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Proposition of the Geo-Location of The Melaka Sultanate Bridge

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ABSTRACT

Over five centuries ago, stand a bridge spans the Melaka River linking the cosmopolitan city of Upeh and the royal compound of Melaka Sultanate. Sultan Mansor Syah, the sixth sultan of Melaka, gave the order for its construction. Undoubtedly, the Melaka Sultanate's bridge is a vital and remarkable construct, holding great importance for the city across various levels. Nevertheless, there hasn't been a critical examination to determine the precise location and orientation of the bridge concerning its current geographical environment. This study is a component of a broader reconstruction research project focused on the Melaka Sultanate bridge. Identification of the bridge's position and alignment in relation to the modern geographical context is expected to enhance our understanding and inform the reconstruction process more effectively. In this study, a narrative analysis framework is utilized to meticulously examine descriptive hints regarding the bridge's whereabouts and alignment. These clues are extracted from ancient texts originating from China, Melaka, and Portugal, all written during or near the Sultanate era. The outcomes of the narrative analysis were cross-referenced with a compilation of municipal plans dating from the Portuguese and Dutch periods in Melaka. The objective was to identify discernible indicators that offer credible evidence of the preservation of traditional elements from the Melaka Sultanate's urban structure. These identified elements were then employed as the basis for constructing a compelling argument regarding the bridge's location and alignment. The results of the narrative analysis and visual anthropological study indicate that the original location of the Sultanate bridge was along the riverbank, running in continuous with the primary street along Bendahara Village. Interestingly, this alignment precisely leads to the main gate of A'Famosa, in contrast to the Portuguese and Dutch bridges, which deviate from this main gate. This study is subject to certain limitations as it depends on English translations when interpreting ancient Chinese and Portuguese texts. Nonetheless, the broader objective of this Melaka Sultanate reconstruction project is oriented towards long-term historical tourism, in alignment with Sustainable Development Goals (SDGs) 8.9 and 11.4.

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1. Introduction

The central city of Melaka Sultanate was once situated at the shore of west part of the current Peninsular Malaysia, almost at the middle of the Straits of Melaka. Melaka River flows from the inland which separates this city into two parts: i) the cosmopolitan trading town of Upeh, and ii) the royal compound. Linking two territories, a bridge stands as an architectural wonder created by the indigenous people of the Melaka Sultanate, as documented in numerous historical accounts (Birch, 1875), (Cortesao & Amando, 1967), (Wheatley, 2010), (Mills et al., 1970), (GroenVeldt, 1877), (Ahmad, 1979). According to historical records, unquestionably, this bridge held immense significance within the Melaka Sultanate, making it one of the city's most important structures, symbolically (Cortesao & Amando, 1967), functionally (Mills et al., 1970) and aesthetically (Cortesao & Amando, 1967). Nonetheless, it has been over five centuries since the bridge from the Melaka Sultanate was last witnessed in its original, undamaged state. This bridge served as a formidable fortification for the Sultanate's army and consequently became a target for bombardment during the 1511 war by the Portuguese (Birch, 1875). Apparently, it is not known whether the Sultanate of Melaka bridge had still survived, altered or in used after the war. Neither the bridge nor the entire leftover Sultanate constructs seemingly unidentified within the municipality of post Sultanate period. Currently, the bridge no longer exists or visually available.

This research was undertaken as a component of broader reconstruction efforts aimed at understanding the Melaka Sultanate bridge. Determining the precise location and alignment of the bridge can play a pivotal role in obtaining valuable measurements (for example, in view of the Melaka River which has different widths at different spots). Aiming for the above, the research was set to embark with two objectives:

i. To detect and examine descriptive hints within historical documents that can shed light on the bridge's location and alignment. These clues are derived from a range of ancient texts, including those from Melaka, China, and Portugal, which are roughly contemporaneous with the Sultanate era.

ii. To investigate traceable markers which have strong evidence of the leftovers from the tradition of the Melaka Sultanate embedded in municipal plans of colonial periods. This forms the foundation for the study's argument.

2. Research Perspective

This research was initiated with the premise that the Melaka Sultanate represented a sustained civilization for approximately 250 years (Ismail et al., 2012) and inherited historical and technological traditions from Srivijaya for many centuries (Hashim, 1992). It is simply illogical to perceive that the Portuguese who came based on economic gain to capture the glorious Melaka, then, demolished the entire city and started fresh from zero. From this standpoint, identifying the location of the Sultanate bridge site does not seem unattainable, considering the available historical texts and visuals.

3. Methodology

This research is shaped by a qualitative methodology and an exploratory approach. It involves a process of gathering, examining, analyzing, and assembling "pertinent pieces of information" into a cohesive whole. The foundation of this endeavor is rooted in historical records, which serve as the basis for establishing the connection between the traditional aspects of the Melaka Sultanate's urban development and the potential location of the bridge. The study is characterized by its investigative nature, aimed at comprehensively exploring the broader context of the Melaka Sultanate city within historical narratives, all of which have direct implications for the research objectives.

Within this study, two distinct analytical frameworks are employed:

i. Narrative analysis by Czarniawska (2004)

ii. Visual Anthropological framework by Collier (2004)

4. Narrative Analysis Framework

In this study, a narrative analysis framework is utilized to meticulously select, assess, and scrutinize descriptive hints concerning the bridge's location and alignment from a range of ancient texts, specifically those originating from Melaka, China, and Portugal, which are contemporaneous with the Sultanate era. This narrative analysis framework is structured into three primary phases, as illustrated in Table 1.

i. Explication Phase: the researcher adopts the role of a "semantic reader." This entails the careful examination of descriptive viewpoints while simplifying and framing them within a particular context. The goal is to identify consistent patterns amidst potentially fragmented and conflicting data, thus contributing to

the development of coherent worldviews related to the subject matter and research objectives (Czarniawska, 2004).

ii. Explanation Phase: the researcher takes the objectivist approach (Czarniawska, 2004), in studying the historical texts in view of their 'external structures' or 'external criticism' and brings the question of 'why' and 'how'. As such, this pushes the researcher to being a critical or 'semiotic reader' (Eco U, 1990) which includes consideration of authors and rhetorical analysis of their account "… to unmask interests that underlie the enterprise of knowledge…" (Habermas, 1972).

iii. Exploration Phase: which pushes the researcher to take stance on strategic historiographical aspects of historical texts implicitly and explicitly supported by careful readings for at least three times. Taking off from the big picture obtained, researcher begins the narrative analysis, in 'connecting the dots' and in cross-referencing with the visual anthropological analysis.

Table 1. Narrative Analysis Famework

Explication	Explanation	Exploration
Standing Under	Standing Over	Standing in for
Reproductive Translation	Inferential Detection	Existential Enactment
Reconstruction	Deconstruction	Construction

The study gained the big picture of the bridge from all the above accounts but benefited a good deal from the 1511 war narratives as reported by the Portuguese general, Alfonso de Albuquerque to the ruler of Portugal, King Manuel. The nature and position of the bridge appear extremely vulnerable, defended by the Sultanate army, and subjected as primary target by the Portuguese troops in the war narratives. In describing the war strategy and movement of the army, Albuquerque had repeatedly provided clues on the alignment of the Sultanate bridge with other Sultanate constructs as markers; namely primary street, mosque, specific parts of the Melaka River and others (Czarniawska, 2004).

5. Visual Antropological Framework

The preliminary results obtained through narrative analysis were subsequently compared with the compilation of urban plans from the Portuguese, Dutch, and British periods in Melaka. This part of the study employed visual anthropological analysis framework as outlined by Collier (2004) which incorporates four stages as shown in Table 2.

In the first stage, municipal plans brought into the study were carefully and openly examined individually and as a whole which bring to light the intangible textual understanding into something tangible. Bridges in location appear in many forms, in slightly different spots and orientations imaginable due to continuous war and rebuilt. The assortment of municipal plans offers various facets of quality and potential; certain plans feature labels but fewer elements, while others are abundant in elements but lack labels. Similarly, in different instances, some plans incorporate precise measurements, while others are more rudimentary in nature. Collier emphasized on spending time to 'play' with the visuals, individually and collectively, in chronological or various arrangements until it 'speaks' as an individual and as groups. Consequently, the connection between individual visual elements and the overall composition was established, leading to the emergence of discernible patterns.

As the collection of archive visuals evolved, the study moved into the second stage; which focused on the discipline in pursuing digital inventory; in regards of titling and indexing which also paid attention to creators of those visuals. However, the year recorded for each historical visual may not necessarily reflect the year of its creation but instead the year of it being published. It was during the third stage that the study transitioned into a more methodical analysis, entailing comprehensive descriptions, categorization, and measurements aligned with the research objectives. In the fourth stage, the study shifted its focus towards uncovering meaningful significance within a relatively broader visual dataset, where the pattern seen within context reflects their significance. There are more than fifty post Sultanate Melaka's municipal plans involved in the analysis.

Table 2. A Streamlined Framework for Analyzing Visual Antropology

Stage	Activities	Concerning
Stage 1	1. Observe	Overtones and subtleties
	2. Discover	Connecting and contrasting patterns based on feelings and impressions
	3. Make Notes	(Carefully) identifying the images which considered data

	4. Write All Questions	Triggered in the mind may provide important direction for further analysis
Stage 2	1. Make Inventory	Or a log of all your images
	2. Design Inventory	That reflect and assist your research goals
Stage 3	1. Structure the Analysis	Based on specific questions; measure distance, count, compare, information may be plotted on graphs, listed in tables, or entered into a computation
	2. Produce Detailed Descriptions	Connecting and contrasting patterns based on feelings and impressions
Stage 4	1. Search Meaningful Significance	By returning to the complete visual record to the data in an open manner. Write details from structured analysis in context
	2. Respond Again	To the data in an open manner, details from struc tured analysis in context
	3. Re-Establish Context	View images in entirely, then write the conclusions as influenced by this final exposure to the whole

6. Key Findings of Narratives and Visual Antropological Analysis

Several crucial elements, as revealed through narratives and visual anthropological discoveries, aid in tracing the tradition of the Melaka Sultanate within the Portuguese municipal plan.
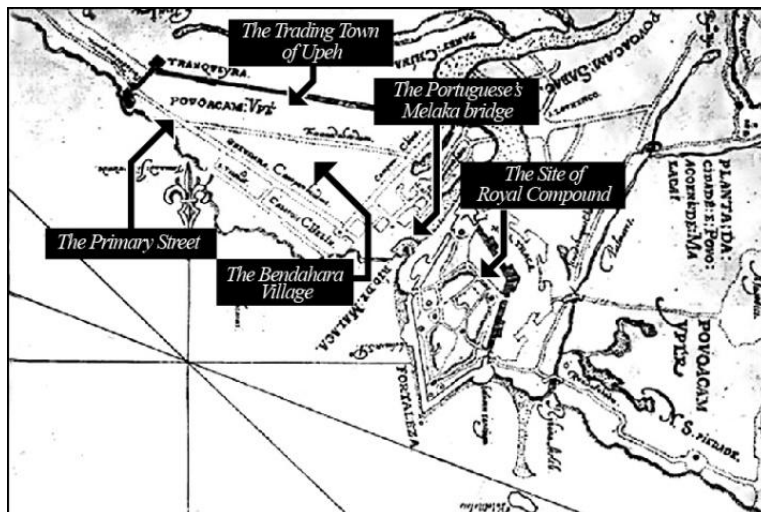

Figure 1. Municipal Plan of Portuguese Melaka (Eredia, 1613)

The depicted Figure 1 represents a municipal plan crafted by Emanuel Godinho de Eredia, delineating not only the fortified city but also the seldom-disclosed trading town of Upeh. Researcher regards this as one of the most fundamental municipal plans in tracing municipality of Sultanate tradition. Even the naming of territories seemingly has authentic Malay words preserved in it. For example, Eredia (1613) used the word 'Campon Bemdara' in reference to 'Bendahara Village' using the same unique spelling in tradition of Pires (1512) that was very close to the Sultanate period. The fundamental urban grid, or street network, depicted in the plan serves as a foundational element for property development, and it exhibits similarities throughout all three colonial periods, persisting in the present day.

The primary street which passes through Bendahara village shown in Figure 1 above is consistent with Albuquerque's description based on his 1511 war narrative. Naturally, the street and bridge were supposed to reach the Sultanate gate in a straight line as they are so close together. None of the Portuguese textual account mentioned about the Sultanate gate. However, the China and Malay accounts clearly mentioned about the Sultanate gate. Malay Annals mentioned seven layers of gates before reaching Sultanate palace. The primary gate of Melaka Sultanate is believably to be a large construct in view of Melaka customary law where the Sultan should be mounted on the elephant moving in and out of the royal compound especially in the royal possession. It was also natural to see the street, bridge, and gate as the significant Sultanate

constructs because they connected the royal compound and the cosmopolitan trading town of Upeh. However, it is rather strange to discover the sequence and alignment of three constructs (primary street, Sultanate bridge and Sultanate primary gate) during the Sultanate period which accurately reaching the main gate of A' Famosa when the Portuguese and Dutch Melaka streets and bridge always turn away from the main gate of A'Famosa. The disalignment of three constructs during Portuguese and Dutch Melaka periods is such an uncomfortable design especially when they were so close together with no obstacle between them.

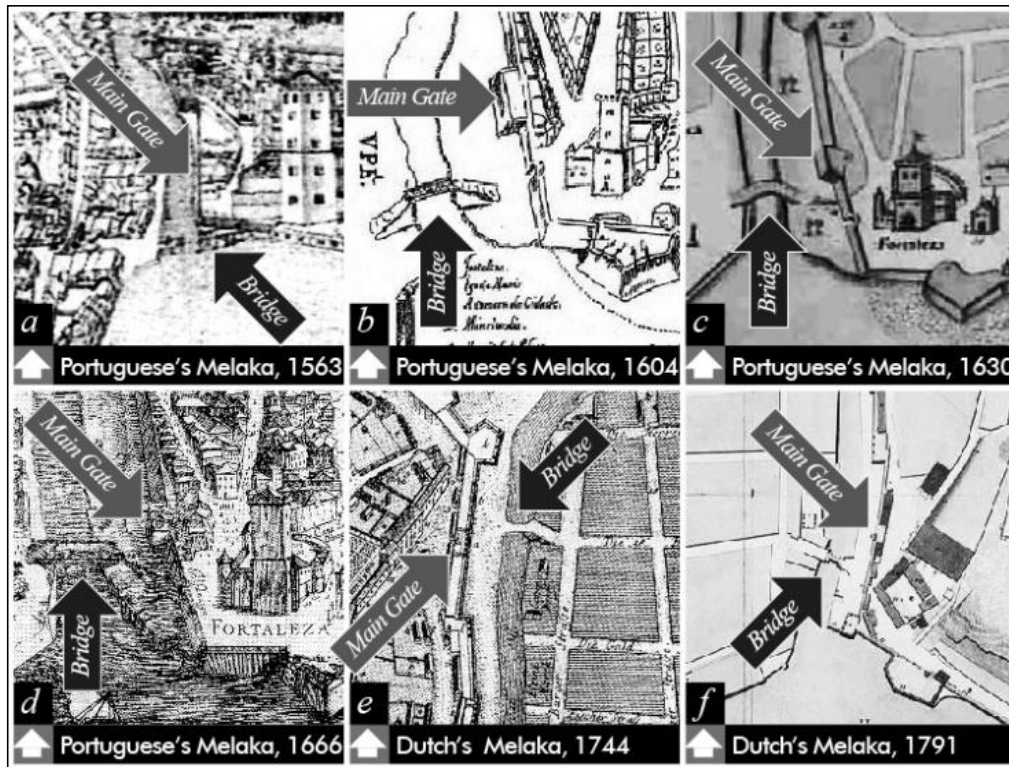## 7. Implication of Research Findings

Figure 2. Typical Relationship between Primary Street, Bridge, and Main Gate in the Portuguese and Dutch Melaka Municipal Plans

Figures 2 (a), (b), (c), (d), (e), and (f) illustrate the occurrences observed in Portuguese and Dutch municipal plans, showcasing a discernible pattern of connection among the primary street, bridge, and the main fortress gate of A'Famosa. The primary street and series of bridges always deviate their orientation and seemingly avoid reaching the main fortress gate which is a strange anomaly. The A'Famosa's main gate described in the legend of the municipal plan in Figure 2(e) as 'Das grosse thor' or 'das grosse tor' which in German means 'the large gate'; and in Figure 2(f) as 'de grote Poort' which in Dutch means 'the Great Gate'. It was mentioned that the fortress city has four gates (Harrison, 1985) which was coincidentally the same during the Sultanate period (Mills et al., 1970). The main gate was larger than the large south gate which is the only remnant of the fortress that still exists until today. The diversion of the primary street and bridges towards the main gate during the Portuguese and Dutch Melaka must have been due to overwhelming reasons.

A closer study finds that the main gate of A'Famosa did not even appear to be used in the entire existence of the Portuguese and Dutch in Melaka. Every time the gate appears in 3D, it was drawn in a large boxy construct without the door leaf. None of the network of streets inside the fortress city led to the fortress gate. In all the Portuguese Melaka municipal plans, the main fortress gate appears to be 'sealed' and there were buildings behind the main gate. During the Dutch Melaka period, where its municipal plans started having accurate measures, the primary street of Upeh can be seen twisted before reaching the Melaka River and as a result, the Melaka bridge turns away from the main gate. This phenomenon continued except for the time before the World War I, during British Melaka period where the primary street and Melaka bridge were in a straight line and reaching the position of the main gate; but during this time, the main gate was no longer exist. There is something about this main A'Famosa gate which the colonial Melaka Bridge turns away from.

8. Mapping the Sultanate Bridge

The composition of Figure 3(a) and (b) below represents the proposition of the position and orientation of the Melaka Sultanate Bridge had it existed during Dutch Melaka in 1744 and 1791. This mapping is possible

since Dutch Melaka municipal plans were drawn into more accurate measures as they had been produced in relatively modern days, in view of markers at the surrounding area. The dotted lines demonstrate the straight path between the primary street, the proposed position of the Sultanate bridge and the proposed position of the Sultanate gate. Figure 3(c) illustrates the proposed position and alignment of the Sultanate bridge within the present-day geographical context of Bandar Hilir Melaka, in contrast to the existing Tan Kim Seng bridge.
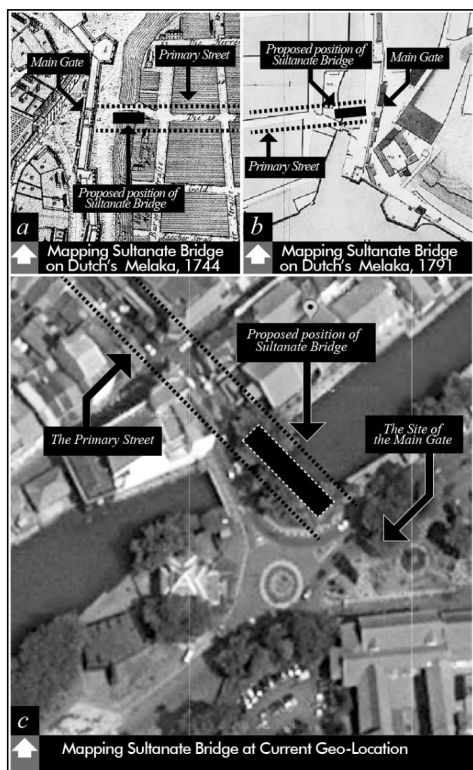

Figure 3. Mapping of the Sultanate Bridge

9. Conclusion

The proposed alignment between the primary street, Sultanate Bridge and the main gate during the Sultanate of Melaka was based on the analysis of historical record which combines descriptive views from Chinese, Malay, and Portuguese sources. This proposition can stand on its own based on the strategic alignment without the strange anomalies exist in the Portuguese and Dutch Melaka municipal plans. Albuquerque clearly and repeatedly described the clue on the alignment of the primary street and the Sultanate Bridge based on the movement of armies in the 1511 war report (Birch, 1875).

The primary street which appears in the earliest Portuguese Melaka municipal plan also matches the Albuquerque's description of Sultanate period (Birch, 1875). The existence of Sultanate main gate is described in China (Mills et al., 1970) and Malay (Ahmad, 1979) historical texts, an account contemporary to the Sultanate period. This Sultanate main entrance has seven layers before reaching the royal palace (Ahmad, 1979).

To accommodate the seven-layer gates, the outer layer of the main gate had to be close to the Melaka riverbank. Thus, the distance between the Sultanate Bridge and the Sultanate main gate was inevitably quite close. Considering the Sultanate Bridge and the Sultanate main gate are quite close, they had to be aligned with each other; otherwise, they will be unnecessarily disoriented and the relationship between both of them cannot be established effectively. Bridges built across a moat or river close to the main fortress gate are typical in the Malay world (Eredia, 1931) and across Europe during the medieval period. It is extremely rare a bridge very close to a main gate does not align to each other.

The fact that the proposed position and orientation of the Melaka Sultanate bridge distinct from that of the current Tan Kim Seng bridge is perfectly normal (please refer Figure 3c). This is due to the fact that Tan Kim Seng Bridge today caters to different conditions and needs of the land, and that there isn't a fortress gate present. During Melaka Sultanate period, there was a primary fortress gate which currently is not exist. However, based on earlier research, the primary street (currently known as Jalan Hang Jebat) which is structural to the municipality of Upeh is known to be the left-over tradition of Melaka Sultanate (Mustaffa et

al., 2022), and (Mustaffa et al., 2022). The alignment and bearing of the primary street the Sultanate Bridge and the Sultanate Gate is imperative to facilitate access and exit connecting the Sultante palace area and the city. It is too much of coincidence that the alignment of the primary street, Sultanate Bridge is reaching the main gate A Farmosa instead. The intriguing aspect is that in contrary, the main of A Farmosa gate was not appears to be designed to the preference of Portuguese and Dutch Melaka administration.

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