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**“Kiss my Foot,’ said the King:
Diplomacy, Firearms, and the Military Revolution in India, 1520”**

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Global Society & Justice Workshop, 14 April 2008

INTRODUCTION

Today I wish to illustrate how the story of a battle that took place nearly five centuries ago in the middle of India – a battle virtually unknown in the historical literature – can illustrate a number of themes, spanning a number of levels. At the most general level, I will talk about a world-wide phenomenon, namely, the so-called “military revolution” that began in several parts of the planet in the 14th century, gathered force in the 15th century, and then took off with stunning speed in the early 16th century. This was when the technology of gunpowder, used both for cannon and for matchlock firearms, diffused all over the planet. But everywhere gunpowder went, it had different consequences, depending on what those who first possessed this seemingly invincible technology did with it

At a second, a somewhat lower level, I wish to use this battle to explore a misconception found in many histories of India, namely, that for hundreds of years, the country had been sunk in perpetual conflict between Hindus and Muslims. It was Samuel Huntington who, in his controversial book *The Clash of Civilizations* drew severe lines between “civilizations” across the planet. (*) Here, for example, is his map of the contemporary world, which severely demarcates a “Hindu” India, represented in orange, from the “Islamic” world to its immediate west, represented by green. One would never imagine, judging from this map, that India today is home to more Muslims than inhabit the entire Middle East! Such are the dangerous distortions of Huntington’s

book, which has caused incalculable damage in the 12 years since its publication in 1996. But Huntington is not alone. For years historians of premodern India have drawn a sort of “Maginot Line” across India’s mid-section – along the Krishna River, to be exact – with the area north of that line designated “Muslim”, and those south of it “Hindu”. The battle I will discuss today will throw light directly on this matter, and also on the follies of carving up the world along civilizational lines, in the manner of Mr. Huntington.

The third level of this talk explores the lives of ordinary people, with a view to showing how this battle brought out characteristics that are common to all humans, everywhere -- such as greed, revenge, triumphalism, weakness to liquor, compassion, and more. (*) They are all exhibited in the three central actors who figure in our story, namely, Krishna Raya, the king of the great kingdom of Vijayanagara, Sultan Isma`il Adil Khan, the sultan of Vijayanagara’s arch rival to the north, Bijapur, and Cristovao de Figueiredo, a swash-buckling captain of the Portuguese infantry who lent his military services to one of the two players in this battle. (**)

In the battle I am about to describe, I hope to bring out all three registers. There’s the story of India’s military revolution; there’s the story of Hindu-Muslim encounter and confrontation; and the all-too human story of how individual players behave in moments of stress. If there’s a fourth register to this talk, it would be the level of how we historians evaluate evidence, especially when – as is all too often the case – the available evidence is contradictory, tendentious, or incomplete. For doing *any* sort of history is always like doing a jig-saw puzzle in which most of the pieces are missing, and those that you do have are of confusing shapes and indistinct colors.

BACKGROUND

(*) First, we must turn to the map. The battle I describe, the Battle of Raichur, was waged in the summer of 1520 for control of the strategic city of Raichur. This fortified center is located in the middle of a rich sliver of land between two rivers that run through the heart of the Deccan Plateau. (*) For several centuries before this battle took place, sultans of the Bahmani kingdom to the north of Raichur fought with rulers of the Vijayanagara kingdom to the south over control of this agricultural fertile tract, with the town of Raichur located right in its center. (*)

Actually, this region had been a contested zone even before the Bahmani and Vijayanagara states came into being. In the late 13th century, a regional Hindu king had seized this tract of land and built the imposing complex of walls and gates that encircle the core of Raichur city. (*) With their massive slabs of finely dressed granite, these walls were, in their own day, considered an engineering marvel. (*) Even today, residents of Raichur imagine them to have been built by gods, not men.

However, in the early 14th century, rulers of a mighty north Indian empire, the Delhi Sultanate, invaded the Deccan plateau, swept away all the states of the region, and systematically colonized the northern Deccan with settlers transplanted from north India. At the same time, the invaders subcontracted governance of the central and southern Deccan, including the Raichur region, to local client-chiefs. But in 1327, one of these client-chiefs threw off allegiance to his northern overlords and carved out a new state that sprawled over the entire southern half of the Indian peninsula. (*) This was the kingdom of Vijayanagara, a powerful kingdom governed from the sprawling metropolis of the same name, located just south of the Raichur plain. Several dynasties of kings ruled from this splendid city, which by the 1400s was described by Europeans

as larger than either Rome or Lisbon. Here we see some of the surviving monuments of this great metropolis, a stunning site even today in its ruined state. (*****)

But Raichur did not for long remain in southerners' hands. In the confusion that surrounded the expulsion of imperial rule of the Delhi Sultanate in 1347, the Raichur plain fell to the other power that simultaneously arose on the ashes of Delhi's failed attempt to colonize the Deccan. (*) This was the Bahmani sultanate, which ruled from a series of capitals north of Vijayanagara. For 150 years, rulers of Vijayanagara and the Bahmani sultanate fought bitterly for control of the agriculturally rich Raichur plain. But for most of this period the plain remained under northern control. During this period, in 1469, Bahmani engineers, capitalizing on technology imported from north India and the Middle East, built an entirely new wall (***) Here one sees the city's new, outer wall, which crawled up the hill leading to the hill-top citadel. (*) And here is a view of modern Raichur from atop the citadel.

But shortly after completing these fortifications, dissensions within the Bahmani ruling class led to factional struggles, and by the year 1500 the kingdom had fragmented into five new successor states. (*) The one that inherited control over Raichur was the kingdom of Bijapur, which also inherited control of the western half of the plateau, including the strategic seaport of Goa.

But by the opening of the 16th century, the balance of power between the northern and southern Deccan was swinging back to the south, meaning the great, sprawling state of Vijayanagara. For one thing, the fragmenting of the old Bahmani sultanate into five successor states naturally meant that Bijapur, which inherited control over the Raichur plain, would be weaker than its larger, parent state. For another, in 1509 the man who ascended the Vijayanagara throne was Krishna Raya, one of the most famous conquerors in Indian history. Under him,

Vijayanagara annexed the entire peninsula down to the southern cape, thereby amassing immense manpower and capital resources. And third, it was in Krishna Raya's twenty-year reign that Europeans sailed to India's shores for the first time since the fall of the Roman Empire. These were Portuguese mariners who, following Vasco da Gama's voyage from Lisbon to India in 1498, built up a powerful commercial and military presence on coastal India. Moreover, having driven Muslims out of Europe, these conquistadors were especially hostile to Muslims in Asia. And since Bijapur was ruled by a Muslim sultan, Portuguese strategists naturally made overtures to Krishna Raya, the Hindu ruler of Vijayanagara.

The Portuguese possessed several assets in their drive for political and commercial dominance along coastal India. First, by achieving control over the Arabian Sea, which connects the Middle East with India, the Portuguese monopolized control over the valuable trade in war-horses, which Indian rulers had imported from Arabia and Iran for centuries. Second, the Portuguese introduced new kinds of gunpowder technology to the Deccan plateau. To be sure, gunpowder was known and used in India before the advent of the Portuguese. In the 1470s, Bahmani engineers used explosive mines in their wars of Vijayanagara. And in the early 1500s, Muslim engineers in the Deccan were using artillery and matchlocks in their campaigns. A major infusion of gunpowder technology reached western India in the years after 1508, when Ottoman Turks sailed into the Arabian Sea to engage Portuguese warships off the Indian coast. Following that engagement, some Turkish gunsmiths stayed behind and took up service with the sultanate of Bijapur, working in the Goa arsenal. This would explain why, when the Portuguese attacked and conquered the seaport of Goa in 1510, the victors found that the Bijapuri defenders had already established their own munitions plant in the city.

In fact, Afonso de Albuquerque, the mastermind of Portuguese operations in Asia, was so impressed with Goa's gun-making tradition that he sent the king of Portugal samples of the heavy cannon used by the Muslims of that city, together with the moulds from which they had been cast. In 1513 he wrote that Bijapur's gunsmiths could turn out iron cannon and matchlocks of a higher quality than anything produced in Germany, which was then considered the source of Europe's finest guns. What is more, Albuquerque persuaded Bijapur's gunsmiths to stay on in Goa and work for the Portuguese. In this way, a tradition of German and Bohemian gun making that the Portuguese had brought to India merged with Turkish gun-making traditions that were already present in Goa. The hybridized product of these has been called an "Indo-Portuguese" tradition of matchlocks, which were superior to anything then produced elsewhere in India. (*) This chart illustrates the evolution of these weapons. (*) And these contemporary images – depicting Portuguese soldiers in West Africa and in India – illustrate the Indo-Portuguese lock mechanism that had evolved in Portuguese Goa. (**) By the mid-1500s they would spread into the interior of the Deccan plateau, and then throughout Portuguese Asia as far as Japan.

Nonetheless, despite this rapid diffusion of gunpowder technology in India and the world, before 1520, we hear of no major battles in which firearms were used in the Deccan, or for that matter anywhere else in India. All this would change with the Battle for Raichur.

THE BATTLE

We now come to the battle itself, waged between Krishna Raya of Vijayanagara and Isma`il Adil Khan of Bijapur. Two sources can guide us here. (*) One is Muhammad Qasim Firishta, who in 1611 dedicated his monumental Persian-language history, *Tarikh-i Firishta*, to Isma`il's great grandson as ruler of Bijapur. The other is the Portuguese chronicler Fernao Nunes,

who around 1531 wrote a history of Vijayanagara's kings based on local traditions and his own interactions with Indians. Nunes, who was a horse trader who resided in metropolitan Vijayanagara for three years, might have lived in coastal India since 1512, in which case he would have heard first-hand reports of the battle shortly after its conclusion. It is also possible that he recorded remembered traditions some eight years after the event, most likely from participants. Most intriguing is the possibility that he was an eye-witness to the battle, which is suggested by the sense of immediacy with which he described the battle.

Of these two sources, Firishta is the less trustworthy, not only because he was writing 90 years after the fact, but because he had to account for the crushing defeat of his patron's own great grandfather. For Isma`il Adil Khan not only lost the battle for Raichur, he lost it spectacular manner. So let's consider the two accounts in turn. According to Firishta, in the spring of 1520 Isma`il `Adil Khan took 7,000 cavalry down to the northern shore of the Krishna River in order to recover the fort of Raichur from Krishna Raya of Vijayanagara. On learning of this, the king of Vijayanagara brought up a much larger cavalry of 50,000 to the southern shores of the same river.

Here Firishta introduces the factor that doomed Isma`il's project to failure. While the sultan was resting in his tent after pitching camp, one of his courtiers proposed a drinking bout. The sultan responded enthusiastically and promptly got so thoroughly drunk that he decided to cross the river and attack his adversary at once. Although his officers pleaded for more time to build the necessary boats and rafts, Isma`il ignored the advice and, mounting his elephant, rode straight to the river and plunged into the water, ordering his officers and men to follow. But when he reached the river's southern shores, the sultan confronted Krishna Raya's host of cavalry. Finding himself trapped between the Vijayanagara army and the river, Isma`il and his forces retreated in panic and disorder. And when they tried to re-cross the river, virtually his entire army

was cut down by the arrows of Krishna Raya's pursuing forces. The sultan, who himself barely survived the debacle, sank into remorse for his rashness and swore off wine forever. Firishta thus framed his account as a morality play, the basic point being that the disaster had been the fault of the wine, or rather, of the sultan's weakness in succumbing to wine at an inappropriate time.

The account left by Nunes is far more detailed and, above all, more contemporary with the battle than is that of Firishta. According to Nunes, Krishna Raya entrusted one of his Muslim merchants with 40,000 gold coins to buy warhorses from the seaport of Goa, then under Portuguese control. But instead of doing that, the merchant absconded with the money to Bijapur. This so enraged Krishna Raya that he decided to use the incident as an excuse to invade the fortified city of Raichur, which he and his predecessors at Vijayanagara had long coveted. So in early 1520 the king moved north with an immense force of 27,000 cavalry and over a half million infantry. The bulk of the army consisted of archers, swordsmen, war elephants, and only "several" cannon. By contrast, Isma`il Adil Shah had fortified Raichur with 200 heavy cannon and many smaller cannon, positioning these artillery between the thirty bastions of the fort's outer wall.

Whereas the fort's defenders fired on Vijayanagara's forces with their cannon and matchlocks, the besiegers used no artillery against Raichur's walls. Instead, Krishna Raya ordered his commanders to offer their men monetary inducements to approach the walls directly and dismantle them with crowbars and pickaxes, paying them in sums proportionate to the size of the stones they dismantled. Of course, many were killed as they hacked away at the walls by hand. In this dreary manner, the siege dragged on for three months.

Then in early May, while the siege was still in progress, Krishna Raya learned that Isma`il `Adil Khan had marched down from Bijapur to relieve the embattled fort and was camped on the northern side of the Krishna river. Suspending the siege of Raichur, the king moved his army up

to the Krishna river to prevent the sultan's forces from entering the Raichur plain. The battle between the two armies began several hours after dawn on May 19. Having moved his forces to the southern side of the river, the sultan fired all his artillery at once, in one mighty salvo, directly into the massed Vijayanagara cavalry. While the front lines buckled, Krishna Raya's remaining divisions regrouped and managed to drive the sultan's forces back towards, and finally into, the river. Like Firishta, Nunes reports the horrific slaughter that then took place by the river, in the midst of which Isma`il jumped on his elephant and barely escaped with this life.

(*) It is clear that Isma`il had brought considerable ordnance from Bijapur down to the battlefield, for Nunes reports that his retreating army had to abandon 400 heavy cannon and 500 small cannon, in addition to 4,000 warhorses and 100 elephants. In fact, writes Nunes, Isma`il boldly crossed the Krishna River not because he was drunk, as Firishta would later write, but because he was confident that the great strength of his artillery would give him a quick victory over his adversary's cavalry and infantry. And in fact, the sultan's opening barrage did give him temporary field advantage. On the other hand, Krishna Raya, who crushed his opponent in that engagement, used no artillery or matchlocks. Similarly, in his siege of Raichur, which was heavily defended with cannon, the king of Vijayanagara used no cannon to bombard the fort's walls. Rather, he paid his men to claw it down with crowbars and pickaxes.

So when Krishna Raya returned to Raichur, he resumed this same, laborious method of besieging the fort. Except this time a new factor enters the stage. (*) This is the appearance of a group of twenty Portuguese mercenaries who, led by one Cristovao de Figueiredo, had joined Krishna Raya's forces as matchlockmen. Noticing how fearlessly Raichur's defenders roamed about the fort's walls, fully exposed to the view of the besiegers, de Figueiredo and his men began picking them off with their matchlocks, doubtless the Indo-Portuguese guns recently manufactured

in nearby Goa.. Significantly, Nunes reports that up to that point the defenders had *never* seen men killed with firearms. This is dramatic evidence of the earliest appearance of gunpowder in the Indian interior.

A turning point in the siege came on June 14, when the governor of the city, seeking a better view of exactly where the Portuguese snipers were positioned, unwisely leaned out in front of one of the battlements and was instantly killed by a matchlock shot that struck his forehead. This snapped the morale of Raichur's defenders, who promptly abandoned the wall. The next day the fort's defenders opened the city gate and filed out, beginning for mercy. And the following day, June 16, Krishna Raya rode into the city and spoke to the gathered townspeople, generously assuring the city's leaders that their property would be respected. He even gave them the option of leaving the city with their movable property, if they so wished. Thus ended the battle's military phase.

POST-CONFLICT DIPLOMACY

Now we come to the post-conflict phase of this battle. Here we witness an extraordinary round of diplomacy in which the Isma`il Adil Khan and Krishna Raya engaged in a sort of choreographed ballet in which their human side comes through with vivid clarity. Upon returning from Raichur to Vijayanagara, Krishna Raya devoted himself to several weeks of non-stop festivities to celebrate his crushing defeat of Isma`il Adil Khan. (***) When this was over, an ambassador from the sultan's court arrived at his court to negotiate a final settlement between the two kings. (*) Krishna Raya clearly relished this moment of triumph. First, he kept the ambassador waiting for a full month before admitting him for private audience. When he finally got his audience with the king, the ambassador conveyed to the king an extraordinary request from Isma`il Adil Khan, namely, that the sultan would remain the king's enduring and loyal friend if

only Krishna Raya would restore to Isma`il the city of Raichur, together with all the artillery, tents, horses, and elephants that the sultan had lost in the battle.

Considering that the sultan had been thoroughly defeated both on the battlefield and at Raichur fort, this was a stunning request, which took a lot of chutzpah to make. Most diplomats would have been turned out of court for making such an outrageous request. But Krishna Raya, basking in his triumph, decided to play the ambassador by agreeing to all the requests of his defeated adversary. Indeed, he went one more. He even offered to return to the sultan his highest-ranking officer, Salabat Khan, who had been captured in the debacle by the Krishna River and was now in languishing in the Vijayanagara jail. But there was one catch. To close the deal, Isma`il Adil Khan would first have to come down to Vijayanagara and kiss the king's foot. When this proposal was conveyed to the sultan, Isma`il replied through his ambassador that he was "of full mind joyfully to do that which the King wished." Regrettably, though, it was not possible for him legally to enter another king's sovereign territory. Therefore, he would not be able to kiss the king's foot.

On hearing this, Krishna Raya graciously offered to accommodate the sultan's concerns by meeting him at their common border near the fort of Mudgal, located midway between Bijapur and Vijayanagara. (*) There, on the border, the sultan could kiss the king's foot. One can even imagine Krishna Raya dangling his foot over the border. But this time, the king didn't wait for the sultan's reply. In fact, he made immediate preparations to proceed straight to the border town of Mudgal. Accompanying him north was a formidable army, doubtless intended to focus the mind of the sultan. But Isma`il, who had no intention of journeying to Mudgal or of ever enduring the humiliation of kissing the king's foot, stalled and prevaricated while his messengers notified

Krishna Raya that the sultan was at that very moment on his way and would reach Mudgal very soon.

However, when it became clear that Isma`il was not going to present himself at the border, Krishna Raya opted for an alternative course of action, namely, of bringing his foot to the sultan, so that the latter could kiss it in his own domain – indeed, in his own palace – without having to travel anywhere. So the king and his army entered the sultan’s territory, moving all the way up to the capital city, Bijapur city, which the sultan prudently vacated before the king’s arrival. With Isma`il absent, Krishna Raya’s men proceeded to damage several of the city’s prominent houses, on the grounds that they needed firewood. When Isma`il protested, through envoys, Krishna Raya replied that he had been unable to restrain his men from their destructive activities. Eventually the king, satisfied that he had humiliated his adversary sufficiently, left Bijapur and returned to his own capital of Vijayanagara.

CONCLUSION

What should we make of this battle and its dramatic diplomatic aftermath? I think we can look at it from three perspectives. (*) At the personal level, we have this extraordinary power play between the two major leaders. This is a very human drama in which arrogance, coercion, loss of face, and humiliation are all central. At the ideological level, we have the old question of Hindu-Muslim relations, and what this battle might tell us about those relations. Here we must address the old Orientalist stereotype of precolonial India as a place sunk in perpetual, communal conflict between Hinduism and Islam. And at the level of world history, we have the diffusion of gunpowder technology and the important question of how different societies around the world responded to the advent of this new technology.

Taking first the personal level of the conflict, one must first note that the story of Krishna Raya's overbearing behavior in the aftermath of the battle stands at odds with his image in modern scholarship, which tends to revere him, through a rose-tinted lens, as an ideal Indian monarch – heroic, virtuous, pious, and just. At least one modern historian has rejected outright the possibility that, notwithstanding the testimony of Nunes, a man as “noblehearted” as Krishna Raya could have demanded that an adversary kiss his foot. But the reporter of this episode, the Portuguese horse-trader Nunes, was an outsider with no particular stake in either side of the conflict. Nunes is not known to have met the king himself, although as a horse merchant living in the metropolitan capital for three years, he would certainly have been in touch with the kingdom's commercial agents. My own view is that Nunes's account of the foot episode is entirely factual. Moreover, it serves to humanize Krishna Raya, and that as such, it can provide us with a much-needed corrective to the king's idealized, cardboard cut-out image that is found in most textbooks.

But there is a more serious side to the story of the king's foot. For Krishna Raya, during his campaign against the sultan of Bijapur, had in his service a man who would later display the same high-handed style of diplomacy, which in his case led to the destruction of the metropolitan Vijayanagara and the collapse of the state. This was Rama Raya, an officer who had joined Krishna Raya's service five years before the Raichur battle, and a man who so impressed Krishna Raya that the king gave him his own daughter in marriage. After the king's death in 1529, Rama Raya steadily rose in power, in 1542 becoming Vijayanagara's supreme autocrat, even if not its legal king. For several decades Rama Raya intervened in conflicts among the sultanates to the north. (*) But his manipulative and haughty manner finally induced those same sultanates, in 1565, to combine forces and crush him and his army at the Battle of Talikota. Significantly, the cause of that battle lay in an act that, in its brazen audacity, precisely echoed that of Krishna Raya

and his foot. In late 1561, Rama Raya demanded that if his current adversary would like to enjoy lasting peace with Vijayanagara, he must first come and eat betel nut from his hand – in the same way that your own pet dog might take kibble from your hand. Unlike Sultan Isma`il of Bijapur, who preferred to abandon capital than to kiss Krishna Raya's foot, Rama Raya's opponent succumbed to the humiliating demand imposed him by Rama Raya, and ate betel nut from his hand. But shortly afterward, that same adversary mobilized the other sultans of the Deccan to combine forces and wage a campaign in which Rama Raya was killed, his army destroyed, and Vijayanagara totally demolished. This was the famous Battle of Talikota, which took place in 1565. I very strongly suspect that Rama Raya's crude technique of humbling his northern adversaries was something he had picked up by observing the overbearing diplomacy of his own father-in-law, Krishna Raya.

The second level of analyzing these events is that of Hindu-Muslim relations. One of the most enduring stereotypes of precolonial India – reinforced by centuries of British history-writing – was that before Britain brought its so-called “rational” rule and “Pax Britannica” to India, the region had been consumed by perpetual Hindu-Muslim conflict. The image of destructive Muslim rulers violating Hindu sacred space by demolishing temples is deeply etched in the collective consciousness of millions of Hindus today, thanks in large part to British historiography. Although the Battle of Raichur is virtually unknown in Indian history, the Battle of Talikota has in conventional historiography swollen to a titanic confrontation between Muslim and Hindu. Moreover, in this historiography the defeat of Rama Raya at Talikota led not only to the destruction of his kingdom, but to the snuffing out of India's last independent Hindu ruler for over a century.

However, if I am correct in my interpretation of the facts on the ground, it would seem that the critical factor that precipitated the Battle of Talikota was not endemic Hindu-Muslim hostility. Indeed, religion appears to have had nothing to do with that battle. What precipitated the Battle of Talikota was the Battle of Raichur – and more particularly, that legacy of overbearing arrogance that characterized that battle’s aftermath, as reflected in Krishna Raya’s insistence that the vanquished sultan kiss the foot of the victor. So I would argue that this was not religious conflict; but good old-fashioned, raw, power-politics.

Finally, we should see the battle through the lens of world history – and specifically, by asking how new technologies appear, how they move across space, and by what mechanisms they get assimilated in societies where they were previously unknown. On this point, the Battle of Raichur presents us with something of a paradox, for the side that relied the more extensively on the newly introduced technology of firearms not only lost, but lost decisively. In April 1526, just six years after the Battle for Raichur, one of India’s most famous battles was fought at Panipat, a thousand miles to the north. In that contest, the founder of the Mughal Empire, Babur, not only defeated the last ruler of the Delhi Sultanate, but also went on to establish the most glorious empire in India’s history, the Mughals. But here we encounter the old fallacy, *post hoc, ergo propter hoc* – that is, “after this, therefore because of this”. Because Babur used field cannon in that contest, and because his victory at Panipat was immediately followed by the establishment of the Mughal Empire, Panipat is sometimes seen as having inaugurated India’s “gunpowder age.”

But such logic will not hold. In fact, it is directly contradicted by the Battle for Raichur, where the side that had the gunpowder lost. What we can take from this history lesson, it seems to me, is the important lesson that states and societies assimilate new technologies by a gradual process of trial-and-error, in respect to which failures can be as important as successes. Herein

lies the importance of the Battle of Raichur from a world history perspective. Isma`il lost the battle by the river mainly because his gunners couldn't reload and fire successive rounds of shot quickly enough before being overwhelmed by Vijayanagara's swift and powerful cavalry. But the problem wasn't just technical; it was also tactical. The sultan's decision to fire all nine hundred of his cannon at once, in one mighty blast, allowed his surviving opponents the opportunity to counterattack and overwhelm his entire army. Much had to be learned about the manufacture and deployment of field cannon, and considerable practice would be necessary, before this new technology could become truly lethal to opponents who had mastered the tactics and techniques of cavalry warfare. From this standpoint, Isma`il's defeat represented a crucial and necessary step towards the full integration of field cannon into South Asian military traditions that theretofore had been dominated by the use of heavy cavalry.

Similar lessons had to be learned respecting the defensive use of cannon. Here, too, Isma`il was innovative, as he seems to have been the first ruler in India's interior to mount cannon on the battlements of forts. At the onset of the battle for Raichur, the fort had 200 heavy cannon mounted on the curtain wall between the fort's thirty bastions, on each of which was mounted a stone-hurling catapult, a much older device for defending forts. But Isma`il's deployment of his cannon in this manner proved disastrously ineffective during the siege. Being placed high on the curtain walls, in fixed positions, they could not fire down on the men dismantling the walls at their base. (**) Here are two miniature paintings from a bit later in north India, but it shows the sort of mounting technique that Isma`il used at Raichur. Isma`il's engineers had not yet learned how to mount and manoeuvre their cannon so as to screen the walls with flanking fire. Being fixed between the battlement's merlons instead of mounted on swivels, the cannon would have been useless against besiegers beneath them. (*) Here is a swivel-mounted cannon dating to several

decades later. So at Raichur fort, just as by the Krishna River, the very novelty of cannon technology proved the users' undoing.

What, then, was the effect of the battle on military technology at Vijayanagara, the side that won the Battle for Raichur? For Krishna Raya, the victories at Raichur confirmed the value of heavy cavalry on the field, and also of infantry armed with nothing but pickaxes during the siege of the fort. The king of Vijayanagara could hardly be faulted for not seeing cannon warfare as the wave of the future. Indeed, clear down to the final destruction of the kingdom in 1565, the walls of Vijayanagara itself, together with all its other forts in the southern Deccan, remained without bastions and without gun-mounts for cannon. (*) By contrast, Isma'il's successors at Bijapur, although they had lost the battle for Raichur, just kept on building elaborate battlements and experimenting with different ways of mounting cannon – first on the curtain walls, as they had did to disastrous effect at Raichur, and finally on swivel-mounts placed on the bastions themselves, replacing the old stone-hurling catapult. Here we see the citadel of Bijapur, complete with its moat and projecting bastions.

But if Krishna Raya and his successors at Vijayanagara failed to integrate cannon into their military system, they were clearly impressed by the matchlocks used by Cristovao de Figueiredo and his fellow Portuguese mercenaries at Raichur. (*) As Nunes noted, no Muslims at Raichur had ever been killed by such firearms until Krishna Raya's siege of the city. So it seems that the one area in which the new gunpowder technology made its mark at the Battle for Raichur was in the area of matchlock weapons -- not in that of field or fixed cannon. But who were these Portuguese mercenaries, and what weapons did they have? It seems certain that de Figueiredo and his men were carrying matchlocks manufactured in Goa, whose arsenal was then producing the co-called

“Indo-Portuguese” firearms that were superior to anything then available in India, or even in the world. In the early 16th century, Goa had one of the largest arsenals in the world. (**)

What is more, it was in Portuguese Goa that, during the early decades of the 16th c., Portuguese and Muslim gunsmiths exchanged designs and developed hybrid matchlocks that proved superior to guns made anywhere else in the world. The critical moment for this creative interaction seems to have been the ten years after 1510, when the Portuguese had captured Goa from the control of Bjiapur. During that decade, German techniques of gunsmithing that were brought to India by the Portuguese merged with techniques that had already been introduced by Turkish gunsmiths in the years just before 1510. These foreigners, identified in Persian sources with the surname Rumi, meaning Ottoman Turk, apparently went out to India when the Ottoman navy engaged the Portuguese navy off the Indian coast. But instead of returning home, these people took up service with the Bijapur sultanate and developed Goa, then under Bijapur’s control, as a major center for gun manufacturing.

So in effect, Goa emerged as a major nexus for the diffusion of gunpowder technology in the early 16th century, for it witnessed the creative fusion of two different traditions of gunsmithing – the Ottoman and the German. It is fascinating to reflect that in the 16th c. even while the Ottomans and Austrians were fighting one another in Europe, in Goa, far from the arena of the Austrian-Ottoman struggle, the gunsmithing traditions of those two antagonists would fuse to create something superior to either one of its predecessors.

In this way, then, a story that would otherwise seem particular to the history of India – the somewhat unremarkable story of two rival kings struggling over the control over a fort in the middle of India -- in fact merges with themes charged with enormous, world-wide significance.