

## Traditional Vietnam's Incorporation of External Cultural and Technical Contributions: Ambivalence and Ambiguity

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### Abstract

Focusing on the Vietnamese attitude towards cross-cultural borrowings and cultural adaptation, this paper argues that, in spite of the age-old Sino-Vietnamese cultural alignment, the Vietnamese governing class had always been favourable to multi-centred technological transfer, contending at the same time that their own court culture would be less innovative than the Chinese Confucian tradition. In particular, the adoption of Western military technology, military strategy, and ship-building techniques from the very beginning of European expansion in the region belies the long-standing claims that the Vietnamese bureaucracy was blinded by Confucian dogmas to the real potential of Western technology in state-building and national defence. In fact, expressing strong interests in and understandings of Western material life in the early nineteenth century even as the Western threat was looming, the Vietnamese leadership was far from being introverted and anti-modernist, contrarily to the common belief.

**Keywords:** artillery, firearms, Gia-Long, Minh-Mạng, shipbuilding, Thiệu-Trị, Tự-Đức, Vauban-type citadels

Appearing, in some aspects, to be part of a maritime region linked by waterborne traffic, all the while playing the role of a frontier between China and Southeast Asia, Vietnam has undoubtedly had a share in a common Southeast Asian culture. Linguistic borrowings, such as the use of the word "*cù-lao*" for island, a Vietnamization of the Malay term "*pulau*," imply that a certain amount of permeability to Southeast Asian cultural influence has always existed. The common Southeast Asian elements, nevertheless, do not generally outweigh the factors which linked Vietnam to China, and Chinese cultural models remained synonymous with "civilization," as Vietnamese literati never ceased to define Vietnamese culture so as to distinguish it clearly from that of their Southeast Asian neighbours, endeavouring persistently to increase popular awareness of Confucian norms and to deepen the association between Vietnamese ethnicity and Confucianism.

### Vietnam Seen as an Intermediary in Technology Transfers

This cultural alignment notwithstanding, Vietnamese scholars in the past tended to stress considerably the important role of their country as an intermediary in technology transfers

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between China and Southeast Asia. The diffusion of plants is a good example. The introduction of many species is clear in several sources. In his encyclopaedic work *Vân Đài Loại Ngữ* (Classified Topics from the Yun Library) composed in 1773, Lê Quý Đôn told his readers that, among diverse food crops, maize had been brought to Vietnam from China by Phùng Khắc Khoan when the latter was sent as an ambassador to Beijing in the sixteenth century [Lê Quý Đôn 1961: II, 178 ff]. One of the results of this trip was that, when this diplomat returned to his home province of Sơn-Tây, he introduced this new grain to farmers there. Soon thereafter, maize replaced rice throughout the area. However, Lê Quý Đôn stated categorically that the material produce of Vietnam was superior to China's in everything from flowers and fruits to vegetables. He traced Vietnam's sugar crop back to seventh-century south India and Vietnam's methods of boiling rice wine back to the medieval Thais; he stated that "people from Laos" had brought tobacco plants to Vietnam for the first time about 1660. Above all, he pointed out that three types of early ripening rice, known as "sixty days rice," "eighty days rice," and "hundred days rice," all originating in Champa, had been transmitted first to Vietnam and only later to China. As Alexander Woodside has suggested, by making the international spread of Cham rice in the eleventh century into a major theme for Vietnamese readers some seven centuries later, "Lê Quý Đôn was inviting them to reimagine the whole economic field of the South China sea away from China and in favour of Indochina" [Woodside 1997: 256–257]. It is evident that Lê Quý Đôn's aim was not only to shrink the importance of China, but also to make the data from regional agricultural growth impart a far more multi-dimensional consciousness of Vietnamese identity. As a matter of fact, other seventeenth or eighteenth-century botanical introductions received less attention from the governing elite. This was certainly the case for the green peas introduced by the Dutch (hence the name "Dutch beans" given by the Vietnamese); or the mangosteen-tree, imported into Cochinchina from the Sunda Islands by the French missionary Pierre Pigneaux [Malleret 1932]. Those omissions stemmed apparently from the nature of eighteenth-century text-base culture of the Vietnamese literati, who generally sought to interpret all change as emerging from long-standing cultural norms developed from the Confucian tradition.

For their part, the Chinese occasionally acknowledged the artfulness of Vietnamese craftsmen. Thus, in 1282 the Yuan emperor demanded that Vietnam send tribute consisting of skilful artisans, two individuals for each branch of crafts [Cu'ong M'uc 1998: I, 509]. The Chinese were also interested in Vietnamese skills in the manufacture of weapons. During the Ming occupation of Vietnam in 1407–24, the Chinese took Vietnamese weapon specialists back to China to fabricate firearms: the Ming chronicles reported that during their occupation of Vietnam the Chinese had acquired some artillery techniques from the Vietnamese, probably a reference to several types of fire lances which had initially been developed in Vietnam.<sup>1)</sup>

1) *Ming Shilu* (Xiao-zong), quoted by Wade [1994: I, 349]. Vietnamese historiography relates that Hồ Nguyên Trùng, one of Hồ Quý Ly's sons, received special treatment from the Ming emperor after he was brought to China as a prisoner, because he was well-versed in the production of firearms [Cu'ong M'uc 1998: I, 735].

Vietnamese builders had been also requisitioned in 1416 to take part in the construction of palaces in the Ming capital Yanjing [*ibid.*: I, 757].

The Vietnamese craftsmen's manual dexterity, skill and perseverance were favourable conditions for the development of technology. They managed to obtain important achievements through very simple means and extraordinary patience. Great adapters rather than creative artists, they were capable of imitating very closely the most curious things ever fabricated provided that they could have the same materials. In another book of his, *Phủ Biên Tạp Lục* (Frontier Chronicles, composed in 1776), the above mentioned eighteenth-century encyclopaedist Lê Quý Đôn spoke admiringly of the members of the family of an artisan of the Nguyễn lords who had been a student of the Dutch, Nguyễn Văn Tú, all capable of manufacturing very sophisticated cog-wheeled clocks and telescopes [Lê Quý Đôn 1977: I, 328–329].

But, regardless of their openness to outside sources of technological innovation and their inclination to judge technological borrowings by any criteria other than their perceived local practicality, the Vietnamese often sought also to instil a personal character in these foreign techniques. This tendency seemed to represent a special Vietnamese intellectual trait, insofar as the Sino-Vietnamese cultural alignment was concerned. In spite of their deep Sinicization, the Vietnamese retained indeed a sharp critical sense towards their Chinese initiators. In the domain of therapeutics for example, they did not accept all the Chinese theories or courses of treatment. They modified them considerably instead, taking into account local vegetal and mineral resources that they considered well adapted to the pathology of their people (hence the numerous treatises written on materials going into medicinal preparations).<sup>2)</sup> In so doing, they emphasized the antagonism between northern (*thuốc bắc*) and southern medicine (*thuốc nam*).<sup>3)</sup>

The fact is that, in traditional Vietnamese pre-mechanical technique, the individual factor, the part of the maker, was crucial. The causes of failure were poorly understood and unpredictable, since they could not be related to any scientific explanation or scientific concept. Under these conditions, it is easily conceivable that a technique could comprise, on the one hand, an objectively effective part, of empirical origin, and on the other, a magical part, in practice ineffectual, but to which the craftsman would sometimes attach very great importance, to the point of endowing the instruments of his activities with a soul. This gave rise to the belief holding weaponry to be invested with sacred energies that could be summoned in

2) The medicinal herbarium compiled in the fifteenth century by the historian Phan Phu Tiên, *Bản Thảo Thực Vật Toàn Yếu* (Materia Medica), was apparently the first of these Sino-Vietnamese treatises listing available medicinal stuffs. In the eighteenth century, appeared in 1717 the fundamental work *Nam Dược Thân Hiệu* (Southern Medicine of Divine Efficiency), whose author was the monk Tuệ Tĩnh, considered as the patron of medicine.

3) Michele Thompson has thoroughly analysed the differences between Chinese and Vietnamese traditional medical theory from the particular viewpoint of smallpox in her study [Thompson 1998]. For a general survey, see Dương Bá Bính [1951]; Huard & Durand [1953]; Nguyễn Trần Huân [1973]; “La médecine traditionnelle” [1977].

battle. Recognizing the spiritual nature of firearms as being in keeping with the perception of the inter-relationship between the material and spiritual spheres of life, the Vietnamese rulers followed the ritual exercised elsewhere in Southeast Asia of harnessing the spiritual powers of these weapons for the benefit of their kingdom. Hence the practice of accumulating large numbers of decorative and unusable guns, and the tendency to venerate certain cannons as potent genii. William Dampier, the English traveller who visited Hanoi toward the end of the seventeenth century, saw a cannon placed in front of the palace of the lord Trịnh Côn to serve as the supernatural protector of the kingdom. In 1826, the emperor Minh-Mạng had the temple of the Genii of Fire Guns built at Huế; on that occasion, he proclaimed a very revealing edict: “Cannons are of a vital importance in warfare, and their power arises from a terrible spirit. However, no cult has been rendered to it up to now. We therefore order relevant officials to choose a suitable place and to erect a temple where this spirit will be worshipped properly at willed times. We further deliver to this spirit the title of *Genius of the Fire Guns endowed with supernatural powers and full of majesty, who protects from far*” [Cadière 1992].

On the other hand, since a spiritual end was assigned to each achievement, military art was particularly closely linked to geomancy, be it fortifications, tactics or strategy, territorial conquests or pitched battles. The adoption later on in the early nineteenth century of Vauban-type plans for citadels would not preclude the combination of Western conceptions with those of geomancers, and the preservation of the old Chinese quadrangular or pentagonal earth ramparts.

As for the Vietnamese bureaucracy, generalist by tradition, it was considered to be based on the concept that the morally cultivated Confucian “superior man” was preferable as an official



**Fig. 1** Sacred Cannons, Symbolic Guardians of the Citadel at Huế

to the man who merely commanded technical or administrative expertise. His motives and manners would be irreproachable and he could thus provide an example of proper behaviour to subordinates and to the people. And yet, to repeat Alexander Woodside's expression, the Vietnamese scholar class needed a sort of epistemological sovereignty within the Vietnamese political system [Woodside 1995: 171]; therefore, they tended to defend their position not just by their claim to exemplify Confucian virtue, but by their practical all-knowingness, and all-knowingness in the matter of how to acquire empirical knowledge rather than purely moral knowledge. From that point of view, since travelling was deemed a way to increase knowledge, travelogues were regarded as a means of learning about oneself, about one's own country and about neighbouring nations. That was the reason for Lê Quý Đôn to write in the preface of his *Notes on Things Seen and Heard* (1777): "Wherever my steps brought me, I applied myself to investigating and inquiring, and whatever I saw or heard, I made notes and wrote short appreciations, then gave my notes to my page to put aside in my bag of documents" [Lê Quý Đôn 1977: II, 14]. And, bound to write detailed reports on what they saw and experienced, envoys sent abroad, especially in the first half of the nineteenth century, were understandably very keen on giving informative records of their missions.<sup>4)</sup>

### Ship and Gun Manufacture

Such a state of mind helps to explain the willingness in selecting new ideas from the outside world to adapt them within an accepted cultural framework. This is well illustrated in the effective response toward new technological advances, particularly in the field of the manufacture of ships and guns. The general conviction is that, if the Vietnamese were to be credited with independence of conception, inventiveness in research and the making of a model, those qualities could be found in their art of shipbuilding [Piétri 1949: 5]. As the Vietnamese coastline is one among those most swept by typhoons, a population of seafarers has naturally developed an acute sense of observation and a long experience of local waters. The originality of this population has been to combine harmoniously different influences, Indian, Indonesian, and Chinese, to manufacture craft often easier to manoeuvre than their models.<sup>5)</sup> Vietnamese boats had real nautical qualities, even if the practice of caulking and metallic joining was not applied to them. In particular, the traditional assemblage technique of the Vietnamese shipwrights, making use mostly of pegs of special wood that fastened the wooden or iron parts together without corroding them, was most ingenious. Foreign observers had been unanimous in appreciating the worth of Vietnamese boats and sailors, and their opinions were best summarized in the narrative of the envoy of the Governor General of India to Vietnam in the early nineteenth century, John Crawfurd: "... I know no people of the East so well fitted to

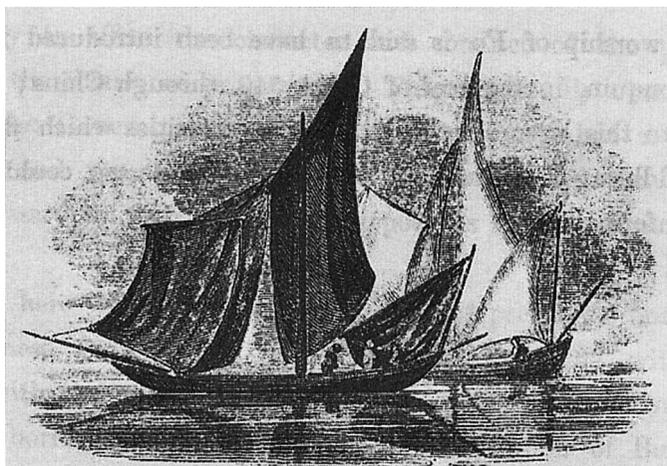
4) Those reports were officially known as "Daily Chronicles of the Progress of the Embassies" (*Sú' trình nhật ký*). As examples, see Phan Huy Chú [1994]; Chen Ching-ho [1994]; Salmon & Tạ Trọng Hiệp [1994]; Tạ Trọng Hiệp [1996]; Salmon [1999].

5) For the description of the different techniques of construction, see Paris [1942] and Piétri [1949].

make expert mariners from their hardiness, their activity and their prompt and cheerful habits of obedience. The Cochin Chinese, altho' not permitted to go abroad, conduct a considerable traffic by sea between one part of the Empire and another. In the course of this, as well as in the transporting of the tributes to the capital, they acquire a good deal of maritime experience. Their vessels, it has been remarked by good judges, are the best description of native craft anywhere to be seen in India, and fit to encounter without danger the worst weather" [Lamb 1970: 263–264].

After having been apprised of the advantages of Western ships, the Vietnamese would not hesitate to borrow construction details from the Europeans, and local shipwrights soon proved capable of building European-type ships. However, for a long time they would prefer to rely on their small, light and fast vessels that they adapted for trade or war [Nguyễn Việt *et al.* 1983]. Thus, in the beginning of the seventeenth century, the Trịnh lords in North Vietnam had 500 large junks each carrying at least three cannons, and those vessels were regarded by some missionaries as the equal of any European ship in Asian waters at that time.

Naturally, the unending state of civil wars in Vietnam encouraged the production and use of firearms on a relative large scale. During the whole seventeenth century, the Vietnamese sovereigns bought from the Dutch, the Portuguese and the Spaniards cannon, saltpetre, sulphur, lead and cannonballs, whereas, by recovering guns from Portuguese, Spanish and Dutch shipwrecks, and by employing European gunsmiths, the Vietnamese came to learn about the latest European developments, which they then applied to their own foundries. A Portuguese of mixed blood, João da Cruz, offered his services to the Nguyễn lords in South Vietnam and established a foundry in Huế to build guns in the European way [Cadière 1924; Le Breton 1934]. Two centuries later, the envoy of the Governor General of India to Huế in 1822, John Crawfurd, could still appraise the quality of some of the pieces cast by João da Cruz: "The



**Fig. 2** Vietnamese Boats as Seen by John Crawfurd  
Source: [Crawfurd 1828: 502]

art of casting good brass cannon, under the direction of Europeans, appears to have been long known in this part of the world, for among the cannon in the arsenal were a good number of very well founded ordnance, apparently of the size of long nine-pounders, as old as the years 1664 and 1665. These had an inscription in the Portuguese language, importing that they were cast in Cochin China, and bearing the dates in question, with the name of the artist. Although very inferior indeed to those recently cast under the direction of the French, still they were very good specimens of workmanship" [Crawford 1828: 253].

The Vietnamese quickly applied the new techniques to their own considerable skills in casting. In the late seventeenth century, they cast two bells of 230 kilograms for the Christian churches in Ayutthaya. When they asked the English to send a gun founder in 1678, it was not to learn about founding but to assess European techniques. They were able to recognize quality workmanship. In 1689, the Nguyễn lord refused to accept from the English 2 defective cannon; at another time only 7 of 20 cannon sent by the English were deemed to be of acceptable quality [Andaya 1992: 383]. The Vietnamese manufacturing processes must have improved with time, since a century later, the English East India Company's envoy to South Vietnam, Charles Chapman, attested the high standard of "Cochinchinese" gunsmiths under these terms: "Some soldiers were employed in shooting at a bull with long matchlocks which had swivels and three-legged stands to fire them on. The workmanship of these pieces was as good as any I have had seen of the kind in Hindostan. The Viceroy acquainted me they had been fabricated under his own inspection" [Lamb 1970: 112].

In the war between the Nguyễn and the Trịnh, the proficiency of the South Vietnamese in handling both cannon and harquebus was observed in 1631 by a Jesuit missionary: "The Cochin Chinese have now become so expert in the managing of them [artillery and harquebus] that they surpass our Europeans; for indeed they did little else every day but exercise themselves in shooting at a mark. They are so good they could hit with the artillery better than others would with a harquebus. And with harquebus, too, they are good. They go daily to the fields to practise" [Boxer 1965: 166]. For the field artillery the South Vietnamese relied on small cannon which could be borne on the backs of the soldiers and fire a four-ounce (112-gram) shot. But the Trịnh lord in North Vietnam also kept ready a force 70,000 or 80,000 men, armed with swords or thick, heavy matchlocks with barrels of 1 to 1.2 metres in length. Those men were considered among the quickest of any nation in loading and firing arms. The armoury of the Trịnh lord in the seventeenth century contained some 50 to 60 iron big guns from falcons to demi-culverins, together with 2 or 3 whole culverins or demi-cannon and some iron mortars. Around the Nguyễn court in the south were some 1,200 bronze cannon of different calibres. Some bore the Spanish or the Portuguese coat of arms, while others — most likely of local manufacture — were beautifully crafted in the form of dragons, sphinxes, and leopards [Burnay 1932].

By the middle of the eighteenth century, firearms had become a permanent part of Vietnamese warfare. When the Tây Sơn forces routed the Chinese army sent in aid of the Lê emperor in 1789, their leader Nguyễn Huệ is described as entering Thăng-Long (Hanoi) with

“his armour black from the smoke of gunpowder” [Maybon 1919: 298]. Mines also killed many fleeing Chinese, a fact demonstrating Vietnamese familiarity with their use. Nguyễn Huệ paid much attention to the strengthening of the armed forces, equipping them with new weapons, including muskets, various types of cannon, flame-throwers and large warships capable of transporting many elephants, cannon or six to seven hundred troops. He apparently combined this with contempt for Western military technology. As he stated in one of the last of his proclamations: “You must not be so credulous as to believe in all the Westerners’ boasts. What are they worth? They all have blue eyes like those of snakes, and you must regard them as corpses washed ashore by the North Sea waves. There is nothing that you can tell me about their brass-clad ships and their balloons” [*Lịch Sử Việt Nam* 1971: 367].

This apparently disdainful declaration denoted in reality a certain resentment, not to say a feeling of powerlessness, at a time when Western intervention was beginning to be a decisive factor in the situation.<sup>6)</sup> By then, Southeast Asian gun founders were indeed at a considerable disadvantage in relation to European gun makers, whose technology had quickly surpassed all others. Because of the increasingly complex knowledge necessary to produce sophisticated arms, it was no longer feasible for local rulers to depend upon captured or even hired Europeans or foreign Asians, let alone expect them to reproduce guns of the same quality as those manufactured in Europe or in European foundries in Asia. By the eighteenth century the Europeans had established undisputable superiority in the production of great quantities of dependable cast-iron cannon and of the much lighter and more reliable flintlock muskets. So vast was the gap between the quality of handguns locally manufactured and those in Europe that one English observer in the early nineteenth century, John Crawfurd, remarked that the wheel locks and flintlocks were “a complex machinery far beyond [Southeast Asians’] skill” [Crawfurd 1820: I, 191]. While recognizing the skill of the Vietnamese in smelting and working the useful and precious metals, John Crawfurd had also to say that “they are ignorant of tempering iron and steel: they are quite incapable of manufacturing an useful gunlock; and therefore, with all their dexterity in imitation, they depend wholly upon European nations for a supply of fire-arms” [Crawfurd 1828: 483].

Where the absence of true expertise was sorely evident was in the production of gunpowder. The mixing of the gunpowder ingredients to the right proportion of charcoal, sulphur, and saltpetre had taken years of experimentation by the Chinese. Yet it was the Europeans who, after having adopted the successful formula, were able to adjust the nitrate content to provide the necessary explosive power for the various types of new and effective weaponry. The difficulty of obtaining consistent up-to-date knowledge drove Southeast Asian

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6) Indeed, when in 1778 Charles Chapman, the English East India Company’s envoy, was received near Qui-Nhơn by Nguyễn Huệ’s older brother, Nguyễn Nhạc, he was informed by the latter of “his desire of having some person sent to him capable of instructing his subjects in the military science” [Lamb 1970: 100]. However, Chapman said of Nguyễn Nhạc’s land force that it was “very inconsiderable and so deficient in the art military that I may safely aver a hundred disciplined men would rout his whole army. His marine force, consisting of a few galleys and three or four junks seized from the Chinese, is almost as despicable” [*ibid.*: 101–102].

rulers to abandon local production of both firearms and gunpowder in favour of relying increasingly on supplies provided by the Europeans [Andaya 1992: 387].

### The Nguyễn Dynasty's Ambivalent Attitude toward Foreign Borrowings

Under these conditions, Nguyễn Ánh, who vied with the Tây Sơn for supreme power, had over his adversaries the advantage of benefiting from European assistance. It is possible that he would have defeated his enemies without any French aid at all,<sup>7)</sup> but there can be no doubt that the team of French advisers assembled on his behalf by the missionary bishop Pierre Pigneaux was to a great extent responsible for his victory.<sup>8)</sup> In terms of money, men and materials the French role was small, but in terms of technical expertise it was highly significant. The military and naval experts brought by Pierre Pigneaux introduced indeed something of European organization and equipment to Nguyễn Ánh's army. The naval forces that swept the ships of the Tây Sơn from the seas were organized and trained by Frenchmen,<sup>9)</sup> while on land French officers set up the principles of fortification pioneered in France by Vauban.<sup>10)</sup> In any case, the modernist vision which enabled the future king Gia-Long of Vietnam and the founder of the new Nguyễn dynasty to apprehend fully the potentialities of Western technology was far from being inconsequential. Berry, a British tradesman present in Saigon in April 1799 while operating for the East India Company, remarked that: "[Nguyễn Ánh possessed] uncommon talents, and one principal tendency of his ambition is to naval science, as a proof of this he has been heard to say he would build ships of the line on the European plan. The king has got several Portuguese carpenters from Macao but is principal carpenter himself. He obtains much knowledge from the Encyclopaedia<sup>11)</sup> and frequently has required of the bishop translations of such parts of it as struck his attention, particularly those of naval architecture and fortification. His mode of building the three ships alluded to was by taking an old European ship to pieces and supplying the place of every part with new and the assistance of such observations as he himself made on the old during the dissection" [Nguyễn Thế Anh 1965: 1371].

7) Alexander Woodside, for one, considers that French aid did not constitute a decisive factor, as he asserts: "In fact, the importance of the role of the Chaigneaux and Oliviers and Behaines in Vietnamese history has been grossly exaggerated. . ." [Woodside 1971: 16–18].

8) See, for details, Mantiene [1999].

9) By 1801 Nguyễn Ánh's fleet was composed of 3 European vessels (the *Phoenix*, the *Eagle* and the *Flying Dragon*, under the command of French officers); 200 frigates of 16, 15, 20 and 22 guns; 100 large galleys of between 50 and 70 oars; 500 small galleys of 40–44 oars. The Hà-mật naval dockyard employed 4,000 workers and could build four-hundred-ton ships in ironwood on Occidental patterns [Huard & Durand 1954: 229].

10) For details, see Mantiene [1999: 126–162]. A number of surviving fortresses, like the great citadel at Thanh-Hóa, are witness to the achievements of Franco-Vietnamese military engineering in this period.

11) Berry probably meant the French *Encyclopédie* that appeared at Paris between 1751 and 1772 under the editorship of Denis Diderot, assisted by d'Alembert. This attested anyway to the fact that Western publications were referred to on a frequent basis.

John White of the United States Navy, who spent three months in Saigon in the last year of Gia-Long's reign (1819–20), confirmed the Vietnamese king's interest in Western things. White described the long shopping-list of Western goods which Gia-Long's lieutenant, Lê Văn Duyệt, presented him: "A quantity of artillery; clothing for his troops; plates representing battles, naval and military; and landscapes illustrative of European scenery; treatises on European legislation; histories of Europe; fire and side arms of fine temper and exquisite workmanship; useful and ornamental work in glass; literary and scientific European works generally, etc. . . . A few days afterwards, the commissary came on board with official overtures from the king, accompanied with a large roll of papers containing mathematical drawings, very neatly executed, of cannon of various calibres and dimensions — none however heavier than five pounders; and a long list of the articles which he wished us to contract to furnish him the following year" [White 1823: 343–344].

But perhaps the appraisal made by John Crawfurd, who visited Vietnam in 1822, depicts most suitably Gia-Long's specific trait: "His great merit consisted in the good sense with which he submitted to, and profited by, the lessons and instructions of his European officers; and the tact and discrimination with which he availed himself of their skill and knowledge. Through their means he acquired an useful and even extraordinary acquaintance both with naval and military tactics, and the art of fortification; and thus he was enabled to organize a more regular and effective military power than probably was ever before formed in India, with such slender assistance from European civilization and science. But his talents were far better suited to reconquer a kingdom than to govern it" [Crawfurd 1828: 509].

His success in building a centralized structure and learning from the West notwithstanding, near the end of his reign Gia-Long seems to have been moving steadily towards the conservative frame of mind which rejected European ideas in favour of the traditional Confucian principles of government. This tendency was going to be reinforced by his successors. Historians have, as a rule, expressed harsh opinions about this attitude. David Marr, for one, qualifies the attention Gia-Long and his son Minh-Mạng devoted to the building of an important network of fortifications to serve as strong points for the army as pertaining to a "fortress mentality [which] had long-term implications: militarily it bred generations of Vietnamese generals who believed in static defence at a time when European gunnery technology was advancing by quantum degrees in terms of increased power, range, and mobility" [Marr 1971: 23]. He also adds: "Had [Gia-Long and his associates] failed to grasp the progressive nature of events and allowed Confucian concepts of historical permanence and intellectual superiority to blind them during their prolonged exposure to change? . . . Whatever the explanation, several decades later in the 1830s the situation was even more acute. Not only did technological and organizational advance not reach the troops in the field, but also in some cases eighteenth-century improvements previously introduced seem to have vanished without memory" [*ibid.*: 24].

Yet, in the light of the gradual loss of economic and military dominance in Southeast Asia to foreign groups, it was already becoming apparent that the traditional response toward new technological advances, consisting of selecting outside ideas to adapt them to accepted practice,

was an inadequate formula in face of the threat from the Europeans. Foreign progress in ship-building and firearms production continued to be greatly admired, but the extent to which the new technology was adopted depended upon perceived needs. European-rigged armed vessels could only be purchased by the rulers, and invariably assisted them in strengthening their control. Gia-Long and Minh-Mạng had several such ships in their fleet in the early nineteenth century, some captained by Europeans. The Nguyễn chronicles list precisely the names of the ships purchased in the 1830s to be sent to the southern seas on trade and information missions (such as *Phân-bằng*/Spreading Eagle/, *Thuy-long*/Auspicious Dragon/, and *An-duong*/Ocean Pacifier/) [Nguyễn Thế Anh 1999]. In 1840, the Vietnamese court possessed three steamers, *Yên phi*/Secure Flyer/, *Vân phi*/Flying Cloud/, and *Vụ phi*/Flying Vapour/ [DNTL 1969: t. 22, 186]. Between 1865 and 1872, Tự-Đức had four new steamers bought from English, French and Prussian firms in Singapore, Saigon and Hong Kong, and equipped with foreign crews hired at high price, until Vietnamese sailors could assimilate perfectly the new technique of navigation [Nguyễn Thế Anh 1981: 117]. But the attempts of Vietnam, as well as those of Siam and Burma in the same period, to acquire steamers, though central to the military survival of these kingdoms, were contested by the European powers whose key strategic advantage this challenged. Since the Europeans were unwilling to provide the Southeast Asians with the means to defy them, this resulted in the beginning of a European technological monopoly in arms production and supply in the region. For Vietnam itself, the sources of strength that had helped the new dynasty at the end of the eighteenth century, when the European powers were distracted and divided by war, seemed to have become unmanageable in the nineteenth.

In any case, Vietnam's elite certainly did not come to view the Western threat from an entirely doctrinaire, ideologically conservative posture. They were in fact much interested in Western technology and the use that could be made of it. The position of the Vietnamese court on Western civilization was not at all tinged with static fanaticism, contrary to what French missionaries alleged in their writings. Having an imaginative mind and a keen interest in technology, Minh-Mạng often indicated his penchant for scientific experimentation (he had for instance a Western steamship bought and copied in a Huế factory by his artisans in 1838 [DNTL 1968: t. 20, 252]<sup>12)</sup>) and was indisputably an admirer and user of Western products. By 1836 Vietnam was purchasing English gunpowder, which court officials declared was the best in the world [Woodside 1971: 283]. Very much troubled about the inadequacies of the examination system for preparing the Vietnamese elite to deal with the contemporary world, the emperor paid particular attention to maritime affairs and began in 1823 to send regular missions to different areas of the southern seas to gather information on foreign countries and to train

12) That enterprise was a failure, the engine blowing up on the first trial: the main cause was that, according to Alexander Woodside, "the Vietnamese court attempted to copy the intrinsic features of the steamship without mastering the internal principles of the steam engine" [Woodside 1987: 133]. Another try in 1840, however, seems to have been more successful, with the construction of a steamship of average size (its measurements are precisely enumerated in the Nguyễn chronicles, see Nguyễn Thế Anh [1970: 187]).

Vietnamese crews on techniques of navigation [Chen Ching-ho 1994: 105]. Naval warfare, he told his high officials at length in 1838, had not been properly studied or written about: “I indeed have a cursory knowledge of one or two of the tactics of the Western countries, but I want you all to examine them and become familiar with them . . . and make your findings and calculations into books. We will order soldiers to study them day and night” [DNTL 1968: t. 20, 126–128]. Minh-Mạng’s successor, Thiệu-Trị, issued in 1843 Western muskets to his ministers, ordering them to learn how to use them [DNTL 1971: t. 24, 410].

Alexander Woodside has demonstrated that, compared to the Chinese court during the 1830s, the Vietnamese court was much more informed about Western culture. It was also more receptive, through the Vietnamese explicit tradition of cultural borrowing, to the idea of adopting what made up its technical and military strength, especially in those realms of Vietnamese life where there were no well-defined Confucian prototypes of behaviour to resist Western ideas and deform them. But Western machines could not be copied as easily as Chinese administrative institutions, and the traditional forms of institutional acculturation and transposition encouraged by the relations of the Vietnamese with the Chinese were, in the end, bad precedents that blocked true modernization. Apparently, it never dawned on the Vietnamese that it would be necessary to study the principles, theories, or culture on which Western science was based, instead of imitating the products of Western science in the same mechanical manner as their imitation of the Chinese institutions [Woodside 1987: 133].

The basic problem, however, for the Nguyễn regime was not merely the acquisition of Western arms or the borrowing of Western technology, but the reconstruction of social and political order on lines that would enable it to resist the pressures of Western imperialism — a problem by its nature insoluble. Although the court of Huế was conscious of the need of innovation of its military institutions, it was also conscious of the concomitant need to reinforce the control of its civil bureaucracy over the society. Thus, the emperor Tự-Đức, reputed to be so inflexible in his Confucianism that any thought of Western-influenced reforms would be anathema to him, manifested a lively interest in and familiarity with Western science and technology. He read Chinese-language newspapers from Hong Kong and occasionally organized discussions among the court notables of articles on technical and commercial subjects [DNTL 1976: t. 34, 165–167]. But he often used his own knowledge of Western learning to refute those who urged its widespread adoption, because he believed that the French menace could only be defeated through a renewal of dedication to the Confucian political canons on which Vietnamese social and political institutions were based. From this perspective, even successful resistance to French military aggression and political domination at the price of adopting Western ways would not solve the fundamental problem of protecting Vietnam’s classical civilization from the subversive potential of Western culture.

The court of Huế was not unaware of the actual international situation. Emissaries dispatched abroad in the 1830s, such as Lý Văn Phục and Phan Huy Chú, had clearly reported on the rivalries that opposed the European powers to each other, and had also noted the superiority of Western techniques over those of the Chinese world. Nevertheless, they did not seem to

have been really shaken deep down inside themselves, even though for his part Lý Văn Phú'c, showing his admiration for British technology, was much impressed by the novelties that he witnessed [Salmon 1999: 402]. On the contrary, Cao Bá Quát, sent on a mission to Batavia in 1844, was led to question his own world vision. Having discovered the formidable western threat that was slowly swooping on the different countries of Asia, he could not figure out how this could be averted. Further, his travel made him aware of the limits of his knowledge, which he perceived as extremely restricted faced with the immensity of the universe. Apparently questioning the very foundations of the scholars' knowledge, he had come to hold that the observation of the present world was as important as the study of old books: it allowed him to realize the limits of the Sinicized world and the parallel existence of a foreign world which represented an increasing threat with each passing day. Cao Bá Quát seems to have been perfectly aware of the dangers that his own country was running [Salmon & Tạ Trọng Hiệp 1994: 141].

By and large, the Vietnamese elite had no reason yet for losing faith in the institutions deriving from the only socio-political system they had known up to then. They were confident that a readjustment of Confucian values and institutions would allow Vietnamese leaders to achieve an internal transformation of society and an improvement of the economic and social order. Moreover, the reassertion of Vietnam's own Confucian identity was deemed crucial for the ideological cohesion of the ruling class. Nonetheless, the sharper awareness of the scientific and technical advance of the West led some people to think of the possibility of adopting practical innovations, whereas the essential values of Confucian culture should be kept intact. This was the implementation of the couple "substance/function" (*thể/dụng* or *ti/yong* in Chinese) distinguished by Zhu Xi: the ethical foundation of society constituted by Confucian teaching would be preserved as the substance, while elements of Western culture could be introduced for their usefulness, for their practical application. Therefore, there were at this period "Westernizers" among the ruling class who advocated the kinds of reform that seemed on the evidence available, the most likely to lead to a strengthening of the system. Evolution toward a more technical education was central to the concerns of these reformers. In 1856, Phạm Phú Thứ submitted to the emperor a memoir in order to modernize national economy and national defence by means of steamboat building. His embassy to France in 1863–64 gave him the opportunity to perceive what constituted Europe's strength and to express his ideas about what should be borrowed to improve the country, renewing those opinions that he already defended in 1856. For Phạm Phú Thứ, the secret of modernization lay in a combination of Confucian culture and Western technology [Tạ Trọng Hiệp 1996: 359]. Another upholder of change, Nguyễn Trường Tộ, doggedly advocated a comprehensive programme of reforms, including the study of the exact sciences; the publication of newspapers; the translation of European books and the sending of students to Europe for education; the recruitment of European technical advisers to help in the modernization of agriculture, the development of mining and industry (including an armament industry), the construction of strategic roads and the reorganization of the army [McLeod 1994; Boudarel 1997].

It is possible that in conditions less externally menacing this profusion of proposals for reform could have generated more dynamic changes at this time. Instead, the increasing threat from France induced a new kind of paralysis, which prevented the Nguyễn court from appreciating the extent of institutional transformation required to implant new cultural and technological borrowings to the traditional patterns of imperial statecraft, in order to deflect France's imperialist intentions. This turned out finally to be fatal for the Nguyễn dynasty.

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