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Title of Research: Navigating Malaysia's Fragmented Frontiers

Project Summary:

In my dissertation fieldwork, I extensively shadowed citizen science projects in Penang and Kuala Lumpur, Malaysia. Acknowledging the socio-historical legacies of Malaysia's New Economic Policy (1971-1991), many secondary forests transformed into experimental sites of state developmentalism and active spaces of political negotiation. Through mixed-ownership models of the oil palm industry and state-backed interventions in the automotive industry, Malaysia incubated the large-scale growth of infrastructural megaprojects such as federal highways, administrative capital cities (e.g., the Federal Territories), and widespread suburban neighborhoods. In postcolonial Malaysia's contemporary transition to a manufacturing and service-sector-based economy, dominant features such as fragmentation of public goods, car-centric infrastructures, and private ownership models emerged. Exploring the contemporary ramifications of competing and contradicting urban planning models of land-use governance, I conducted 12 months of ethnographic fieldwork in Penang and Kuala Lumpur, Malaysia, during 2025-2026. In addition, my dissertation is supplemented by two months of preliminary fieldwork in 2023 and 2024.

As Kuala Lumpur's sprawling postcolonial metropolis expands and Penang's colonial entrepôt revitalizes, local urban neighborhoods have experienced deforestation-related impacts such as severe flooding, property damage, housing insecurity, and human-primate conflict. On the ground, I shadowed local Malaysian citizen scientists, housing security advocates, and property developers in ethological sampling trips, residential association town halls, and environmental forums. Environmental nonprofits and startups deploy futuristic-oriented discourses of sustainable development as they engage in project bidding, corporate funding acquisition, and sustain public-private partnerships to legitimize conservation projects.

Departing from moralizing multispecies interactions, citizen science sampling data is now mobilized as a speculative policy tool in absorbing, complying with, or defying the 'shock externalities' of uneven development impacts. Therefore, in my dissertation project, I explored these core research questions: How do models of ecological territoriality become entangled with economic ideologies of land-use governance, and what are their policy consequences for urban development? What does it mean to live, dwell, and contend in 'futuristic green' cities that promise competing and contradicting visions of postcolonial harmony?

Overall, my dissertation will contribute to five areas of anthropological theory: citizen science in multispecies theory; development politics over green connectivity and land-use governance; local environment representations influenced by a mutual entanglement of Anglophone, Sinosphone, and Islamic-Malay contexts; urban housing/dwelling politics; and the commodification of science (e.g., scientific consulting firms, public-private partnerships, consulting gig work, and project portfolios).



A scenic view from Bukit Kiara Federal Park in Kuala Lumpur, Malaysia.



A person tosses a leftover coconut to a long-tailed macaque in Kuala Lumpur, Malaysia at a popular religious tourism site.

Research Methodologies:

To answer my research questions, I conducted 12 months of participant observation immersed in citizen science, ethological sampling, and semi-structured interviews across five sites in Penang and Kuala Lumpur, Malaysia: a rural community park in mainland Penang (July to December 2025); affluent peri-urban neighborhoods on Penang Island (July to December 2025); a coastal touristic suburb in Penang (July to December 2025); Malaysia's only federal forest park and its nearby affluent urban neighborhood in Kuala Lumpur (January to July 2026); and an educational forest park jointly administered by the cities of Petaling Jaya and Kuala Lumpur (September 2025, January to July 2026). In addition, as a core part of my participant observation, I attended residential association town halls and volunteered at environmental event booths in both cities. Through partnership agreements, I interned as a social scientist for local environmental nonprofits and small private enterprises; in turn, my local affiliations allowed me to shadow key interlocutors in ecological fieldwork and interview a wider pool of environmental activist networks.

In citizen science projects, I trained in both primate observational sampling and firefly sampling to study various human-nonhuman interactions taking place in urban neighborhoods and community parks. Although my conservationist interlocutors used ethological sampling to study primates and fireflies as animal subjects and their behaviors, I deployed ethology as a sociological paradigm to integrate relational linkages such as capitalist dynamics of state developmentalism, land-use politics, bureaucratic power structures, and conservation knowledge production that mutually and asymmetrically shape local ecological relationships (Hartigan 2021; Imanishi 2002; Malone 2021). As my interlocutors engaged in scan sampling (e.g., recording observations on collective behaviors of a primate social group), they established a structured way of familiarizing themselves with "routine primate characters" as study subjects, producing a baseline of discrete, species-typical behaviors and as mutual co-producers of ecological knowledge (Chu 2024; Ohnuki-Tierney 2020; Hartigan 2020). However, unlike anthropologists, when conservationists deploy ad libitum sampling (e.g., recording "interesting" events), they justify the "atypical" behaviors of animal subjects as individual externalities or "one-off events" systematically disconnected from contemporary capitalist and colonial dynamics (Strathern 1988).

Doing my latter half of dissertation fieldwork in Kuala Lumpur, I shadowed firefly citizen scientists in Malaysia's only federal park. In firefly sampling trips, I contributed to metrics such as species identification and population counts while citizen scientists gently marked and measured the length of firefly larvae on the park's tarmac roads and hiking trails. For my interlocutors in Kuala Lumpur, this gradual accumulation of firefly population heatmaps serves as bearing witness to uneven indexes of speculative and ongoing development politics (Polleri 2019; Rudge 2025).

Lastly, when my local conservationist interlocutors proposed environmental policies such as canopy bridges or permanent buffer zones, they facilitated residential association town halls to seek the collective approval, permits, and feedback of local community members. Observing

these outreach meetings, residential association town halls became spaces of political negotiation over local land-use disputes and policy beneficiary allocations (Mathur 2015; Low 2022; Sheets-Johnstone 2015). As development politics were being debated, I witnessed the entanglements of able-bodied, racialized, gendered, and classed dynamics in how urban residents performed micro-social interactions in community town halls.



Citizen scientists collect behavioral observations on dusky langur monkeys in Penang, Malaysia. Primate ethological sampling records the individual and collective behaviors of primate social groups. Citizen scientists engage in digiscoping, taking photos through binoculars.



Citizen scientists mark a firefly coming from the *lamprigera* species in Kuala Lumpur, Malaysia. This firefly species is one of the largest in the equatorial tropics and firefly count sampling is used for indexing levels of local development impacts.

Fieldwork Challenges:

These socio-historical conditions set the stage for my contemporary fieldwork hurdles as a local and diaspora Malaysian researcher. Residing in Penang for the first five months, social class and linguistic identity markers were the dominant factors in structuring my ethological sampling trip conversations. Middle-aged and older interlocutors socially teased me for my “crude-sounding Hokkien,” signifying I was culturally out of place and lacking in-group social membership. Many Malaysian-Chinese dialects such as Hokkien and Cantonese are associated with spatiotemporally extending and securing promises of transnational mobility and thriving entrepreneurial activity (Chu 2010; Chu 2026; Ong 1999).

As an embedded ethnographer for a private social enterprise in Penang interfacing with urban residents and passersby, I introduced myself as a heritage Hokkien dialect speaker with family members from Johor, a Malaysian state in the southern region neighboring Singapore. In these daily life conversations, the social-classist dynamics often characterized Johorean residents as “crude-sounding Hokkien speakers” and “factory workers” migrating to Singapore. Subjected to these ethnic-based and classist dynamics, I was marked as a cultural outsider and faced initial difficulties in the rental housing market as a female researcher in Penang (Bourdieu 1977; Hussein Alatas 2010; Yeoh 2019).

During ethnographic design workshops I conducted for my conservationist interlocutors, some perceived the core roles of ethnography as a prescriptive tool of behavioral reform in ecological interactions and the financial instrumentalization of achieving utilitarian-driven outcomes such as sustaining the longevity of individual businesses (Chua et al. 2020). Coming from engineering and manufacturing backgrounds, older interlocutors easily scrapped ethnography in the archaic repository of data graveyards because ethnography was perceived as “too cumbersome” in sustaining heavy emotional labor with community members, not pertinent enough to monetize social media highlighting urgent events, and incurring more “cost-intensive” expenses than profit generated and ecological condition improvements in some conservation projects (Levins and Lewontin 1985).

During fieldwork conversations with the general public, some conservationist interlocutors perceived ethnography as a rapid response tool of compliance to engage individual-level cultural perceptions and to “correct” those perceptions with the goal of reforming behavioral actions such as preventing monkey feeding and littering. During these tense conversations laden with punitive-focused language, some traditional conservationists did not account for the mutual interplay of sociopolitical systems, colonial histories, and socioeconomic realities in shaping individual moral choices such as monkey feeding.

Theoretical Contributions:

Firstly, my dissertation project contributed to anthropological understandings of political ecology, infrastructural politics, and multispecies theory (Anand 2017; Govindrajan 2018; Hartigan 2020; Malone 2021; Wang 2024). I argue ecological impacts such as human-primate conflict,

seasonal flooding, and urban heat island effects are symptomatic of capitalist dynamics of development. By comparatively studying human-primate and human-firefly interfaces beyond the species actor level, I observed how citizen scientists deployed environmental policy strategies as competing visions of green connectivity. By studying diverse human-animal interfaces as ways to manage the spatial flows of high-density and equatorial tropical compact spaces (Barua and Sinha 2017), my interlocutors chose to strategically absorb specific land-use patterns and politics of natural resource allocation by affirming distinct infrastructural models such as the colonial *entrepôt* in Penang or the urban sprawling metropolis in Kuala Lumpur.

On another thematic point, I contributed to anthropological conversations interweaving urban development and housing/dwelling politics (Bachelard (1958) 2014; Carsten 2018; Ingold 2000; Low 2022). By shadowing citizen science projects and housing association meetings, I juxtapose the political dichotomy of horizontal and vertical urbanisms. Highways, access roads, alleyways, houses, and parks transform into experimental types of relational commons my interlocutors sought to govern. For example, in Penang, some urban residents desired individualistic land ownership and patterns of public space usage that favored higher degrees of individual privacy over communal sociality. As a dwelling structure, the colonial-style terraced house with sidewalls emerged as the dominant and singular form to incorporate in urban planning and environmental policy interventions. Complaining about intense human-primate conflicts in urban neighborhoods and feelings of experiencing high-density compactness, some residents evoked Peranakan discourses of land-use heritage to liken Penang to a futuristic-oriented *entrepôt*, now termed “Silicon Valley of the East,” especially with its recent land reclamation projects and its ambitious semiconductor industry, which largely contributed to Malaysia’s 436.9 billion RM (105 billion USD) worth of electronic exports (Teoh 2026). Although the colonial-style terraced house is a signifier of cosmopolitan social status on Penang Island, this horizontal model of urban planning marginalizes other ethnic communities from showcasing their local heritage and facilitates structural dynamics of housing insecurity, where more younger and working-class residents are now commuting from Penang’s mainland city, Seberang Perai. On the other hand, in Kuala Lumpur, citizen scientists were frequently exposed to an uneven multiplicity of dwelling forms such as high-density apartment complexes, longhouses, skyscrapers, and suburban neighborhoods. In Kuala Lumpur, these urban dwelling forms have mutually co-existed within high-density compact spaces. This is because infrastructural megaprojects such as SPRINT Expressway have facilitated the widespread development of car-oriented residential townships, reshaping Malaysia’s internal migration patterns by positing Kuala Lumpur as a postcolonial metropolis with lucrative manufacturing and managerial jobs.

Lastly, I produced ethnographic findings related to state developmentalism, commodification of science, and postcolonial nation-state building (Ferguson 1994; Ferguson and Gupta 2002; Mathur 2015; Mathur (2017) 2023; Scott 1998; Levins and Lewontin 1985). Citizen science transforms into an experimental market where scientific research and public policy interventions mutually entangle. In Malaysia, private social enterprises, scientific consulting firms, and nonprofit organizations conduct essential operational labor in forest conservation projects, resulting from structural histories and contemporary dynamics of corporate funding models,

project bidding, and public-private partnerships. As conservation projects are now contracted to private actors, the dominant language of consultancy reframes forest fragmentation problems into project portfolios and cost-efficient models of allocating fieldwork labor (Terence Gomez and Jomo K.S. 1997; Graeber 2018; Levins and Lewontin 1985). Embedded in consulting language, some scientists frequently deploy Neo-Darwinian cultural metaphors of resource competition and dominance, justifying cost-benefit analysis to legitimize which conservation projects are viable to take on. In this contemporary context, citizen science transforms from a participatory research methodology to being part of the consulting gig economy. As private small enterprises and nonprofit organizations strategize and accumulate their project portfolios, they must also negotiate the kinds of policy beneficiaries they interact with and how to navigate the project management cycle in yielding long-term economic and environmental benefits tied to monetizing urban green spaces.

I am deeply grateful to the Royal Anthropological Institute (RAI) for supporting my research. I especially thank Dr Joanna Cook for her mentorship. As a long-time admirer of RAI's work, I hope my scholarship strengthens the unwavering commitment to fostering dialogue and collaboration between the traditional sub-fields of anthropology.

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