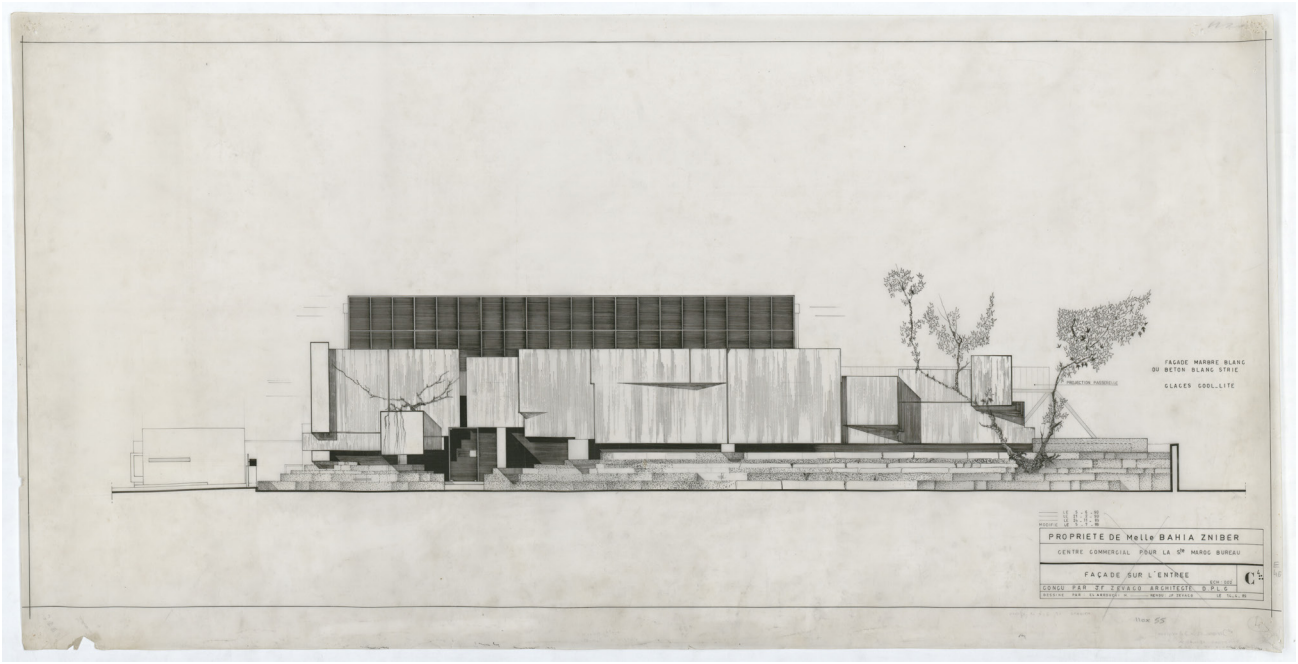

Figure 5 – Societé Marroc Office Building (Rabat, 1989). Jean-François Zevaco.
Source: © Frac Centre-Val de Loire

The other side of this decision is precisely its interior development: minimal contact with the exterior allows for a more poetic and often cathartic exploration of lighting solutions. Courtyards become immensely important, along with other devices for capturing the vast sunlight of the Maghreb. This is evident in the design of Villa Zevaco (Casablanca, 1975), where the ground-level layout allows for a spiral arrangement of spaces around a core illuminated by a circular zenithal opening, organizing the living room as a simulacrum of the nomadic desert tents' gathering spaces (Figure 6).

This same celebration of interior space guides the design of the Beni Mellal Courthouse (1960), a square-based building with four wings facing an internal courtyard, where the main courtroom volume is elevated. Externally, the façades are predominantly blank, inviting a focus on the internal spatial experience. The programs are arranged on the first two floors, freeing up the ground floor for access and circulation, a sort of modern *pilotis*, though completely enclosed from the outside.

Finally, it is worth describing Zevaco's incorporation of the polycentric network organization of the *casbah*, using two examples: the Yasmina Hotel (Cabo Negro, 1968) and the Thermal Station of Sidi-Harazem (1960). The complex program of a hotel is addressed in Cabo Negro with a non-simplifying strategy, meaning no volumetric synthesis or formal geometric block adaptations. The layout responds to the topographic conditions, taking advantage of the terrain to multiply the views from the rooms here, celebrated. The program spreads across the territory in a tentacular manner, creating focal points that do not repeat formal decisions: the rooms develop linearly, multiplying staggered horizontal corridors that open the rooms toward the sea; a courtyard separates the rooms from the leisure areas; and finally, or as an entrance, Zevaco recreates the enclosed interior void, open to the sky, with multiple pillar-beams supporting a concrete shell that welcomes visitors (Figure 7).

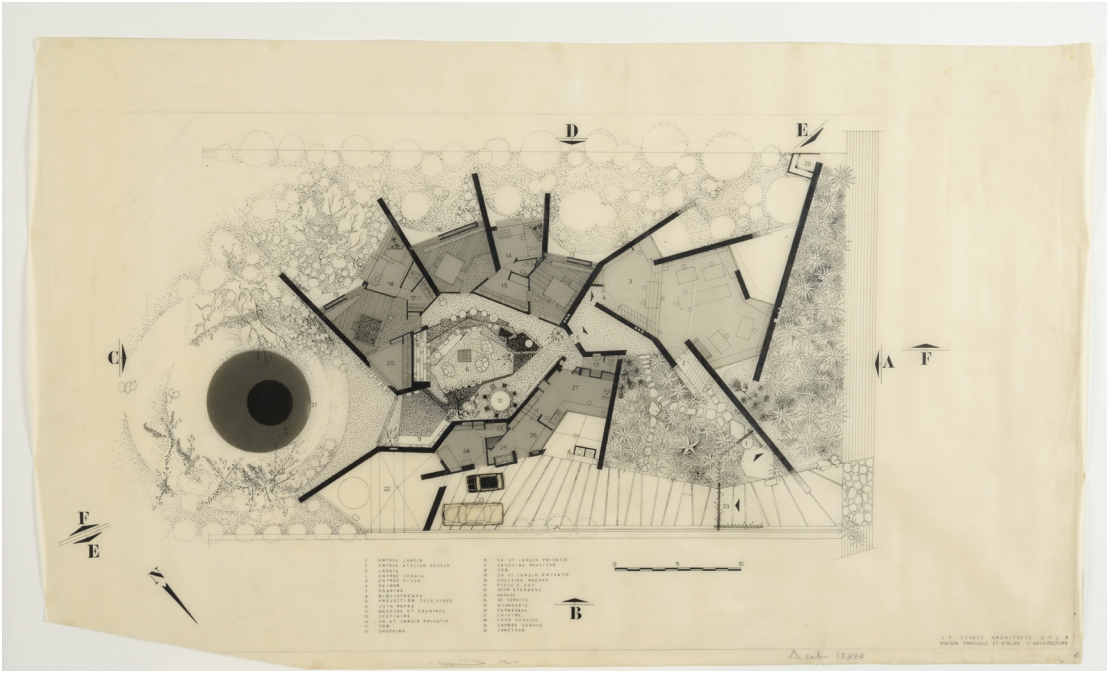

Figure 6 – Vila Zevaco (Casablanca, 1975). Jean-François Zevaco.
Source: © Frac Centre-Val de Loire.

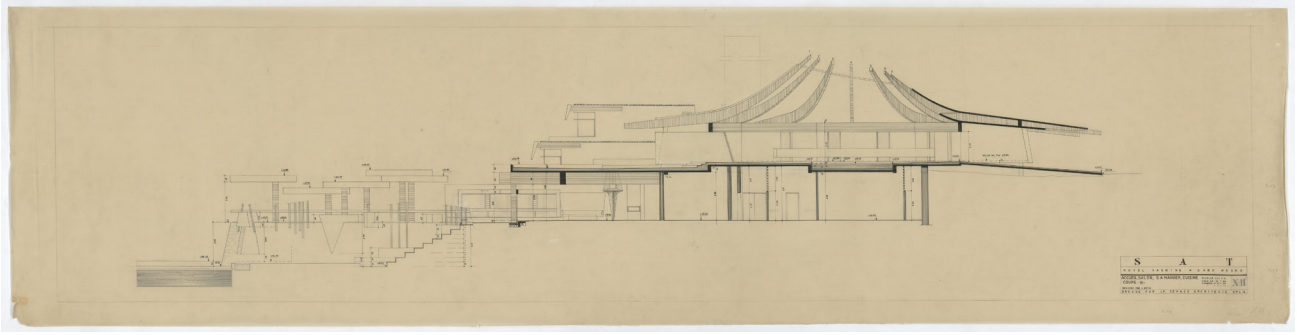

Figure 7 –Yasmina Hotel (Cabo Negro, 1968). Jean-François Zevaco.
Source: © Frac Centre-Val de Loire.

In Sidi-Harazem, Zevaco, faced with the challenge of designing a program to celebrate the existence of an oasis in the desert, a rare thermal spring, uses water as the central element of the project. Through strategies of control and the creation of plasticity—human action upon this natural element the project takes shape. From this understanding arise the mirrors, paths, wells, and pools that generate a spatial plurality, enhanced by the architect's artistic intervention (Privitera, 2018). As in Cabo Negro, the focus is on diversity rather than synthesis; formal and programmatic hubs colonize various sectors of the site, interconnected by strategies mediated through water. The Berber urban network, as referenced by Bonillo, materializes here as in few other instances (Figure 8).

Figure 8 – Thermal Station (Sidi-Harazem, 1960). Jean-François Zevaco.
Source: © Julien Lanoo.

The challenge of describing the project is amplified by the profusion of uses and spatial situations, but it is addressed concisely below. The aquatic center, hotel, and commercial zone are the three main programmatic sectors; however, it is the articulation elements that receive the most significant artistic investment.

The pool complex occupies the edge of the site, off the central axis of the layout, like an arm reaching toward the plain of the water source. Two circular pools[7] sit on a geometrically shaped platform, set against a backdrop of arid mountains the ultimate representation of the desert landscape. This is the symbolic depiction of an oasis, offered for public leisure use. Access to the platform is mediated by a series of small buildings that face the narrowing passage through a hill towards the main axis of the complex. Most of these structures, built primarily from exposed concrete, explicitly recreate traditional Berber techniques, with simplified volumes and minimal, controlled openings. The intense, direct light is incorporated into the poetic discourse through the chromatic variation of select volumes, which stand out from the complex's mimetic relationship with the landscape, and through pergolas that cast exceptional strips of shade along the path.

The main axis connects the hotel to the commercial area (*ryad*). The hotel consists of two perpendicular prismatic blocks, employing a stark modern compositional language in the design of the façades with openings. The rooms are clearly legible from the exterior, with balconies that alternate yet remain continuous, shaped through a purely graphic operation in the construction of the enclosing elements.

The supports of the blocks, V-shaped double pillars, hint at what unfolds in the following sectors: a profusion of plastic experimentation, free from geometric standardization except for the

[7] Francesca Privitera associates the circular form with the wells that appear due to water evaporation in desert regions near the sea, known as sebkha (Privitera, 2018).

material choice exposed reinforced concrete serves as the common thread. The *ryad* is a square plaza covered by a repetition of concrete pyramidal modules, evoking archetypal figures from local architecture.

The space between the hotel and the *ryad* is developed as a long water garden, referencing the vernacular typology of the *kissariat*, walled courtyards filled with gardens and, notably, streams of flowing water. Anticipating the results achieved by Carlo Scarpa in his explorations of water path design, Zevaco draws from North African tradition in an almost innate way, in a context where such citation is thoroughly appropriate. Like Scarpa, Zevaco crafts an homage to the profession itself, dedicating exceptional attention to the design of each spatial situation. Various solutions for handling elevation changes, controlling water flow, designing tanks and planters, and supporting roofs and walkways multiply throughout the site, along with walls and porticos that define the path. The abundance of geometric ornamentation revives the celebrated examples of Arab architecture that have survived to this day (Ragon; Tastemain, 1999).

Contextual Construction as a Plastic Element

The approach to construction themes must also be framed within the key of contextualism: any work seeking to adapt to the prevailing conditions of its territory must evaluate the available technical possibilities and, thus, understand the cultural equation in which it is embedded. This approach can suggest solutions rooted in vernacular traditions or, with equal strength, validate technological experiments consciously incorporated into the project's design decisions.

In both directions, the manipulation of the construction process becomes an important tool in the creation of architectural poetics, as it embodies dominant expressive discourses in the outcome of the work while simultaneously revealing the architect's critical stance toward their technological reality.

Modernity brought the choice of construction processes to the forefront of the discussion; until then, material decisions were fundamentally dictated by local availability and the accumulation of vernacular technical capabilities. It is this reality that allows for reflection on the choice, and thus, on its poetic virtues. Discussing the possibilities of construction becomes a reality, offering architects an additional component for negotiation in their design decisions.

Architecture gains the ability to investigate itself in metalinguistic terms, critically reflecting on its processes and expanding its sphere of concern beyond mere *poíesis*[8], into its own poetics. In other words, beyond the concrete outcome, it becomes valuable to discuss the means themselves, taking them as elements of plastic investigation.

Along this path, we can continue reflecting on the processes of our key figures, all of whom are attentive to local construction possibilities—whether actual or potential, through evolutionary provocation. Starting with Molyvann, who provides a clear example with his proposal for the National Stadium: faced with the challenge of building a sports complex for 80,000 people within the prohibitive timeframe of 18 months (Iwamoto, 2017), he proposed a topographic architecture, relying on the mechanical effort of earthmoving as the primary construction task [9].

[8] *Poíesis* (or *Poïétique*) is one of the modes of human activity described by Aristotle in the 4th century BC, positioned between theory and practice: theory as the pursuit of true knowledge, and practice as action aimed at solving problems. *Poíesis*, then, represents the human spirit's impulse to create something from imagination and emotions. It embodies the act of bringing forth something new, blending intellectual insight with creative expression, bridging the gap between thought and tangible creation.

[9] Noteworthy, although with no indication of cross-contamination, is the similarity between the section proposed by Molyvann and the one designed by Paulo Mendes da Rocha for the Serra Dourada Stadium (Goiânia, 1973).

The adaptation to the set of constraints also brings Molyvann closer to traditional techniques. Associative construction processes that is, those regulated by the composition of small, lightweight elements dominant in everyday architecture throughout Southeast Asia served as a basis for his modern interpretation of building design. Alongside the material truth he learned from his experience with Le Corbusier, Molyvann adds a visual component connecting with vernacular architecture, creating a figurative representation quite literal of his surroundings. This results in a perfect harmony.

In his work, there are no efforts to simulate or conceal structural efforts or palliative construction techniques: the physical reality of the components is valued, exposed, and revealed as a poetic virtue. In this sense, the choice of prefabricated concrete components when necessary becomes clear, adjusted to the general compositional equation of the works. Vernacular materiality – predominantly wood – ceases to be a mandatory reference, as the choice of contemporary materials can be made within the same logic of ancestral construction decisions. The process is valued more than the result.

Two recurring solutions should be noted. The first is the appropriation of support elements as aesthetic motifs, that is, the design of the structure as a strategy to reference vernacular architecture. This occurs in the design of the Chaktomuk Conference Hall (Phnom Penh, 1957), where a system of secondary structural elements is arranged on the façade, forming a triangular pattern that exudes the signs of the Khmer wooden temples. Molyvann here employs methodological strategies from his two mentors: he draws with Le Corbusier's Modulor and adheres to a geometric rigor respectful of a single matrix, the triangle, in light of Frank Lloyd Wright's experiences. The geometric figure, initially taken as a cultural connection, guides him through the design stages: he arranges the block in a fan shape, with its apex facing the Bassac River – recreating the solution of Le Corbusier's Palace of the Soviets (1932) – segments the roof into radial sections with a triangular profile, and concludes with a system of enclosures designed with exposed diagonals on the facade.

The second recurring solution is the use of pre-molded, pleated concrete roofing, which sublimates the initial vernacular formal references but remains true to the commitment to constructive efficiency. There is, of course, a certain degree of visual connection with the sharply sloped roofs of the local tradition, but the interpretation here makes the reference much more abstract. At this point, it is important to understand that the solution is primarily a critical reflection on the role of the constructive element within the architectural composition in a tropical country, considering the roof as an autonomous element of shading and rain protection. This autonomy is evident in several projects, notably the State Palace (Phnom Penh, 1966), the Teacher Training Center (Phnom Penh, 1971), and even more explicitly in the National Sports Center, previously mentioned (Figure 9).

Back in Brazil, the discussion about structure in Niemeyer's work is often overshadowed by considerations of the plastic effects achieved by his projects, which typically have the explicit goal of surprising. Nonetheless, it is worthwhile to look for clues in his decisions that align his approach with that described for Molyvann or Zevaco, which was valid for almost the entire first generation of modernists: a respectful display of structural reality.

Figure 9 – Teacher Training Center (Phnom Penh, 1972). Vann Molyvann.
Source: Adaptor-Plug.

The starting point should be Niemeyer's early recognition of the virtues of reinforced concrete, not only in terms of plastic freedom – as his discourse insists – but also as an adaptation to the technological possibilities of a country on the periphery of global capitalism. It is worth noting that Niemeyer was born in a country that had abolished slavery less than three decades prior. The processes of concrete molding required low-skilled labor. On the other hand, the Brazilian's geometric experiments introduced unprecedented sophistication in structural calculation processes, enabled by the relatively low cost of the construction processes he developed.

Niemeyer immediately recognized the symbiotic relationship with structural calculation to which his architecture was subject, maintaining explicit acknowledgment of his engineering partners, notably Joaquim Cardozo – who was also a poet and enabled many of his notable curves. Poetry and structure are part of the same universe in Niemeyer's work. However, the focus is more on the poetic exploration than on poetry as a comparative point; that is, advancing on the plastic intentions present in the exposure of construction processes rather than the formal result achieved. To this end, we discuss two projects: the Lucas Nogueira Garcez Exhibition Pavilion (OCA), part of the Ibirapuera Park complex (São Paulo, 1954) and the Cathedral of Brasília (1970).

In São Paulo, Oscar Niemeyer was commissioned to design a leisure complex to commemorate the city's 400th anniversary, participating in the movement to assert the modern identity of what was becoming the largest and wealthiest city in Latin America. In this spirit, in collaboration with landscape architect Roberto Burle Marx, he created the city's most important public park, which includes a series of buildings designed to host a commemorative exhibition.

What we highlight here is the Lucas Nogueira Garcez Exhibition Pavilion, quickly nicknamed Oca[10], in reference to the residential structures of the Xingu culture[11].

[10] The term "Oca" in the Tupi language means "house".
[11] Referring to the indigenous peoples who inhabit the Xingu River region, a tributary of the Amazon River.

The vernacular reference here is of little importance, with no clear intentional connection. The poetic exploration in Niemeyer's work, as seen in his repeated vocabulary across various projects, focuses on concrete's maximum structural potential, with the shell being one of the most explicit examples. From a circular base plan, Niemeyer designs a singular roof, present and defining the entire spatiality created. A series of overlapping slabs form a new structural block that, intentionally, does not touch the shell. The vertical circulation strategy – ramps - structures the pathways between the different slabs, reinforcing the independence of the two proposed volumes.

But it is in the design of the Cathedral where Niemeyer most explicitly reveals the power he seeks in structural decisions. He concentrates the entire aesthetic responsibility of space creation in the sixteen ribs defining the circular plan. The solution, strikingly simple, breaks definitively with any attempt at a hierarchized reading of construction processes: architecture and structure become a single gesture. The geometry of the ribs recreates the upward movement expected for ecclesiastical solemnity, without explicit references to more conventional solutions (nave, transepts, dome): the cathedral is a single space, with one significant exception for access. Here, Niemeyer invokes a phenomenological interpretation of spatial experimentation and creates the constraint – constriction and containment of light – typical of the thresholds of Portuguese churches, and distills this experience into a tunnel that prepares visitors, through its brief passage, for the awe of the vast structure and the stained glass that encloses the space. Upon entering, it is impossible not to look up at the sky (Figure 10).

A similar solution can be found in Zevaco's work, particularly in the design of the vestibule of the aforementioned Hotel Yasmina in Cabo Negro, where he proposes an open courtyard framed by thirteen ribs supporting a concrete tent-shell. The curved elements towards the center and the sky shape the circular reception space of the hotel, suggesting a sense of enclosure through the absence of contact with the horizon. This gesture is reinforced by the subtle irregularity of the supporting elements, which rise in a spiral motion, revealed in their verticality by the white shell that does not reach their extremities.

This spatial celebration of structure is echoed in one of his most notable projects, the Pavilion of the City at the Casablanca International Fair (1960), where Zevaco employs the possibilities of concrete to achieve the archetypal form of an inverted square-based pyramid, reminiscent of the solution proposed by Oscar Niemeyer for the Museum of Caracas (1955) a few years earlier. The exceptional nature of the program led to an eloquent, unexpected solution, achieved through a strong structural gesture. Exposed concrete, revealed and accentuated by a secondary cable-stayed roof supported by the four pillars extending from the pyramid's edges.

A deeper analysis of Zevaco's work continues to reveal vigorous plastic experimentation with structural elements, even though these are conditioned by broader design decisions and thus play a less prominent role in the spatial composition. At this point, it's important to remember that Zevaco was a student of Auguste Perret, and certainly carried with him the emphasis on structural points learned from his mentor. More than just points, these are systems of load distribution explored as a poetic motif.

Figure 10 – Brasília Cathedral (1958). Oscar Niemeyer.
Source: © Tissiana de A. de Souza.

In his work, Niemeyer's exploration involves a strong tectonic appeal that grounds his buildings – or sections of them – through materialities traditionally associated with the earth: stone, soil, and concrete. However, the functional operation of modernity continues to be expressed through the creation of explicitly distinct elements, visually lighter, and resolved with contrasting materials.

This condition is further emphasized in Zevaco's projects, where he assigns a more festive design to the elements participating in the base level, creating support systems with significant plastic power. This is evident in the set of schools and judicial buildings constructed around 1960. It's important to note that the formal separation between parts of the building stems from a modern effort at functionalist representation, meaning it composes a methodological strategy that assigns poetic value to the isolated significance of programmatic sectors, rather than to the synthesis of the whole. Notable spaces – both the rules and exceptions – receive specific material treatment and are recognized in the final formal equation. In this effort, Zevaco creates an explicit spatial category for the mediation between the building and the ground, equating it with the other programmatic categories of the building.

In the design for the Tribunal de Ben Ahmed (1958), three autonomous functional blocks are proposed, connected by a ground floor that is hollowed out in its central module. More than a modern piloti, this represents a transition between the exterior and the interior, with very little height and little suggestion of permanence; all the plastic attention is directed towards the supporting elements – columns, frames, beams – and the staircases, reinforcing the transitional

nature of the space. In contrast, the design for the *Grupo Escolar T. Gautier* (Casablanca, 1960) focuses on horizontal circulation elements, with prominent canopies extending from the prism-shaped classroom blocks. The supports are explored in a festive manner: frames with pronounced beams, Y-shaped columns supporting the roof slab. The choice of materials enhances the formal partitioning discourse, with concrete columns and frames, fused to the ground, and the programmatic blocks covered and painted white.

Tricontinental afflux

The parallel reading of such distinct works aims to shed light on common procedures that, through contextual adaptations, have supported the strength of modernity. The focus, therefore, is on strategies rather than results, as it is these that provide learning opportunities and serve as tools for reproducing knowledge. Thus, it is crucial to highlight each architect's manifest intention to align with the cultural order to which they belong and their desire to secure a legitimate place within their territory, to become part of the landscape.

The works of this tricontinental modernism are the result of intense and creative efforts with a common denominator: to become a critical, liberating consciousness (Dussel 1986), dynamic and forward-looking within the field of architecture.

Thanks to a decidedly inventive and unorthodox approach, supported by a dialectical framework and an ongoing, egalitarian dialogue between indigenous vernacular knowledge and universalist Western perspectives, the three architects create vibrant examples of liberatory architecture. These works, through a process of anthropophagic self-emancipation, break away from both traditionalist repetition and globalist domination. By updating, hybridizing, and transmuting the present and all of history, they ground new territorial realities and identities, opening universal architecture to complexity, diversity, cultural polyreferentialities, and civilizational multipolarities.

The vitalist force of the tricontinental movement was indeed so strong that it expanded from the American continent to the entire planet, becoming a counter-model or alter-model even in the Anglo-Saxon world and Europe. It aligned itself with Corbusian Brutalism, particularly in the post-war years.

This feedback loop remains to be properly documented, a task that falls to an emerging decolonized, multipolar, and dialogical historiography of architecture, to which we invite you to participate[12].

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[12] For further documentation and information about the projects, please refer to the following websites: https://www.vannmolyvannproject.org/meet-vann-molyvann, https://mammagroup.org/jean-francois-zevaco, https://www.oscarniemeyer.org.br.

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Collaboration

F. S. Noto contributed to the conceptualization, formal analysis, investigation, methodology, writing — original draft, writing — revision, and editing; C. P. Loddis contributed to the conceptualization, formal analysis, acquisition of funding, investigation, methodology, and writing - original draft.