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# Intertwined maritime Silk Road and Austronesian routes: A Taiwanese archaeological perspective

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## Abstract

This article analyses recent archaeological work on the flow of materials and their influences on the communities in the South China Sea maritime regions, primarily from a local, Taiwanese perspective. The intertwined Austronesian Routes and maritime Silk Road acted as the primary conduit for the movement of both people and materials. Archaeological findings demonstrate intermittent interaction and cultural exchange between Taiwan and the regions around the South China Sea during the period 1,500–500 BCE. However, starting from 500 BCE, the gradual increase of glass beads, agate beads, and metal products which were made in mainland Southeast Asia and adjacent regions indicate an intensified interaction between Taiwan and Southeast Asia via the Maritime Silk Road and the Austronesian Routes. The author hypothesizes that trade diasporic craftspeople were the carriers of these exotic materials and knowledge, and that external cultural elements had a profound impact on the development of contemporary prehistoric Formosan society. This can be seen most notably in the shifting of decoration systems, the changing methods of subsistence, and technological leaps. Some of the impacts have faded into the archaeological records, but others are still traceable in the modern Indigenous society of Taiwan.

**Keywords:** trade diaspora; Austronesian Routes; Maritime Silk Road; pyrotechnology of metal; maritime interaction sphere

... those of Quimaurri ... do not plant nor harvest; rather they live like gypsies or sangleys, going from one village to another, making for them houses, arrows, clothes, hatchets and pre-selling their cuentas and stones. After they have consumed the rice that they had gathered during that period, they would go back for another two months to engage in the same activity.<sup>1</sup>

In the early seventeenth century, Jacinto Esquivel, a Spanish missionary, wrote these words about the Basay people in northern Taiwan. Simon Keerdekoek, who worked in the Dutch East India Company, had a similar description of the Basay people but with slightly more details: 'The inhabitants from Quimaurrij [are] blacksmiths, carpenters, and cutters who navigate to Cabolang in June to trade their manufactured goods for rice, skins and gold.'<sup>2</sup> These people, also known as Basai, Bazay, or Vasai in various historical accounts, were portrayed as smart, though sometimes guileful, merchants and brokers who facilitated transactions between foreign traders and local communities, as well as being good sailors with excellent navigation

<sup>1</sup>José Eugenio Borao Mateo, *Spaniards in Taiwan, Vol. 1: 1582–1641* (Taipei: SMC Publishing, 2001), 183.

<sup>2</sup>Mateo, *Spaniards in Taiwan, Vol. 2: 1642–1682* (Taipei: SMC Publishing, 2002), 577.

skills. Their purported characteristics and manner of subsistence were quite different from the other contemporary Formosan tribal groups who were mostly Indigenous peasants. However, in the end, the Basay people, as with the other Plain Formosans, have since become Sinicized and seemingly invisible in modern Taiwanese society.<sup>3</sup>

Japanese scholars documented the Basay language during the Japanese Colonial Period (1895-1945) and in the past two decades, historians, linguists, and archaeologists have illuminated more details about the Basay people, including their rise and fall as merchants, their lifestyle, methods of subsistence, and their relationships with the other local and foreign communities.<sup>4</sup> Among these studies, Yi-Chang Liu uses terms such as trade diasporic community and itinerant craftspeople to describe the Basay people and to frame their relationships with other communities.<sup>5</sup> While the Basay people appeared in the European historical accounts from the seventeenth century, they are also becoming more visible from an archaeological perspective by means of new data that has provided greater detail regarding their ancient roots.<sup>6</sup> Yi-Chang Liu has hypothesized (as discussed further below) that this ancient 'trade diasporic' community appear in the historical record from about two thousand years ago and can be associated with certain archaeological material remains, such as a specific type of black pottery and traces of metalworking.

The story of the Basay people reflects several crucial elements in the development of Taiwanese history and society. These elements include the maritime interaction between Taiwan and the outer world, the reaction and resilience of local communities to external contacts, and the creolization of cultures. Taiwanese society has for a long time received waves of migrants and foreign cultural influences; the legacy of these elements continues to shape modern Taiwan, both among the Han Chinese communities and Taiwanese Indigenous tribal groups. For example, settlement patterns in south-western Taiwan reflect the legacy of the establishment, rise and fall of ancient ports during the Qing Period; and on the Indigenous side, the waves of ancient foreign elements have left material traces on the heirlooms of modern Taiwan Indigenous peoples, such as glass beads, agate beads, and metals.<sup>7</sup>

<sup>3</sup>Plain Formosan (平埔族) is the term used here in contrast to the Mountainous Formosan (高山族). The literal translation of Plain Formosan is 'the Indigenous who live in the plain area'.

<sup>4</sup>See 康培德 Peter Kang, '十七世紀上半的馬賽人' (The Basay in the First Half of the Seventeenth Century), *台灣史研究 Taiwan Historical Research* 10, no. 1 (2003): 1-32; 陳宗仁 Tsung-jen Chen, '年傳教士報告的解析—兼論西班牙佔領前期的臺灣知識與其經營困境' (An Analysis of Fr. Jacinto Esquivel's 1632 Report 'Memoria De Las Cosas Pertencientes Al Estado De La Isla Hermosa'), *台灣文獻 Taiwan Historica* 61, no. 3 (2010): 1-34; 吳佳芸 Jia-Yun Wu, *從到金雞貂--臺灣原住民社群關係之性質與變遷* (From Basay to Jinjidiao, the Nature and Evolution of the Interactions between Taiwan Indigenous Communities) (臺北 Taipei: 國史館 Academia Historica, 2011); 周子揚 Zih-Yang Jhou, '十三行文化舊社類型與平埔族聚落關係之研究—以馬賽人村社為例' (The Research on the Latest Society's Type of Shih-San-Hang Culture and Its Relationship with the Ping-Pu Ethnic Group—A Case Study of the Basai People Community as an Example) (Master's thesis, 國立政治大學 National Chengchi University, 2010).

<sup>5</sup>劉益昌 Yi-Chang Liu, 'Basay 人群與生業型態形成的再思考' (Rethinking the Formation of Basay People and Their Subsistence), in 第三屆「族群、歷史與地域社會」學術研討會 (The Third Conference of Group, History, and Regional Society) (Taipei: Academia Sinica, 2011), 1-21.

<sup>6</sup>周子揚 Jhou, '十三行文化舊社類型與平埔族聚落關係之研究—以馬賽人村社為例' (Research on the Latest Society's Type of Shih-San-Hang Culture and Its Relationship with the Ping-Pu Ethnic Group); 潘瑋玲 Wei-Ling Pan, '龍門舊社遺址的發掘與研究' (The Excavation and Study of Long-Men Jiou-She Site, Taiwan) (Master's thesis, 國立臺灣大學 National Taiwan University, 2005).

<sup>7</sup>Yu-Ju Lin, 'The Trade System of Port Cities in the Mid-Nineteenth Century Taiwan', *Crossroads: Studies on the History of Exchange Relations in the East Asian World* 4 (2011): 137-68; Yi-Chang Liu and Su-Chin Wang, 'Encountering the Wider World Before the Transition to History: Chinese Ceramics in Proto-Historic Taiwan (Tenth through Sixteenth Centuries)', in *Historical Archaeology of Early Modern Colonialism in Asia-Pacific: The Southwest Pacific and Oceanian Regions* ed. María Cruz Berrocal and Cheng-Hwa Tsang (Gainesville: University Press of Florida, 2017), 270-312.

Archaeological studies show the exotic origins of these materials that were introduced by traders and immigrants thousands of years ago.<sup>8</sup> The introduction of those exotic goods marks a pivotal point for Taiwanese prehistory, reflecting the transition from the Neolithic period into the Metal Age.

In light of these intellectual and scholarly developments, the aim of the present article is to further explore the development of trading activity, establishment of diaspora, and the presence of itinerant craftsmen on the Island of Taiwan during the later first millennium BCE into the first millennium CE. As with many of the other contributions in this Special Issue (henceforth SI), special emphasis is placed on the importance of local communities, the agency of their members, and on how they participated in wider interregional trade routes. The experiences of those who could be regarded as the forerunners to, or ancestors of, the later Besay occupy particular attention in this article. Extending the analysis provided by Matthew Cobb and Jeremy Simmons (see their articles in this SI), the eastern end of the Maritime Silk Road (MSR) is also brought into greater focus. This includes the ways in which it intersected with Austronesian Routes in the South China Sea (or Southeast Asian Sea) maritime interaction sphere, primarily from about 500 BCE to the tenth century CE.<sup>9</sup> These Austronesian Routes, which formed part of a long-established network from at least 3,500 years ago, had traditionally acted as a major channel for exchange and migration. Taiwan, as one of the starting points of Austronesian Routes, has received substantial scholarly attention on the dispersal of Austronesian people and the concurrent development of networks of exchange. Nevertheless, while studies on outbound Austronesian expansion continue, scholars are also increasingly recognizing the importance of analyzing the counter-stream of migration, formation of trade routes, and their impact on the local societies in ancient Taiwan.

An important body of material for this analysis is the archaeological record of Taiwan since the island only really entered the 'historical period' (in the more traditional sense of this term) from the seventeenth century. It had a relatively long proto-history, hence, archaeology is often the main tool we possess for examining early human activity in Taiwan. It can help us to highlight the importance of trade and exchange in the appearance of new material cultural forms on the island.<sup>10</sup> However,

<sup>8</sup>For details, see Kuan-Wen Wang and Caroline Jackson, 'A Review of Glass Compositions around the South China Sea Region (the Late 1st Millennium BC to the 1st Millennium AD): Placing Iron Age Glass Beads from Taiwan in Context', *Journal of Indo-Pacific Archaeology* 34 (2014): 51-60; 王淑津 Su-Chin Wang and 劉益昌 Yi-Chang Liu, '十七世紀前後台灣煙草、煙斗與玻璃珠飾的輸入網絡：一個新的交換階段' (The Import Networks of Tobacco, Tobacco Pipes, and Glass Bead Ornaments into Taiwan Circa the Seventeenth Century: A New Phase of Exchange), *台灣大學美術史研究集刊 Taida Journal of Art History* 22 (2007): 51-90; 陳光祖 Kwang-Tzau Chen, '臺灣地區出土銅器及相關遺留芻論' (A Preliminary Research of Copper-Based Artifacts and Related Remains Discovered in the Taiwan Area), *中央研究院歷史語言研究所集刊 Bulletin of the Institute of History and Philology Academia Sinica* 82, no. 2 (2011): 169-259.

<sup>9</sup>It is worth noting that both the term Maritime Silk Road and the South China Sea imply a Sinocentric ideology. As a Chinese product, silk is only one of the tributes and merchandises carried along the terrestrial and maritime trade routes between the West and the East. The term 'Silk Road' over-emphasizes the importance of this Chinese product. The term 'South China Sea' also contains the same biased ideology and overlooks Southeast Asian countries' significance and their people from the past to the present.

<sup>10</sup>劉益昌 Yi-Chang Liu, '台灣史前黑陶互動關係體系的初步研究' (A Preliminary Study on the Interactions of the Black Pottery in Prehistoric Taiwan), in 「古代交換與殖民模式的跨地域比對」國際學術研討會 (International Conference on Cross-regional Comparison of Ancient Migration and Exchange Patterns) (台北 Taipei: 中央研究院人文社會科學研究中心考古學研究專題中心 Centre for Archaeological Studies, Research Centre of Humanities and Social Sciences, Academia Sinica, Institute of Archaeology of New Caledonia and the Pacific, New Caledonia, 2012), 1-4; 劉益昌 Yi-Chang Liu and 王淑津 Su-Chin Wang, '從玉器到玻璃、瑪瑙：臺灣史前裝飾器物的變遷' (From Jade to Glass and Agate Beads: The Change of Prehistoric Decoration System in Taiwan), in 臺灣地區外來物質：珠子與玻璃環玦形器研討會 (Conference of the Foreign Materials in Taiwan: Beads, Glass Bracelet, and Jue) (台北 Taipei: 中央研究院歷史語言研究所 Institute of History and Philology, Academia Sinica, 2005), 211-26; Wang and Jackson, 'A Review of Glass Compositions'; 李坤修 Kun-Hsiu Lee, '舊香蘭遺址出土的砂岩鑄模及其來源探討' (Sandstone Moulds from Jiuxianglan, Taidong and Their Origin: A Preliminary Consideration), *田野考古 Field Archaeology of Taiwan* 18, no. 1 (2015): 31-71; Hsiao-chun Hung and Chin-yung Chao, 'Taiwan's Early Metal Age and Southeast Asian Trading Systems', *Antiquity* 90, no. 354 (2016): 1537-51.

historical evidence (textual accounts) from the early modern period is also drawn upon where they can offer potential insights into earlier historical phenomena.

In this article, I intend to adapt the trade diaspora model developed by Yi-Chang Liu as a heuristic tool to comprehend the transitional mechanism from the Neolithic to the Metal Age in Taiwan, which is the period when the Austronesian routes intertwined with the MSR in this region. In his three-staged trade diaspora model, Yi-Chang Liu suggests that: 1) around 400 BCE itinerant craftsmen with knowledge of high-firing pyrotechnology travelled to Taiwan annually for trade (temporary Diaspora Autonomy); 2) around 100 BCE, due to the strong demand for 'repairing metal tools and reprocessing metal and glass', some craftsmen began to settle more permanently on the island, either in separate communities or segregated areas, though they still maintained links with their 'homeland', potentially motivated by the need to access raw materials (remaining in Diaspora Autonomy mode); 3) around 200-400 CE, these craftsmen were able to access to iron ore on the island and over time Diaspora Autonomy gave way to Diaspora Integration.

I suggest that this model (only briefly outlined and simplified here) may allow us to accommodate the scattered foreign material cultures and technological traditions that altered Taiwan's prehistoric trajectory and gives us an alternative explanation for the formation of Formosan society in the pre-modern era.

### Scope of the study: Taiwan and the South China Sea maritime interaction sphere

In this SI, several of the contributors engage with concepts from globalization in order to analyze the importance of major trade networks and nodes across Afro-Eurasia. This article also selectively adapts concepts from globalization thinking in order to apply it to the trade diaspora model adopted here. In particular, the intersection between the 'global' and the local, the potential for increasing dependencies that can result from increased connectivity, and the vulnerability (and eventual breakdown) that can result when shifting cultural and political phenomena bring about changing habits and tastes. This is with the goal of offering an alternative to more traditional migrationalist perspectives that have been used to frame developments taking place in this region in the period. However, before going on to tease out some of these themes, it will be helpful to set out the geographical scope of this article and the circumstances that led to the development and intertwining of both the Austronesian Routes and the MSR in the South China Sea region.

### The island of Taiwan

Today, Taiwan's population is approximately 23.5 million people, and among the whole population, there are about 560,000 Aborigines. This is less than three percent of the total.<sup>11</sup> Sixteen tribes have received government recognition, and more are waiting. Before the pre-modern period, these Formosans were the main residents on the island.<sup>12</sup> Often geographically considered part of East Asia (particularly because of historical developments from the last few centuries), archeological and historical evidence testifies to Formosan (Taiwanese) relationships with not only the continent across the strait, but also with other areas in the South China Sea. Modern-era history forms the surface appearance of Taiwanese

<sup>11</sup><https://eng.stat.gov.tw/point.asp?index=9>; [https://www.moi.gov.tw/stat/news\\_detail.aspx?sn=13334](https://www.moi.gov.tw/stat/news_detail.aspx?sn=13334) [accessed 17 April 2023].)

<sup>12</sup>In this article, the term 'Taiwan Aborigines' is used for the current Taiwan Austronesian people. 'Formosans' refer to the ancestors of those modern Taiwan Aborigines before the eighteenth century.

society, but to get to the root of ‘Taiwanese/Formosan’ society, we need to look closely to those long and entangled interactions going back thousands of years.

The earliest human occupation of Taiwan can be traced back to 25,000 years ago; however, we have little understanding of those Paleolithic people’s destiny after the arrival of ancient Austronesian people in about 4,000 to 3,500 BCE. These Austronesians were Neolithic farmers and hunters whose ancestry can be traced back to the southeast coast of continental East Asia. The period from 300 BCE to 200 CE was a pivotal point in Taiwanese prehistory, marking the transition from the Neolithic to the Metal Age. At this time, glass and agate beads, along with metals and metallurgy were introduced from overseas.

### **Austronesian Routes**

Fort Zeelandia in southwest coastal Taiwan became an entrepôt of the Dutch East India Company (Vereenigde Oostindische Compagniem, hereafter VOC) for conducting business with China and Japan in the seventeenth century. We have a clear image of how complex the trade routes were in the Age of Commerce, and it is likely that many segments of these routes were long ago established prior to the expansion of European powers in the area. So too were those in the South China Sea maritime regions.

The South China Sea, also known as the Asian Mediterranean and Southeast Asia Sea, acts as a vital trade conduit at the east terminal segment of the MSR.<sup>13</sup> Studies have shown that the movement of ideas, people, and goods along this trade route stimulated social changes, both economically and politically, especially in mainland Southeast Asia.<sup>14</sup> But prior to goods and merchants moving via the MSR there was another exchange network in this region which was possibly established and operated by the Austronesian people, namely the Austronesian Routes.<sup>15</sup> These Austronesian networks connected people through one of the most extensive language families in the world, covering the regions from Easter Island to Madagascar.<sup>16</sup> Linguists and archaeologists have long been interested in its expansion,<sup>17</sup> with research from

<sup>13</sup>François Gipouloux, *The Asian Mediterranean: Port Cities and Trading Networks in China, Japan and South Asia, 13th-21st Century* (Cheltenham: Edward Elgar, 2011).

<sup>14</sup>Bérénice Bellina, ‘Beads, Social Change and Interaction between India and South-East Asia’, *Antiquity* 77, no. 296 (2003): 285-297; Bellina, ‘The Archaeology of Early Contact with India and the Mediterranean World, From the Fourth Century BC to the Fourth Century AD’, in *Southeast Asia: From Prehistory to History*, ed. Ian Glover and Peter Bellwood (New York: Routledge Curzon, 2004), 68-70; Mercedes Murillo-Barroso et al., ‘Khao Sam Kaeo – an Archaeometallurgical Crossroads for Trans-Asiatic Technological Traditions’, *Journal of Archaeological Science* 37, no. 7 (2010): 1761-72; Ian C. Glover and Bérénice Bellina, ‘Ban Don Ta Phet and Khao Sam Kaeo: The Earliest Indian Contacts Re-Assessed’, in *Early Interactions between South and Southeast Asia: Reflection on Cross-Cultural Exchange*, ed. Ian C. Glover and Bérénice Bellina (Singapore: ISEAS–Yusuf Ishak Institute, 2011) 17-46; Bérénice Bellina, ed., *Khao Sam Kaeo. An Early Port-City Between the Indian Ocean and the South China Sea*, Mémoires Archéologiques, (Paris: École Française d’Extrême Orient, 2017).

<sup>15</sup>Wilhelm G. Solheim, *Archaeology and Culture in Southeast Asia: Unraveling the Nusantao* (Diliman, Quezon City: University of the Philippines Press, 2006); Hsiao-chun Hung et al., ‘Coastal Connectivity: Long-Term Trading Networks Across the South China Sea’, *Journal of Island & Coastal Archaeology* 8, no. 3 (2013): 384-404.

<sup>16</sup>Peter Bellwood, ‘Austronesian Prehistory in Southeast Asia: Homeland, Expansion and Transformation’, in *The Austronesians: Historical and Comparative Perspectives*, ed. Peter Bellwood, James J. Fox, and Darrell Tryon (Canberra: Australian National University Press, 1995), 103-18.

<sup>17</sup>*Ibid.*; Wilhelm G. Solheim, ‘The Nusantao and North-South Dispersals’, *Bulletin of the Indo-Pacific Prehistory Association* 15 (1996): 101-9; John Edward Terrell, ‘The “Sleeping Giant” Hypothesis and New Guinea’s Place in the Prehistory of Greater near Oceania’, *World Archaeology* 36, no. 4 (2004): 601-9; John Terrell, ‘History as a Family Tree, History as an Entangled Bank: Constructing Images and Interpretations of Prehistory in the South Pacific’, *Antiquity* 62, no. 237 (1988): 642-57.

different disciplines being used to support the 'Out of Taiwan' hypothesis.<sup>18</sup> The unidirectional migrationalist model has dominated the explanatory frameworks for the Austronesian expansion. It can be roughly summarized as a major stream of population movement going from Taiwan (in the north) to the Philippines (in the south) and then spreading into other parts of Island Southeast Asia (ISEA) and Oceania. However, in one alternative to the 'Out of Taiwan' hypothesis, Tsang has argued that the southeast region of continental East Asia, especially the Pearl Delta, is the motherland of Austronesian speakers.<sup>19</sup> In any case, most scholars acknowledge that Austronesian expansion takes root from both sides of the South China Sea. If many archaeologists have different perspectives for the paths of movement, most agree that migration was the major means by which the Austronesian language spread.

Archeologically, based on the distribution of red-slipped pottery and Taiwanese nephrite (also known as Taiwanese jade) artifacts, Bellwood concluded that an Austronesian-speaking population started to migrate out of Taiwan as early as 2,000 BCE.<sup>20</sup> Supporting Bellwood's hypothesis, Hung proposes a closer relationship between Taiwan and Luzon from 1,000 BCE, based on multiple attributes of pottery in Taiwan and northern Luzon, such as chronology, style, motif pattern, and ceramic matrix (paste and temper).<sup>21</sup> Other scholars have interpreted the evidence differently, though they still adopt a unidirectional migrationalist framework.<sup>22</sup> Hung and her colleagues' research on the distribution of Taiwanese nephrite around the South China Sea maritime regions indicates the possible existence of an exchange network, as well as itinerant nephrite craftsman groups. They also suggest that the movement of Taiwanese nephrite (and maybe the craftsmen who worked it) started with the Austronesian dispersal and ended around 500 CE.<sup>23</sup>

From the South China Sea regions' perspective, the appearance of exotic materials (red-slipped pottery and nephrite artifacts) suggests overseas human interactions starting as early

<sup>18</sup>Peter Bellwood and Eusebio Dizon, 'The Batanes Archaeological Project and the "Out of Taiwan" Hypothesis for Austronesian Dispersal', *南島研究學報 Journal of Austronesian Studies* 1, no. 1 (2005): 1-32; Peter Bellwood, *First Migrants: Ancient Migration in Global Perspective* (Malden, MA: Wiley Blackwell, 2013); Chi-Shan Chang et al., 'A Holistic Picture of Austronesian Migrations Revealed by Phylogeography of Pacific Paper Mulberry', *Proceedings of the National Academy of Sciences* 112, no. 44 (2015): 13537-42; Yoshiyuki Iizuka and Hsiao-Chun Hung, 'Archaeomineralogy of Taiwanese Nephrite: Sourcing Study of Nephritic Artifacts from the Philippines', *南島研究學報 Journal of Austronesian Studies* 1, no. 1 (2005): 35-81; Yoshiyuki Iizuka, Peter Bellwood, Hsiao-Chun Hung, and Eusebio Z. Dizon, 'A Non-Destructive Mineralogical Study of Nephritic Artifacts from Itbayat Island, Batanes, Northern Philippines', *Journal of Austronesian Studies* 1, no. 1 (2005): 80-105; Hsiao-Chun Hung, 'A Sourcing Study of Taiwan Stone Adzes', *Bulletin of the Indo-Pacific Prehistory Association* 2 (2004): 57-70; Hsiao-Chun Hung, 'Neolithic Interaction between Taiwan and Northern Luzon: The Pottery and Jade Evidences from the Cagayan Valley', *南島研究學報 Journal of Austronesian Studies* 1, no. 1 (2005): 109-33.

<sup>19</sup>Cheng-Hwa Tsang 臧振華, '再論南島語族的起源與擴散問題 Once Again on the Austronesian Origin and Dispersal', *南島研究學報 Journal of Austronesian Studies* 3, no. 1 (2012): 87-119.

<sup>20</sup>Bellwood and Dizon, 'The Batanes Archaeological Project'; Bellwood, *First Migrants: Ancient Migration in Global Perspective*; Bellwood, 'The Austronesian Dispersal and the Origin of Languages', *Scientific American* 265, no. 1 (1991): 88-93.

<sup>21</sup>Hung, 'Cultural Interaction between Taiwan and Adjacent Islands'; Hung, 'Neolithic Interaction between Taiwan and Northern Luzon'.

<sup>22</sup>Armand Salvador B. Mijares, 'The Early Austronesian Migration to Luzon: Perspectives from the Peñablanca Cave Sites', *Indo-Pacific Prehistoric Association Bulletin* 26 (2006): 72-8; Armand Salvador B. Mijares, 'The Archaeology of Peñablanca Cave Sites, Northern Luzon, Philippines', *南島研究學報 Journal of Austronesian Studies* 1, no. 2 (2005): 65-93.

<sup>23</sup>Iizuka and Hung, 'Archaeomineralogy of Taiwanese Nephrite: Sourcing Study of Nephritic Artifacts from the Philippines'; Iizuka, Bellwood, and Hung, 'A Non-Destructive Mineralogical Study of Nephritic Artifacts from Itbayat Island, Batanes, Northern Philippines'; Hsiao-Chun Hung et al., 'Ancient Jades Map 3,000 Years of Prehistoric Exchange in Southeast Asia', *Proceedings of the National Academy of Sciences* 104, no. 50 (2007): 19745-50; Yoshiyuki Iizuka, Hsiao-Chun Hung, and Peter Bellwood, 'A Noninvasive Mineralogical Study of Nephrite Artifacts from the Philippines and Surroundings: The Distribution of Taiwanese Nephrite and the Implications for the Island Southeast Asian Archaeology', in *Scientific Research on the Sculptural Arts of Asia Proceedings of the Third Forbes Symposium at the Freer Gallery of Art*, ed. Janet E. Douglas, Paul Jett, and John Winter (London: Archetype Publications, 2007), 10-17.

as 2,000 BCE. The beginning of this network might have started with the dispersal of Austronesian people from Taiwan to Southeast Asia in about 2,000 BCE, and expanded by the following craftspeople who worked with Taiwanese nephrite.<sup>24</sup> Those routes likely ended up as a persistent exchange network that was maintained and operated by Austronesian people in the South China Sea regions until the tenth century (or later). Once trade via the MSR had become more active, it is reasonable to envision that people would exchange goods (and more subtly cultural elements) in the region where the MSR and Austronesian Routes overlapped. In the case of Taiwan, the exotic materials such as glass beads, agate beads, and metal objects become archaeologically visible around 300 BCE.<sup>25</sup> However, the intertwining of the Austronesian Routes and MSR in the South China Sea regions may occurred as early as 500 BCE.

### **Mainland Southeast Asia and the Maritime Silk Road in the South China Sea**

If the Arabian Sea and Bay of Bengal regions were vital conduits for trading activity in the Indian Ocean proper (see Cobb and Simmons' articles in this SI), Mainland Southeast Asia (henceforth MSEA) acted as a vital bridge between the Indian Ocean and South China Sea regions. Archaeological studies show the importance of the Kra Isthmus as the gateway between the two great bodies of water in ancient times.<sup>26</sup> This region, however, was not merely the 'meeting ground' for peoples from distant regions. In recent years, the research paradigm has shifted from emphasizing the direct Indianization from the west and the influence of Han/Chinese cultures from the north to a greater acknowledgement of the role of local communities and their agency (archaeological studies having played a vital role in this shift).<sup>27</sup>

<sup>24</sup>Hung et al., 'Ancient Jades Map 3,000 Years of Prehistoric Exchange in Southeast Asia'; Hung et al., 'Coastal Connectivity: Long-Term Trading Networks across the South China Sea'; 深山絵実梨 Emiri MIYAMA, '耳飾が語る金属器時代東南アジアの海域ネットワーク' (The Maritime Network in Southeast Asia Metal Age – Perspective of Earrings), in 海民の移動誌-西太平洋のネットワーク社会 (*The Stories of Sea Nomad, the Network Societies in Western Pacific Ocean*), ed. 小野林太郎 (Rintaro ONO), 長津一史 (Kazufumi NAGATSU), and 印東道子 (Michiko INTOH) (京都市 Kyoto: 昭和堂 Showado, 2018).

<sup>25</sup>王淑津 Wang and 劉益昌 Liu, '十七世紀前後台灣煙草、煙斗與玻璃珠飾的輸入網絡：一個新的交換階段' (Import Networks of Tobacco); 劉益昌 Liu and 王淑津 Wang, '從玉器到玻璃、瑪瑙：臺灣史前裝飾器物的變遷' (From Jade to Glass); Liu and Wang, 'Encountering the Wider World Before the Transition to History'; 劉益昌 Yi-Chang Liu, '臺灣東部史前晚期人群互動的考古學研究' (The Archaeological Study of Prehistoric Interactions in Eastern Taiwan), in 中央研究院歷史語言研究所 99 年度第十七次學術講論會 (The 17th Lecture of the Academic Series in IHP) (Taipei: Institute of History and Philology, Academia Sinica, 2010), 1-27; 越南 Sa-Hyunh, '文化時期的台灣及其相關問題' (The Prehistoric Taiwan and Sa Hyunh Culture in Vietnam), (paper presented at the Commemorating the Tenth Anniversary of Hoi An World Heritage Site International Symposium, Hoi An, Vietnam, 2010).

<sup>26</sup>Bérénice Bellina, 'The Inception of the Trans-National Processes between the Indian Ocean and the South China Sea from an Early City-State on the Thai-Malay Peninsula (Fourth-Second Century BCE)', in *Ports of the Ancient Indian Ocean*, ed. Marie-Françoise Boussac, Jean-François Salles, and Jean-Baptiste Yon (Delhi: Primus Books, 2016), 484-5.

<sup>27</sup>Glover and Bellina, 'Ban Don Ta Phet and Khao Sam Kaeo: The Earliest Indian Contacts Re-Assessed'; Bérénice Bellina, 'Was There a Late Prehistoric Integrated Southeast Asian Maritime Space? Insight from Settlements and Industries', in *Spirits and Ships: Cultural Transfers in Early Monsoon Asia*, ed. Alexandra Landmann, Andrea Aciri, and Roger Blench (Singapore: ISEAS-Yusuf Ishak Institute, 2017), 17-46; Joyce C. White and Elizabeth G. Hamilton, 'The Transmission of Early Bronze Technology to Thailand: New Perspectives', *Journal of World Prehistory* 22, no. 4 (2009): 357-97; Ian Glover and Peter S. Bellwood, *Southeast Asia: From Prehistory to History* (London: Routledge Curzon, 2004); Joyce C. White and Elizabeth G. Hamilton, *Ban Chiang, Northeast Thailand, Volume 2a: Background to the Study of the Metal Remains* (Philadelphia, PA: University of Pennsylvania Press, 2018); Thomas Oliver Pryce, "南望上"与"北望": 中国与东南亚冶金考古的跨国交融' ('Looking South' Meets 'Looking North': Towards a Trans-National Archaeometallurgy between China and Southeast Asia), (paper presented at the 秦时期冶金考古国际学术研讨会 (International Symposium on Qin Period Metallurgy and its Social and Archaeological Context), 北京 Beijing, 2014).

Yet, despite the greater focus on the role of local agency in receiving and adapting foreign cultural elements, it is still the case that in many studies there is a general acceptance of the basic premise that social development across MSEA followed the trajectory of the Stone Age, Bronze Age, and Iron Age.<sup>28</sup>

Certainly, archaeological studies in peninsular and upper Thailand and Laos point to glass beads, agate beads, and the knowledge of beadmaking and metallurgy being transmitted across the Bay of Bengal. Besides the movement of materials, this research also illuminates how foreign cultural elements functioned as a cause of social change in MSEA, starting from the middle of the first millennium BCE. (See the studies of the Kao Sam Kao site for more discussion on sociopolitical changes and a series of studies by Dussubieux and Lankton for glass analysis).<sup>29</sup> The analyses of Indo-Pacific glass beads has further demonstrated how glass beads, ingots, and stone ornaments, and the techniques of making them, moved from South Asia to Southeast and East Asia.<sup>30</sup> While most of these previous studies have explored the connections across the Bay of Bengal, the accumulation of data from the other side of the peninsula allows us to extend the discussion eastward, giving us new insights into maritime interactions in the South China Sea region.

As mentioned above, on the eastern side of MSEA, the Austronesian trade routes had been established from c. 2,000 BCE and persisted, but from about 500 BCE, it seems to have become intertwined with the MSR; this may have taken place in the eastern coastal areas of MSEA. Studies of Taiwanese nephrite ornaments and their production waste indicate the movement of material, people, and craftsmanship in the South China Sea region.<sup>31</sup> The intertwining of material cultures and crafts knowledge from Austronesian Routes and the MSR in c. 500 BCE potentially stimulated the bloom of Taiwanese nephrite craftsmanship in the region. The localized style of Taiwanese nephrite products, such as Linging-O earrings and double-headed pendants, shows that the craftspeople made these products onsite in order to cater to the local markets in MSEA. This also included the exchange of manufacturing knowledge in not only MSEA but also across South China Sea between central Vietnam and the Philippines.<sup>32</sup> Studies on other precious and semi-precious stones, glass beads, stone

<sup>28</sup>Charles Higham, *Early Cultures of Mainland Southeast Asia* (Bangkok: River Books, 2002); Glover and Bellwood, *Southeast Asia: From Prehistory to History*. While the origins of the bronze technology are still debated, the ferrous pyrotechnology shows strong influence from the west side of the Bay of Bengal.

<sup>29</sup>Lynn Biggs et al., 'Prehistoric Iron Production Technologies in the Upper Thai-Malay Peninsula: Metallography and Slag Inclusion Analyses of Iron Artefacts from Khao Sam Kaeo and Phu Khao Thong', *Archaeological and Anthropological Sciences* 5, no. 4 (2013): 311-29; Bellina, ed., *Khao Sam Kaeo*; Alison Kyra Carter, 'Trade, Exchange, and Sociopolitical Development in Iron Age (500 BC-AD 500) Mainland Southeast Asia: An Examination of Stone and Glass Beads from Cambodia and Thailand' (PhD diss., University of Wisconsin-Madison, 2013); Cristina Cobo Castillo, Bérénice Bellina, and Dorian Q. Fuller, 'Rice, Beans and Trade Crops on the Early Maritime Silk Route in Southeast Asia', *Antiquity* 90, no. 353 (2016): 1255-69; Olivier Évrard et al., 'Of Myths and Metallurgy: Archaeological and Ethnological Approaches to Upland Iron Production in Ninth-Century CE Northwest Laos', *Journal of Southeast Asian Studies* 47, no. 1 (2016): 109-40; Glover and Bellina, 'Ban Don Ta Phet and Khao Sam Kaeo: The Earliest Indian Contacts Re-Assessed'; James W Lankton and Laure Dussubieux, 'Early Glass in Asian Maritime Trade: A Review and an Interpretation of Compositional Analyses', *Journal of Glass Studies* 48 (2006): 121-44; Thomas Oliver Pryce, Bérénice Bellina-Pryce, and Anna TN Bennett, 'The Development of Metal Technologies in the Upper Thai-Malay Peninsula: Initial Interpretation of the Archaeometallurgical Evidence from Khao Sam Kaeo', *Bulletin de l'École française d'Extrême-Orient* 93 (2006): 295-315.

<sup>30</sup>Wang and Jackson, 'A Review of Glass Compositions'; Alison Kyra Carter and Laure Dussubieux, 'Geologic Provenience Analysis of Agate and Carnelian Beads Using Laser Ablation-Inductively Coupled Plasma-Mass Spectrometry (LA-ICP-MS): A Case Study from Iron Age Cambodia and Thailand', *Journal of Archaeological Science: Reports* 6 (2016): 321-31. Bérénice Bellina, 'Maritime Silk Roads' Ornament Industries: Socio-Political Practices and Cultural Transfers in the South China Sea', *Cambridge Archaeological Journal* 24, no. 3 (2014): 345-77.

<sup>31</sup>Peter Bellwood and Eusebio Dizon, *4000 Years of Migration and Cultural Exchange: The Archaeology of the Batanes Islands, Northern Philippines* (Canberra: Australian National University Press, 2013); Hung et al., 'Ancient Jades Map 3,000 Years of Prehistoric Exchange in Southeast Asia'.

<sup>32</sup>深山絵実梨 Emiri MIYAMA, '先史時代東南アジアにおける耳飾と地域社会: 3つの突起を持つ石製状耳飾の製作体系復元 (特集 世界考古学: 東アジア・東南アジア)' (Earrings and Regional Societies in Prehistoric Southeast Asia: Reconstruction of a Production System of Slit Stone Earrings with Three Projections), *古代Kodai* no. 135 (2014): 43-65; 深山絵実



mould for bronze earrings, and ceramics further point to an intensified exchange network that started about 500 BCE. Some of this material culture and pyrotechnology knowledge flowed back to Taiwan via the long-established Austronesian Routes, beginning around 400 BCE. Thus, both the MSR and Austronesian Routes in the South China Sea region may have persisted until the sixteenth century, only losing their significance in long-distance networks of exchange when the trade system became distorted with the increasing presence of European powers.<sup>33</sup>

In summation, studies have revealed that complex networks across multiple time periods existed in the South China Sea region. First, the migration of Austronesian people from 2,000 BCE laid the foundation of this network. Second, foreign materials, brought via the MSR, led to the intensification of networks in the South China Sea region. This is also at the time (c. 500 BCE) when maritime trade societies were flourishing.<sup>34</sup> The intensification of trade and exchange activity weaved the MSR and the Austronesian Routes together, which led to the flow of exotic materials from Southeast Asia back into Taiwan. The phases which followed this seem to coincide with the rise of Chinese merchants around or after the ninth and tenth centuries, at which time the long-distance Austronesian Routes became shorter and more segmented.<sup>35</sup> A later phase was inaugurated by the entrance of European powers who subsequently dominated the long-distance trade in the region.

### Archaeological observations in Taiwan

The distinct geographic position of Taiwan, as a big island adjacent to mainland East Asia at the northern tip of the South China Sea region, meant that it had a slightly different historical trajectory to its neighbours. This includes more unique social developments compared to those seen in China and MSEA, as well as the Austronesian-speaking societies of ISEA. Part of this phenomenon can be explained by its nodal role in a number of exchange networks and the active engagement of local Formosans in this activity (the emphasis on local agency being highly important). As has already been stressed, due to limited written accounts prior to the arrival of Europeans in Taiwan, archaeology plays a valuable role in our understanding of these social developments and overseas cultural influences. (For a map highlighting the island's link into the Austronesian Routes and related artefacts, see Figure 1). Consequently, we can best explore the significance of these networks on the island's development in this period by examining some specific types of material culture, including nephrite objects, glass beads, bronzeware, and iron working.

### Taiwanese nephrite

The source of Taiwanese nephrite is a quarry located in the Fengtian area of Hualien County in eastern Taiwan. Prehistoric Formosans appear to have utilized nephrite as raw material for tools and ornaments mostly between 1,500 BCE to 500 BCE, but the zenith of the use of this

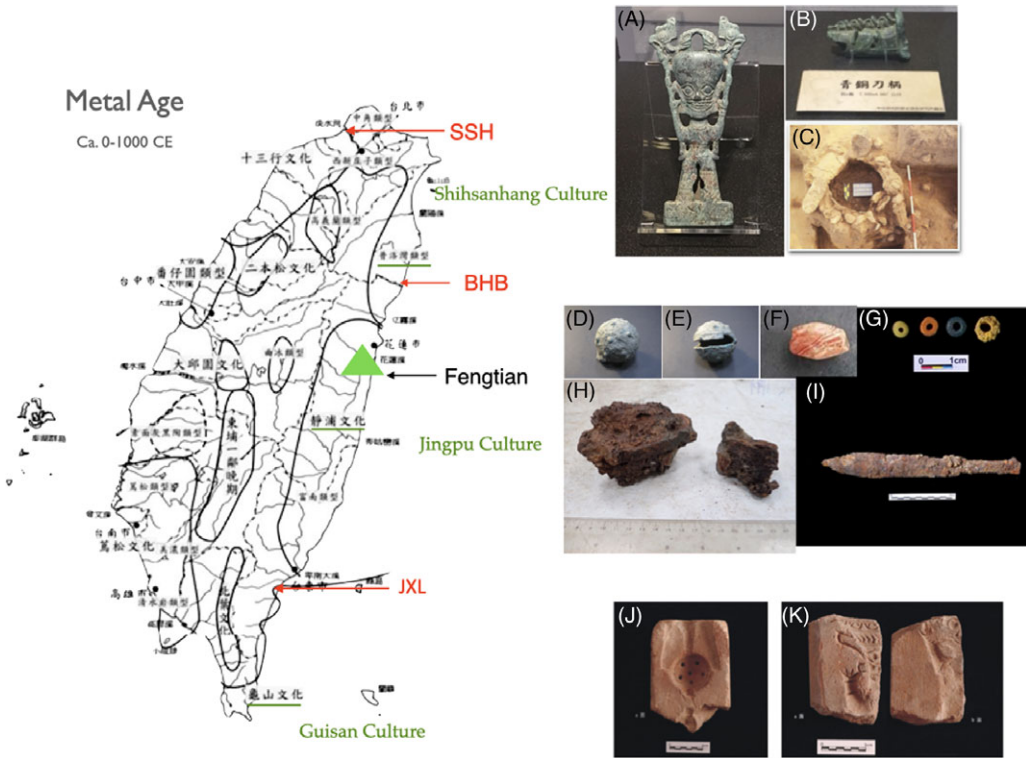
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梨 MIYAMA, '耳飾が語る金属器時代東南アジアの海域ネットワーク' (The Maritime Network in Southeast Asia Metal Age).

<sup>33</sup>Laura Junker, 'Conflictive Trade, Values, and Power Relations in Maritime Trading Polities of the Tenth to the Sixteenth Centuries in the Philippines', in *Trade and Civilisation: Economic Networks and Cultural Ties, from Prehistory to the Early Modern Era*, ed. Janken Myrdal, Kristian Kristiansen, and Thomas Lindkvist (Cambridge: Cambridge University Press, 2018), 413-52; Aude Favereau and Bérénice Bellina, 'Thai-Malay Peninsula and South China Sea Networks (500 BC-AD 200), Based on a Reappraisal of "Sa Huynh-Kalanay"-Related Ceramics', *Quaternary International* 416 (2016): 219-27; Bellina, 'Was There a Late Prehistoric Integrated Southeast Asian Maritime Space? Insight from Settlements and Industries'; Hung et al., 'Coastal Connectivity: Long-Term Trading Networks across the South China Sea'.

<sup>34</sup>Bérénice Bellina, 'Southeast Asia and Early Maritime Silk Road', in *Lost Kingdoms: Hindu-Buddhist Sculpture of Early Southeast Asia*, ed. John Guy (New York: The Metropolitan Museum of Art, 2014), 22-4; Bellina, 'Maritime Silk Roads' Ornament Industries: Socio-Political Practices and Cultural Transfers in the South China Sea'.

<sup>35</sup>Liu and Wang, 'Encountering the Wider World before the Transition to History'.



**Figure 1.** Early Metal Age map of Taiwan with site names mentioned in the article. Artifacts and feature photos on the right show the set of exotic material assemblage imported to Taiwan presumably from MSEA. Artifacts A-C from SSH, D-I from BHB, and J-K from JXL. Artifacts A and B: anthropomorphic bronze knife shank, C: iron-working/making furnace, D and E: bronze earring (diameter: 1cm), F: agate (length:2.5 cm), G: glass beads, H: Smithing hearth bottom slag, I: iron sword, J: sandstone mould of earring (note the same pattern on object D), K: sandstone mould of an anthropomorphic knife shank. All three sites yield similar exotic material assemblage, but not all remains are archaeologically visible. For example, there is no sandstone mould from the SSH site, and only a few small pieces of iron slag in the JXL site. The proposed trade diaspora model may explain the uneven distribution of pyrotechnological and exotic remains. Map layout based on Liu 2011.<sup>36</sup> Photo credits.<sup>37</sup>

beautiful, smooth, shiny material to make pendants in for markets in MSEA and ISEA occurred later, between 500 BCE and 200 CE. Lingling-O earrings and double-headed animal pendants were the major Taiwanese nephrite product in MSEA and ISEA. The distribution of Taiwanese nephrite ornaments, pre-cut blocks, and production waste indicate both the export of raw materials and the spread of craftsmanship skills or the movement of craftspeople.<sup>38</sup> The

<sup>36</sup>劉益昌 Liu, 臺灣全志 一卷三 住民志考古篇 (Taiwan Chorography).

<sup>37</sup>A-B: author; C: 臧振華 Tsang and 劉益昌 Liu, 十三行遺址—搶救與初步研究 (Salvage Archaeology and Preliminary Research of Shisanhang Site); D-G and I: 劉益昌 Liu et al., 台九線蘇花公路山區路段改善計畫漢本遺址搶救發掘工作結案報告 (Final Report for the Rescue Archaeology on the Blihan Hanben Site); H: author; J and K: 楊小青 Yang, 李坤修 Lee, and 陳文山 Chen, ‘岩象分析方法於考古研究之應用: 以臺東縣舊香蘭遺址砂岩質石器及陶片為例’ (The Application of Petrographic Analysis to Archaeological Research).

<sup>38</sup>Hung et al., ‘Ancient Jades Map 3,000 Years of Prehistoric Exchange in Southeast Asia’; 深山繪実梨 MIYAMA, ‘耳飾が語る金属器時代東南アジアの海域ネットワーク’ (The Maritime Network in Southeast Asia Metal Age).

use of Taiwanese nephrite decreased dramatically after 500 BCE in Taiwan and almost disappeared when entering the Metal Age. However, archaeologists did find one unfinished Lingling-O earring associated with glass beads that dated to 500-700 CE (Metal Age) from the Jiuxianglan 舊香蘭 site in south-eastern Taiwan.<sup>39</sup> This association indicates the import of Lingling-O craftsmanship along with glass and metal from SEA.

Interestingly, while Taiwanese nephrite ornaments remained popular in SEA, on the island itself, the number of glass beads, agate beads, and metals rapidly became the new fashions in Metal Age Taiwan. This means the Taiwanese nephrite quarrying continued even when the domestic need declined and continued mainly for exportation to SEA. Could this be an example of the trade diaspora model in action (with the movement of both materials and craftsmen)? Alternatively, with the growing dependence upon external demand (with a decline in local Formosan demand), could this activity be classed as a form of economic 'integration' between different regions?<sup>40</sup>

### *Glass and agate beads*

Glass beads have important social meanings for many modern Taiwanese Aborigine tribal groups. For ranked societies, such as Paiwan and Rukai, glass and agate beads are the heirlooms for the elite class and are a symbol of social order. For the other Taiwanese Indigenous tribes, glass beads are also highly appreciated. Dutch historical records show that this silica-based material is one of the favorites among Formosans and, as such, the Dutch people would typically prepare glass beads to trade for deer skins and food when doing business on the island in the seventeenth century. In the Basay narrative, written by the Spanish missionary Jacinto Esquivel, cuentas and stones were the merchandise offered by the Basay people in exchange for food with other Formosan tribes. General scholarly consensus is that cuentas and stones were actually glass and agate beads.<sup>41</sup> Worthy of notice is that the glass beads mentioned here, either European or Chinese products, were different from traditional glass beads.

Archaeological, ethnographic, and historical art studies highlight the multiple sources of the glass beads that are used in Taiwanese Indigenous society and those that appear in archaeological contexts.<sup>42</sup> There are three major sources: MSEA, China, and Europe. Long before European traders appeared with glass beads, Indo-Pacific glass beads and agate beads had been introduced to Taiwan alongside metal, starting around 400-200 BCE, via the

<sup>39</sup>劉益昌Liu and 王淑津 Wang, '從玉器到玻璃、瑪瑙：臺灣史前裝飾器物的變遷' (From Jade to Glass); 劉益昌 Yi-Chang Liu, '臺灣玉器流行年代及其相關問題' (The Fashion of Taiwanese Jade Artifacts and Issues), (paper presented at the 第三屆國際漢學會議 Third International Conference on Sinology, 台北 Taipei, 2003).

<sup>40</sup>For a brief discussion of Belich, Darwin, and Wickham's graduation of levels of global interconnectivity, see Matthew Cobb's introductory article in this SI.

<sup>41</sup>陳宗仁 Chen, '年傳教士報告的解析- 兼論西班牙佔領前期的臺灣知識與其經營困境' (An Analysis of Fr. Jacinto Esquivel's 1632 Report).

<sup>42</sup>胡家瑜 Chia-Yu Hu, '臺灣南島民族玻璃珠飾品的跨文化分析比較：對於形式、價值與物質性的一些思考' (Comparative Analysis of Glass Beads Used among Austronesian Groups in Taiwan: Some Thoughts on Forms, Values and Materiality), *考古人類學刊 Journal of Archaeology and Anthropology* 76 (2012): 97-133; 王淑津 Wang and 劉益昌 Liu, '十七世紀前後台灣煙草、煙斗與玻璃珠飾的輸入網絡：一個新的交換階段' (Import and Networks of Tobacco); 劉益昌 Liu and 王淑津 Wang, '從玉器到玻璃、瑪瑙：臺灣史前裝飾器物的變遷' (From Jade to Glass); 王冠文 Kuan-Wen Wang et al., '由舊香蘭遺址玻璃質遺留的原料及工藝談玻璃珠的交換' (The Exchange of Glass Beads Reflected by the Raw Materials and Craft of Glass Remains at Jiuxianglan), *考古人類學刊 Journal of Archaeology and Anthropology* 89 (2018): 57-92; Wang and Jackson, 'A Review of Glass Compositions'.

Austronesian Routes. Geochemical analyses confirm that the manufacturing provenience of these early glass beads is mainly MSEA.<sup>43</sup> It was not until the tenth century that Chinese-made lead-based glass would also be brought to Taiwan via merchant networks (along with Chinese porcelain), while Dutch-made glass beads arrived in Taiwan with the establishment of VOC trade in East Asia.

### **Bronze objects and technology**

Morphological studies of bronze objects in Taiwan indicate that they derive from two main sources: China and MSEA. In northern and south-western Taiwan, a few arrowheads and one axe from the Yuanshan 圓山 and Dahu 大湖 culture sites have been identified as Chinese products due to their style. They all date to around 1,000 BCE. It is possible that these early bronze objects were transported to Taiwan as a result of intermittent interactions across the Taiwan Strait, given their modest numbers. Dating from later, in the Metal Age, a little bronze bell and knife shanks with sandstone moulds demonstrate the bronze-working capabilities of prehistoric Formosans (c. 200 to 800 CE) at the Jiuxianglan 舊香蘭 (JXL) and Blihun Hanben 漢本 (BHB) sites in south-eastern and eastern Taiwan. The style of the arrowheads, earrings, and anthropomorphic knife shanks suggests a possible MSEA provenance of bronze-working technology. The recent discovery of the sandstone mould even suggests the local custom production of the anthropomorphic knife shank.<sup>44</sup>

Generally speaking, even though we have some archaeological evidence for bronze artifacts and possible bronze-working technology, the quantity of this material and residues of bronze-working are relatively small compared to iron-working remains. Hence, in contrast to MSEA, Taiwan has no distinct Bronze Age. Instead, bronze and iron might have been introduced with beads (glass and agate) as an assemblage.

### **Iron objects and technology**

Due to environmental conditions in tropical Taiwan, it is a challenging task to find iron objects preserved in archaeological contexts. However, the large amount of iron slag remains from the Shihshang 十三行 (SSH) and the newly excavated Blihun Hanben site provide solid proof of iron-working activities in ancient Taiwan. The strata with iron slag at these sites can be dated from 400 to 1,000 CE.<sup>45</sup> Previous research indicates the presence of two

<sup>43</sup>Wang and Jackson, 'A Review of Glass Compositions'.

<sup>44</sup>陳光祖 Chen, '臺灣地區出土銅器及相關遺留芻論' (Preliminary Research of Copper-Based Artifacts); 郭素秋 Su-Chiu Kuo, '臺灣北部圓山文化的內涵探討' (A Discussion on the Essence of the Yuanshan Culture in Northern Taiwan), *南島研究學報 Journal of Austronesian Studies* 5, no. 2 (2014): 69-152; 楊小青 Hsiao-chin Yang, 李坤修 Kun-Hsiu Lee, and 陳文山 Wenshan Chen, '岩象分析方法於考古研究之應用: 以臺東縣舊香蘭遺址砂岩質石器及陶片為例' (The Application of Petrographic Analysis to Archaeological Research), *南島研究學報 Journal of Austronesian Studies* 3, no. 2 (2012): 71-88.

<sup>45</sup>臧振華 Cheng-Hwa Tsang et al., 第二級古蹟十三行遺址調查研究報告 (Research Report of SSH Site), (台北 Taipei: 歷史語言研究所 Institute of History and Philology, 中央研究院 Academia Sinica, 2000); 臧振華 Cheng-Hwa Tsang and 劉益昌 Yi-Chang Liu, 十三行遺址—搶救與初步研究 (Salvage Archaeology and Preliminary Research of Shihshang Site) (臺北縣 Taipei: 臺北縣政府文化局 Culture Bureau of Taipei County, 2001); 劉益昌 Yi-Chang Liu et al., 台九線蘇花公路山區路段改善計畫漢本遺址搶救發掘工作結案報告 (Final Report for the Rescue Archaeology on the Blihun Hanben Site), (台北 Taipei: 交通部公路總局蘇花公路改善工程處 Suhua Improvement Engineering Office, Directorate General of Highways, Ministry of Transportation and Communication, Taiwan, R.O.C, 2016).

prehistoric iron-working traditions in Taiwan. The tradition in northern Taiwan was to use magnetite iron sand as ore to produce iron without any clear evidence for the use of an air supply method. The other tradition, in eastern Taiwan, was possibly a double piston air supply iron-working tradition originally from SEA. Both traditions may have ended up using salvaged iron from shipwrecks and Chinese iron woks as raw material after contact with Chinese merchants.<sup>46</sup>

Recently, based on a study of slag and other iron-working remains, this author concluded that massive primary smithing activities, instead of smelting (as suggested by prior research), took place in SSH and BHB. This conclusion is not intended to overturn previous assumptions regarding iron production capabilities in ancient Taiwan but to point out that the current metallurgical remains are mostly from smithing activities and that there are still some mysteries surrounding the type of ancient ferrous pyrotechnology employed.<sup>47</sup> Nevertheless, both iron-working traditions show connections with Southeast Asian tradition instead of northern Chinese tradition, which was developed based on bronze-working technology. And this iron-working tradition might have been introduced with bronze, glass, and other material cultures from Southeast Asia via Austronesian Routes which had intertwined with the MSR prior to this reversed flow.

In summary, except for the early bronze objects that might relate to the intermittent interactions across the Taiwan Strait and the glass beads after the tenth century, these early exotic archaeological remains, such as bronze bells, Indo-Pacific glass beads, and iron-working remains seem to imply a closer relationship between Taiwan and SEA beginning from 400 BCE.<sup>48</sup> It is worth noting that this material assemblage also sheds light on the local agency and choices of the Formosans. For example, studies suggest that artisans may have crafted the anthropomorphic knife shank to fit with local Formosan tastes—an example of ‘glocal’ adaptation?

### Discussion: intertwined networks

The Austronesian-related material remains, dating back to c. 2,000 BCE and found around the South China Sea region, may represent the first few waves of early Formosan expansion and point to the early formation of the Austronesian Routes.<sup>49</sup> These routes were presumably maintained by subsequent waves of migrations and the counter streams of migration. In the case of Taiwanese green nephrite objects, these were introduced via these routes and eventually became popular in the region, specifically the central to eastern part of MSEA and

<sup>46</sup>Kwang-Tzuu Chen, ‘Ancient Iron Technology of Taiwan’ (PhD diss., Harvard University, 2000).

<sup>47</sup>Jiun-Yu Liu, ‘Trade Diaspora in Prehistoric Eastern Taiwan’, (paper presented at the Annual Meeting of the Society for American Archaeology, Orlando, Florida, 7 April, 2016); ‘The Emergence of Iron Metallurgy in Taiwan: A Trade Diaspora Model’, (paper presented at the Re-Thinking Globalization in the Ancient World conference, Lampeter campus, University of Wales Trinity Saint David, UK, 8-10 May 8-10 2018).

<sup>48</sup>Data predominantly from the Jiuxianlan, Blihun Hanben, and Shihsanhang sites.

<sup>49</sup>Bellwood and Dizon, *4000 Years of Migration and Cultural Exchange*; Bellwood, *First Migrants: Ancient Migration in Global Perspective*; Hung, ‘Neolithic Interaction between Taiwan and Northern Luzon: The Pottery and Jade Evidences from the Cagayan Valley’; Kazuhiko Tanaka, ‘The Continuity and the Gap of the Occupation of Shell Midden Sites in the Lower Reaches of the Cagayan River, Northern Luzon’, in *Southeast Asian Archaeology: Wilhelm G. Solheim Festschrift*, ed. Victor Paz (Diliman, Quezon City: University of the Philippines Press, 2004), 158-83; Mijares, ‘The Archaeology of Peñablanca Cave Sites, Northern Luzon, Philippines’.

western part of ISEA, from 500 BCE to 200 CE. Possibly, craftspeople and craftsmanship moved around and across the South China Sea to produce Lingling-O and double-headed animal pendants.<sup>50</sup> This green nephrite decoration system, while lasting a long time, and remaining popular in parts of SEA, even when Formosan demand declined, seems to have eventually given way with the rise of Indian-related culture (e.g. from the Champa Kingdom) in the region.<sup>51</sup>

This newly introduced material culture and craftsmanship, such as glass, agate beads, iron metallurgy and their manufacturing techniques from across the Bay of Bengal stimulated social changes in MSEA starting around 500 BCE.<sup>52</sup> The routes of these goods and knowledge from the west to east across MSEA not only allowed for the transportation of these goods to China but also the intertwining with the ancient Austronesian Routes in eastern coastal MSEA.<sup>53</sup> This would lead to the introduction of glass, agate beads, and iron metallurgy to Taiwan via the South China Sea<sup>54</sup> in 400 BCE (see Figure 2). The introduction of foreign material and knowledge significantly altered the developmental course of prehistoric Formosan societies. With the increase of those exotic items, the amounts of decorative objects and daily implements made of Taiwanese nephrite declined (as noted above).<sup>55</sup> In Metal Age Taiwan, glass and agate beads had fully replaced the Taiwanese nephrite as the primary decorative materials. This shift left a profound legacy in the modern-day Taiwanese Indigenous societies. They are the descendants of prehistoric Formosans but have no nephrite-using cultures. Instead, glass and agate beads, and bronze and iron objects have become the important items in their societies.<sup>56</sup>

Studies have sought to layout the routes and possible origin of overseas materials in ancient Taiwan; however, the mechanism of these movements has not been discussed much. What was role of these people, as the carriers of exotic materials, when introducing overseas materials

<sup>50</sup>Hung et al., 'Coastal Connectivity'; Hung et al., 'Ancient Jades Map 3,000 Years of Prehistoric Exchange in Southeast Asia'; Bellina, 'Was There a Late Prehistoric Integrated Southeast Asian Maritime Space? Insight from Settlements and Industries'.

<sup>51</sup>Hung et al., 'Ancient Jades Map 3,000 Years of Prehistoric Exchange in Southeast Asia', identifies 500 CE as the end of Taiwanese nephrite ornaments production in this region. However, Emiri Miyama uses the rise of Champa culture as the end of Taiwanese nephrite industry (personal communication, 2009)

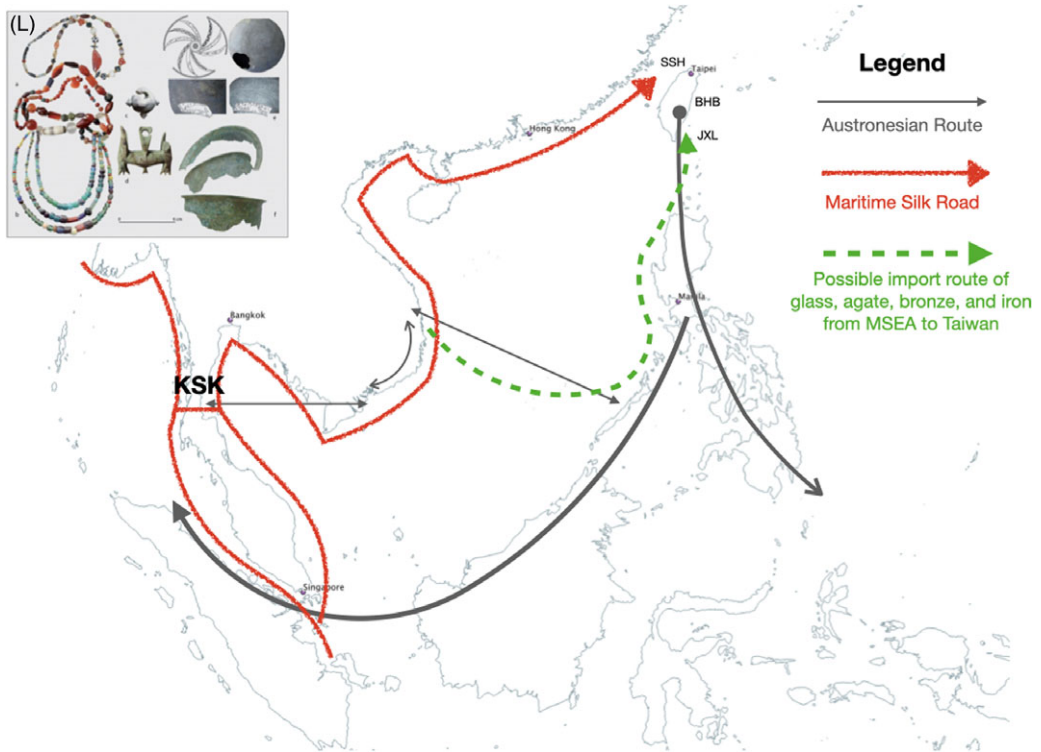
<sup>52</sup>Bellina, ed., *Khao Sam Kaeo*; Bellina, 'Southeast Asia and Early Maritime Silk Road'; Murillo-Barroso et al., 'Khao Sam Kaeo – An Archaeometallurgical Crossroads for Trans-Asiatic Technological Traditions'; Biggs et al., 'Prehistoric Iron Production Technologies in the Upper Thai-Malay Peninsula: Metallography and Slag Inclusion Analyses of Iron Artefacts from Khao Sam Kaeo and Phu Khao Thong'.

<sup>53</sup>Favereau and Bellina, 'Thai-Malay Peninsula and South China Sea Networks (500 BC–AD 200), Based on a Reappraisal of "Sa Huynh-Kalanay"-Related Ceramics'; Bellina, 'Was There a Late Prehistoric Integrated Southeast Asian Maritime Space?'; Hung et al., 'Coastal Connectivity'.

<sup>54</sup>Mariko YAMAGATA, 'Inland Sa Huynh Culture Along the Thu Bon River Valley in Central Vietnam', in *Uncovering Southeast Asia's Past: Selected Papers from the 10th International Conference of the European Association of Southeast Asian Archaeologists*, ed. Ian Glover, Vincent C. Pigott, and Elisabeth A. Bacus (Singapore: NUS Press, 2006), 168–83; 深山繪実梨 MIYAMA, '耳飾が語る金属器時代東南アジアの海域ネットワーク' (The Maritime Network in Southeast Asia Metal Age); Favereau and Bellina, 'Thai-Malay Peninsula and South China Sea Networks (500 BC–AC 200), Based on a Reappraisal of "Sa Huynh-Kalanay"-Related Ceramics'.

<sup>55</sup>劉益昌 Liu and 王淑津 Wang, '從玉器到玻璃、瑪瑙：臺灣史前裝飾器物的變遷' (From Jade to Glass); 劉益昌 Liu, '臺灣玉器流行年代及其相關問題' (The Fashion of Taiwanese Jade Artifacts and Issues); 劉益昌 Yi-Chang Liu *臺灣全志一卷三 住民志考古篇* (Taiwan Chorography, Vol 1, Issue 3: Archaeology), (南投 NanTou: 國史館臺灣文獻館 Taiwan Historica, 2011), 223–64.

<sup>56</sup>胡家瑜 Hu, '臺灣南島民族玻璃珠飾品的跨文化分析比較：對於形式、價值與物質性的一些思考' (Comparative Analysis of Glass Beads).



**Figure 2.** Map of intertwined Austronesian Routes and the MSR in the South China Sea region, c. 200 BCE – 1,000 CE. Artifacts photo L represents the ornamental assemblage in MSEA.<sup>57</sup> Note that the agate, carnelian, and glass beads on the left demonstrate an exotic influence from India; the Lingling-O and double-headed animal pendant in the centre are local style but some are made of Taiwanese nephrite; bronze technology might demonstrate influences from both northern and western MSEA but may have been developed into a localized style. This assemblage and ferrous pyrotechnology may have been imported to Taiwan by using the intertwined network of Austronesian Routes and the MSR.

into Taiwan? Migration and exchange are two primary explanations offered by Yi-Chang Liu in his articulation of the trade diaspora mode (noted above).<sup>58</sup> He hypothesized that those who introduced foreign materials were itinerant craftspeople with knowledge of ferrous metallurgy.

Yi-Chang Liu's model seems to have a reasonable basis in the archaeological record. Primary supporting evidence comes in the form of ceramic, glass, and ferrous metallurgical remains, as well as bioarchaeological remains.<sup>59</sup> Moreover, analysis of subsequent periods may indirectly support

<sup>57</sup>Photo credit of artifacts: Bérénice Bellina, 'Maritime Silk Roads' Ornament Industries: Socio-Political Practices and Cultural Transfers in the South China Sea'.

<sup>58</sup>劉益昌 Liu, '台灣史前黑陶互動關係體系的初步研究' (A Preliminary Study on the Interactions of the Black Pottery in Prehistoric Taiwan).

<sup>59</sup>Ivy Hui-Yuan Yeh et al., 'Ancient DNA (ADNA) Studies of the Hanben People', poster presented in *Annual Meeting of Society for Archaeology of Taiwan* (Tainan: Annual Meeting of Society for Archaeology of Taiwan, National Cheng Kung University, Tainan, Taiwan, 2018); Liu, 'The Emergence of Iron Metallurgy in Taiwan: A Trade Diaspora Model'; Jiun-Yu Liu, 'A Craftspeople Settlement, A Trading Post or Both? A Trade Diaspora Model for the Early Ancient Metallurgy in Taiwan: A Case Study on the Blihun Hanben Remains', Paper Presented in International Conference of Maritime Exchange and Localization across the South China Sea 500BC-500AD (Tainan: National Cheng Kung University, Tainan, Taiwan, November 9-10, 2018); 王冠文 Wang et al., '由舊香蘭遺址玻璃質遺留的原料及工藝談玻璃珠的交換' (Exchange of Glass Beads); 劉瑩三 Ying-San Liou, 王世忠 Shih-Chung Wang, and 劉益昌 Yi-Chang Liu, '花蓮崇德遺址出土古玻璃珠科學分析的初步成果' (Preliminary Scientific Results of the Ancient Glass Beads Unearthed from the Chungde Site, Hualien), *國立臺灣博物館學刊 Journal of the National Taiwan Museum* 67, no. 1 (2014): 53-69; Wang and Jackson, 'A Review of Glass

this trade diasporic module for the latter first millennium BCE and first half of the first millennium CE. This is specifically because developments in the centuries would seem to lead to its displacement.

Ancient iron-working activities declined starting around 900 CE, as suggested from the remains of two major sites with large amounts of slag (SSH and BHB). Studies show that one possible reason for this is the rise of Chinese merchants who traded Chinese-made glass beads and iron woks to Formosans for deer skins. This had been happening in the area since the ninth century. The gradual increase of Chinese ceramics along the western coast of Taiwan and the record of trade with Formosans that is found in Chinese literature are two lines of reasoning in support of this argument.<sup>60</sup> With the rise of this Chinese-based trade system, the long-distance Austronesian Routes may have gradually split into shorter and more localized trade routes. Archaeometallurgy studies on slag also support the idea that Chinese iron woks were used as raw material for iron-working in Formosan societies.<sup>61</sup> Studies of glass beads in archaeological, ethnographic, and historical accounts not only support the argument for a Chinese origin of foreign material from the tenth century but also confirm the existence of European glass beads that may have been traded into Taiwan by the Dutch and the Spanish in the Age of Commerce.<sup>62</sup> The encroachment of European trading powers further weakened the already shortened and fragmented Austronesian Routes.

More studies need to be done to connect earlier archaeological cultures with the historical Formosans; that is to say, to establish links between the Basay people and modern Taiwan Indigenous groups. The material culture remains from the same region of the Basay people certainly show the connection between the Formosans attested to in the historical record and their ancestors. Figuratively speaking, the characteristics of itinerant Basay craftsmen may have been 'inherited' by later Formosans.

## Concluding remarks

Taiwanese history can be studied from many angles and view Taiwan variously as a motherland for the Austronesian people; as an eastern island terminal of a historical trans-regional trade route (MSR); and later as one of the entrepôts of the VOC. Needless to say, the social development of Taiwan cannot be separated from its geographical location as part of East Asia and SEA. This article has examined the formation of Austronesian Routes and how they became entangled with the MSR using archaeological evidence found mainly in Taiwan. While a few studies have linked Taiwan to the MSR in the South China Sea, by using the trade diaspora model, the article aims to provide a more detailed explanation of how Taiwan transitioned from the Neolithic period to the Metal Age, and to consider the impact of new foreign materials on prehistoric Formosan and modern Taiwanese aboriginal societies.<sup>63</sup>

Some of these influences from the ancient times left traceable legacies in pre-modern Formosan and modern Taiwan Indigenous cultures, among which are the story of overseas origin among

Compositions'; Kuan-Wen Wang et al., 'The Anomaly of Glass Beads and Glass Beadmaking Waste at Jiuxianglan, Taiwan', *Archaeological and Anthropological Sciences* 11, no. 4 (2019): 1391-405.

<sup>60</sup>Liu and Wang, 'Encountering the Wider World Before the Transition to History'.

<sup>61</sup>Chen, 'Ancient Iron Technology of Taiwan'; 宋昱潔 Yu-Jie Song, '龍門舊社遺址出土鐵渣與製鐵遺留之研究' (The Study of the Slag and the Remains of Iron Work of Longmen-Jioushe Site), (Master's thesis 臺灣大學 National Taiwan University, 2008).

<sup>62</sup>鄭玠甫 Chieh-Fu Cheng, '淇武蘭遺址與社內遺址出土玻璃珠的相關研究' (Studies of Glass Beads Excavated from Kivulan and Shenei Site, Taiwan) (Master's thesis 清華大學 National Tsing Hua University, 2007); 王淑津 Wang and 劉益昌 Liu, '十七世紀前後台灣煙草、煙斗與玻璃珠飾的輸入網絡：一個新的交換階段' (Import Networks of Tobacco); 劉益昌 Liu and 王淑津 Wang, '從玉器到玻璃、瑪瑙：臺灣史前裝飾器物的變遷' (From Jade to Glass).

<sup>63</sup>Hung and Chao, 'Taiwan's Early Metal Age and Southeast Asian Trading Systems'; 深山繪実梨 MIYAMA, '耳飾が語る金属器時代東南アジアの海域ネットワーク' (The Maritime Network in Southeast Asia Metal Age).



Indigenous tribes, highly valued glass and agate beads, and characteristics of craftsmanship. These archaeological studies permit us to contextualize the development of Taiwan and her adjacent regions' histories and societies.

The trade diaspora model discussed here may potentially be applied to other societies in the South China Sea region or even to western coastal MSEA. It can be used as a tool to explain the process by which exotic material culture and techniques might be introduced into different societies, in their turn resulting in (glocal) outputs that spread to other regions. This article is merely the opening endeavours of an author who wants to link his research on Taiwanese prehistory to the broader region. Needless to say, there are still many questions to be answered and issues to be explored.

**Acknowledgement.** I would like to thank Matthew Cobb for inviting me to be part of this issue and for his effort for managing the logistics. I also want to thank Yi-Chang Liu 劉益昌 from the Institute of Archaeology, National Cheng Kung University for allowing me to use the unpublished reports on the Blihun Hanben site. His rich archaeological knowledge and experiences about Taiwan and the adjacent regions cultivate me as an archaeologist. Emiri MIYAMA 深山絵実梨 generously shared both her wonderful work on Lingling-O and double-headed animal pendants made of Taiwanese nephrite and her archaeological knowledge of the South China Sea maritime regions. I am also deeply inspired by B er enice Bellina's Khao Sam Kaeo works on peninsular Thailand. Finally, I need to thank my dear cohort David Carlson and advisor Peter Lape, who provided me with academic advice and support, as well as guidance with English writing. Without the support from all of the above, this article would have been impossible.

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