



TECHNOLOGIES OF RESILIENCE

**RESOURCEFULNESS IN SCARCITY: THE ARCHITECTURE
OF KABULI PASTORAL NOMADS**

NAREN ANANDH

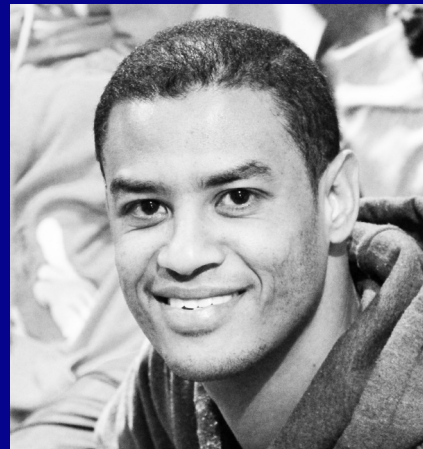
**THE MARGINALIZED CITIZEN AS AN EXPERT:
TYPOLOGIES AND BUILDING TECHNIQUES OF SELF-MADE
BUILDINGS IN MACASSAR TOWNSHIP, SOUTH AFRICA**

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He is currently busy with his PhD entitled the "Tectonics of the Displaced." The study seeks to trace the tectonic idea of self-made spaces of the subversive public realm in the apartheid township of Macassar. Key collaborators are architect Carin Smuts and writer Diana Ferris.



COLLECTIVE EXPERTISE: TYPOLOGIES AND BUILDING TECHNIQUES OF SELF-MADE BUILDINGS IN MACASSAR TOWNSHIP, SOUTH AFRICA

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ABSTRACT

This essay contrasts the western thinking behind the design of South Africa's apartheid townships with the thinking behind the self-made buildings and spaces created by people who have been forced to live in segregated communities. In this essay, selected photographs from a photo journal compiled by youth from Macassar, a township located in the Western Cape of South Africa, are examined to center the marginalized citizen as an expert by looking at how their self-made buildings are transforming the original apartheid township design. The essay starts with some background information about apartheid housing to contextualize the conditions in which self-made buildings develop. The self-made buildings of five local residents are then presented as a selection of photographs. Thereafter I examine the typology, material experimentation, and building techniques that emerge in conditions of scarcity to draw a comparison with western ideas.

Prioritizing social concerns over technical concerns sets the thinking behind self-made buildings apart from environments that assert western ideas. People use what they have and produce local spaces that support human life in neglected communities more adequately, while revealing the shortcomings of apartheid design. The thinking behind self-made buildings is collective, and uses cheap material that is abundantly available and practical. The experience-based knowledge produced through these buildings expands the role of the marginalized citizen, no longer a mere bystander or spectator of their environment, but one who actively participates in restoring, shaping, and building their world. The marginalized citizen as an expert is a timely reminder to architects and designers to reengage the social relations of architectural production to develop architectural processes that can challenge outside expert-driven approaches of the past.

INTRODUCTION

Western thinking and understanding of culture and societal progress influenced several disciplines that sought social change through modernism during the late 19th and early 20th centuries. Unfortunately, modernist ideals have also been used to justify political agendas¹ that have oppressed much of the global South. In doing so, certain populations' ways of being and the subsequent lessons it has to offer for contemporary society have been overlooked. For example, in apartheid South Africa, the appropriation of modernist planning and design principles reinforced the colonial legacy of social inequality with separate urban development for blacks and whites. Today, in South Africa the legacies of this urbanization, such as unemployment, poverty, and crime, continue to cripple many townships² and characterize the lived reality of the poor. A quarter of a century into the country's democratic era, many of these townships continue to struggle to create a sense of identity and belonging.

According to Pieterse, many scholars over-explain the structural economic causes of African urban conditions.³ Although largely due to poor service delivery on the part of the government, it has become too easy a premise to explain the complexity of the poor's living conditions. The problem with this perspective is that it hinders a careful look at the agency of the poor' to transform their surroundings. More importantly, it negates the poor's intrinsic experiential knowledge that develops in conditions of scarcity. From a western perspective, the built environment that has developed under oppressive conditions to support township life could be misread as unordered, and the antithesis of humane conditions of being.⁴ From a local perspective, people in poorer communities do what is needed to keep a sense of belonging alive.⁵ By creating local spaces, people set out to meet their material and immaterial needs. Intrinsic to these self-made places and buildings are functional knowledge systems established by social relations and the forged community identity⁶ by which people can define themselves.

This essay contrasts the western thinking behind the design of South Africa's apartheid townships with the thinking behind the self-made buildings and spaces created by people who have been forced

to live in segregated communities. In this essay, selected photographs from a photo journal compiled by youth from Macassar, a township located in the Western Cape of South Africa, are examined to center the marginalized citizen as an expert by looking at how their self-made buildings are transforming the original apartheid township design. The essay starts with some background information about apartheid housing to contextualize the conditions in which self-made buildings develop. The self-made buildings of five residents are then presented in a selection of photographs. Thereafter I discuss the typology, material experimentation, and building techniques that emerge in the township to draw a comparison with western ideas.

THE APARTHEID TOWNSHIP GROUNDED IN WESTERN IDEAS

Modernist planning and design principles had a strong influence on South African architects starting in the late 1930s, with students from South African universities visiting the works of prominent architects such as Walter Gropius, Mies van der Rohe, and Le Corbusier in Europe.⁷ In 1938 students from The University of Witwatersrand hosted a conference that focused on "applying ... modern planning ideas and design approaches to speculative projects... for a model native township."⁸ Students demonstrated *ideas* such as "the standardization of housing types, rational and geometric design layouts in landscaped settings" through a thesis outlining the model native township. These ideas reflected the work of European architects and urbanists and revealed the "contradictions between the idea of modern planning as a vehicle for radical social change,"⁹ and South Africa's racial segregation and inequalities at the time. In 1944, the government attempted to reconcile racial segregation with town planning principles using modernist reasoning. Consequently, the government adopted the idea of creating communities separated by greenbelts, as used in the United States and the United Kingdom at the time. This idea of separating communities with green belts was interpreted as planning racially segregated areas with buffer strips between them.¹⁰ In 1950, the Group Area Act¹¹ made urban segregation and separate development for black and white South Africans law under the rule of the

National Party. Together with several other legislative acts and policies, racial segregation was legalized, out of which emerged the design of the Bantustan¹² and the township to control the black urbanization.¹³

PRIORITIZING TECHNICAL CONCERNS

Following western examples, apartheid planning took a scientific approach to the concern of how people's lives would be impacted by separate development. Technical solutions such as cost-effective development, circulation patterns inside houses, minimum space standards, the layout of houses, the density of housing schemes, and construction methods¹⁴ formulated a criterion used to build the townships. Townships were planned and built on the periphery of cities, separated from white areas with buffer strips (manmade and natural features such as railways, main roads, rivers, streams, and ridges). The basic building blocks of the township were a set of single-story standard house designs¹⁵ referred to as "house type NE/51,"¹⁶

an acronym for Non-European / 1951, and hereafter referred to as a council house. These dwellings were built at minimum cost using robust materials to lessen maintenance, while the lack of decoration referenced abstract modernist architectural design. This technique of urbanization effectively sought to assert western ideas of domesticity¹⁷ on black South Africans.

The prioritising of technical considerations in the design of townships left many communities with no positive public open spaces. Instead, leftover spaces between houses became unsafe places. "This lack of designing the public space can be seen as a total disregard for the ... "nature of human action and behaviour in that it is social, participative, relational and how societies are made."¹⁸ The township eventually became overcrowded, polluted, and a monotonous wasteland¹⁹ that was rife with crime and poverty. Consequently people found it difficult to connect with these environments.



Figure 1: Typical township layout with standardised housing deployed in Macassar during the 1970's. Courtesy: Department of Rural Development and National Geo-spatial Information of South Africa. Aerial photo, 1977.

In post-apartheid South Africa, the intrinsic values of the NE/51 typology remain largely unchallenged. In its haste to address the growing housing crises, South Africa's Reconstruction and Development Program's (RDP)²⁰ housing schemes did not improve on apartheid design. Many believe that RDP housing has reinforced apartheid planning principles in that it formalized peripherally located shack settlements by making these permanent.²¹ More disastrous is the inferior build quality of these homes, with the majority reported to be a high risk.²² In these conditions, where the government has failed to provide a suitable built environment that can adequately support human

life in the townships, these environments are still characterized as places of unity.²³ Here people continue to carve out a meaningful existence, multiply in numbers, and continue to transform the townships into a liveable place. In fact, the township has been a major site for people's struggle for a transformed society,²⁴ both politically and spatially. In other words, the townships have become places where political practice and architectural knowledge come together.²⁵ As such, the built-up urban fabric of the township is a piece of physical evidence²⁶ encompassing multiple interpretations of architectural ideas of how to live in environments intended to control. It thus becomes

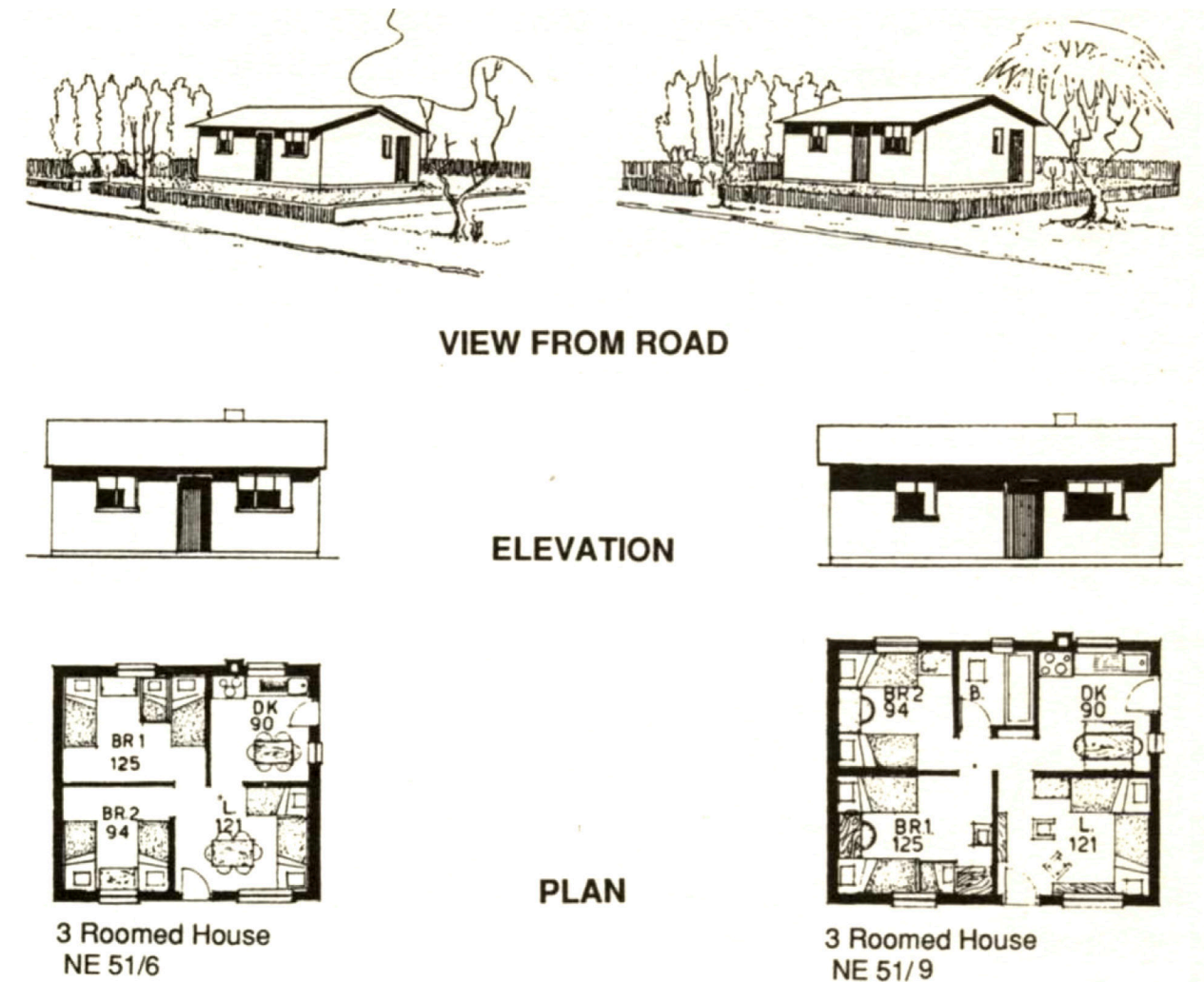


Figure 2: Plan drawing of standardised housing block in Macassar. By author 2020.



Figure 3: Jannie's Games Room exterior view. By author 2018.



Figure 4: Jannie's Games Room interior view of community. By author 2018.

possible to identify the intrinsic experiential knowledge of marginalised citizens by looking at the self-made buildings and spaces that contest the original apartheid township design. [Figure 1 & 2]

PHOTOGRAPHING LOCAL SPACES IN MACASSAR

In 2016, local spaces frequented by youth in the community of Macassar became the inspiration for a group of young people to document their world through street photography.²⁷ The project aimed to visually tell the story of how residents build local spaces to create a safer community.²⁸ The project also sought to change distorted outside perceptions of neglected communities : that of being poor, idle, and lacking the capacity for change without outside help. After two years the group produced a photo journal to present their perspective of life in Macassar. The photographs presented in the subsequent section are selected

from the photo journal to tell the stories of how five Macassar residents have transformed their apartheid council houses into much-needed public spaces for people to connect.

Jannie Charles is a local pastor who constructed a games room for youth. Here, a ten by fifteen-meter shack was made over time to fill in a once crime-ridden alleyway between old council houses. With the help of unemployed youth, used building components were collected from several building sites. The fifteen-meter roof span was made using shorter lengths of timber beams that were connected using a lap joint technique to create continuous beams that span the length of the structure. The structure is also used for local community functions such as meetings, weddings, funerals, exhibitions, and storytelling (Figure 3, 4).



Figure 5: Street view of shack made at Bong's Place. By author 2018.



Figure 6: Inside of shack at Bong's Place with community exhibition event. By author 2018.



Figure 7: Street view of Owen's treehouse. By author 2018.



Figure 8: View of space between Owen's treehouse and the council house. By author 2018.



Figure 9: Street view of Paul Swartz's house. By author 2018.

Rastafari Joey Sampson, known as Bong by residents, built a shack over the old council house with his friends to accommodate his teachings and practices. Over the years, the shack has also functioned as a greengrocer and a taxi business. Timber gum poles and second-hand mild steel corrugated sheets were used to construct the shack's envelope. Large doors open during the day to create positive outdoor space onto the street and blur the inside -outside boundary. Today, firewood is sold from the shack while passersby take part in storytelling around an open fire. The shack has also been an important place for young people to meet up (Figure 5, 6).

Owen Amsterdam is a local musician who enjoys building treehouses. Together with long-time friend Mervyn Speelman, he combines woodcutting and carpentry skills to construct a four-level treehouse that ascends above the township roofscape. Firewood, timber offcuts, laminate floorboards, and PVC pipes are nailed together and supported by an existing tree trunk. The treehouse is located between the old council house and the street-facing garden wall, creating an intimate space where friends and neighbours meet daily around a fire to talk about life in the township (Figure 7, 8).



Figure 10: View of private courtyard with entrance to work space. By author 2018.

Local sculptor and television repairman Paul Swartz built a small space to work and cook behind the council house. A boundary wall is built to create a private courtyard between the self-made structures and the council house. He recycles old building rubble, clay, wire mesh, and TV parts to build the walls of his buildings. Pieces of pottery and sculptures adorn his work, to which he applies new layers of paint each year. The scale and dimensions of these spaces are determined by the 80-year old Paul's body, and the size and weight of available materials. In front of his property, an organic folding garden wall references his courtyard buildings. The street-facing garden wall encroaches over the boundary and creates sitting

areas for youth and elders, from where they watch over the street (Figure 9, 10).

PRIORITIZING COMMUNITY

According to Smith, "self-made buildings are sites where people merge with objects..., sociality with economics, and the individual with the communal."²⁹ This means that people's identities and buildings are inextricable and shaped together. It is not only the space that is transformed, but also the social identity of all participants. This is because "the transformation of buildings and... [social transformation] ... is seen to be... [concurrent]." In conditions of scarcity, we can

argue that people's experiential knowledge is integral to the structures they make as they persist in creating a world that exemplifies a world they want to see. It is through this persistent "invention and reinvention... [of worlds that]... people's knowledge emerges."³⁰ Particular to the spaces created by the five residents presented in the previous section are their knowledge of the social conditions that surrounds them, and their experimentation of materials and building techniques. These buildings and spaces are first concerned with social issues, such as creating safe places for youth and economic opportunity at Jannie's games room and Bong's place, and individual expression at Paul's sculptor's house and Owen's treehouse. Found materials and building techniques are then assigned to these buildings and made to perform under new technical specifications. These characteristics are in line with Frey's description of contemporary building culture in South Africa, in that it is a "collective ... [social enterprise that]... makes use of cheap materials that are abundantly available and is... [practical]... in its construction."³¹ Consequently, these structures stand in stark contrast to apartheid council houses in respect of typology, building techniques, and materiality. Because of these differences, it is helpful to draw comparisons between the thinking behind these self-made buildings and that of the original apartheid township. To do so, we need to see these buildings as inventive places that connect with people, instead of a bad example of western standards.

TYPOLOGIES OUT OF A COLLECTIVE ENTERPRISE

In the buildings presented, people worked together with their neighbours to help make buildings that forge purposeful social identities that can resist the social ills posited by an environment designed to control. An example of this is the making of safe spaces for youth at Jannie's Games Room and Bong's Place. Here we see unemployed youth working together to help create a space that can purposefully shape their identities. In both instances, dangerous alleyways were built up incrementally and then used for multiple forms of social gatherings such as community meetings, an arcade, a fruit and vegetable grocer, and even a transport business. At Paul's sculptor's house, Swartz carefully constructed an introverted space for himself. He then shared his knowledge by building

a front garden wall with seats that are used with his neighbours. At Owen's treehouse, Amsterdam works closely with his friend to create an aspirational space. These different public uses next to the private council house significantly redraw the boundaries of the council house and the land parcel it sits on. This in turn creates other typologies such as infill, courtyard, and street edge buildings. Less functional is Owen's treehouse, but no less important. As a vertical typology (tower building) it creates an important urban marker in what is predominately a flat urban landscape.

An important feature in all these buildings is how they encroach over or step back from the site boundary to create positive outdoor public spaces facing the street. Large doors and gates facing the street are opened during the day to conduct public services and closed at night for private use. Because of this, the street becomes an expanding and contracting public space that supports everyday social life in the township. As a collection of spaces, these buildings work together to create a subversive public domain needed for the community to function efficiently. Contrary to apartheid planning, which grouped all public buildings away from residential areas, these spaces can be described as a disseminated urban typology made up of several smaller constituent spaces located within the community. These buildings are operated by residents, are accessible, and connect people and their place. In 2018, a community exhibition was hosted by the Macassar community where several self-made buildings were used instead of the state built public buildings. A large reason for this was that many state-built buildings in the area were not accessible because of politics and their locations. The success of the exhibition revealed that conventional civic centres and community hall design did not function optimally as a place for building community. Because of this, the design of public building typologies can benefit from examining how marginalized groups invent and re-invent buildings suitable for their context. The experiential socio-spatial knowledge that these buildings produce is important for imagining typologies that can support the diverse way of life in townships, while forging a sense of place and belonging.

CHEAP MATERIALS AND BUILDING TECHNIQUES THAT ARE PRACTICAL

A large percentage of South Africa's construction industry's labour force lives in the townships. Carpenters, bricklayers, plasterers, and tilers bring home with them the knowledge of conventional construction. Leftover building materials and other found objects that are useful for building are also collected. Building techniques are then re-invented in the making of self-made buildings because of the use of found materials. People recycle and reuse found materials because they are affordable and available. These cheaper materials are given new technical specifications, as they are made to perform under new conditions. Under these new conditions, materials and components are brought together in unexpected ways that move away from conventional building techniques. For example, at the sculptor's house, Swartz constructed a circular studio entrance using the steel reinforcement frame reclaimed from a discarded stormwater pipe. He then layered the frame using a clay and cement mix. Fiberglass fruit carrier bags were used between each clay-cement layer to create a watertight envelope. This technique was perfected and then used to construct other parts of the building. Consequently, the walls of the self-made buildings are organic and decorated with broken tiles and paint, and juxtapose the conventional, undecorated standard council house that was made using concrete blocks. At Jannie's Games Room, a thin roof spanning fifteen meters was made using several shorter timber beam lengths. A timber double lap joint was used to connect the timber lengths to make long, continuous beams that span the structure instead of conventional truss construction. In parts of the building, local reeds were used to clad the ceiling for thermal, acoustic, and aesthetic reasons. At Owen's treehouse, lateral stability is achieved by using a grid where structural columns are made by bundling lengths of reclaimed timber together. The ladders between each platform act as a brace to further stabilize the structure. Built on top of an existing tree trunk, the self-made structure and the growing tree converge to create a vegetal aesthetic that softens the predominately urban landscape.

This constant experimentation with materials and building techniques creates a hybrid aesthetic that

is decorative and expressive. People find it easier to connect with this aesthetic because it is the product of their aspiration and capacity. Because of this, we can argue that these buildings are more representative of people than the reductive qualities of apartheid buildings. In thinking about an architecture that can represent people's cultures and ways of being, it would be important to understand how technological innovation can be adapted to suit locally available skills and materials. The experiential technical knowledge that these buildings produce is important for considering how to make robust and durable buildings that do not revert to reductive qualities in these contexts.

SUMMARY

Western ideas, in the form of apartheid design, sought to address the complicated needs of South African society with grand schemes and rigid rules. The result was bland architecture that people had trouble connecting with. Apartheid design created an anti-social, controlled environment and hindered the advancement of black communities. In response to these contexts, citizens have been forced to take greater responsibility to make their communities more liveable and representative of who they are. People use what they have and produce self-made buildings to meet their material and immaterial needs. Today, self-made buildings make the largest contribution to the transformation of the South African urban landscape³² and can more adequately support human life in neglected communities, while revealing the shortcomings of apartheid design. These buildings prioritise social concerns over technical concerns, and contest the thinking behind environments that assert western ideas. [This]... "foregrounding of the social in postcolonial contexts... [is important to instill a sense of belonging and community identity in]...populations that have been historically marginalized."³³ However the application of western technologies and aesthetics in local conditions remains evident in the design of buildings produced by the state and their appointed architects. The design thinking and implementation behind many of these public buildings do not always include the marginalized citizen's experiential knowledge as a genuine contribution to the social project of architecture.³⁴

For this reason, the choice of pictures presented in this essay was not just selective; it was tendentious. The photographs do not only present the perspectives of local youth (and the spaces that shape their everyday experiences), but it also attempts to "expand the role of the citizen..., no longer a mere bystander or spectator of his or her environment, but one who actively participates in restoring, shaping, and building his or her city."³⁵ The self-made buildings by citizens offer valuable insights into how architecture and technologies are reinterpreted by marginalized groups and the subsequent knowledge this produces. In conditions of scarcity, new typologies that accommodate emergent social groups, material experimentation, and alternative building techniques offer glimpses into "subjugated knowledge and subjectivities."³⁶ These are important considerations if architects and designers want to learn how to design in low- resourced communities. We need to see these self-made buildings and the worlds they construct as alternative modernities instead of bad examples of western standards. Studying these sites as examples of inventiveness can reinforce the idea that technological innovation has to adapt to local capacities by taking into account locally available skills and materials.³⁷

The marginalized citizen as an expert is a timely reminder to architects and designers to reengage the social relations of architectural production. As designers, we need to build our capacity to understand poorer communities. Low writes³⁸ that a reengagement of social anthropology and ethnographic methods can help designers include the expertise of those with lived experiences in the design process. The emerging field of architectural ethnography³⁹ offers a good methodology that can help us understand the hybrid-built environments created by these experts. Architectural ethnography focuses on drawing as a means of describing architecture not as a static result, but about what people do in, around, and for it. Such humanistic techniques can reveal the experiential knowledge of the citizen and can transform the way architects and designers engage with the communities in which they work. Consequently, we can develop a more inclusive architecture that respects and acknowledges local ways, and challenges outside expert-driven approaches of the past.⁴⁰ ■

ENDNOTES

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