

**Tsukuba Science City: Between the Creation of Innovative
Milieu and the Erasure of *Furusato* Memory**

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Since the past is infinite in detail, it is beyond the potential ability of anyone ever to take the entire past into account. We make selections; indeed, we make a cascading set of selections. And we have as our best guide to what selections we make the knowledge we need to make sensible historical choices about the future.

Immanuel Wallerstein.¹

Introduction

Comprehensive attempts to synthesize and interpret social interaction in spatio-temporal processes have been exhausted in the fields of interdisciplinary endeavor. Theoretical approaches ranging from social geography to cultural studies emphasize the key role of social organization and practices (self-representation) not only in constructing a sense of belongingness within a particular setting but also understanding and transforming the inhabited landscape.

Social landscapes throughout the Asia Pacific region are vivid portraits of communication and assimilation that involve intensive negotiation of vexed realities oscillating between tradition and innovation, and between orthodoxy and pragmatism. Therefore, the analytical basis for the discussion of social landscapes in the present

¹ Immanuel Wallerstein (2004). *The Uncertainties of Knowledge*. Philadelphia: Temple University Press, p. 139.

work will largely encompass the effects of culture, ideology, and political economy of the State in trying to disentangle the threads of man-made spatial orders².

In the first section, the essay provides the theoretical foundations and key definitions on social landscapes, paying special attention to the “sense of place and the sense of time”³, on the one hand, as inherent features of fellowship and continuity in human settlements; and on the other hand, as group boundary and cultural expressions. In the second part, the essay examines Tsukuba Science City –located in Ibaraki prefecture 50 km Northwest of Tokyo– as a complex prism of changing realities that entails an discourse of modernization and economic progress as the *leitmotif* of Japanese central government while generating a parallel process of rootlessness and alienation among their “native and new settlers”. In the last section, the essay offers the main findings and proposals in interpreting Tsukuba’s current landscape and challenges in becoming a solid community that articulates the past, present, and future contexts *vis-à-vis* the creation of a Tsukuban identity.

Some theoretical considerations on social landscapes

The word landscape suggests more than exposing a “rural” setting in a flawless snapshot. As many other concepts subscribed to the social sciences, the idea of landscape has also been a victim of elites and experts in the arts or even monopolized by tourism industries as a private, static, and unspoiled canvas, unaware of visual revolutions and kaleidoscopic images taking place as human beings adjust themselves to the surrounding environment. Above all, “landscape is the interaction of culture, time,

² The spatial order is “a societal order which can be interpreted only as a social product resulting from the complex interplay of human perceptions, objectives, and capacities, institutional rules, and material conditions connected with human and physical material substances in space”. Van Paassen cited in Peter Jackson and Susan J. Smith (1984). *Exploring Social Geography*. London: George Allen and Unwin, p. 30.

³ See John Brinckerhoff Jackson (1984). *Discovering the Vernacular Landscape*. New Haven: Yale University Press.

and geographic space...Landscape is the unvarnished etching of a past and present, of reality. It expresses the values and social forces associated with a culture that have shaped the environment.”⁴ What is more, the production, representation, and self-reproduction of landscapes not only reflect the pressure of economic and political forces but also entail profound symbolism in response to socio-cultural imagination, as J.B. Jackson describes:

...A landscape is not a natural feature of the environment but a *synthetic* space, a man-made system of spaces superimposed on the face of the land functioning and evolving not according to natural laws but to serve a community... [A] landscape is thus a space deliberately created to speed up or slow down the process of nature⁵.

The human ability to intertwine physical locations to social life structures has created shapes of time through design, planning, construction, use, rehabilitation, and demolition of buildings. Context-generative dimension of landscapes is then placed as cornerstone in interpreting social formations and their particular sense of history and geography.

Once a social landscape is derived from the convergence of topographical features and man-made compositions, the impact of human responses and adaptations to natural settings acquires a sense of group belonging and public identity. Vernacular expressions are therefore erected to remind us the socio-temporal order upon which communities not only conquest the early constrains of geography but also establish institutions and portray a particular ideology as the backbone of cultural production.

Landscapes are also meant to build boundaries and spatial relationships among different ethnic groups. Political and religious symbols are manifested in well-defined spaces (commonplaces) to confer status and cohesiveness to people, however; official

⁴ Cotton Mather and P.P Karan, et. al (1998). *Japanese Landscapes. Where Land and Culture Merge*. Lexington, Ky.: The University Press of Kentucky, p. 1.

⁵ Jackson *op. cit.*, p. 8.

discourses on continuity and change can also be used to redraw political landscapes according to new contexts and interests.

Given that the word landscape implies a “concrete, three-dimensional shared reality”⁶ it can be argued that landscape is a powerful social entity that creates historical bonds between people through unique set of values unfolded into a spatial order. All our responses to unfamiliar places rely upon a combination of sensorial experiences and social construction of reality, consequently, subjectivity permeates the most sophisticated eye as Appadurai has accurately pointed out in his book *Modernity at Large*:

...Dilemmas of perspective and representation that all ethnographers must confront, and... (as with landscapes in visual art) traditions of perception and perspectives as well as variations in the situation of the observer, may affect the process and product of representation⁷.

Comprehensive attempts to understand the process of spatial transformation by human settlements unavoidably need to integrate both, insider’s and outsider’s perspectives since it is commonly agreed that spatial structures of social interaction comprise more than one-sided reality. Moving from subjective to inter-subjective (shared) experiences, the crucial endeavor of social scientists is to find tenable middle grounds between cognition and perception that reveal the identity and changing nature of a particular setting.

Nonetheless, place-making along with its meanings, sentiments, and symbols needs to operate within the dynamics of the macro-sphere that bridges organizational structures with individual practices. In other words, ontological interdependence between individuals and society is inescapably regulated by abstract entities such as the

⁶ *Idem.*, p.5.

⁷ Arjun Appadurai (2000). *Modernity at large. Cultural Dimensions of Globalization*. Minneapolis, Minn: University of Minnesota Press, p.48.

nation-state that articulates and re-articulates landscapes according to spatio-temporal needs and highly institutionalized modernity.

It is the manipulation of places and environments by the capitalist development –based on the principle of *tabula rasa*– what subsumes all aspects of daily life among communities as land becomes also a commodity. But it is the Industrial Revolution what gave the owners of capital and the bourgeoisie the privilege to control the pace of innovation. This industrial modernization is the engine behind the logics and current importance of cities. “As the locus of the market, the city becomes the key geographical location in the space economy. As innovation leads to factory production, so the city takes on an ever greater significance”⁸. Urban landscapes therefore represent the ultimate realization of socio-economic systems. Supported by industries, physical infrastructure, and transportation webs, the cycle of production is set and reconfigured through social relations no longer related to land as means of human survival but as means to exchange, especially when it comes to urban expansion and profitable economic activities.

Landscapes are far from being static pieces of art hanging from the walls of galleries and living rooms. On the contrary, they epitomize the vivid images of dynamic changes in historical processes. The naturalistic iconography heavily represented during the feudalism lost its power in favor of a discourse that exalts the alienation and utilitarianism towards the elements of landscape. Human intervention in the inhabited landscape is seen now more than ever through a glass of *triumphalism* over nature and its physical boundaries, triggering the age of the “intelligent and creative” (high-tech)

⁸ In Denis E. Cosgrove (1998). *Social Formation and Symbolic Landscape*. Madison, Wisconsin: University of Wisconsin Press, p.44.

cities by exploiting the icons of “the clean, sanitized glassy greenfield palace or the fashionable studio in a refurbished warehouse at the inner city edge”⁹.

Contemporary urban landscape then not only reveals a rainbow of archetypes dictated by the industrial modernization but also reflects a synthesis of collective memory and popular culture; beyond the cosmopolitan discourse, cities have become symbols of social uniqueness and inexhaustible ways to construct new self-images attached to functional homogeneity within aesthetical differentiation.

The sense of place and its power over inhabitants relies upon a fragile balance between living in a “global city” and preserving genuine ethnic identities. Economic and technological transformation has a direct impact in cultural expressions, sometimes resulting in hybridization and sometimes erasing local heritage. Although cultural heritage is more than monuments and dwellings, urban renewal must be oriented to maintain some of the original features of the social landscape. In a world where cities look alike in order to become more attractive to transnational capital, cultural distinctiveness is a potential asset in urban development as well as a device for multiethnic inclusion within the logics of the nation-state. Once more, this does not imply to fall into the parameters of oblivion where planners lose their historical consciousness imposing a hyper-symbolism without any notion of time, place, and space. Cultural impoverishment as the *maladie* of the 21st century requires recovering the meaning of landscape as the fusion of human and nature partnership beyond the shackles of the modernity.

⁹ In Charles Landry (2000). *The Creative City. A Toolkit for Urban Innovators*. London: Earthscan, p.36.

Tsukuba Science City: from vernacular furusato to R&D incubator

The landscape of Tsukuba has changed a great deal in the last four centuries. Although the physical features of the vernacular scenery –comprised by a flat valley covered with red pine forests and safeguarded by the two-peaked Mount Tsukuba¹⁰ and Tsukuba Shrine, (a toad-shaped Shinto temple)– have been preserved, the drawing and redrawing of local boundaries have largely responded to political dynamics in consolidating the Japanese nation-state.

During the Edo period the Tsukuba-Tsuchiura area was ruled by lords such as Tsuchiya of the Tsuchiura clan, Hosokawa of the Yatabe clan, and the Satake family. In order to diminish the power of local warriors, the Tokugawa Shogunate took these clans under the Mito and Kasama mandate. Once Japan went through the Meiji restoration, the Mito and Kasama domains were abolished and combined into the prefectures of Ibaraki, Niihari and Inba in 1871. Four years later, Niihari and Inba were merged into the new Ibaraki prefecture¹¹. Although the area was brought to the map again as the largest air base and training center for kamikaze pilots during the War World Two, Tsukuba remained as a rural economy based on vegetable and pig farming until the first half of the Twentieth century¹².

Post-war Japanese urbanization and administrative structure required intensive reconstruction projects and political negotiation. Land reform and land use represented a central challenge for urban patterns since opposition movements such as those led by farmers and landowners would be decisive in the process of cities' future growth.

¹⁰ Often called “purple peaks”, the Mount Tsukuba is famous for the legends that claim the progenitors of Japanese race, the deities Izanagi-no-Mikoto and Izanami-no-Mikoto, are enshrined here. See <http://www.geocities.com/tpbnt/tsukuba.htm>

¹¹ Combined sources Sharon Traweek (Spring 2004). “Keizu to Nendaiki: Making History in Tsukuba Science City”. to be published in Jesus Valero de Matas. *Social Study of Science: An Interdisciplinary Context*. Cambridge: Cambridge University Press. pp. 6 and 11, and Tsukuba City Hall http://www.city.tsukuba.ibaraki.jp/hp/e_hp/guide/history.html

¹² James W. Dearing (1995). *Growing a Japanese Science City*. London: Routledge, pp. 45-46.

Given that rapid concentration of population and industries occurred along the Pacific belt/Tokaido Megalopolis area (77% of industrial production is located in only 23% of Japan's land area)¹³ uneven urban expansion and spatial distribution of infrastructure in metropolitan regions created overwhelming pressures on citizens' quality of living and environmental sustainability.

Consequently, by the early 1960s it was clear that Japanese government had to solve two critical issues; on the one hand, Tokyo already represented a bottleneck for urban planners in terms of concentration of people, land prices, pollution, and traffic congestions. On the other hand, areas outside the capital lacked of infrastructure and industrial development. In order to foster economic development in rural areas and redistribute the population in the capital, national government decided to construct several new towns that would operate as satellites for larger cities.

Moreover, in the name of economic ground-breaking Japanese government wanted to create a scientific cluster modeled in part on the high-tech manufacturing cities of Jurong in Singapore, Kaohsiung in Taiwan, and Akademgorok in ex-USSR¹⁴. A dose of governmental intervention poured out into a geographical agglomeration of scientific and industrial resources would provide the material basis for technological diffusion and would mobilize the productive forces in generating knowledge spillovers. According to Technopoles' literatures, the synergies resulted from the fusion of researchers, academics, and entrepreneurs shape up the spatial expression of a cutting-edge milieu, given that "the construction of such privileged secluded places is intended to signify a certain distance from the day-to-day conflicts and petty interests of society

¹³ The Pacific belt covers the prefectures of Tokyo, Saitama, Chiba, Kanagawa, Shizuoka, Aichi, Mie, Gifu, Nara, Kyoto, Osaka, Hyogo, Okayama, Hiroshima, Yamaguchi and Fukuoka. See André Sorensen (2002). *The Making of Urban Japan*. London: Routledge, pp. 169-170.

¹⁴ See Dearing, *op. cit.*, p.51.

at large, potentially enabling scientists and scholars to pursue their endeavor, both detached from –and independent of– mundane material concerns”¹⁵.

Based on the above formula, on 10 September 1963, the Prime Minister’s Cabinet designated Tsukuba as the site for the science and academic city since it was 40 kilometers closer to Tokyo than Akasu, Nagi, and Fuji, –the other three towns that had been considered as possible candidates to relocate research institutes and universities– and it would be easier for researchers and professors to move in¹⁶. Above all, it is commonly acknowledged that geographical redistribution of industrial entrepreneurialism requires also a dose of institutional policy and mostly, social-cultural structures that can function as catalytic forces in galvanizing economic development by concentrating a large pool of human and material resources these techno-industrial complexes represent the backbone of innovative capacity and business competition.

Tsukuba Science City was created from the merging of small towns and villages such as Oho town, Toyosato Town, Yatabe Town, Tsukuba Town, and Sakura Village. In 1966, the Japan Housing Corporation began purchasing land from 2500-2600 local farmers through a wide negotiation of prices, especially for those parcels that were suitable for agriculture (*see* fig. 1):

Between 1964 and 1966 protests from angry farmers (as well as from government employees who faced relocation) caused successive scaled-down revisions of the original Tsukuba Science City Master Plan by the Master Plan Core Working Group”...[E]ventually, the Ibaraki prefectural government helped finance a more lucrative deal for Tsukuba farmers by exchanging their agricultural land for farmland in Northern Ibaraki, providing irrigation, and paying relocation expenses, in addition to the sale price for their land in Tsukuba.¹⁷

This intricate negotiation along with the forest pattern gave an elongated shape to the science city, about 18 km from north to south and 6 km from west to east. From the

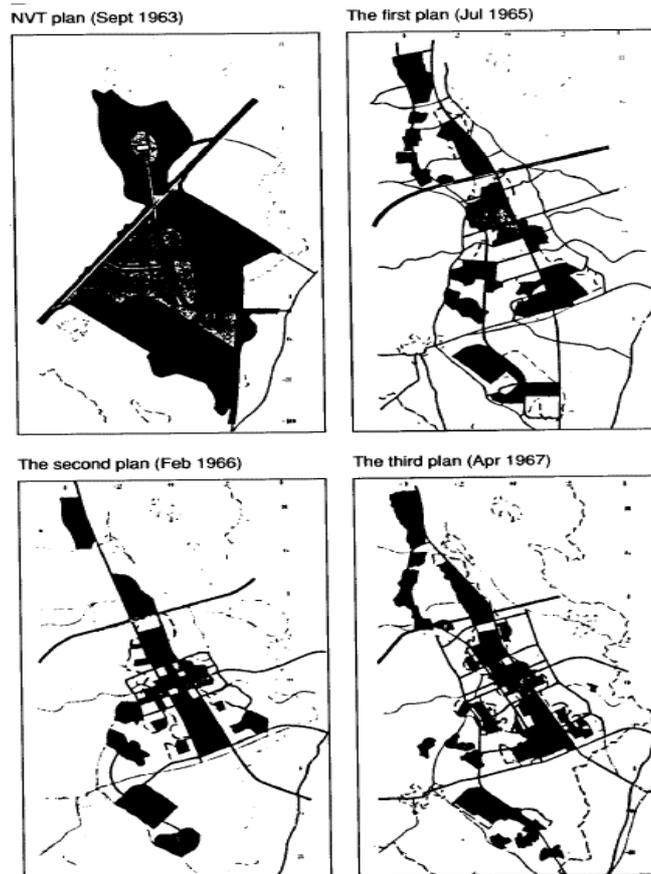
¹⁵ Manuel Castells and Peter Hall, (1994). *Technopoles of the World. The making of Twenty-First Century Industrial Complexes*. London: Routledge, p. 39.

¹⁶ Dearing...p. 50-51.

¹⁷ *Ibid.*, pp 54-55.

total area of 2700 hectares, government designated around 1465 hectares for research and academic building (54%)¹⁸ and the remaining land destined to housing (25%) and commercial use¹⁹.

Fig. 1 Comparisons between first, second, and third versions of Tsukuba's Master Plan.



Source: Dearing, p. 60.

Although Tsukuba Science City is now a highly urbanized cluster that combines education, research, and technological development, back in the 1970s the city was a site full of dirt roads and open fields, a mud-covered community mostly populated by

¹⁸ Tsukuba Science City is divided into five sections: (1) higher education and training. (2) research institutes of construction, (3) research institutes of science and engineering, (4) research institutes of biology and agriculture and (5) common facilities. Justin L. Bloom and Shinsuke Asano (1981). "Tsukuba Science City: Japan Tries Planned Innovation". *Science*, New Series, Vol. 212, No. 4500 (June), p.1241.

¹⁹ *Idem.*, p. 1240.

wild dogs and mosquitoes that was far from being suitable for scientists and their upper-middle class wives²⁰. Furthermore, “many people assigned to work in Tsukuba refused to live there. Many workers who chose to become residents complained about the socially sterile environment to which they had moved. The suicide rate of disgruntled researchers and lonely students was the highest in Japan”²¹. Such conditions made think that Tsukuba would never become a solid neighborhood with own social dynamics.

The technocratic project characterized by a long process of negotiation, conflict and consensus throughout 40 years has finally crystallized in a science city that enjoys most of the social amenities and infrastructure found in modern cities. Parks, restaurants, hotels, department stores, museums, residential housing, and equipped hospitals and clinics melt in the elaborated landscape of geometric designs and concrete-steel dwellings – a monumental piece envisioned by architects such as Isozaki Arata– that exalts a symbolism beyond the connotations of science and technology²² (*see images 1-2*). Additionally, high-speed transportation systems such as the Tsukuba Express Line (TX) are operating since 2005 making possible to commute from Tsukuba to Akihabara in only 45 minutes.

Nowadays, Tsukuba has around 300 major research, higher education, and scientific facilities, and about 200,000 inhabitants. As a science city, Tsukuba is intended to become the core of scientific research throughout Japan; a self-sufficient and a 21st century eco-life model city that will galvanize the ‘development’ of information oriented society²³. Challenges such as the improvement of academic standards in primary and secondary local schools (in comparison to metropolitan/foreign schools), the upgrading of housing for researchers –since the

²⁰ Dearing, *op. cit.*, pp. 55-56.

²¹ *Idem.*, p. 67.

²² See Isozaki Arata. “Of City, Nation, and Style” in Masao Miyoshi and H.D. Harootunian (eds.) (1989). *Postmodernism and Japan*. Durham: Duke University Press, pp. 47-62.

²³ See <http://www.info-tsukuba.org/city/city_future01.html>.

majority live in subsidized apartments blocks– and the assistance with basic living logistics to non-Japanese residents (foreign students and researchers)²⁴ still need to be addressed.



Source: <<http://www.japan-101.com/photos/showimage.php?&=52322> and <http://www.info-tsukuba.org/construct.html>>.

Although according to the Tsukuba Academic New Town Construction Promotion Headquarters, the Science City’s main goals were to develop institutions to carry out high level research and educational activities by maintaining at the same time mutual organic connections with the natural environment and historical heritage²⁵; so far, the city has failed to build a lively community interwoven with local traditions since, as Lambert argues, it has primarily attracted “hundreds of standardized chain restaurants and retailers, while many independent family-owned shops have closed...[in that sense] the city might be labeled heartless both in terms of urban design and in the breadth of social interaction”²⁶.

²⁴ Combined sources; Sorensen *op. cit.*, p.264, and Bruce Henry Lambert (2000). *Building Innovative Communities: Lessons from Japanese Science Cities*. European Institute of Japanese Studies <http://www2.hhs.se/eijswp/107.pdf>, pp. 13-14.

²⁵ In Lambert, *op. cit.*, p. 4.

²⁶ *Ibid.*, p.5

In order to give a distinctive nature to Tsukuba, government has made *tabula rasa* of personal and collective association with the location of *urusato*²⁷ (the “old village” or ancestral home). Above all, Tsukuba is a vertically implemented social-economic experiment that perpetuates Japan’s re-making of historical memory in *pos* of competitive innovation. The absence of a traditional culture within an aesthetically artificial city has originated mixed feelings in residents towards the top-down rigidities of a Tsukuban identity. As Traweek accurately illustrates:

None of the official Tsukuba Science City’s lists and genealogical charts mentions the local people who lived in the area before the national government decided to ‘develop’ it”²⁸ ...[furthermore], “the founders cannot be found in the official histories of the city, the university, or the laboratories. Some of these have written memoirs, regaining a voice but not a place. Many of the region’s people are missing, having left the area three or four decades ago, after selling their land”²⁹.

The construction of Tsukuba clearly epitomizes how micro-social landscapes are absorbed by modernization within a process of phagocytosis that entails the ongoing discourse on economic pioneering. In other words, by absorbing towns and villages since late 1950s, by erasing old names, and by inserting a cutting-edge community life, the Japanese government has left behind the blurry images of a past peasant life. Surrounded by an aura of nostalgia, “native” settlers try to preserve some of the features of the vernacular landscape unaware that somehow the image of Tsukuba as an unspoiled canvas has been transformed into a pastiche for tourists. The following poems depict that nostalgic trace of an ancient landscape bounded by Mount Tsukuba as the only lasting piece in the giant puzzle of instrumental triumphalism:

tsukubane no	Friends and strangers alike
mine no momijiba	call forth tender feelings
ochitsumori	when the autumn leaves

²⁷ *Furusato* evokes a past rustic lifestyle often yearned in modern everyday life. Whereas “the temporal dimension is represented by the word *furu*, which signifies pastness, historicity, senescence, and quaintness...The spatial dimension is represented by the word *sato*, which suggests a number of places inhabited by humans: a natal household, a hamlet or village, and the countryside (as opposed to the city)”. Jennifer Robertson (1994). *Native and Newcomer. Making and Remaking a Japanese City*. Berkeley: University of California Press. p. 14.

²⁸ Sharon Traweek, *op. cit.*, p.15.

²⁹ *Idem.*, p. 21.

shiru mo shiranu mo from trees on Tsukuba's peak
nabete kanashi mo flutter down and pile in heaps

Anonymous³⁰

tsukubane no Seeking protection
ko no moto goto ni on the august spring mountain,
tachi zo yoru I approach in turn
haru no miyama no the shelter of every tree
kage o koitsutsu growing on Tsukuba's peak.

By Miyaki Koyoki³¹

Even though long time ago the humble beauty of countryside was used as a powerful mechanism in consolidating Japanese national identity now, the vertiginous dynamics of modernism has left a place-making vacuum in many rural localities transformed in high-tech niches “overnight”. Receptive to the counterproductive effects of these dynamics, Japanese government has set in motion new campaigns on recovering the emblematic *furusato* and its traditional festivals (*matsuri*) to foster local folklore together with Tsukuba's internationalization. Furthermore, the city hall even promotes in its website the symbols of Tsukuba such as the official flower, bird, tree, and logo that represent “infinite development and strong harmony”³².

Foremost, Tsukuba represents the Japanese attempt of modernity's assimilation into a cultural system of dualisms, blending nothingness and holism in social landscapes across the country; the crystallization of an ultra-modernist aesthetic and the metaphor of contemporary sleekness and functionality-driven cities. In spite of being the target of all sorts of dissatisfactions, Tsukuba Science City has gained international prestige for what it is best known, a mirror image of the omnipresence of the Japanese national state.

³⁰ In *Kokinshū. A Collection of Poems Ancient and Modern*. Translated and Annotated by Laurel Rasplica Rodd (1984). Princeton N.J.: Princeton University Press. p.244.

³¹ *Idem.*, p. 211.

³² See <http://www.city.tsukuba.ibaraki.jp/hp/e_hp/guide/symbols.html>.

Concluding Remarks

Every identity system or structure is social and historical, and in the end is always artificial and to some extent, also ephemeral. Social interaction in particular spatial settings unavoidably generates a dialectical relationship between official narrative and local customary remembrances in shaping and reshaping the past and present of communities.

In Tsukuba, adaptation to new conditions has required a long-term process of reciprocal consent and emotional resistance between the vernacular community *vis-à-vis* newcomers' "imposed" way of life. Representations of popular memory and modern social practices coexist in the Science City as two different and parallel worlds.

The dominant rhetoric formally instituted from national government towards Tsukuba as a monolithic structure with an urban high-tech 21st century "global culture" has been incessantly contested from both, new settlers and native residents since this "lack" of historical heritage has only reinforced a vicious cycle in which Tsukuba distinguishes itself as a sophisticated bastion where native residents became outsiders in their own hometown.

Giving color to life in Tsukuba has become a colossal task since virtuous spirals of social change are not as mechanistic as Japanese bureaucracy projected back in the 60s. Sentiments of individual and collective attachments to a particular place take more than transplantation of people and dwellings to rural landscapes, especially when researchers and their families feel ostracized from real community life outside Tokyo. Nevertheless, contemporary Tsukuban identity and local cohesiveness are expected once new generations born in the science city consider it as their vernacular *furusato*.

Although the confluence of discourses often melts in popular imagination by being eventually assimilated as part of a pragmatic heritage, current necessity to grasp

the fragments of vernacular identity with regard to policy platforms compel to rethink the role of the State as an active agent of geographical and social change. Beyond the amorphous mass of land, people, and dwellings it rests a rich heterogeneity of lifestyles that cannot be overlooked.

Finally, it is worth remarking that as a city, Tsukuba is quite young and the verdict on its feasibility as incubator of a vibrant social landscape is still under construction. Unfortunately, whereas people move within the logics of a fast-changing world, learning how to love and care about the landscape one occupies evolves in slow-motion. Perhaps, in the long run, Tsukuba might be able to attenuate the voices that once labeled it as sterile.

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