

# Capitalism and Religion \*

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This paper is a product of a larger study I intend to summarize in a book, tentatively entitled *Purification and Progress: Religion in Economic Evolution*. Comments would be much appreciated. However please do not cite without the permission of the author.

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## **Abstract**

The essence of capitalism is credit creation driven by the mobility of capital; the essence of religion is purifying faith. Pervading the great religions of the Classical Era – Judaism, nascent Christianity, Greek philosophy, Buddhism, Confucianism, and Taoism - was contempt for the merchant, nascent capitalism's agent. To priests domestic merchants were corrupters, impure; to rulers foreign merchants – notably the nomadic peoples of the Central Asian Steppes adhering to the Central Asian Complex – were potential military enemies. Ultimately pummelled by invasions swirling out of Central Asian that terrified their elites, the great civilizations slipped into the Dark Ages, trade faltering. As the great civilizations recovered from the Dark Ages, the Central Asian Complex merged with Classical Era religions in two regions: Western Europe and Japan, spawning feudalism. Exploiting reviving opportunities for Eurasian wide trade, a new religion Islam emerged. It promoted capital mobility, putting down the roots of Merchant Capitalism. To stay competitive Islam's most fervent enemy, Western Europe Christendom, gradually copied and adopted Islam's innovations, notably the bill of exchange, laying the foundation for banks and stock markets. Drawing upon Greek learning as interpreted and updated by Islamic scholars, and exploiting domestic advances in manufacturing precision machinery, Western Europe slowly wedded Merchant Capitalism to a second form of capitalism, Technological Capitalism. Modern capitalism as we know it was born. All of this occurred in an era when religious faith was unshaken among the masses. However advances in Technological Capitalism after the mid-19<sup>th</sup> century increasingly undercut the hold religious faith had on the masses, ushering in a revival of the conflict between capitalism and religious fervor.

“Disillusioned words like bullets bark/As human gods aim for their mark/Make everything from toy guns that spark/To flesh-colored Christs that glow in the dark/It’s easy to see without looking too far/That not much is really sacred.” (It’s Alright, Ma (I’m Only Bleeding)” <sup>1</sup>

“You can’t take it with you and you know it’s too worthless to be sold/They tell you, ‘Time is money,’ as if your life was worth its weight in gold” (“When You Gonna Wake Up?”) <sup>2</sup>

“Jesus is calling, he’s coming back to gather up his jewels/Jesus is calling, he’s coming back to gather up his jewels/We living by the golden rule, whoever got the gold rules” (Gonna Change My Way of Thinking” Version 2) <sup>3</sup>

“You know, capitalism is above the law/It say, ‘It don’t count unless it sells’/When it costs too much to build it at home/You just build it cheaper someplace else” (“Union Sundown”) <sup>4</sup>

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In the first section I explain why the religions of the Classical Age were hostile to capitalism. <sup>5</sup>

## **I Distrusting Merchants, Classical Age Religions Constrain Violence**

### **I.A Priests and Warrior-Rulers**

This is how a story from the Brahmanas, a compendium of ancient Hindu scriptures - known as “King and the Priest in the Chariot” - goes: <sup>6</sup>

“Vrisha was the royal chaplain ... of Triyaruna, king of the Ikshvakus ... [he would] hold the reins in the chariot for the king ... to keep him [the king] from doing any harm ....as the two of them were driving along, they cut down with the wheel of the chariot of the chariot the son of a Brahmin ... they argued with each other about it. The king said ‘The one who holds the reins is the driver of the chariot. You are the murderer.’ ‘No,’ said the priest ‘I tried to pull back to avoid him, but you drove the horses on. *You* are the murderer.’”

A second even more remarkable Hindu scripture, the *Bhagavad Gita*, describes another great struggle between chariot driver (the god Krishna) and warrior-rider (Arjuna):<sup>7</sup>

“Arjuna ....asks Krishna a lot of difficult, indeed unanswerable age-old questions about violence and nonviolence, this time of the context of the battlefield, questioning the necessity of violence for warriors ....[ultimately] the warrior with ethical misgivings has been persuaded that since war is unreal, it is not evil ....Krishna persuades Arjuna to fight....[by offering him] devotion ..... [renouncing] not the actions but their fruits .... [embracing] actions without desires.”

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To be sure these ancient myths are part and parcel of a worldview in which Brahmins (priests) and warrior-rulers (Kshatriyas) share ruling power, self described purified elites, lording over Vaishyas (merchants, farmers and herders) who are at least allowed to participate in purifying rituals and Shudras (servants, serfs) so impure as to denied access to the rituals. Indeed in the Vedic myth describing the dismembering of the Primeval Man:<sup>8</sup>

“His mouth became the priest (the Brahmin, master of sacred speech) .... His arms were thee Raja (the Kshatriya, the Strong Arm, the class of warriors, policemen and kings); his thighs, the commoner (the Vaishya, the fertile producer ...) and his feet – the lowest and dirtiest – the servants (Shudras) ...”

In effect a system of checks and balances existing among the ranks of the elites is being described in the myths surrounding Brahmins and Kshatriyas. Priests check the actions of warrior-kings prone to excessive violence. They check the excesses of rulers by appealing to guilt, reminding the powerful that wanton bloodshed leads to even more bloodshed. Warrior-kings submit to priests because the priests provide them with justification for the actions they are required to take in their official capacities. Armed with priestly rationalization, they garner legitimacy. The lower classes owe obedience to these elites because their joint rule permits the

lower groups to function in a relatively peaceful market oriented environment where exchange and barter flourish.

Granted the stories are specific to Hinduism. Still they are emblematic of the way states originally created norms encouraging cooperation in populations sufficiently large to enjoy widespread specialization and division of labor. Typically these states emerged as hunting and gathering tribal structures gave way to more complex societies enjoying the benefits of settled agriculture with domesticated plants and animals.<sup>9</sup> Joint rule by priest and warrior elites appeal to transcendental monitoring. Monopolizing contact with purity, elites purporting to be in close contact with a transcendental world inhabited by gods and/or eternal philosophical principles claim they inculcate norms of purity that counteract the pollution rife in a materialistic world inhabited by merchants, farmers, craftspeople, servants, slaves and serfs.

Alas, the elites are all too human. Try as they will to elevate themselves above mundane humanity they are not gods. Over time they become increasingly corrupt, sullied by power and greed, self righteous and arrogant. The veil of purity falls off their bodily frames. Increasingly seen as hypocrites and spongers, resentment stirs among the masses. Overthrow from below threatens. But going down this road leads to more, not less, violence.

The great religions of the Classical Age offer a solution: a hero anointed to be messenger by an even higher transcendental authority comes, bearing a new and more compelling message than that offered by the contaminated priesthood: purity can be won by anyone, by the masses themselves. The gates to purity are being swung wide open beckoning everyone to crowd in one and all.

The so-called Axial religions – Confucianism, Taoism, Buddhism, the books of the Hebrew Prophets, Christianity – emerged on the Eurasian land mass in the last millennium BCE.<sup>10</sup> Despite marked differences between these faiths, they share common features: purification through ritual and the inculcating of myth; the existence of an identity figure, the hero, whose shining example can be emulated by the faithful; diversity in the paths that be sought on the road to purity; and the potential to incorporate earlier forms of religious worship, syncretism.

Why did the religious hero emerge?

#### **I.B Domestic Merchants Garner Low Status in the pre-Axial Age**

In the pre-Axial faiths merchants were distrusted, despised. They dealt in the material, the obverse of the transcendental. Trading in un-standardized commodities – diverse in size and weight, myriad in design and texture – they were as likely as not to oversell their wares, to lie and dissemble as they haggled over price. They corrupted elites, encouraging their superiors to anoint themselves in fragrances, to dress in silk, to display their exalted status with emerald pendants, jade rings, and glistening babbles. Their labors were clothed in deception; they encouraged greed; they fomented invidious envy.

Emerging out of the ranks of the domestic populace the merchant was treated with opprobrium. The obsequious merchant dealing in local commerce was not especially feared, just held in contempt. To be sure the artisan who fabricated ploughs and wove fabrics and the tiller of the soil were also objects of derision. However provided they paid their taxes and tithes, accepting the fact their status was lowly, bowing their heads before the priests and

warriors who sanctified their societies, they were viewed as either too stupid or downtrodden to threaten the ranks of the elites. The sole threat was the crafty merchant, dissembler and clever, the amasser of wealth. Insufficiently humble the merchant might stir up the masses.

Still uppity merchants emerging from the ranks of the lower classes could be managed. Keep them from gathering in weapon caches. Radically different was the problem posed by the long-distance merchant: the herder of livestock, the nomadic merchant-warrior of the Central Asian steppes. This individual was the proto-capitalist, exclusively dealing in mobile capital, driving on livestock in search of feeding grounds. Threatening the great agrarian civilizations as they came swirling out of the steppes in spoke wheel chariots these merchant-warriors were prepared to trade horses for elegant textiles, for golden goblets, for jewels. These were the chariot riders celebrated in the *Rig Veda*. Treated with disrespect they could turn dangerous, seizing territory, unseating rulers, and trashing temples. No wonder the Vedic literature makes repeated reference to the horse sacrifice. The horse epitomized the wildness of the steppe.

The age of chariot warfare was bad enough. But it was nothing compared to the threat they posed once the Iron Age promoted advances in archery. By 1000 BCE merchant-warriors could flex their muscle massed in huge cavalries. With the onset of the Iron Age the technology of warfare took a leap forward. A small bow – the “cupid bow” – coupled with cast bronze arrowheads produced on mass basis according to standardized weight and size – changed all of this.<sup>11</sup> Arrows were simplified and streamlined. Armed with a small bow that could be flexibly operated by archer riding atop speeding horseback the merchant-warrior was able to dispatch metal tipped arrows in three directions: left, backwards and forward. Forged into armies

through loyalty to powerful chieftains who entered into alliances of convenience with potential rivals, the long-distance merchant band capable of carrying goods between the eastern and western reaches of the Eurasian land mass posed a whole new set of political problems for the great agrarian civilizations.

Right upfront was the direct threat to military security. Second and only slightly less disturbing was the power of beliefs: the Central Asian chieftain came enshrined in the hero myth. This had tremendous appeal to potential domestic opponents of the priest/warrior elites. As well it had tremendous appeal to warrior-rulers: rule through a cult of violence. How to check this?

Enter the religious hero.

### **I.C The Long Distance Merchant-Warrior: The Cults of the Central Asian Culture Complex**

This is the myth basic to the Central Eurasian Complex. It is the story of a hero: <sup>12</sup>

A maiden is impregnated by a heavenly spirit of god.

The rightful king is deposed unjustly.

The maiden gives birth to a marvelous baby boy.

The unjust king orders the baby to be exposed.

The wild beasts nurture the baby so he survives.

The baby is discovered in the wilderness and saved.

The boy grows up to a skilled horseman and archer.

He is brought to court but put in a subservient position.

He is in danger of being put to death but escapes.

He acquires a following of oath-sworn warriors.

He overthrows the tyrant and re-establishes justice in the kingdom.

He founds a new city or dynasty.

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Loyalty unto death was central to the early Central Asian Culture Complex.<sup>12</sup> The oath-sworn friends of the hero were prepared to die for their lord. Even more striking, in the institution of the *comitatus*, the Praetorian guards, the defenders of the hero were prepared to commit ritual suicide if the hero preceded them in death. The Japanese *samurai* who were heirs to the Complex knew this principle. They called it *junshi*. Loyalty was all: loyal retainers proved their devotion by following their lord into the grave, where they were buried with his weapons and riches.

Why embrace this horrid fate? The answer is riches: silk robes laced in gold, jewels, a luxurious life enjoyed in the palaces maintained by the lord. Indeed this was the key to trade on the Central Asian steppes: the *comitatus* carried on trade in order to secure the beautifully crafted ornaments produced in the civilizations that had embraced settled farming. As well the bond between chief and retainer ran deep. It gave purpose to life. In any case a life spent surrounded by riches was superior to scratching out a penurious existence in villages strung across the vast semi-arid interior of Eurasia.

All of this made Eurasian wide trade both mutually advantageous and potentially dangerous. The nomadic *comitatus* braved the great spaces stretching between the Mediterranean and the Great Wall of China. Either individually or in federations, fighting off raiders the *comitatus* struggled across frigid steppe lands, over parched deserts, passing

through snow covered forbidding mountain passes. All of this to offer up horses, cotton textiles, pearls, gems, gold bullion to the elites ruling the great agrarian empires of Eurasia whether Greek, Parthian, Indus Valley, Chinese, or Roman. At the same time if challenged, if insulted, the comitatus was fully prepared to harass, exhausting their trading partners with feints, bloody incursions, at the very frontier outposts where they exchanged goods.

In short the merchant-warriors of the Eurasian interior were proto-capitalists. Their capital was almost exclusively mobile. True, they established outposts, built fortresses, enlisted the services of locals to construct grand palaces. Unlike the rulers of the agrarian empires who promoted the construction of irrigation ditches, bolstering the embankments of turbulent rivers as they enlisted the services of peasants and serfs in an effort to control water flow, the focus of the hero of the comitatus was continual movement. No need to lay down roads. No need to build temples to awe farmers with the grandeur contact with the pure transcendental world offered. To be sure as monasteries sprung up in the wake of the spread of great Axial faiths like Christianity and Buddhism it was in the interest of the comitatus to make donations to the monastic communities. They might take refuge within the walls of the monasteries. Moreover monks had information. They knew who might be waiting to ambush caravans.

In point of fact the mobile lifestyle was not always a choice. Imagine the Eurasian steppe land as a billiard table. Treat its borders as a combination of geographic frontiers - oceans to the east and west and daunting ice fields on the north – and political lines laid down by the great agrarian civilizations lying along the littoral zones of the Eurasian land mass where soil and climate were unusually well suited to settled farming.

Play pool on this table. As one ball commences rolling it bounces against formations of balls, causing them to spin, fly apart, crashing their way across the table till they reach pockets where they are either absorbed (incorporated into a agrarian civilization) or settle along walls, etching out a niche near the frontier of an agrarian civilization. Something like this is how the cultural map of the Eurasian center evolved during the period leading up to, and continuing through, the initial institutionalization of the Axial religions. Tribes continually clashed, making treaties afterwards, crafting coalitions typically short-lived, the most heroic and bloodthirsty groups eventually pummeling and pushing their weaker adversaries towards the steppe boundaries.

Start at the center of the table. This is where the most dramatic break-out occurred. From somewhere in Central Asia – in all likelihood in the region just north of the Black and Caspian Seas – a group speaking a proto-Indo-European language broke out, spreading outward to all points on the compass.<sup>14</sup> Celts, Italics, Illyrians and Greeks moved into the Mediterranean basin; Thracians, Hittites, Luvians, Lycians into the eastward reaches of the Aegean and Anatolia; Slaves and Germanics northward towards what became Scandinavia; and Aryans, Iranians and Indics to the east. Exactly when, and from what homeland dispersion, originated is much disputed. As McEvedy (2002: 100) acidly concludes speculation regarding timing and original settlement of the Indo-European tribes is “a game without rules.”

The gradual dispersion and settlement into ecological niches of the Indo-Europeans pushed them up against a various groups: a West Mediterranean group inhabiting Iberia; a Uralic group in the north; a Elamo-Dravidian group occupying the Indian sub-continent; and a

Afro-Asiatic group splitting into Berbers, Egyptians and Semites in Africa north of the Sahara and the Levant. Through a combination of accommodation and conquest sub-groups of the Indo-European peoples settled into the lands passing through the Neolithic revolution. They abandoned the nomadic life. The lucky conquerors became priests or warrior-rulers in their new homelands. The less favored farmers, servants, merchants. Once settled, they either became fierce adversaries of, or trading partners for, their former nomadic brethren.

As populations grew in the great agrarian centers, and as rulers mastered warfare using Iron Age weapons and tactics, empires were carved out on the periphery of Central Asia: China and India on its east; along its heavily contested southern/central zone a sequence of empires (at various times dominated by Hittites, Babylonians, Assyrians, and Egyptians); and in the west Greek then Roman. As the nomadic tribes of Central Asia jostled about some gradually pushed up against these empires.

For example consider the west. Over time a number of the nomadic groups, further subdivided, established niches on the border of the Roman Empire, basically just northeast of the Rhine. For instance having been pushed southward by Alans and later Huns, Germanic tribes settled into a zone between Slavic territory and the reaches of Roman control. Circa 300 CE, Saxons, Visigoths, Ostrogoths, Asding Vandals and Siling Vandals staked out territorial claims on the edge of the Empire while Franks and Alemanni managed to gain entry to the Empire itself.

In the east a similar frontier situation prevailed. At its northwestern borders, Chinese Emperors struggled with the Xiongnu who commanded 300,000 cavalymen, a formidable

threat.<sup>15</sup> By crafting an alliance with another nomadic group, the Yuezhi, Chinese generals dreamed that their combined militaries could quickly bring the pesky Xiongnu to their knees. Failing in their effort the Chinese generals abandoned the Yuezhi to a horrid fate. The Xiongnu promptly defeated the Yuezhi, killing the Yuezhi chief, crafting his skull into a drinking vessel (a standard way to celebrate victory on the Central Asian steppe). Driven westward and southward the Yuezhi eventually settled in several regions, notably Bactria (today a region shared by Afghanistan and Uzbekistan). Eventually the once hapless Yuezhi were able to form the Kushan Empire that managed to make inroads into northern India.

In short the borderlands fringing the great classical age empires emerging out of the Iron Age were potentially unstable. Military pressure from the interior of Central Asia was one problem. Population growth or climatic disruption preventing re-growth of grasslands within its vast interior would certainly set the billiard balls in motion.

As well pressure from the great empires pushing outward into its reaches was a destabilizing element. For example the greatest economic triumph of the classical age – the establishment of the land-based Silk Road around 14 CE– was largely due to Chinese military victories upon the Tarim Basin rendering relatively safe passage over 2000 miles of the 4,400 miles stretching from Changan, China’s western capital from Antioch on the Mediterranean.<sup>16</sup> To be sure the economic interests of emperors and kings and the interests of the nomadic tribes operating along the Silk Road coincided: rulers secured taxes; the heroic leader of a nomadic tribe received luxury goods he could distribute to his comitatus. At the same time as tribes were absorbed into the empires or chased away, even exterminated, in humiliating

defeat, they had to adjust to new realities. Many so-called barbarian groups ended up as soldiers in the empires that had crushed their former leaders.

This was the world that gave birth to the great religions of the classical era. As rulers successful at aggrandizing power with Iron Age military technology they were able to establish empires that began warring with one another and with the nomadic tribes of Central Asia. Warrior-kings increasingly exploited the commerce that merchants both domestic and barbarian outsider brought to the table. Elites were corrupted by wealth and power. As often as not the priestly class joined in, feeding at the same trough where arrogant kings and restive soldiers gorged themselves.

Those true to religious purity were horrified. In reaction a new hero came onto the stage. A hero committed to super-virtue, to radical purity. This hero goes by a myriad of names: Confucius, Lao Tzu, Arjuna, Buddha, Jeremiah, Isaiah, Jesus, and Socrates. What set him apart from the heroes of the past is suffering. It was purity paid for by suffering that made the new hero attractive to the oppressed masses experiencing daily sufferings. It was upon the mantle of righteous suffering that his everlasting glory rested.

#### **I.D Anti-capitalism in the Axial Religions**

Many readers may balk at the thesis that the messages espoused by the Axial heroes overlap to a remarkable degree. Still this is my position. Let me explain.

At the outset I should concede that the way Axial age ideals fall into two distinct groups: wisdom versus prophecy. In the frameworks advanced by a Confucius or a Socrates the vision is

clear. Rely on wisdom achieved through arduous study and penetrating questioning of glib doctrines. Rule by elites purified through study and rational thought is virtuous rule. By contrast shining through the utterances of prophets - Buddha, Lao Tzu, Jeremiah, Jesus, Krishna in his debate with Arjuna – is faith in prophecy stemming from direct contact with a pure transcendental world. Divine contact is all. At the practical level prophecy tends to rely on magic or the capacity to foretell future events as proof of the prophet's special relationship with the transcendental world.

Are not appeals to wisdom and to prophecy diametrically opposed? Aren't they at war with one another in the typical human brain? Is it not true that the regions of the brain tapped by rational study – the frontal lobe for instance – are distinct from the regions where emotions dwell, erupting out of the midbrain, the Amygdala and the Hypothalamus?

My baseline is that overtime belief trumps the conflict between the pull of rational thought and the impulses that generate emotions, love and hatred, altruism and jealousy. Say I model my life around Socrates, inculcating the ideal of reasoned debate. Over time I become a believer, rejecting criticisms aimed at my role models, only accepting as valid views consistent with my deeply ingrained ideals. I am not likely to abandon my commitment to constructive debate even in the face of experience with “hardnosed reality” that suggests most people are unconvinced by resort to rational argument alone. The same holds if I embrace a belief in prophecy. Say I decide after long rational study of religious options that Buddha is my ideal for living a fruitful satisfying existence on earth. I am highly unlikely to listen to voices arguing that

searching for personal enlightenment is egotistical. Once cognitive dissonance enters the picture, belief takes over.

Going beyond this point, it is my view that the specific recommendations of the Axial age heroes are not widely divergent.<sup>17</sup> Without exception they recommend behavior rooted in a transcendental ideal. Be it the Mandate of Heaven; the Way (Tao); Platonic absolutes; Buddhist enlightenment informing the bodhisattva; faith in Jesus as a personal savior. Rulers and commoners alike should heed the transcendental.

One salient feature they share is a belief that their doctrines enjoy superiority. They embody what it means to be civilized. Outsiders are not civilized. Translated this meant barbarians – the ultimate outsiders – are barbaric.

And who were the most threatening barbarians? The answer is obvious: the Central Asian trader-raiders; the masters of mobile capital, the proto-capitalists; the violent tribes that threatened the great civilizations at the borders. They require civilizing. How this was to be accomplished varied from system to system. Conversion to Christianity and Buddhism – even to Judaism – was one option. Imbibing the Greek and Confucian classics was another. Purifying barbarians meant bringing them under the sway of superior belief systems.

Without exception the Axial belief systems recommended non-violence. Or rather the view that violence might be acceptable but only as a last resort. In any case violence against other members of one's religion was disparaged. Outsiders might behave according to inferior principles, existing on lower plane altogether. For instance In Socratic thinking as captured in Plato's *Republic*, killing Spartans was anathema but extinguishing the lives of mere mortals who

were not Greeks was acceptable. In China Taoism was unusually concerned with reining in the violent impulses of rulers. According to its doctrines the ruler who is unknown by the people is the most virtuous ruler. The lighter is the emperor's footsteps, the less punitive and harsh, the happier are the commoners. The more tranquil is the country. A king reluctant to undertake violence - yet like Arjuna committed to doing so under certain circumstances - is a virtuous ruler. A firm hand if needed, yes; but firmness governed by a deep understanding of the cruelty of killing, the ultimate futility of warfare.

Axial belief systems recommend purifying ritual. Whether it is devoted to the ancestors (as it is Confucian thought); or takes the form of clarifying meditation (as practiced by yogi or Buddhist acolytes); or is rooted in mindful prayer and regular reading of a sacred text (in Judaism and Christianity); or imbibes rational debate (evinced by the Socratic dialectic); ritual reminds us of the correct path. The king adhering to proper ritual is better equipped to make judicious decisions.

Ritual can take many forms. Indeed it is fair to say the Axial age belief systems form "big tent" institutions accommodating heterogeneity of preferences inevitable among the ranks of believers. At the practical level the difference between the stance of Neo-Platonists and Gnostic Christians is minimal. Continually reciting the "Jesus prayer" is akin to Hindu yogi practices or Chan/Zen Buddhist meditation leading to enlightenment. One may embrace ritual purification of the body and mind many ways. Extreme asceticism, being a martyr, giving up something one loves for Lent, cleansing in a ritual bath after menstruation, spending hours memorizing

Mencius or the Book of Changes or the Torah are all ways proving devotion to a belief system. Many are the paths leading to purifying civilization.

Most important for the thesis of this paper: all of the Axial belief systems disparage capitalism by which I mean credit creation linked to the mobility of capital. Jubilee years; bans on usury (at least usury practiced within the community of believers); Confucian contempt for the person toiling in pursuit of wealth; Taoist adherence to a harmonious blending of yin and yang, eschewing corrupting materialism; the deliberate ritualized rules of the monastic community. At their core the profit oriented, results oriented, self interested, materialist, calculating behavior associated with merchants is viewed with contempt, even horror.

In point of fact capital is Janis-faced: it is either fixed or it is mobile. Fixed capital, visible capital – notably churches, monasteries, synagogues and temples celebrating faith and palaces erected by rulers who encourage Axial thought – is one thing. This capital can be wreathed in virtue. It has the potential to be sacred. Mobile capital is altogether another matter. Amassing hoards of coins readily transported; warehousing silks, rubies, and cotton textiles for sale at a more propitious time; squirreling away wheat and the fruits of the vine in anticipation of lean times when prices spiral upward; is suspect. Is this not the opposite of the transparent? Is it not corruption itself? Is it not true merchants exploit the gullible, the downtrodden, those unfortunate to fall ill from debilitating illnesses? Aren't the riches a source of envy? Surely their existence begets violence. Doesn't acquisitive behavior open the door to vengeful behavior? Encouraging impure action mobile capital is impure. Driving the moneylenders from the temple is a powerful paradigm. Sacred space should not be contaminated.

In the successful Axial age religions, the sacred hero gathers disciples. Wishing to convert and convince commoners and elites alike, disciples have little choice but to advertise. What mechanisms for advertising are available? One obvious device is building structures where members can congregate sharing in communion so to speak, making their presence visible to one and all. The downside: this requires material resources. How are these resources to be amassed?

Start by bringing in the masses to the faith. Get them to make contributions. Tithe them. But how do the believers cajole the common folk into joining the fold of the community? Convince the uncommitted and disinterested by dramatic example. Extreme asceticism comes to mind. So does martyrdom.<sup>18</sup> Martyrdom reminds others of the suffering of the hero in a very powerful graphic manner. It is the extreme form of devotion. It is advertising carried to the nth degree because it turns violence onto the suffering believer. A deep paradox is involved: violence is invoked in the service of non-violence. More mundane, arguably more hypocritical, was the quid pro quo the devout offered to commoners who had managed to amass riches: make donations; in exchange we, the religious virtuosi, will pray for you, will intervene with the transcendental world on your behalf, will offer you accommodation in our sacred space as you journey from market to market. Not surprisingly merchants – used to the truck and bartering of commerce – found this appeal especially attractive.

The other avenue open is convincing the ruling elite of the superiority of the beliefs espoused by devotees to the new faith. After all, elites command resources. This means targeting warriors and priests who worship other gods, who are following creeds deemed

inferior by the community of believers. The appeal is that elites may gradually come to realize that they acquire enhanced legitimacy with the masses (and that they can better control rank and file warriors and the mundane performers of ritual) by converting to a suffering hero driven faith. Conversion does not entail abandoning their elite status.

How sincere was Emperor Constantine in quelling campaigns against Christianity in the Roman Empire; calling together the Christian hierarchy that defined Arian doctrine as heresy and outlawed usury at Nicaea; ultimately accepting baptism on his deathbed? Who knows? Whether it was a cynical move designed to strengthen the hold of the Roman Emperor over the legions protecting the Empire from invasion or civil strife, or it was a sincere move reflecting conviction that he had sinned deeply in waging warfare is unclear. Similar ruminations surround accounts of the Indian ruler Asoka, fervent convert to Buddhism after a career blemished by bloody campaigns against rivals in an effort to expand the boundaries of his empire.

Who knows what drove them to adopt the Axial age creeds? These individuals lived in enchanted worlds. Astrology was used to make decisions. Magic and ritual were intertwined and invoking proper incantations might spell victory in battle. Cover all your bases. Speculation about motives is a treacherous game to play for those of us who live in an age far removed from the heyday of the classical age. People thought differently in the past. Any historian worth his or her salt realizes it is folly to impose his or her mindset on the actors who changed history in the distant past.

In general we can say that a mixture of two strategies – organizing the masses through advertising and convincing elites that the new doctrines are superior to the old - is what

established the dominance of variants of Axial age thought within the great Eurasian agrarian civilizations. In the case of Confucianism that muscled its way into the upper echelons of the imperial bureaucracy it would appear appealing to elites was crucial. Its potential rival Taoism developed a stronger hold on the masses: martial arts and magic flourished in the temples devoted to the Way. In India Brahmin dominated ritual went through a decided transformation when confronted by Buddhism (and Jainism) as rivals, the new faiths exercising particular appeal among the lower classes. A more popular religion, Hinduism, emerged. Hinduism became a classic case of a “big tent” religion. It provided devotees with a pantheon of particular gods that could be worshipped in a quasi-monotheist fashion, cult like fashion. Quasi-monotheistic because the deities could become avatars, transforming themselves with abandon into other divine creatures: Shiva, Vishnu, Krishna had different characteristics yet all were basically Brahman. Faced with the popularization of Hinduism, Buddhism eventually withered in India, moving on to China along the Silk Road where it flourished because it was highly compatible with Taoism. In the Roman Empire martyrdom and monasticism – monks strong-arming their way into communities – played a key converting the masses. Still elite support was the ultimate linchpin in its success.

That religious rivalry was a salient feature of the classical age is something historians appreciate, or at least should appreciate. Chronology is not causation. It is a mistake to view what came after certain events as inevitable. The fact that Christianity emerged dominant in the Roman Empire owed much to the fact that Constantine and subsequent Roman Emperors (but not the Emperor Julian) favored it over rivals like paganism, Manichaeism and Mithraism. Thought in the Axial age was highly competitive mirroring the fact that conflict in the military

and political spheres was on-going. Axial age thought threw up new religions that had to compete with one another as well as with the doctrines advanced by already established priesthoods.

### **I.E Classical Age Collapsing: Feudalism Emergent in the West and Japan**

Commencing in the second century CE, a process described by Beckwith (2009: 95 ff) as the Great Wanderings of Peoples took place in Central Asia. To the west, Germanic peoples crashed their way in the Roman Empire, some settling within its boundaries, some seizing territory on its frontier. Further east in the Persian Empire that competed with the Romans for territories in the Fertile Crescent, Chionites and Hephthalites carried out successful invasions. In the north-east China Mongolic peoples penetrated southward. The billiard balls were in turbulent motion.

Finally the Huns emerged as movers and shakers on the steppe lands. Driving Alans and Goths out of niches they had established, pressuring the other tribes in Central Asia, they pushed barbarians into the great agrarian zones of Eurasia. China split apart only to be reunified centuries later under the Sui, Tang, and Sung dynasties. Still Chinese dismemberment was nothing like the terrible fate Europe experienced. In characterizing the Europe zone Beckwith (2009) describes the attendant disruption as complete and total re-Central Eurasianization. The classical age came to an end; the period known as either the Dark Ages or the Barbaric Period commenced.

How civilize the barbarians who rode roughshod over an increasingly Christianized Roman Empire? Compatibility between the Central Asian Culture Complex and Christian dogma

had to be managed somehow. One approach was the Church's proliferation of saints, martyrs in the struggle to bring barbarian opponents around to the true civilization. Advertise extreme devotion: hopefully it will trump loyalty to the comitatus.

Another major vehicle was monasticism. Under the principle of Benedictine monastic rule the abbot of the monastery became all powerful, meting out physical punishments to underling monks. Loyalty to the Abbot's harsh rule was the watchword. This form of organization surely exercised a strong fascination to those following the rules of the comitatus. To the chief of a Germanic tribe the two organizations did not seem so different. Moreover practical concerns were not insignificant. A comitatus head adhering to primogeniture found convenient dispatching non-inheriting offspring to monasteries established in the territories under his control. With this in mind, local rulers doled out land to monks who were required to toil as part of their training. Monasteries ended up specializing in farming. In principle monks worked in the fields. Or in the monasteries where copying manuscripts and prayer took precedence in the litany of tasks assigned the devout, monks at least managed farmland that was actively tended by serfs, slaves and tenant farmers.

In the upshot decentralized feudalism spread over Western Europe. With the Christian empire carved up in the west – the Byzantine remnant alone maintaining a dual system of emperor cum patriarch rule – the Holy See in Rome had little choice but to compromise with feudal lords who attempted to exercise complete control over the churches and monasteries established within their domains. Even with the creation of the Holy Roman Empire circa 800 CE, feudal decentralization, fragmentation, was the reality. In effect three parties wrestled for

control over the resources allocated to Christian organizations, notably the monasteries: the Vatican in Rome; the Holy Roman Emperor; and the feudal lords. Under feudalism the institutions of Christianity were profoundly transformed.

Similar logic prevailed at the other end of Eurasia. In Japan decentralized rule became the order of the day. Powerful warlord *daimyo* exercised control over *samurai* warrior retainers. Under the Tokugawa version established in 1600 CE power was divided between three parties: an emperor, the nominal head of a Shinto cult, a shogun who was the dominant military overlord and the *daimyo*.<sup>20</sup> It would be a mistake to overemphasize similarities between the Western and Japanese versions of feudalism as many of their key institutions differed but it would be an equally bad mistake to ignore important similarities. In both environments fragmentation accommodating the comitatus principle key to the Central Asian Cultural Complex was crucial to the way Axial thought systems were instituted. For instance after Confucianism and Buddhism were imported from nearby China. Buddhist monasteries operated under edicts laid down by both shogun and *daimyo*.

Over time diffusion of Christianity in the West and Buddhism and Confucianism in Japan mitigated the way the Central Asian Cultural Complex operated at the ground level. Suicide of retainers upon the death of the leader of the comitatus gave way to a gentler form of feudal rule. Still the notion that ties of loyal service forged between superior and inferior prevailed in both Christian West and in Japan is valid.

With the collapse - or rather significant dismantling - of the great classical age empires Central Asian cultural norms melded with the great Axial faiths. This was less true in China,

more so in the Christian west and in Japan. One might think that proto-capitalism associated with the nomadic mobile capital would prevail in the aftermath. But this did not happen. Rather the Central Asian invaders settled down, carving out territory that they farmed. In adopting settled agriculture with domesticated animals, they shed many vestiges of the nomadic lifestyle. Commensurate with the Axial faiths that they eventually adopted, the elites of the revamped agrarian regions of the Eurasian land mass continued to frown on credit creation, continued to distrust merchants, continued to favor fixed capital over mobile capital.

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In the second section, I explain why the first form of capitalism emerged under Islam and why the institutional innovations pioneered by Merchant Capitalism spread to Western Europe where their impact was vastly extended under European and Japanese feudalism.

## **II Merchant Capitalism**

### **II.A Nascent Merchant Capitalism in Islam**

In its heyday the Roman Empire expanded on all fronts. It pushed out into the Middle East and the Levant in addition to gaining a strong foothold in Egypt and northern Africa. It expanded to the east to exploit Silk Road trade opportunities. It did so to draw a militarized barrier, a line in the sand, with its Persian imperial rivals. Merchants caught in the middle between these two mighty foes – in Syria, Iraq, and the Arabian Peninsula - naturally took advantage of the situation, acting as intermediaries transporting goods from Red Sea ports and merchant dominated cities in old Fertile Crescent to western India and onward to China. Two

avenues were available to them. One was the caravan moving through desert lands. The other was seafaring: taking advantage of the winds to traverse the Arabian Sea, arriving at the Bay of Cambay where Barygaza was located.

Great Middle Eastern trade centers flourished under these circumstances. The earliest to emerge as a major commercial powerhouse was Petra, populated by Nabataeans who settled down in a Jordanian ravine, handling the transshipment of goods between the Gulf of Aqaba on the Red Sea and the east. Key to their choice of locale was avoiding the clash of arms between Romans and Parthian/Persians quarrelling over the lands once held by the Seleucid Empire. Eclectic in their choice of gods, the Nabataean faith incorporated Greek, Roman, Mesopotamian, Persian and Egyptian deities into their shrines, statues and rituals.<sup>21</sup> Along the Silk Road religions clashed and congealed as merchants came together to truck and barter their wares.

There is nothing like competition. In this case, competition for riches with which jewel encrusted temples could be erected. Consider the other end of the Silk Road. After the barbarian invasions of the Great Wandering dismembered China, spinning off nomadic dominated dynasties in the north, the Northern Wei Empire established a foothold between the Central Asian steppe and the remnant of the Han Empire now relegated to the south. To differentiate themselves from the Confucian dominated south, the rulers of the Northern Wei chose to base their legitimacy on Buddhism, hoping to make this the dominant religion of a China ultimately unified under their aegis. The carving of monumental Buddhist figures played

an instrumental role in their patronage campaign. What better way to advertise your commitment? <sup>22</sup>

Motivated by a similar goal, consolidating legitimacy, the ruler of the once nomadic Yuezhi, also embraced Buddhism, promoting a variant of the faith more compatible with the gift giving practices key to the comitatus. The resulting faith, Mahayana Buddhism, promoted the giving of Seven Treasure donations (the luxury goods of the Silk Road) to Buddhist monasteries and stupa, a veritable entry fee to securing a place in the Buddhist inspired paradises populated by Bodhisattvas. Not surprising over time the carving of Buddha figures spread, skirting along the fringes of the Takla Makan desert, spilling down into what is today's Afghanistan.

In short the Silk Road trade did increase religious competition for merchant wealth. Is it surprising that eventually a religion justifying merchant activity emerged? To be sure, nothing is inevitable; however momentum is important. It is difficult to escape the feeling that a religion compatible with the idea of credit creating mobile capital, a religion embracing merchant values, would eventually emerge somewhere along the Silk Road.

And so it did: in Mecca. <sup>23</sup>

Early seventh century Mecca was somewhat similar to Petra. Christian tribes, Jewish tribes and pagan tribes competed and cooperated. There they watered their camels; haggled over the prices of cloth, wine, leather, grain, spices and frankincense; and argued over which faith was superior to the others. Like Petra, it was extremely commercial and extremely ecumenical.

To prevent the internecine fighting between tribes that plagued caravan trafficking across the Arabian Peninsula connecting the Red Sea to the Arabian Sea the tribes worked out a clever arrangement. They made sacred space out of what was de facto commercial and diplomatic space. A border of stones was laid around Mecca. Within this space attacks against competitor tribes were anathema. At the heart of Mecca was the Ka'ba a holy temple. Myth and tradition swirled around this structure. Did Abraham's son born to Hagar, Ishmael, sanctify it? That it was mentioned in the Hebrew Scriptures – in Psalm 84 where a pilgrimage to the Valley of Baca is mentioned – suggests it was associated with Abraham the “original monotheist.” Was its interior decorated with a painting of Jesus and the Virgin Mary? In any event during the early seventh century the Ka'ba was under the control of the Quraysh who worshipped a pagan god, Hubal.

This was the world of the young Muhammad. Born into one of Mecca's noble families - his father tragically deceased before he emerged from the womb - Muhammad followed in the footsteps of his tribal elders, becoming a shepherd first, later a highly successful merchant.<sup>24</sup> It was only later that he became the prophet – according to Islam the Last Prophet, continuing a prophetic line created first by Abraham, extended by Joseph son of Jacob and Moses, continued on by Jesus – establishing a pure form of monotheism.

Driven out of Mecca by the Quraysh, Muhammad led his followers to Medina where he consolidated his political base, ultimately returning to Mecca, defeating his Quraysh opponents in a holy war (*jihad*), and ultimately gaining control over the Ka'ba in the name of one god Allah. Over the course of his remarkable career, Muhammad progressed from being a shepherd to a

wealthy merchant to a suffering prophet attacked by powerful enemies to a political leader, a military leader, and finally a powerful benefactor to the poor.

Once more, emerges the suffering hero who – through countless travails and grinding hardship - wrestles forth spiritual triumph from an impure world sullied by misconceptions and error. Remarkably for the first time the suffering hero leaves a legacy extolling the merchant. Granted acquiring riches for the mere sake of acquiring riches is frowned upon. Granted the Christians are right in condemning usury. Still trade itself is admirable. Indeed submission to Allah means submission to peaceful transaction, to honest commerce.

The Qur'an makes the last point crystal clear: <sup>25</sup>

“Cling one and all to the faith of Allah and let nothing divide you. Remember the favors He has bestowed upon you: How He united your hearts when you were enemies, so that you are now brothers through His grace; and how He delivered you from the abyss of fire when you were on the very brink of it.”

Once you were enemies raiding each other's caravans, slaughtering each other out of devotion to false deities whose worship accomplished nothing for you, simply preparing you for an afterlife of everlasting torment and incineration. Now, thanks to Allah's mercy, you are free to trade; better yet you are freed from fear of everlasting torment in the fires of hell.

There is little doubt that Muhammad - growing up in a world alive with Christianity, Judaism, Manichaeism, Gnosticism, and paganism - viewed the program of belief he fervently espoused was revealed to him by the Angel Gabriel as the final step on the road to purification. The “people of the book” had managed to distort the true message of Abraham. Judaism was tribal, exclusionary; Christians failed at elementary arithmetic, confusing three with one. The

Qur'an and the thousands of oral statements (hadith, sunnah) made by the prophet were revealed truth, mischievous error having been cleansed. Islam was pure monotheism.<sup>26</sup>

In the aftermath of Muhammad's demise, the problem of how to rule under Islamic principles, how to carry on commerce on Islamic principles, how to carry on warfare under Islamic principles, and how to treat peoples conquered by the Arabs (the first group to embrace Islam), became acute. After all, Muhammad was an unusual religious hero: he was at once prophet, merchant, administrator and warrior all wrapped up into one. During the first three generations of Islamic life – the so-called era of the righteous *salaf*, of the purest generations, of the righteous ancestors of contemporary Islam – sorting out these issues involved much bloodshed, much disputation, and the planting of seeds of future division and dissension.<sup>27</sup>

From the perspective of this paper that focuses on capitalism the most important issues involve treatment of non-Islamic peoples; the development of legal theories concerning contracting, credit creation and corporations; and the uniting of secular rule with religious rule. With no claim to a comprehensive treatment a few comments about each issue – admittedly cursory - are essential.

Exploiting weaknesses in the Byzantine Roman and Persian Empires, the territories that fell to the armies of Islamic rulers – the Caliph – increased dramatically in the aftermath of Muhammad's demise. Under the first three of the Rashidun, the so-called Rightly Guided Caliphs -Umar, Umar ibn al-Khattab, and Uthman ibn Affan - Persia, Egypt, and a huge swath of territory was incorporated into the Caliphate governed empire. During the short-lived rule of Ali, son-in-law and cousin of Muhammad, the last of the Rashidun, a fierce civil war broke out

between various factions striving to grasp control of the empire. To be sure aggrandizing power was crucial but so was principle. Muhammad had been both prophet, anointed religious leader, as well as administrator and war leader.

Which was more important: a sage-king listening to the voice of Allah, or a king-sage aggrandizing territory to be exploited through control of Silk Trade routes and promotion of agricultural development? The faction supporting Ali became known Shi'a: they believed in the sage-king model. The majority faction supporting a king-sage model, the Sunni, overthrew Ali's faction after the establishment of the Umayyad Caliphate.

Under the Umayyad Caliphate territorial expansion continued. Central Asian territory was added on: the Caucasus, Transoxiana, Sindh (the Indus River basin), the Maghreb, and a major chunk of the Iberian Peninsula. Unfortunately this proved to be the Umayyad's undoing. During the mid-700s CE a faction opposed to Umayyad rule – bankrolled by powerful merchants, relying upon Central Asian Turkish, Persian and Georgian slave troops (the Mamluk) – overthrew the Umayyads, the heir to the Umayyad dynasty fleeing to Iberia where he established the Emirate or Caliphate of Cordoba.

In sum, within a very brief period a vast number of communities adhering to diverse religious backgrounds were brought under Islamic rule. The problem was how to treat them. Three options were available: convert to Islam; remain non-Muslim, becoming *dhimmi*, who were required to pay a special tax (*jizya*) for the privilege of receiving military security from the Muslim community; or die by the sword.

There were some advantages to being a *dhimmi*. Under the Pact of Umar *dhimmis* had the option of using non-Muslim courts to settle disputes. Subject to the proviso that they were dealing with other *dhimmis* and not Muslims, the Pact allowed non-Muslims to either access Muslim courts – four major schools of religiously inspired Islamic law existed although in practice it was easy to move between the courts – or to seek judgement elsewhere. Muslims, however, were only allowed to use one of the branches of Muslim jurisprudence. Moreover, because Muslims could not renounce their religion, become apostates, without being subject to capital punishment, Muslims could not escape their own religiously inspired law, largely drawn from the Qur'an and the hadith, with reasoning based on rational debate free of scripture playing a relatively minor role in three of the four legal schools.

Another potential advantage of being *dhimmi* was the possibility of practicing primogeniture. Islamic law frowned on it, perhaps because the traditions of the Qur'an and the hadith were initially developed amongst trading communities using highly divisible, mobile, capital rather than land. Equal division of inheritance tended to fragment both the holding of mobile capital and land ownership.

In any event Islamic law was very favorable to trade. Under the principle that interaction between travelling merchants (*al-Tajir as-Saffar*) and resident merchants (*al-Tajir al-Muqim*) should be encouraged in order to facilitate Silk Road commerce, judgements allowing writing of bill of exchanges became the law of the Islamic world by the mid-eight century. The fact that the Abbasid Caliphate had enjoyed strong merchant backing in its protracted struggle to unseat Umayyad dominance certainly did not hurt the cause of facilitating long-distance, mobile

capital, business. As described by Rubin (undated: 7 ff) it became common practice for a bill of exchange (*suftaja*) that required payment of a debt by a certain date to be rigorously enforced by the Islamic courts. Individual A loans individual B a specified sum to be repaid by individual C on such and such a date. In exchange for receiving the funds, B issues a bill of exchange to A. A fee is charged for the loan. Dealing in a common currency – ubiquitous throughout the Islamic world – no currency arbitrage is involved. However interest is implicitly reckoned in the set of transactions governed by the issue of a *suftaja*. The fee charged is implicit interest.

The bill of exchange was an ingenious device for creating mobile capital linked to credit creation. From the Council of Nicaea convocation instigated by the Emperor Constantine, Christians were not supposed to charge interest on loans to other Christians, a principle that the Qur'an followed, enunciating in a famous Sūrah: <sup>29</sup>

“O you who believe, keep you duty to Allah and relinquish what remains [due] from usury.”

The idea is unrighteous profit is bad but exchange is good: interest (*riba*) is unacceptable, presumably because it is exploitative, impure. In practice as opposed to principle Islamic law permitted interest. The bill of exchange is one device for charging interest. The other device is sharing returns on investment. If A wants to secure interest from B because B has an investment opportunity the two parties can agree to share any profits accruing to B's management of the funds. Under this subterfuge A is basically securing interest: the share of profits relative to the amount of funds loaned (to compute the rate one needs to take into account the length of time it takes for the fruits of the investment to be realized).

Moreover Islamic law allowed for other devices that promoted capital accumulation. One was the *waqf*, the trust. Under Islamic law a *waqf* could be created by a benefactor. Once set up the conditions of the trust were not to be changed. The primary motive for arranging an Islamic trust was charity, a basic principle laid down by Muhammad who ended his life as a benefactor to the poor. Typically trusts were set up for the construction and maintenance of fixed capital, hospitals or schools for instance. Still “cash *waqf*” were allowed, suggesting a degree of flexibility. That said, one of the major themes emphasized by Kuran (2011) is that the *waqf* was not the equivalent of the Western corporation. There are two obvious reasons: most *waqf* were set up to provide the destitute with food and medical services; and the benefactor’s stipulations were binding. To be true to the principles of Islam, the state needed a system of welfare. Countenancing the *waqf* was one way to accomplish this goal. Allowing it to morph into a profit making corporation was not in the interests of the state.

That Islam was highly favorable to credit creating mobile capital is clear from the fact that Karimi merchants became fantastically wealthy under the Mamluk Sultanate of Cairo. Enjoying virtual monopolies in the spice trade, and dabbling in the African slave trade, some of the greatest fortunes assembled (on a global basis) during the period of the late Middle Ages were put together by an elite group of Karimi merchant houses.<sup>30</sup>

Reflecting its trade driven commercial success during the period of Abbasid Caliphate rule (750 – 1517 CE), it is not surprising that Islam experienced a Golden Age. Indeed Findlay and O’Rourke (2007) suggest that the blossoming of trade is associated with innovation in general. During the period 750 to 1300 it was the Islamic world, not the Latin Christian world

that translated the Greek writings of Aristotle, Ptolemy, and Galen.<sup>31</sup> It was the Islamic world that built on the works of the great Greek philosophers, astronomers, map makers and medical theorists, improving their calculations, in some cases disputing the rectitude of their doctrines. It was Baghdad, the Abbasid capital that housed great libraries during the Middle Ages. Not Paris, not Rome, not London. It was the Islamic world that developed the astrolabe, an ingenious device used for determining the direction to Mecca – crucial for proper Muslim prayer – with useful spinoffs to seafaring and land travel.

Given its early lead in developing Merchant capitalism why did the Islamic world collapse into an era of stagnation? As Kuran (2011: 68 ff) emphasizes the share of commerce in the labor force of the Islamic world declined between the period 701 – 1100 CE and the period 1101 – 1500 CE. By contrast after 1200 CE it was Western Europe - not the Islamic world – where commercial innovation blossomed, where major advances in Merchant Capitalism and science were being made.

One popular theory – that growing religious homogenization due to the decline in the share of the *dhimmi* population in Islamic societies (more and more people having converted to Islam presumably to avoid paying the *jizya* tax or to escape other forms of discrimination or because they viewed Islam as superior to their native faiths) – has been questioned by scholars. To be sure the idea that a purifying form of Islamic fundamentalism gained prominence, strangling innovative thinking is reasonable. The Abbasids were corrupt. Over time the luxury of their court became increasingly abhorrent, outright disgusting, to those steeped in the study of the Qur'an. That a purifying movement aimed at returning Islam to the age of the *salaf*

occurred is not only plausible but actually true seems to bear out the key premise of this thesis. However the burden of Saliba (2007) is that there is no evidence for a decline in the productivity of Islamic philosophers, astronomers and mathematicians during the thirteenth and fourteenth centuries, precisely the period when the purification movements were in their ascendancy.

Other theories point to trade diversion. Brought on first by the Mongol invasions of the thirteenth century weakening if not destroying Islamic hold over Silk Road commerce, later by European trade expansion in the fifteenth and sixteenth centuries, the vitality of Muslim trade was sapped out. Of this there is little doubt.

However an even more compelling explanation cannot fail to impress: the fact that Islam makes little if no distinction between the sacred and the secular. In his book *Lost in the Sacred Diner* (2009) makes this claim. The shadow of Muhammad, Islam's great hero, looms over the Islamic community. By contrast in Catholic Christian Europe a distinction between the secular and the sacred existed from the days of the Roman Empire. Grafting the Central Asian Culture Complex onto Christianity yielded a feudal Europe in which the divorce between the secular and the sacred actually grew wider, even as Christianity evolved from being a minority religion in the days of Constantine, triumphing to become the only religion of any consequence by the time of the Crusades.<sup>32</sup>

## **II.B Borrowing and Refining Merchant Capitalism: Western Europe**

Not only was Catholic Europe divided along secular versus sacred lines; it was also deeply fragmented politically due to feudalism.

That Catholic Europe was fragmented made it vulnerable to Islamic attack. The fear was not without foundation. Islamic armies had wrestled away Northern Africa, Egypt and the Levant from the Byzantine Empires in the past; and they were threatening to seize more Christian territory in Anatolia. To the east Islamic armies had defeated Chinese troops at the Talus River and had turned parts of the Indian subcontinent into Muslim controlled regions. Moreover Islam was a threat to Christian Europe in ways largely irrelevant to the peoples of China and India. Caliphs controlled Jerusalem and the Holy Land. How important that was is revealed by the fact European maps crafted during the Middle Ages placed Jerusalem at the world's center. Islamic rulers could and did prevent pilgrims from worshipping at sites holy to both Christians and Jews. Sharing sacred space was a major issue. To cite a particularly telling example: the al Aqsa mosque – erected to celebrate Muhammad's ascent into Heaven - was built choc-a-bloc to the ruins of the Jew's Second Temple all but crushed to bits by Roman troops fighting Jewish militants.

Moreover Christians were second class citizens, *dhimmis*, in the Islamic Empire. From a Christian perspective they were discriminated against. How valid was the western Christian critique of Muslim oppression of Christians is a contentious issue. Who knows? Few if any Muslims lived in Christian lands. Consider the fact that Christian lands were not particularly hospitable to the Jews who probably fared better under Caliphate rule than they did in the Holy Roman Empire.<sup>33</sup>

Add to these long festering concerns the fact that the Papacy was mired in a complex political struggle with the Holy Roman Emperor, diverse groups of feudal lords, and the

Byzantine Patriarch (the great schism dividing the Catholic and Greek Orthodox faiths had just occurred in the mid-eleventh century). With all of this pressuring it the Papacy decided to make a dramatic gesture asserting its dominance, issuing a call for the Crusades in the closing decade of the eleventh century.

How important economic prowess factored into the reasoning of the Papacy is an intriguing question. According to the military power equation developed by Mosk (2013), military potential (**M**) depends upon the level of overall economic output (**Y**):

$$[1] \quad \mathbf{M} = (\mathbf{mY})/\mathbf{p}_{mf} = (\mathbf{myP})/\mathbf{p}_{mf}$$

Where **m** is the military conversion rate (equalling the percentage of total economic output devoted to obtaining human and capital resources used in warfare); **P** is population; and **p<sub>mf</sub>** is the relative price of exerting a unit of military force (relative to other goods in the economy). Deflating the share of the economy devoted to the military by the relative price of actually implementing action on the battlefield (**p<sub>mf</sub>**) – the prices of swords, lances, horses, armor, relative to consumer prices – adjusts the resources devoted to the military sub-economy for their actual effectiveness. It reflects the technology of warfare. Consider the Crusades. They raged for approximately two centuries after 1096 CE pitting feudal knights riding on horseback against Islamic cavalry encased in relatively comparable armor, both sides using swords and lances whose manufacture had been gradually perfected over centuries. Not surprisingly the combatants employed relatively similar shock tactics in battle since they were basically armed the same way.

Think of the military power equation this way: imagine a pie representing total economic activity is cut into two wedges, a military sub-economy and a civilian sub-economy. Resources – human, animal and inanimate – are employed in both sub-sectors. How this allocation is to be determined and how effective it is depends on politics: upon the individual or individuals ordering the use of armed force; upon who acquires the funds supporting the training and employment of armies and navies.

The easiest case to envision is a non-fragmented system, central rulers raising funds to fight wars. Some of these funds are allocated for purchase of swords, horses, siege machinery and a navy; some are used to employ soldiers, to pay for their upkeep when they are training as well as when they are in combat. The proportion of the entire economy allocated to military powers – the ratio of the military economy to the entire economy – is **m**. To secure the funds the ruler taxes the population. Under the Caliphate, *dhimmi* were not expected to fight but they paid higher taxes than Muslims, therefore avoiding the call to military service. The relevant population figure the Caliphate was working with was the total population - Muslims plus *dhimmis* - because that constituted its fiscal base. Its base for recruiting soldiers was the Muslim population – and slaves purchased or taken in warfare - under its rule. From a management point of view this system has the huge advantage of a centralized command structure.

For European feudalism the situation was far more complex: feudal society was extremely fragmented. The secular Church had some fiscal resources. Fief-monasteries had to supply warriors. With all of this taken into account the fact remains that the principal supplier

of military hardware and personnel was the agglomeration of feudal estates maintaining cadres of knights. The rents earned by feudal lords from their fiefs loomed large in the financing of the military sector of the economy. Cajoling the various actors into participating in a coordinated military action was tricky. Automatically this made funding and managing the Crusades a daunting proposition for Christian Europe.

Feudal lords fought with one another: they resisted efforts by the Holy Roman Emperor to march to a single drummer. How assemble a unified **P** base sustaining a long run commitment from a unified army of warriors? The papacy alone had a theoretical claim on the knighthood and monks of Europe. Call a Holy War, the Christian answer to Islam's *jihad*. Offer remission from sins, reduced time in purgatory, guaranteed arrival in Paradise, to the knights. Borrow from the book inspired by the teachings of Muhammad.

Employing the ideology of Holy War as a rallying cry resolves some recruitment problems but does not completely eliminate the problem of economic size. Under a regime in which the technology of killing commanded by military units rests upon an equal technological playing field – the Crusades being a prime example - economic variables – the levels of **y**, and **P** (total economic performance **Y** equalling the product of **y** and **P**) – throw a huge shadow over the cold blooded calculus of warfare. Given the Islamic advantage in trade and credit creation – hence a probable advantage in per capita income – European envy of Islamic merchant capitalism is totally understandable.

Learn from your enemies. Imitate those things upon which their economic superiority resides. This is the lesson that the European merchants took from the ultimately futile effort of Christian crusaders to take control of the Holy Land.

The Europeans enjoying the most sustained contact with the Muslims were the merchants of Genoa and Venice. Small city states dominated by powerful merchant interests, able to keep a lid on pressure of Catholic Church, Genoa and Venice were actively involved in shipping Crusaders back and forth to the Levant, contesting the eastern end of the Mediterranean with Byzantine and Islamic traders. The saying “a Genoese and therefore a merchant” speaks for itself. Not surprisingly Genoese and Venetian merchants were innovators in adapting the Islamic bill of exchange to the European market.

Ironically in fragmented Europe the bill of exchange was a more potent vehicle for extending credit and charging interest than it was in the Islamic world. As shown in the Appendix issuing bills of exchange negotiated in a market using a currency differing from that currency where the bill is originally drawn up generates a rate of return. This is above and beyond the return offered by drawing up a *suftaja*. For this reason the bill of exchange became a more potent instrument in fragmented Europe where currencies tended to be unique to localities than in Islam where there was one and only one officially sanctioned currency. One of the consequences was a weakening of the power of rulers. Negotiating bills of exchange ultimately impacted exchange rates between realms. Merchants could undermine, counterbalance, the effort of feudal rulers easing a debt burden by debasing the currency of their realms.<sup>34</sup>

The bill of exchange is the father of the bank check. The principal difference is the fact banks deal with many customers who are mostly anonymous, unknown to one other. Pushing the envelope of the bill of exchange, making it the cornerstone for banks charging interest on loans seems like a small step. Indeed it is provided the religious authorities do not squelch it. In Islam where state and religion tended to coincide it was a step merchants and trusts were not easily able to take. They did not push the envelope. In Europe, fragmented, enjoying the use of secular as well as religious courts, the step was easier to take.<sup>35</sup>

Having taken the step in Italy, important improvements and refinements were open for experimenting. The famous hub-and-spoke system creating legally separable partnerships was introduced by the Medici enterprise in the fourteenth and fifteenth centuries.<sup>36</sup> It consisted of a partnership (the hub) managing the affairs of numerous subsidiary partnerships (spokes). The business affairs of each spoke, run by a branch manager, were operated along tracks separate from the other spokes. Theoretically the entire fiscal umbrella, the hub, bore responsibility for the debts accrued by the spoke managers who bore unlimited liability. In practice – reflecting the fact that each spoke kept its own books and the fact that pursuing legal action against the hub was costly (given the fragmentation characteristic of the hub-spoke system) - creditors assumed the individual branches were independent. This limited the liability of the Medici system as a whole.

This was a foray along the path leading to acceptance of limited liability incorporation. In setting up incorporation – an action pursued by the nascent European centers of learning modeled on the trust concept pioneered by Muslims – Europeans pushed the envelope on

pooling capital for business purposes. The great trading companies emergent with Mercantilism – the Dutch VOC, the English East India and Hudson Bay Companies – drew upon earlier steps taken by universities and banking concerns. The result was the limited liability joint-stock enterprise, gathering in funds from a deep pool of subscribers in order to engage seafarers in global commerce during the age of European exploration and conquest. Mercantilism was business or rather merchant commerce managed in the interest of the state. It is hardly surprising that legal support for the initiatives leading to limited liability joint-stock commerce came largely from secular courts, not Catholic courts.

Not only did the Crusades promote Merchant Capitalism by putting Christians into direct contact with Islamic merchants. They also led to trade expansion within Europe. As monks, lay people and knights bristling with chainmail traversed Europe in growing numbers the wayfarers demanded foodstuffs and services along the way. Market towns sprang up in response to the surging demand. Fairs bringing together merchants from diverse lands prospered. Urbanization was given a strong fillip. So was the mobility of capital.

The gradual transformation of Europe from a system of rural feudal fiefs to a system revolving around market towns and fairs ushered in a reversal in the relationship between secular and spiritual space. Under the feudalism of the early Middle Ages - the period between say 500 and 1200 CE that basically came to an end with the inglorious sacking of Constantinople and the seizing of holy relics (nails from the true cross included) from the Byzantines by the knights of Catholic Christendom – spiritual space mainly consisted of rural monasteries. Many had been set up as the barbarian tribes invading the defunct Roman Empire were incorporated

into Christian space. Many of the newly formed monasteries were basically handed over to lay patrons, feudal lords, as part of their fiefs. This was policy under the Holy Roman Empire, policy detested by the Papacy. Into the monasteries went the oblates, the non-inheriting children procreated by feudal elites. Naturally the lay patrons wanted to appoint as abbots for the monasteries this same pool of literate elites hewing from their own estates. Clash over investiture was a major issue, one that came to a head in the on-going conflict over the appointment of the pope. Was the pope to be anointed by the Holy Roman Emperor? Or was the Pope to be elected by convening cardinals?

In any event corruption crept into the ranks of both the secular clergy appointed by the Pope, recruited to head up churches and the monasteries themselves. This is hardly surprising. Elites accustomed to consumption of luxuries populated the upper echelons of church and monastery alike. Work hard furrowing the fields? Not likely. Transcribing religious texts onto parchment was one thing. Back breaking toil was better left to slaves, servants, serfs and tenant farmers.

Given on-going backsliding, new monastic orders emerged in waves.<sup>37</sup> In each case – Cluny in the tenth century, the Cistercian order in the twelfth century – the professed aim of the founder was to purify monastic life. In each case time eroded commitment to the Benedictine Rule. The Carthusian monks claimed bragging rights because they were less like to deviate from the rule than Benedictines, Cluniacs and Cistercians.

Not surprisingly as credit creation spread in the secular community the monasteries, increasingly wallowing in materialism, took advantage of their privileges to extract rents.

Monasteries carrying the fruits of their vineyards and flour mills evaded paying tolls on bridges maintained by feudal estates. They began to loan out money at interest; they began to borrow to build structures where they could house traveling elites, feudal lords, even powerful merchants. Increasingly they became quasi-secular.

More important to the transformation of space was the drift toward urban civilization. As the composition of population concentration shifted toward market oriented towns and conurbations, the most dedicated Christians became mendicant friars, preaching the gospel to city dwellers. Franciscan and Dominicans gained prominence between 1200 and 1500 CE. And like their monastic counterparts, over time they drifted into aggrandizing rents. One notable example: they began to offer hallowed cemeteries to congregants, cutting into the monopolies once enjoyed by the churches.

During the late Middle Ages the symbol of the secularization of space – the eroding of spiritual space at the expense of the secular – was the gothic cathedral standing grand and tall with its flying buttresses and its magnificent stained glass windows.<sup>38</sup> More than anything else these imposing architectural feats testify to the wealth amassed in powerful towns and cities. Funded by tithes, grants from merchants and local feudal lords, the point of the gothic cathedral was to advertise. Come here: you can do business; our people are prosperous. Maybe you want to borrow from the very groups that assembled treasure chests for the erection of the massive Church structures rivaling the pyramids in grandeur, surpassing the structures celebrating the power of the Pharaohs due to their Biblical purity? After all, the gothic structures drew directly upon ancient Biblical traditions. Supposedly their dimensions were

based on what King Solomon and his priestly advisors worked out in constructing the first Temple devoted to the worship of Yahweh at Jerusalem.

Tellingly, on the outer walls of the gothic cathedrals often appeared figures represented Plato, Aristotle, Galen and Ptolemy. That they celebrated Greek learning was another spinoff of Christian imitation of Islam. It was Islam that had transcribed Greek learning into Arabic that he built on the ideas laid down by Greek philosophy. As well it was the Islamic scholar – Averroes, Avicenna, ibn Khaldun – who had struggled with the contradictions implicit in merging so-called Greek pagan philosophy with monotheism.

One of the biggest problems was the creation of the universe: did God exist before it was created, God being the ultimate creator? Or was Aristotle correct in arguing that the universe was eternal. The Dominican scholar St. Thomas Aquinas struggled with these issues as did the great Jewish scholar Maimonides. Beyond the philosophical issue of the eternity of the universe – admittedly abstruse and not something likely to perplex the peasant harvesting his grain or the milkmaid – was a very practical issue. Did miracles occur? Did God intervene directly in the day to day life of humanity? Was prophecy, direct contact with the transcendental world, a thing of the past? Or did it govern the present? Were the days of Abraham, Jacob, Moses and Jesus over? Or were new prophets coming before the day when the Messiah – or Jesus Christ – would arrive on the scene reconciling God to the ways of a suffering humanity?

Scholasticism is the movement within Christian learning that struggled with the problem of reconciling Greek learning to revealed religion. Ultimately to resolve the problem a

distinction had to be made between natural law and divine law. This is a step onto a highly slippery path. If natural law exists – if it governs motion on the earth, the movement of the planets, the manufacture of iron and steel according to chemical principles, the relationship of the bodily organs to one another; if it explains why people are greedy, why violence exists, why amassing wealth is desirable; if it accounts for all that – what is the proper realm for the application of divine law?

Scholasticism was a magnificent edifice that was ultimately a complete failure. Scholars like Stark (2003) are barking up the wrong tree when they make grandiose claims for its importance in promoting scientific and technological progress in the West. True it brought the achievements of Greek Axial thought into the halls of universities and monasteries. Still it was a dead end. It led thinkers into a cull de sac. Reconciling the miraculous with the mundane was not to be.

The fact that Scholasticism was highly controversial within the confines of the Catholic elite is indicative of the fact it opened up a can of worms. It encouraging the spread of doubts and controversies over the rectitude of doctrine that the Church could not corral. Indeed the publications of Thomas Aquinas were burned at first. Only later after a major lobbying effort did the Dominicans manage to get Aquinas canonized.

Not surprisingly Scholasticism was also incapable of holding Catholic Christendom together in a single communion. Reform movements aimed at cleaning up corruption in the Church – at the Vatican in Rome, in the monasteries, in the groups of mendicant Friars – continued to arise, then fail. How could a purified form of Christianity be fashioned? Attempts

at radical reform – notably the movement led by Jan Hus in Bohemia – ended in failure. Rome promoted a bloody crusade that wiped out the valiant effort of followers of Hus (Hus himself, given a guarantee of safety by Church authorities who proceeded to renege on the deal, was burned at the stake) who barricaded themselves behind wagons aligned in a circle, positioning cannons between the wagons to drive off the crusaders.

What finally led to victory of so-called heretics like Hus – notably Luther and Calvin – was the printing press. Once relatively cheaply produced bibles appeared the door was thrown open a path promoting a form of Christianity that refused to make use of Church priests and monasteries, a form of worship that appealed to those who had basic literacy. And who needed literacy? Merchants of course: they needed to read written contracts.

Not surprisingly the rise of Protestantism in the sixteenth century had special appeal to two groups: merchants and local feudal rulers. It appealed to merchants because they could read; because they could advertise their rectitude by joining a congregation committed to fervent promotion of Christian principles in daily life; and because they could openly avoid the ban on usury. It appealed to feudal lords who increasingly needed revenue in order to finance mercenary armies because it gave them an excuse to abolish the monasteries, securing their assets, disbanding their brotherhoods and sisterhoods.

Having entered the period of the Crusades on a high note, the Catholic Church found itself fighting contenders for Christian faith on all fronts five centuries later. A world increasingly secular, increasingly commercial, was ripping apart its monopoly over faith. Adding

insult to injury, the Church was beginning to feel the heat of competition for power from a new source: the monarchical state.

## **II.C Mercantilism: The West**

Transfer of technology is the handmaiden of trade. The Silk Road was an avenue by which ideas – the most mobile form of capital – made their way from West to East, from East to West. Indian numerals made their way to Spain because Islamic thinkers published books using them, Christian scholars discovering their power. Printing was originally developed in China. Silk reeling started in China, spreading throughout the Islamic region, making its way into Italy. So it is with the manufacture gunpowder that appears to have been commenced in China.

As with Islamic advances in credit creation and the freeing up of capital to move across time and space so it was with gunpowder. Once Europeans discovered innovations made elsewhere on the Eurasian land mass, they ran with them. It was not the Islamic Caliphate; it was not Saladin; it was not a Chinese general that extended a processing using of saltpeter to make a potent shell that could be readily fired by a gun or cannon, a potent shell that could be eventually mass produced. It was Europeans who did this.

Why one asks: because Europe was fragmented into feudal estates that warred with one another. Warfare was ongoing in Europe. Driving down the price of exerting military force ( $p_{mf}$ ) was at a premium in Europe. Bringing gunpowder into regular use in warfare had massive consequences, comparable to the way the chariot, the stirrup, the saddle, the crossbow transformed combat in the past.

From the late fourteenth century on Europeans had to drink from a chalice poisoned by gunpowder. The most important consequence was the gradual demise of feudal knighthood. Use of armed infantry – including employment of semi-skilled mercenaries – gradually displaced use of armed knights riding into combat. As this happened the door was open for the emergence of powerful states. In particular in England – blessed by being an island nation difficult to invade – and in France gradually emerged powerful kings that exploited statecraft in asserting their power over feudal lords. Once the Netherlands extracted themselves from Spanish rule they joined the ranks of states in this case as a republic ruled by an oligarchy. In marked contrast the Holy Roman Empire remained hopelessly fragmented.

Not surprisingly where merchants had achieved the greatest gains in status, where the promotion of banking and joint-stock financing had made the greatest inroads on the economy, where urbanization had taken off with unusual force, Protestant religion had the strongest appeal. This was the case in both England and the Netherlands. By contrast France emerged as a strong state primarily on the strength of its rural sector, its farming. To be sure, productivity gains in agriculture occurred in all three countries as open field feudal use of land gave way to enclosed farms experimenting with new crop rotations.

However the benefits flowing from productivity advance in farming were not the same in all three of the emerging states, England, France and the Netherlands. In the countries leaning toward Protestantism productivity gains increased the surplus a typical farmer could produce – a surplus above and beyond what the farmer needed to live on – setting in motion a move of rural dwellers to the cities where the surpluses racked up by agriculture could be

consumed. Likewise many farmers began producing handicrafts and inputs into manufacturing – originally controlled by artisan guilds – employing time of family members freed up from planting and harvesting obligations to engage in non-agriculture activities.<sup>39</sup> In France farming tended to hang on much longer at the expense of commercial expansion. What was the chicken and what was the egg? Did leaning toward Protestantism encourage the embrace of commerce? Or did the embrace of Merchant Capitalism plant the seeds of a strong commitment to Protestantism, to inculcating belief in the accusation that the Pope was the anti-Christ, and that priests were corrupt, avaricious perhaps demented?

Mercantilism was the upshot of military competition between the emerging states of Europe. Those state rulers best equipped to extract resources for financing the military sub-economy were those that could best survive and prosper in a dog-eat-dog struggle for revenue from international trade and revenue from the domestic economy. Taking three major steps was crucial: transferring rents secured by local units – feudal estates, guilds, monasteries – from the local authorities to the national government, into the coffers of the monarch; increasing the efficiency of all economic actors by eliminating barriers to internal trade and commerce (e.g.: tolls on rivers, bridges, and short roads); and using trade policy to generate a surplus, thereby bringing in precious metals from abroad.

In terms of the military power equation the idea is to increase  $m$  (by increasing the share of rents in the economy taken in by the monarch) and increase  $Y$  by eliminating inefficiencies and expanding commerce abroad, outside of the domestic arena. Embracing credit creating mobile capital was just the ticket.<sup>40</sup> Not only did it give a fillip to foreign trade

and international commerce; as well it promoted domestic investment by merchants in rural areas undercutting the power of urban guilds monopolizing local markets.<sup>41</sup>

In an important sense Mercantilism scaled up the size of the economic base on which rents could be extracted. Encouraging the creation of a global East India Company, a Royal African Company, a Hudson Bay Company, or a Dutch VOC allowed national authorities to extract rents. Monasteries, feudal lords and guilds had done this in past. Now states in the business of selling charters to globally oriented merchant enterprises were aggrandizing the rents. As well they enjoyed the side benefit that the arming of the Mercantilist merchant companies brought to the table.

All of this was in the service of national military potential **M**, that is was in the service of national power and national status. Four hundred years after Europe struggled with military fragmentation in its futile attempt to wrest the Holy Land away from Islamic rule, the centralized Mercantilist system – ideologically committed to wiping out the vestiges of feudalism – profoundly transformed the political nature of the military power equation.

Mercantilism was the highest form of Merchant Capitalism, far overshadowing the small scale merchant businesses that flourished under Islamic rule.

How important was Europe's Merchant Capitalism to the emergence of modern capitalism as it evolved later on with the first Industrial Revolution of the 18<sup>th</sup> century and the second industrial revolution of the nineteenth century?

According to Marx's classic work *Capital* a lot: <sup>42</sup>

“The circulation of commodities is the starting point of capital. The production of commodities, their circulation, and that more developed form of their circulation called commerce, these form the historical groundwork from which it rises. The modern history of capital dates from the creation in the 16<sup>th</sup> century of a world-embracing commerce and a world embracing market.”

and:

“The discovery of gold and silver in America, the extirpation, enslavement and entombment in mines of the aboriginal population, the beginning of the conquest and looting of the East Indies, the turning of Africa into a warren for the commercial hunting of black-skins, signalised the rosy dawn of capitalist production. These idyllic proceedings are the chief momenta of primitive accumulation. On their heels treads the commercial war of the European nations, with the globe for a theatre. It begins with the revolt of the Netherlands from Spain, assumes giant dimensions in England’s anti-jacobin war, and is still going on in the opium wars against China...”

## **II.D The Merchant House: Japan**

Remarkably at the far eastern end of Eurasian Silk Road merchant capitalism there emerged a fresh variant of merchant capitalism. It occurred in the early seventeenth century in Japan. How much it owed to the global trade initiated and perfected by the European Mercantilist powers and how much it owed to purely domestic forces is an interesting question. Suffice it to say that trade and technology transfer between the European powers and Japan blossomed in the sixteenth century. In principle imitation of powerful new form of commerce was a possibility. In principle Japanese might have been attracted to Western institutions because Japanese ideology was relatively close to Western European ideology.

Indeed in unraveling the nuances of the Japanese case, one should not slight outstanding similarities between Japan and the West. Two important similarities stand out: separation of the secular from sacred; and the perpetuation of the Central Asian Culture

Complex as instituted in Japan's version of feudalism. This was true with a vengeance in the refined version of feudal rule institutionalized during rule by the Tokugawa shoguns (1600 – 1868 C E).<sup>43</sup>

Secular power was concentrated in the hands of warlords. First among the warlords was the shogun; fiefs – approximately 300 were created under Tokugawa rule – were placed under rule by lesser warlords, *daimyo*. Under shogun and *daimyo* alike were warrior-bureaucrats, notably the *samurai*. Under the hegemonic rule of Toyotomi Hideyoshi that preceded establishment of Tokugawa control, *samurai* were forced to withdraw from the countryside, forced to reside in the castle town of the *daimyo* who they served in comitatus-like fashion. Loyalty to warlord chief was crucial; it was embodied in the cult of *bushido* (the “way of the warrior”).

Compelling the *samurai* to live in castle towns had profound economic consequences. It stripped them of land. Required to give up their claims to farms, they were compensated by allocations of rice that was taxed away from the villages in their fiefs. The upshot: internecine feuding between armed villages came to an end. Finally, irrigation ditches could be carved out deep in valleys, into areas remote from rivers. Villages near the mouth of an irrigation line were no longer able to monopolize the flow further along the line by dint of arms, effectively charging a toll for water usage, extracting rents from villages less favorably located. Rice cultivation increased as leaps and bounds. So did population: the carrying capacity of the land have been richly improved.

To quell dissent among the restive *samurai*, the policy of granting them exclusive right to carry weapons, namely two swords was imposed on both fiefs and shogun controlled lands alike. In concert with this rule, guns – the greatest threat to feudal retainers as the transformation of warfare from one dominated by cavalry to one dependent on massing infantry in Western Europe proved – were banned. Japanese artisans who had jumped into manufacturing guns during the sixteenth century, meeting the demands of rival warlords fighting over hegemony had no choice but abandon a field that was proving highly lucrative. Indeed they were even selling muskets to West visitors to Japan before the ban. That the shogun introduced these policies kept feudalism alive in Japan at the very time it was experiencing its death rattle in Europe.

The sacred was far more complex in Japan than it was in the Christian West. It was supported on two stools: Neo-Confucianism and Shinto, the imperial cult.

Drawing upon Chinese – ultimately Chinese and Indian – religious traditions, Neo-Confucianism soared to ascendancy as one of two officially sanctioned faiths. Neo-Confucianism first developed in China during the Tang and Sung dynasties was an amalgam of Confucianism, Taoism, and Buddhism.<sup>44</sup> Incorporating the magic and mysticism of Taoism and Buddhism with the wisdom/ritual orientation of Confucianism, Neo-Confucianism evolved as a “big tent” doctrine appealing to illiterate masses and sophisticated elites alike. At a practical level, Tokugawa era Neo-Confucianism served commoners and *samurai* elites on separate platforms. Buddhism was the popular religion, Buddhist temples supported by fief resources and donations from the faithful. Confucian concepts were promoted for the *samurai* elite.

Indeed by the close of the Tokugawa period the *samurai* mimicked Chinese Confucian officials in the sense they were uniformly graduates of fief academies, reading the Confucian classics in classical Chinese.

Shinto, a nature cult tied to the emperor who was its head, was also supported by a host of priests performing rituals in temples, paralleling the network of Buddhist temples serviced by monks. Since the Emperor was the only domestic personage wielding authority in the religious field, he – or she – was the closest analogue to the Catholic Pope. In any case the shogun and the emperor were de facto rivals during the Tokugawa period. The Emperor's official residence (the imperial place) was in Kyoto; keeping a careful watch on the Emperor's comings and goings were officials serving the shogun, residing a few blocks away from the imperial place.

Complicating the separation of the secular and the sacred was the Buddhist monastery. Many were heavily armed, threatening both the warlords struggling to be shogun and the imperial cult alike. Indeed Oda Nobunaga, a powerful warlord who attempted to establish hegemonic authority over Japan in the mid-sixteenth century, a predecessor to Hideyoshi and the Tokugawa, actually burned many of the monasteries populating the mountains north of Kyoto.

In short Japan, recipient of several versions of Axial thought as well as the Central Asian Culture Complex, enjoyed strong similarities with Western Europe. That said one should not underplay profound differences. Islam and Christianity played no role in the evolution of Japanese merchant capitalism. Indeed Christianity was banned from Japan during the Tokugawa period. When Portuguese and Spanish Catholic priests appeared in southern Japan,

notably on the island of Kyushu where they established Catholic churches during the sixteenth century, their message began to resonate with *daimyo* who may have viewed the Catholic ideology as a potential vehicle for recruiting *samurai* retainers.

Fearing that the sword might follow the cross, the Tokugawa regime banned the faith, requiring Japanese living in areas contaminated by Catholicism to tromp upon a picture of the Virgin Mary. Concern that the Pope might be a contender to the Emperor could well have figured in the minds of the shogun. To ensure the masses avoided Christianity compulsory registration with a Buddhist temple was imposed. To make the point clear to the Spanish and Portuguese, Japanese crucified a few priests upside down on crosses, placing them on an island ships passed by on their way to Japanese ports. Negative advertising with a vengeance one is tempted to say.

Trusting Protestants to skirt the delicate issue of religious conversion, sticking to the truck and barter of commerce alone, the shogun's regime graciously permitted the Dutch to maintain a small island known as Dejima off the coast of Nagasaki (a town under the direct control of the shogun). This was Japan's sole window on the West during the two and half centuries of Tokugawa rule. Indeed by keeping at bay meddling Western powers, the shogun introduced a close country policy. In effect the shogun wanted to maintain a monopoly over all international commerce Japan participated in. How much was due to having a controlling hand over diplomacy and how much was due to extracting rents from trade is difficult to say.

In any case the closed country policy conditioned the evolution of Japanese merchant capitalism. It flourished in a closed country environment. In stark contrast to Europe,

international trade played little if any role in its growth and success. True Japanese merchant houses may have enjoyed a slight glimmer of the business practices of the Dutch VOC that visited Dejima from time to time. However it is difficult to believe this contact loomed large in their notable innovations in corporate structure and marketing.

Japan's Merchant Capitalism was nursed into being by the organization imposed first by Toyotomi Hideyoshi, subsequently refined Tokugawa Ieyasu founder of the Tokugawa confederation style of government. The basic problem in managing a confederation of squabbling fiefs cajoling *samurai* resentful of being uprooted from their rural farming villages and peasantry turning over approximately 40% of their rice production in fief taxes, was balancing supply and demand for rice at the local level. Creating a market where fiefs could warehouse a portion of their output was the logical conclusion. A centralized spot where fiefs enjoying a surplus could sell it to fiefs experiencing a shortfall due to the poor harvests was the obvious solution. With this in mind, Hideyoshi assembled merchants from the area surrounding Osaka (the site of his imposing castle), carving out an island in the Yodo River for the building of warehouses. The merchants were instructed to service the rice market, dealing with emissaries from the various *daimyo* represented at the island. But once the Tokugawa shoguns took control of the country they chose to maintain their capital elsewhere. They established their castle town on the Kanto plain, their original territorial base. At first this new capital was nothing more than a tiny sleepy fishing village known as Edo, later to become known worldwide as Tokyo.

Osaka was the first merchant capital of Japan. By the nineteenth century it was one of the largest cities in the world, with a population of over 300 thousand. It was in Osaka that the powerful merchant houses of the Tokugawa era put down their roots. Inspired by the principles of fief rule, they innovated, creating internalized labor markets linked to an ingenious franchising system. The idea was to recruit apprentices (*detchi*); winnow out the lazy, promoting the hardworking apprentice to clerk status (*tedai*); reserving promotion to the coveted position of chief clerk (*banto*) to the most ambitious and committed recruits. It was the chief clerk who opened new franchise units, basically branches off the main trunk. Reminiscent of the Medici enterprise employing a hub-spoke framework, the franchising of major merchant houses was a vehicle for diversifying into new types of businesses. For instance Mitsui started out in the dry goods field, eventually becoming a major financier of fief and shogun managed enterprises. Indeed in the latter half of the Tokugawa period, fiefs – finding themselves strapped for funds due to the denuding of forests used to construct wooden cities and the onset of diminishing returns to creating new rice fields – began to assign *samurai* the task of actively engaging the market for foodstuffs, fertilizers, and natural resources.

Edo, the shogun's capital, grew at an even more voracious pace than Osaka.<sup>45</sup> The reason: the shogun's fundamental distrust of the *daimyo*, particularly those whose ancestors had opposed the Tokugawa takeover of the shogun's position from Hideyoshi's son and heir. *Daimyo* were required to perform compulsory attendance at the shogun's Edo castle on a rotating base. They were required to maintain lavish estates in Edo where their wives and children resided year around, effectively being hostages. They were required to travel to Edo on shogun controlled roads bristling with checkpoints where *daimyo* and travelling retainers could

be searched for weapons. To use a succinct phrase it was a “guns out, wives in” policy. The shogun kept on staff spies who watched out for any subversive activities on the part of so-called loyal feudal underlings. To service a host of servants, artisans and merchants gathered in the shogun’s capital.

By the last decades of Tokugawa rule, Japan still a non-industrial country, had reached levels of urbanization few if any other pre-industrial countries had attained. To provide foodstuffs, textiles, lumber for constructing housing, and swords for the warrior elite a vast network of merchants and artisans had grown from a small base in 1600 to a huge array in the 1850s.

Merchant Capitalism, commencing in Islamic lands, further refined in Western Europe, had come into its own in the Far East.

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In the third section, I explain why a second form of capitalism Technological Capitalism emerged in Western Europe. I discuss why tension exists between the two forms of capitalism, merging as modern capitalism. With this framework I explore the dark side of capitalism, imperialism. Finally I explain why Japan was the first country outside of the Western world to embrace modern capitalism.

### **III Technological Capitalism**

By the term “technological capitalism” I mean investment in technological progress funded by credit creation. Inherent in technological progress is the spawning of new ideas, fresh skills, and the employment of fixed capital embodied in machines, structures and transport equipment.

Grasping concepts - learning how to use blueprints for the organization and implementation of production - is the most important component of technological capitalism. Concepts, the memes of intellectual capital are inherently mobile. They can be taught through many channels: masters convey ideas to apprentices in guilds; managers instruct shop floor workers in factories; books describe blueprints in exhausting detail; schools offer instruction in the concepts in a classroom setting. The potential for diffusion, leakage from organizations or individuals attempting to monopolize them, is extremely high.

Reflecting this reality - much of the capital inherent in technological capitalism taking the form of highly mobile capital almost impossible to keep bottled up – a strong disincentive to undertaking the costly investment in coming up with new technologies can stymie technological capitalism. One way around this problem is creating a positive feedback cycle, progress feeding on progress, invention fostering invention. Say a first step is taken by agent A. Suppose A knows that agents B, C, and D will utilize the first step without incurring the costs of innovation that were incurred by A – a disincentive from bearing the costs to be sure – but also expects that B, C and D will make improvements on the step taken by A (by carrying out their own costly product development) ultimately benefiting A in the long-run. In short suppose expectation of

unending progress saturates the community. In this environment technological progress can flourish.

The paradigm case of positive feedback – the one that emerged in Europe after the Crusades – is one in which technological improvements fostering gains in scientific knowledge that in turn laid the groundwork for improvements in technology. Key to the spawning of this positive feedback cycle is the fact that the rewards attractive to shop floor inventors are different from the rewards appealing to scientists. Scientists seek prestige, status within the community of their peers. Often prestige translates into riches: a boost in salary, support for travel to give learned lectures, control over laboratories. At a minimum, power and influence act as a motivator. To be sure some are less selfish, enjoying the thrill of discovery for discovery sake. In any event the typical priority a scientist works with is to making knowledge public. Believing constant criticism and debate stimulates further gains in scientific knowledge most agents working within the scientific community possess a compelling incentive to spread new discoveries far and wide.

Typically an inventor/innovator wants something else: material rewards, amassing resources for financing further invention. Finding a way to reap a long stream of financial benefits from their work naturally leads them to want secrecy, or at in the absence of secrecy a mechanism from profiting from what they have accomplished.

Creating an institutional environment in which both communities – innovators and scientists – can benefit one another means creating a community in which expectations of progress flourishes. This is the essence of Technological Capitalism.

## **II.A Guilds, Government Sponsorship, Patronage and Patents**

Beginning during in the late Middle Ages, four European institutions laid the groundwork for technological capitalism: guilds; state sponsorship of science and technology, private patronage and patents. The fact that they took the form they did reflects the political fragmentation of Europe and the fact that technological capitalism had to overcome Christian suspicion about the nefarious, corrupting, influence of commerce and profit seeking artisan activity.

The guild – both merchant or craft guild – originated in an environment in which purifying commerce and manufacture was crucial to the survival of institutions in a world colored by the Christian concept of purgatory. According to doctrines developed over centuries within the Catholic Church purgatory - reaching back views propounded by theologians like Saint Augustine – purgatory was a physical place located between Heaven and Hell. Individuals ultimately destined for Heaven and not Hell who died without securing sufficient remission from sin during their lifetimes to justify immediate entry into Heaven spent time in purgatory where their suffering and abasements paid off a debt owed God. Once paid, once sufficiently purified, they could move on to paradise. Church sanctioned prayers offered for them during their lifetimes and prayers offered by those who directed their contributions to the Church in the honor of the deceased could reduce the time spent in purgatory.

Without a doubt there were many in the ranks of the clergy who sincerely believed that they were assisting their flocks by providing services and structures – masses, venues for mass prayer, collection and distribution of alms - to the masses of peasants, serfs, merchants and

artisans. They themselves believed deeply in purgatory, penance and salvation through faith. Still providing these services was also a mechanism for extracting monopoly rents. When the pope said that dying fighting the Saracens in the Crusader wars gave immediate access to paradise; when the Church sold indulgences in remission of sins committed; when a key argument made to feudal lords concerning the granting of land to monasteries was an implicit guarantee that monks would pray for the lord – and his feudal retainers - in order to shorten his sojourn in purgatory; the Church was using the threat of purgatory as a device for securing resources and labor services from its clientele.

That purgatory was not a concept developed in the Old or New Testaments – the closest idea was the Jewish concept of gehenna – speaks volumes. It suggests that the Church hierarchy gradually developed the idea as a mechanism for amassing material resources and solidifying its legitimacy in a world threatened by barbarians. Once the Church lost the subsidies once provided by a Roman Empire collapsing under the weight of hostile invasions it had to look elsewhere for resources. Advertising itself as an indispensable vehicle for escaping an afterlife debased either by fiery torment or by countless years of humiliating toil aimed at sloughing off the dirt and grime of sin committed in this life was a potent arrow in the Church's quiver. After all, psychological experiments suggest that the fear of being consigned to hell (or being condemned to eons of humiliation in purgatory) is much stronger than the appeal of heaven. That purgatory was a concept with tenuous roots in scripture was important during the Reformation: Protestant churches were fully prepared to do away with the idea. For most Protestant sects purgatory went hand in hand with Catholic Church corruption.

Guild membership helped address these concerns. Guilds were both religious and commercial organizations. They adopted as guild names referenced to patron saints or specific Christian events. For instance in the English census of 1388 craft guilds dedicated to the Blessed Virgin Mary, Corpus Christi, Saint Nicholas, Saint Katherine, Saint John the Baptist, Saint William, Saint Lawrence, and All Saint appear.<sup>46</sup> As religious institutions they attended funerals and dirges for deceased members, placed burning candles in churches, paid priests to perform functions, and gave alms. They paid for masses dedicated to the souls of deceased members with the aim of limiting the suffering of the deceased member in purgatory. At the same time they advertised their membership as good Christians, following the commandments, eschewing the seven deadly sins, being truthful, avoiding theft. Lest they be thought of as corrupt and deceitful, they committed themselves to producing high quality goods and selling them at fair prices. Having the right to inspect the operations of all guild members, they claimed to prevent the manufacture and dispensing of shoddy goods. In short bundling together piety and profit had two important consequences. It discouraged members from violating manufacturing standards by raising the cost of being dismissed from the rolls of the guild or voluntarily abandoning the guild, taking guild secrets upon exiting for greener pastures.<sup>47</sup> As long as one remained a guild member one could reasonably expect to have alms given, masses held, and prayers organized, by ones colleagues upon ones death went one presumably moved onto purgatory. Moreover, as quasi-religious organizations, guilds advertised the commitment of their members to purity in commercial dealings.<sup>48</sup>

Guilds functioned as cartels. In so far as they combined piety with profit they exercised tight – oppressive it could be argued – control over their members. The cost of being driven out

of the ranks of the guild being high, most members toed the line. The fact that guild members tended to cluster in a district made it easy to monitor one's colleagues. No wonder guilds were sometimes attacked as monopolies: a cartel in which cheating is absent functions as monopoly. As a result the more perfect the cartel, the closer it could act as a monopolist – and a single buyer of labor in its region – the better it could extract rents.

Thus guilds played a crucial role in conditioning European labor and product markets. Under the rules of the guilds masters who owned their own shops could take on a limited number of apprentices who were contracted out to the master. In principle the master taught the apprentice skills, thereby augmenting the human capital of the apprentice. Masters charged fees to compensate them for their efforts. As well masters benefited from the labor services of the apprentices. Upon completing their apprenticeships the apprentice became a journeyman, often tramping around through a network of towns and rural communities in searching for work. The lucky journeymen became masters enjoying the full rights of membership. Following this logic Epstein (1988) argues that guilds played a key role in improving the quality of human capital throughout Europe between the twelfth and the eighteenth centuries. As well he argues that the circulating of journeymen gave a fillip to the diffusion of best practice technique within fields like hide tanning, iron working, silk reeling, wool weaving, tailoring, tiling, even clerking or tax farming.

It is important to separate out labor training from technical innovation and diffusion of best practice technique. To be sure some skills were passed on by masters to their apprentices. But – and this is a big “but” – was the master equipped to teach? Moreover was the master

willing to give up all of his secrets and clever time saving practices to an apprentice who was likely to become a competitor? More to the point, viewing the transmission of innovations from a selfish angle, did a guild of wool spinners in London that innovated within a field want to see its technological advances mimicked by a wool spinning guild in Antwerp? If the whole point of the guild exercise was to offer beneficial goods and services to the community it served – goods and services superior and better priced than those that could be imported by merchants from elsewhere - did it not have an overriding incentive to monopolize guild secrets?

In actual practice – as opposed to Christian posturing – guilds practiced rent seeking, hardly surprising in a regime in which the secular clergy and the monasteries were also capturing rents. Apprentices were exploited, cheated by masters who refused to reveal trade secrets. Mercers and wool sellers raised prices for their wares when there were shortages appeared in the marketplace. Guilds held onto trade secrets as long as they could.<sup>49</sup> Jaundiced journeymen organized their own associations, attacking guild elites, attempting to exploit any special techniques they had gleaned from observing their masters.

Appreciating the problems imposed on communities by craft guild rules, astute individuals and organizations in late Medieval Europe interested in promoting technological innovation lobbied for alternatives to guilds. Not surprisingly merchant guilds that often managed to gain political control over European jurisdictions were important players. After all their enterprises benefitted if the prices they paid craft guild suppliers for the goods they exported to other communities were lowered through technological improvements that

increased labor productivity. Not surprisingly governments - whether city, ecclesiastical township, principedom, duchy, or monarchical state - offered prizes and subsidies to innovators.

To be sure government investment in technical research predates has a long history predating its flourishing in the late Middle Ages. Driven by astrological concerns, monarchs and Emperors maintained observatories to chart the stars. Royal mints experimented with metals alloys. What late Medieval and early modern Europe brought to the table was a remarkable profusion of quasi-governmental institutions subsidizing research: Royal Societies armed with grants; university grants; royal promises of lifetime pensions for successful inventors; cross-fertilization yoking together guilds, learned societies and city administrations.

Government and university subsidy was especially important for innovation in precision instrument production.<sup>50</sup> While some of the advances made were mainly applied to empirical philosophy in the first instance – scientific observation – some were generated by commercial endeavor, mainly on the high seas, and all of them eventually had practical application. Navigation, surveying, medical practice, the construction of steam engines, the manufacture field weapons all benefited from the telescopes, microscopes, air pumps, pendulum clocks, and refined balances.

The case of European oceanic exploration illustrates the general phenomenon. It was one important driver for the explosion of investment particularly by governments. Reflecting the intense competition between the emerging states of Europe the push to improve navigation aids went hand in hand with burgeoning demand for devices that sailors could use to accurately observe activity on potentially hostile ships. Henry the Navigator assembled a group

of mathematicians and navigation experts with the aim of improving the astrolabe thereby enhancing the capacity of the Portuguese fleet to explore the coast of Africa and the islands off its western shoreline. As a result the mariner astrolabe came into being. Galileo originally developed the telescope with the aim of marketing it to Venetian merchant houses who wanted to improve their ability to observe the goods and personnel aboard rival ships. Colbert, French Minister of Finance commissioned Christaan Huygens to invent a marine chronometer for accurately measuring longitude at sea during the 1670s. Ultimately a prize offered by the British government in the early 1700s yielded a successful device. John Harrison, a Yorkshire carpenter turned clockmaker earned a £20,000 reward for his successful submission.

Holders of professorships in mathematics, mechanics, astronomy - natural and experimental philosophers specializing in science – devised most of the precision instruments whose applications in the fields of surveying, optics, fluid and gas mechanics established a foundation upon which the English Industrial Revolution rested.

For instance Edmund Gunter professor of astronomy at Gresham College invented a one hundred link chain for surveying. With this device the costs of accurately laying out the dimensions of private plots and private toll ways fell. It made it easier to specify the cheapest paths for road beds and the optimal placing of bridges spanning rivers and tunnels cutting through mountains. In short it was just one of the many specialized technical instruments – joining telescopes, backstaffs, sextants, and the like – making for improvements in transport infrastructure (surveying) that reduced the costs of moving goods and people.

In the fields of measuring pressure professorial research was in the forefront. Daniel Bernoulli, Professor at the University of Basil, invented a device to measure blood pressure. Robert Boyle, wealthy Anglo-Irishman and patron of the “invisible college” in London that eventually morphed into the Royal Society of London for Improving Natural Knowledge, extensively experimented with air pumps, eventually showing that the volume of gas varies inversely with its pressure. His protégé, Robert Hooke, worked as an assistant to Boyle, eventually become the curator of experiments for the Royal Society, earning an annual gratuity that allowed him to carry on his research. Interestingly he corresponded with Thomas Newcomen regarding the construction of a steam pump that could be used in pumping out mine shafts. Hooke suggesting creating a vacuum through condensation of steam might be effective.

Research in optics – the work of Isaac Newton, Lucasian Professor of Mathematics at the University of Cambridge, carried out the late seventeenth century stands out – had important spinoffs in practical fields. To be sure in the short run applications to the manufacture of telescopes and microscopes were mainly limited to the practice of science itself. However spectacle makers also benefited from the demands that science placed on lens grinders. Mass production of spectacles had huge pay-offs: it extended the economically productive life of artisans, clerks, merchants and seamen.

National governments, universities, and monarch supported institutions like the Royal Society were not the only public or semi-public institutions dispensing grants and prizes for innovation. Pérez (2008) shows that the eighteenth century government of Lyon was actively

involved in encouraging invention in silk manufacturing: 170 of the nearly 900 inventors who applied to the French national administration for a privilege of invention or a reward came from artisans in the city. In the case of Lyon the major guild in silk production, the Grande Fabrique, worked hand in glove with city administrators, the national government and merchants in coming up with grants and prizes rewarding innovators.

Outside the world of institutions was the private patron, the wealthy merchant, the duke, the prince, the gentleman scientist. Turner (1990) provides many examples of the purchase of precision instruments devised by wealthy individuals executed by master craftsmen. Some of these individuals became private patrons for scientists; some gave grants to learned societies like the Royal Society in London. Hooke was the beneficiary of an annuity funded by a patron. Early in his career Francis Bacon, advocate of public funding for practical advances in science and engineering, benefited from the patronage of Lord Essex. The *Gentlemen's Magazine* of the late seventeenth and eighteenth centuries carried advertisements for philosophical instruments. People of means purchased their own cabinets containing microscopes, measuring devices, and telescopes. The fourth Earl of Cork and Orrery became the patron of John Rowley. Rowley was a gifted instrument maker. At the Duke's request he copied the work of George Graham, a highly respected member of the Royal Society who worked on devising the Greenwich Observatory, creating a model of the Copernican system that mechanically demonstrated the movement of the known planets. Known as an orrery, the model became a veritable splash in elite circles: Queen Anne commissioned one that she gave to Prince Eugene of Savoy; brass and steel versions resting in expensive mahogany cases were snapped up by the wealthy; cheaper knock-offs flooded the market.

Finally there was the patent.

Sometime in the late Middle Ages – in the fourteenth and fifteenth centuries – European monarchs, smaller governments and cities alike began issuing patents. Monopolies of a sort insofar as their recipient enjoyed exclusive rights over a production technique or the manufacture of a specific product for a limited duration, say ten years. It is said that English kings promulgated royal grants of patent to foreigners with the express aim of encourage them to immigrate to England. It is said the Italian republics granted patents for the making of glass and the construction of barges with sophisticated gearing. Trivellato (2008: 222) notes that the Venetian Senate issued at least 1,900 patents of invention between 1474 and 1788. Once Italians became familiar with the patenting institution they exploited its potential for blackmail: grant a patent to me and my colleagues or we will go elsewhere, securing an exclusive manufacturing opportunity in another realm. Europe, highly fragmented, was the perfect soil upon which the patent system could flourish.<sup>51</sup>

One wonders: what made European manufacturing so special that patents would become spread across jurisdictions in a pre-industrial world? The answer is simple: some European artisans were keen to perfect what purchasers could obtain from their private establishments. They wished to operate outside of guilds. They were unable to secure patronage. Their university posts generated earnings insufficient to fund their research activities. They wanted to build up their own laboratories. In all of this the demand for precision was present.

Securing a reputation for refining materials – smoothing the surface of glass, perfecting the balances used by assayers – was good advertising. As well securing patents was good advertising. For the artisan and his or her shop the award of a patent typically sent out a market signal: the recipient took precision seriously. Market opportunities were proliferating. Rich patrons sought beautifully made devices. As commerce began to flourish in the aftermath of the Crusades, enjoying the taste to differentiate the tasteful from the crass became a sign of refinement amongst elites. Monarchs, dukes, princes, wealthy burghers were certainly interested in possessing beautifully made trinkets that they could shower on guests as gifts; that they could employ in attracting politically influential spouses, essential for monarchical diplomacy. Ironically monarchical diplomacy managed through marriage alliances had been widely practiced by the *comitatus* following the logic of treaty making on the steppes of Central Asia by trading brides along with material riches.

It is difficult to pinpoint when and why the European fascination with precision started. One likely contender is the measurement of time.

How much Christianity had to do with a European fascination with precise measurement of time is an interesting question. Landes (1983: 58 ff) argues that it does. Landes points out that pious Jews pray three times a day, but not at set times. Similar is Islam: five prayer times are deemed crucial but they are set by a natural clock (dawn, right before noon, before sunset, after sunset and after dark). Without any natural guidelines as to prayer monks were inclined to pray all the time. Presumably praying continually was a sign of devotion; those not showing such devotion were viewed as laggards by their colleagues. To free up time for work in the

fields and for the copying of manuscripts something had to be done. Tertullian recommended prayer at set times: at the third, sixth, ninth hours. The Benedictine rule adopted this model, paving the way for its acceptance by other monastic orders. Hence a strong interest in developing mechanical timepieces that could be readily reproduced for use in far flung rural locales – unlike massive water clocks favored by Chinese emperors – that could be employed by bell ringers laboring in Church towers or belfries.

In short the monastery played an important role in pushing forward Western technology. Outside of creating a demand for time pieces other potential links between monasticism and technology have been suggested. One lies in the field of glass manufacturing. Churches and monasteries alike required elegant glass, especially so in the late Middle Ages when the great Gothic cathedrals with their beautiful stained glass illustrating scenes from the holy scriptures were under construction. Another possible link: managing gravity water systems. Magnusson (2001) makes a strong case for the view that the monastic orders demanded fresh clean water flowing out of taps at fountain heads. The result was a demand for pipes both bronze and wooden, holding tanks, elaborate pressure releasing cisterns and the like. Since the monastic orders were centralized, innovations obtained at one monastic site tended to spread rapidly to other locales through the agency of the order.

In any event the upshot of the monastic management of time was immense: by the late Middle Ages a stream of innovations were available on the European market. Chamber clocks, timepieces, all types of mechanical clocks competed for funds of discriminating elites. By the fifteenth century spring driven clocks; and by the early sixteenth century miniature watches

were being manufactured by skilled artisans.<sup>52</sup> It is instructive that seventh century scientists like Galileo and Huygens invented pendulum clocks with the aim of making time measurement increasingly precise. Indeed scientists like Galileo worked together with craftsmen in perfecting scientific instruments: geometric compasses, hydrostatic balances, and most famously telescopes.<sup>53</sup>

Remarkably in fifteenth century manuscripts the Cardinal Virtue Temperance is depicted as wearing a clock on her head and eyeglasses in her right hand. She stands on a windmill.<sup>54</sup> Precise instruments abound in this concept: miniature gears finely manufactured to measure time; lens ground the better to see; massive gears converting wind power into a vehicle for grinding grain. Seeing clearly; being punctual; employing machines extracting power out of nature, manipulating nature. Representing this as virtue incarnate is making sacred a secular fascination with mechanical precision.

In sum, in the late Medieval and early modern periods the European supply of precision instruments vigorously expanded. Whether guilds hindered this growth or harnessed it is a matter of considerable debate.<sup>55</sup> In any event outside the guild institution were other sources of supply: work funding by governments, learned societies, universities and their laboratories, private patrons, and patents. Over time the guilds became less influential. The Reformation eroded belief in purgatory weakening the power of piety an essential glue of the guild; the Inquisition promoted by the Counter Reformation stifled creativity in the guilds located in Catholic lands.<sup>56</sup> The spread of great cities like London spawned suburbs where artisans could escape the control exercised by the powerful guilds assembled under the umbrella of the

London Livery Companies. Incipient industrialization creating new metropolises free of guild control; all of this meant that the patent, universities and government loomed larger and larger in the supplying of precision manufactures. Finally governments of freshly minted nation-state intent on weakening local sources of influence and power that could challenge their authority legally abolished the guilds. Patents, universities and government became the hallmarks of incipient Technological Capitalism.

### **III.B Positive Feedback in Technological Capitalism: From Alchemy to Organic Chemistry**

Hermes Trismegistus is one of the shadowy gods emerging from a pure amalgamation. On the one hand was Hermes the Greek god of commerce, trickery, deviousness, transformer, associated with the frontier. He was the perfect embodiment of fear of the Central Asian merchant-warrior. To Hermes was attached characteristics of the Egyptian god Thoth, conjurer of spirits, adept in Gnostic knowledge, magician. The resulting deity was passed down from Roman times to the European late Middle Ages through Islamic philosophers. It was known as Hermetic philosophy.

Hermetic philosophy became an underground tradition – underground because it was not specifically tied to Christianity, indeed it was positively frowned on by the Catholic clergy who may have viewed it as a competitor to the magical rituals they performed in the Eucharist – in both European scientific and artisan circles. It was mystical in a Gnostic sense because it purported to unlock esoteric secrets of the universe that only intellectual virtuosi could plumb. In making much of mystical fifth element, an elixir, the pursuit of Hermetic knowledge known

as alchemy smacked of magic. Ironically it inspired icons of the Scientific Revolution like Boyle and Newton.<sup>57</sup>

Alchemy in the variant that reached Europeans in the late Middle Ages was rooted in Greek philosophy. Aristotle's theories of motion and medicine were the cornerstone. The basic idea was simple and compelling. There are four natural elements: earth, water, fire and air. Earth corresponds to black bile: it is cold and dry. Fire corresponds to yellow bile: it is dry and hot. Water corresponds to phlegm: it is cold and wet. Air corresponds to blood: it is wet and hot. The universe consists of concentric shells of water, air and fire above earth at its center. Water is in between air and earth. As one can see lakes are on the surface of the earth. Air is above water: observation bears this out as bubbles in air in water move upward. Fire is the outermost shell. Meteors spark in the sky.

Each element moves toward its natural place of rest, the shell to which it belongs. Change of place is simply alteration in material composition. Heat water that is wet and cold: as a result it becomes dry and wet, turning into air. Air moves upward. This framework convincingly explains motion but not acceleration, the problem that absorbed Newton in the seventeenth century.

In Aristotle's model of the universe earth is the realm where everything gets jumbled up. Things are not in their natural places, they are out of sync. They are mixed together in a welter of confusion. The terrestrial world is corrupt, shot through with impurities. It is the place where change can and does take place as witnessed by the motion constantly observed on it. For this reason purification is possible because transformation is possible. Evidence one can

transform things is abundant: as already mentioned apply fire to water altering the nature of water, turning it into air. Following this logic, impure metals like lead can be transformed into purer metals like silver by rearranging the elements within it. As well silver can be turned into gold, the purest metal of all.<sup>58</sup>

Islamic philosophers interpreting Aristotle during the Golden Age of Islam reasoned that a fifth substance – they called it *al-iksir*, the word from which the English term elixir is derived – could produce the transformation. The existence of this special substance, this elixir, was the core of alchemic mysticism. It has come to be known as the Philosopher's Stone.

As Leicester (1965) emphasizes alchemy was practiced in many regions within the Eurasian world. The Chinese knew of it. So apparently did people in India. Certainly Islamic thinkers thought it important though its validity was a matter of healthy debate. Once it made its way into Europe via Islam it became entrenched there. Even if the Church despised it secular rulers maintained an active interest in it, inviting alchemists to their courts for demonstrations. That rulers had an active interest in it is hardly surprising: turning alloys of metal into pure gold would facilitate issuing of coinage. It would reduce costs. Moreover proper use of the Philosopher's Stone might well have huge benefits for health and longevity. After all Aristotle's theory suggested that there were important correspondences between the micro-environment of the human body with its various organs and the macro-environment of the universe.

Given the religious-like search for purification central to alchemy it is hardly surprising that the field could – and actually did - become increasingly wrapped up in mysticism. Indeed this appears to have been the case in China where it eventually merged with Taoism and later

Neo-Confucianism. It reached a similar dead-end in the Islamic world, fueling philosophical speculation leading onto intellectual cul-de-sacs. Only in Western Europe did alchemy evolve into chemistry, a hard science. Why?

The answer lies in the technology of precision instrument making. As Leicester (1965: 82 ff) points out the reason alchemy morphed into the experimental field of chemistry was the command over precision reached by European artisans. In the mundane field of material craftsmanship Europeans had gone far down the road of experience. They were adept at making glass freed of mineral impurities that could and did contaminate chemical mixtures. They were well versed in creating accurate balances and scales used by assayers and alchemists alike. Accurately weighing outputs from alchemical experiments created a body of quantitative knowledge that experimenters of all backgrounds, including wealthy amateurs, could tap into. Technology drove science as it has for most of human history, at least up until the mid-nineteenth century when technology gradually became applied science.<sup>59</sup>

It was the on-going use of exacting measurement that permitted alchemists to shed the mysticism of alchemy. Through repeated experiments - in which elements were decomposed into their constituent parts that were then employed in reversing the process, the various parts being reassembled into the original element in the laboratory - chemistry as an academic field emerged. As Klein and Lefèvre (2007) point out this program, extended throughout the eighteenth century, yielded the monumental table of chemical nomenclature painstakingly put together and published jointly by Lavoisier and his colleagues in 1787. Behind this massive project were years of advance in material science gradually creating a consensus around the

theory of chemical affinity. In their view Lavoisier was more the heir than the instigator of a new version of chemistry.

To be sure Lavoisier is justifiably famous for his theory of oxidation (the taking on of oxygen) refuting the older thesis that phlogiston was given off by compounds in chemical processes. However Klein and Lefèvre suggest that the biggest breakthrough after Lavoisier's head was chopped off by the guillotine. They assert it came through the development of organic chemistry in the nineteenth century. What Lavoisier and his colleagues achieved in the eighteenth century was a detailed breakdown of how to produce and decompose inorganic substances. They did not extend their methodology into the analysis of plants and animals. After breakthroughs were made in the 1830s concerning the analysis of carbon compounds it became possible to posit a completely materialistic theory of matter, inorganic as well as organic, an overarching theory for plants, animals and metals.

Organic chemistry opened the door to a wholly materialistic theory of life itself. This was a door that chemistry was hardly alone in throwing open. Materialistic theories became increasingly popular in the course of the nineteenth centuries. Witness Darwinian natural selection, Marxism arguing ideology was the superstructure resting on a material substructure informed by technology cum class structure, Social Darwinism and eugenics.

In short a practice steeped in mysticism and based on purification – integral to religion – was gradually transformed into a totally materialistic theory bereft of otherworldly elements like the Philosopher's Stone. The ultimate key unlocking the door of knowledge was advance in the design and manufacture of precision instruments.

One of the most important consequences of the elaboration of carbon chemistry was the proliferation of patents in the field of chemistry. Once a straightforward method of characterizing compounds was created – based on molecular structure – it became possible to patent new medicines. Scientific pharmacology was born.

This is not to say that the hocus-pocus of alchemy disappeared with the carbon revolution. Indeed the nineteenth century was the century of morphine addiction, as so-called “patent medicines” like laudanum made their way on the shelves of respected pharmacies as well as corner stores.<sup>60</sup>

Despite abuses perpetrated by unsavory apothecaries exploiting a naive public the field of chemistry, increasingly patent-oriented after 1830, made massive strides during the post-1830 period. Commerce and scientifically based research and development were merging, creating a new form of capitalism, Technological Capitalism.

### **III.C Industrial Revolution: Merchant Capitalism and Technological Capitalism Embraced by Modern Capitalism and Nascent Nationalism**

Technological Capitalism came into its own with the first Industrial Revolution of the eighteenth and early nineteenth centuries.<sup>61</sup> Its essence was the merging of the tinkering of mechanics and artisans with the patent system.<sup>62</sup>

Most of the inventions of the first Industrial Revolution had nothing to do with science *per se*. True Watt, developing the separate condenser for the steam engine was employed at the University of Glasgow as a skilled mechanic capable of working on a host of instruments,

including astronomical. True he became friends with the chemist Joseph Black who was a professor at the university. But the theory of steam pressure – thermodynamics – was not advanced until the mid-nineteenth century by Carnot. Inspired tinkering was the order of the day. The flying shuttle, the water frame, the mule and the jenny that transformed cotton textile production in eighteenth century England were inspired inventions to be sure but they did not rest on new theories of how to extract energy from the natural environment. In iron and steel making, Cort's puddling process, use of the lime lined furnace, and the rolling out of the molten were important breakthroughs that made use of established chemical – one might even say alchemical – principles. No new science was involved. Finally the introduction of the factory system employing workers disciplined by time measurement made use of clocks long in existence in Europe. As well it employed a centralized power source, a steam engine. Using technology old and new, innocent of scientific reasoning, the factory proved a powerful device to exploit the specialization and division of labor.

It was not science *per se* but the wholesale commercialization of technological innovation that rendered revolutionary the first Industrial Revolution. It was the company founded by mechanic Watt and entrepreneur Boulton that manufactured steam engines for client firms that was emblematic of the new age ushered in during the eighteenth century. Increasingly inventors like Watt made use of the patent system. It protected them from rivals stealing their ideas then patenting them as if they were their own innovations. As well securing a patent was a powerful form of advertising. It signalled creativity.

Still advances in science and technology fed off one another during the Industrial Revolution. As Morrison-Low (2007) demonstrates the two fields vigorously interacted because they shared a joint interest in precision machinery. For instance in developing a working prototype – as opposed to a miniature model – of a steam engine with a separable condenser Watt required a cylinder that was precisely bored out, imperfections in the cylinder walls allowing air to penetrate or escape under conditions of compression. Again the proliferation of industrial cities where guilds had a weak base or were non-existent – Manchester, Liverpool, York, Sheffield, and Birmingham – attracted entrepreneurial talent that wanted to avoid going head to head with guild competitors. Precision instrument retailing jumped by leaps and bounds in these urban centers.

Technological capitalism and Merchant Capitalism were not particularly comfortable with each other. Adam Smith in his classic *The Wealth of Nations* pointed out the problem: <sup>63</sup>

“The capital, however, that is acquired to any country by commerce and manufactures, is all a very precarious and uncertain possession, till some part of it has been secured and realized in the cultivation and improvement of its lands. A merchant, it has been said very properly, is not necessarily the citizen of any particular country. It is in a great measure indifferent to him from what place he carries on his trade; and a very trifling disgust will make him remove his capital, and together with it all the industry which it supports, from one country to another.”

In short the problem with mercantilism is that it does not well serve national interests. It bleeds away some portion of the capital that should be used within the nation.

At the heart of Smith’s dilemma is the tension between capital accumulation used to fuel the growth of a nation’s economy, ultimately benefiting its citizenry by providing jobs and commercial benefits, and capital accumulation used by merchant houses to exploit

international trade opportunities. On the one hand build fixed capital in the form of factories in one's own nation; on the other hand go willy-nilly to wherever land where the tune an investment creates plays the sweetest, where the its rate of profit is the greatest.

In effect Smith was making a profound argument for nationalism. That nationalism went hand in hand with Technological Capitalism stems from a variety of factors converging.<sup>64</sup> First of all building factories reaching out for raw materials and inputs from other factors generates a demand for transport infrastructure. Someone has to pay for this. Second education plays some role – even in a tinkering economy – in promoting inventions. Someone has to regulate it. Third countries exploit technology in warfare. They have an incentive to keep some of it secret, or at least to monopolize its use.

Whatever the causation linking up the earlier global expansion of Merchant Capitalism with the later emergence of Technological Capitalism it is clear that the force of unregulated capital accumulation ran into a head on collision with the force of nationalism. Along these lines, it is clear Marx and his many followers made a deep mistake in linking the two up. The Marxist notion that the primitive accumulation of capital due to globalization of Merchant Capitalism created a system called capitalism that in turn spawned mechanization is plain wrong. It led to the naive idea that capitalism was nothing more than the articulation of merchant capital accumulation directed along freshly carved out channels. It assumed Merchant Capitalism was identical to Technological Capitalism. Accumulate capital, technology will follow. Unfortunately untrue: it was a horribly bad idea as made clear by the settling of the smouldering ashes of failed Communist nation-states into the dustbin of history.

The bottom line is the modern capitalism is the merging of Merchant Capitalism with Technological Capitalism. It is an uneasy alliance at best. The logic of the two forms capitalism takes pull against one another.

One of the victims of Technological Capitalism was Axial religious thought. As Taylor (2007) points out – in frustration and despair one surmises - the West has become increasingly secular, the sacred marginalized. The reason is obvious. Nationalism has become a powerful ideology challenging religion as a comprehensive ideology. Moreover in making scientific advancement possible, Technological Capitalism has promoted the cult of materialism, the idea of on-going progressive advance. Why dwell on the past? Why not throw outmoded ideas into the dustbin, moving on into a brave new world shaped by technological progress?

### **III.D Modern Capitalism Unveils its Dark Side: Imperialism Opens up China and Japan**

Well, here is one reason why you might want to resist technological progress: war.

Technological Capitalism had powerful spinoffs for military combat. And vice-versa, technological advance in the military sub-economy contributed to price reductions and product innovation in the civilian economy. Between the 1830s and the American Civil War guns had been totally transformed. From muskets loaded through the barrel, gun manufacturing had advanced onto breach loading rifles, to the Gatling gun able to spew out bullets at a speed never anticipated by militaries of the early nineteenth century. By World War I, troops could move by foot, by horseback, by railroad, or by armored truck. The tank came into use. Germany unified and heavily industrialized by 1905 was engaged in a Dreadnought race with the United

Kingdom. Steel hulled battleships bristling with heavy duty cannons faced off against each other at Jutland. Aerial warfare came into its own. The next logical step was the aircraft carrier.

Total War was a grim reality. Trench warfare in which machine guns slaughtered advancing troops turned a war supposed to take only six months into the horrific carnage of the Great War.

Commerce was there to embrace the grim reaper. The German manufacturer Krupp licensed the technology of making powerful ammunition to a British company that used it to mass produce bullets used to kill German soldiers. Ironically the same bullets were used to send British soldiers to their untimely graves. After the Great War was over Krupp demanded royalty payments from the British company on the grounds that it had exploited a technology during the conflict without paying for its use. How popular do you think paying royalties was in the United Kingdom?

In short Technological Capitalism had a dark side. According to the logic of the military power equation driving down the unit cost of exerting military force increases military potential for the countries benefiting from advances in military technology. Accordingly the military organizations of the industrial giants of the late nineteenth century – the United Kingdom, the leading western European countries, and the United States – had within their grasp the power to push around countries in the non-industrial world. Africa was carved up into colonies by European powers beginning in the early 1880s. Germany, France, Belgium and the United Kingdom were unusually active in this endeavor.

To be sure religious competition played a role in the political logic of this new imperialism. Stopping the spread of Islam south played a role. Catholic priests from France competed with American and British evangelicals. That said, the primary motive of imperialism was the search for raw materials, the search for new consumer markets, and the search for new investment opportunities yielding higher rates of return than those accruing from domestic investment. Merchant Capitalism was fully prepared to take advantage of higher rates of return on capital flowing from mines dug and exploited, railroad lines constructed, coffee and tea plantations opened, and banana forests planted in colonies.

All of this put Christianity in a bind.<sup>65</sup> On the one hand imperialism made it easier for missionaries to reach masses of humanity unfamiliar with the truth of Christian doctrine, the salvation offered by belief in Jesus Christ. On the other hand many missionaries were appalled by the way Europeans exploited their colonial subjects. To be sure not all missionaries saw a contradiction between European led commerce and Christianity. For one, David Livingstone, committed to extinguishing the vestiges of the slave trade in Africa, believed promoting alternative forms of trade would accomplish a task the British navy had been unable to stop. With this in mind he pushed the ideology of “Christianity, commerce and civilization” onto what he considered to be a benighted Africa.

In the Far East European and American imperialism unleashed a backlash. Japan is the classic case. After the Opium Wars of the late 1830s and early 1840s forced China to cede treaty ports shogun and *daimyo* alike were alerted to the fact the West had new military resources at hand that could upset their isolationist policy. Once Commodore Perry’s Black

Ships forced open Japan in the 1850s, it became completely evident to many *samurai* that the military disparity between *samurai* swords and Western guns and battleships was massive. Something had to be done to protect the homeland: something embracing Technological Capitalism to be precise.

Having already developed their own form of Merchant Capitalism the Japanese were well suited to carry this out. Overthrowing the shogun and abolishing fragmented feudalism was one logical step. Forging national unity through the promotion of the cult of the Emperor was another. Under the logic of this theory the *samurai* who overthrew the Tokugawa regime, replacing it with nominal rule under the Meiji Emperor, reached back in an atavistic fashion to Shinto while embracing Western technology as the road to progress. The result was creation of an umbrella ideology for the new nation-state: *fukoku kyohei* (wealthy country/strong military).

What proved to be relatively easy to accomplish in Japan proved a huge challenge in China. Mosk (2011) suggests that the difference lies in the nature of the elite. In Japan the *samurai* elite were landless. Their status was hereditary based on primogeniture. By the second half of the Tokugawa period many were involved in managing fief businesses. Merchant Capitalism had already flourished for centuries in Japan so the step to adopting a new form of capitalism based on Western learning did not pose a major threat to elite status. The challenge for the old elites was to figure out how to maneuver themselves into status positions in the new nation-states. Competing for jobs in merchant houses, positions in the imperial bureaucracy, and posts in the new Western inspired army and navy was just the ticket. As a big tent ideology *fukoku kyohei* tied to the cult of the Emperor offered real opportunity to the old

elite. To be sure not all *samurai* were happy about the abolition of their feudal status and a brief civil war was fought in order to quell their restiveness. The fact is that enough of the old elite managed to grasp onto elite status in the new regime to ensure that the political transformation proceeded relatively smoothly.

In China the Confucian elite competed for lucrative positions in the imperial bureaucracy through a daunting examination system. Few advanced to the upper echelons of the system but the landed elite were committed to trying since the rewards accruing from obtaining a high level position were vast. The examinations were based on mastering the Neo-Confucian classics. Candidates devoted years to the study of these classics. They were not inclined to embrace commerce as Confucian thought frowned on it. Only the decision of the Manchu officialdom to reform the examination system – introducing Western science and engineering – could shake the Chinese elite out of their loyalty to the defunct concept of a Confucian empire. Once the imperial regime crossed the Rubicon – in 1905 – the elite, exasperated by the loss of their skills won over years of arduous study – allowed the regime to collapse. In 1911 China became a republic though not one enjoying the support of many of the former elites, including military officials.

It was the disparity between Japan and China that roiled diplomacy in the Far East. Japan, emulating the Western powers, embraced imperialism. It carved out an empire in Asia, securing Taiwan from China in the 1890s, and control over Korea regularized diplomatically in 1910. Defeating Russia in the Russo-Japanese War of 1905 gave Japan control over the Manchurian railroads. The road to World War II in the Far East was opened up. Western

imperialism had stimulated a Japanese claim to create a new form of imperialism in the Far East, one dominated by industrializing Japan committed to extending the imperial umbrella over a weakened China.

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In the final section of the paper I explain why many nations in the twentieth and twentieth-first centuries have disparaged and continue to disparage modern capitalism. Examples include Communism, Fascism, and religious nationalism.

#### **IV Modern Capitalism and Its Enemies**

Modern capitalism is the amalgam of Merchant Capitalism with Technological Capitalism. It is Janus faced. Tension exists between its two faces.

The rivalry between the two faces of capitalism took shape during the Industrial Revolution. Consider the cotton textile industry. Before the mid-1700s the British imported cotton fabrics from India. Then import substitution took place. The stream of innovations in English cotton textile manufacturing – the flying shuttle, the mule, the jenny, the power loom – undercut imports. The fortunes of importers plummeted. True, as it turned out they could shift to exporting cloth as England became the low cost producer during the late seventeenth and early nineteenth centuries. They were forced to reinvent themselves. In the first half of the nineteenth century introduction of the Bessemer converter revolutionized English steel making. No longer was it cost effective to import wrought iron from Sweden in order to fashion blister

steel. With Bessemer's invention one could go directly from pig iron to steel. The importers of Swedish wrought iron were negatively impacted.

In short once Technological Capitalism and Merchant Capitalism became the opposing faces of modern capitalism it was possible for ideologies contemptuous of merchant capitalism to gain a foothold in countries, to become the driving force behind policies in emergent nation-states.

Communism and Fascism emerged as systems committed to denigrating Merchant Capitalism while embracing Technological Capitalism. The idea was simple. Accumulating capital in order to reap the benefits of technology is fine. The key to Communism is that a state representing the class interests of workers should do the accumulating. Make do without the patent: rather make use of state prizes, government funded universities and government managed research laboratories. Pit teams of experts against each other, evaluating the products through rigorous testing. This was how Stalin managed the technical expertise of the Soviet Union in his effort to create a fully automatic gun capable of spewing out a barrage of bullets in seconds, the AK-47. Its successful inventor Kalashnikov was rewarded with a car, a dacha, and a generous state pension. He became a hero of the Soviet Union.

The point is that you can do away with merchants, their relentless search for profits. They are dispensable. They are impure. Communism is pure because it does not exploit the working class the way a merchant dominated state does.

Hostile to market forces mediated through the activity of private profit oriented retailers and wholesalers, the Communist countries committed themselves to central planning,

quotas for state owned enterprises, and politically mandated prices. In adopting this approach, they restricted most of their trade to barter trade since they eschewed resort to prices set on international markets in their domestic planning. Officials, politicians, state managed trading companies negotiated exchanges of wheat, rice, guns, iron and machinery. Naturally this effectively barred private merchants from carrying on trade. It was one more barrier to adopting aspects of Merchant Capitalism.

Restricting trade ended up being an impediment to technological progress at home. Importing goods can and does undercut domestic markets. It threatens domestic oligopolies and monopolies by offering competition. Consider two countries A and B that carry on unfettered trade. When a technological advance in country A leads to price reductions or product improvements and innovation in an industry J it applies pressure on producers in country B's industry J. Innovate or lose market share is the message. When Merchant Capitalism and Technological Capitalism go head to head within a country, consumers benefit by dint of the technological progress induced by the struggle between the two forces.

In short the problem with Communist logic is that making the bourgeois the enemy - as Stalinist bureaucratic Communism did - stripped away much of the incentive to innovate. In the long run it eroded the vitality of state managed Technological Capitalism. The idea that central planning managed by officials – who naturally exploit their positions in the single politically acceptable party, the Dictatorship of the Proletariat, the Communist party, the vanguard of the working class – as a way to secure the benefits of technological advance without being contaminated by merchants is a pipe dream. Elite officials seek rents, extracting them from the

workers who are supposed to benefit from Communist rule. Politically appointed factory managers do this. They spawn black markets; they waste resources; they pollute the environment.

True, unemployment is not a problem under state managed Technological Capitalism. Everyone is assigned a job. But without the sting of political and economic competition characteristic of the “bourgeois state” Communism proved to be dead end in the long-run.

So also did Maoist attacks on the bourgeois as the “running dogs of the imperialists.” True, merchant hating Communist cadres, dispatched by the Central Committee of the Party to purify the nation through utopian collectivization of agriculture transformed China within a decade. Their main positive achievement was accumulating vast amounts of capital used to push heavy industrialization under the aegis of state owned factories. In order to do this they extracted massive amounts of food from the rural sector at low, politically mandated, prices. The peasantry paid the price of rapid state managed Technological Capitalism. Tragically along the way Maoist cadres fomented the disastrous Great Leap Forward ushering in the starvation of twenty to thirty thousand Chinese, setting the stage for the Cultural Revolution committed to stamping out the vestiges of Confucianism, Buddhism and Taoism, unleashing chaos in its wake.

The ultimate irony of the futile Communist attempts to turn Technological Capitalism into a national ideology uncontaminated by Merchant Capitalism is this: the so-called Marxist states made a mockery of Marxism. They turned the super-structure, ideology, into the sub-structure. According to Marx the sub-structure should be materialist. They promoted a new

religion, denigrating merchants as sources of impurity, at the same time denigrating Axial thought systems. They had to denounce the ancient religions. New religions are not necessarily comfortable with old religions. They compete; as likely as not they challenge each other's validity.

Mimicking the religions of yore, the Communist countries published their bibles and idolized their heroes. Whichever brand of Communism – Russian. Chinese, Albanian, East German – the writings of Marx and Lenin were treated as hallowed texts. In Russia, Lenin's body was embalmed, rivaling the Vatican's storing of the body parts of Catholic saints. Lenin's statue appeared everywhere in the Soviet Union and its Eastern European allies reminding one and all of his ideological purity. In China the sayings of Mao were codified in the little Red Book, passed out to every recruit to the People's Liberation Army. Mao was the Great Helmsman, the architect of China's utopian Communism. Of course heretics had to be suppressed. Stalin had Trotsky exiled, then assassinated by a henchman wielding an axe thrust into Trotsky's head. Liu Shaoqi, Mao's nemesis, found himself strapped to a bed where he perished in agony.

Fascism also tried to tame the merchant. In Italy the prevalent ideology – other than exalting the defunct Roman Empire – preached the virtues of a corporatist state. All was to be devoted to the promotion of state power; to the grandeur of the Leader. Bureaucrats, labor leaders and capitalists would work together, putting aside their differences in the interests of the state. Service was all.

The Nazi version, rooted in eugenics and racism, went a fatal step further. To the Nazi ideologues, Jews were the arch Merchant Capitalists. Treacherous to the bone, they were

pulling the strings of democracies like the United States behind the scene, controlling nation-states through their command of international finance. Exterminate them: they have corrupted the Aryan people who are the ultimate progenitors of Technological Capitalism! As for the veneration of heroes, the cult of Hitler rivaled the cult of Stalin in Russia. Hitler's autobiography, *Mein Kampf* (My Struggle) was made available to every German couple when they registered to marry. Hitler was the suffering hero whose struggle exemplified true Nazi virtue. So went the religion of Nazism.

With Fascism defeated in World War II and Communism effectively laid to rest in 1990 one might think the enemies of capitalism are gone. Not so. In the aftermath of the collapse of Communism, a new ideological war – mimicking the Cold War between the capitalist states and the Communist bloc – has broken out. This is a war between religious nationalism and liberal nationalism.<sup>66</sup> Akin to the old Cold War it is steeped into ideology, in this case ancient religious ideology.

Materialist theories espoused by Marxism having failed as a vehicle for economic development, it should not be surprising that the multitudes struggling with poverty have turned to religion. Nor is it surprising the most fervent religious ideologues are committed to purifying their religions, arguing that crass materialism has corrupted their religious elites. Ironically it is the Islamic world, the birth place of Merchant Capitalism, that this movement has gained the greatest traction. The basic problem is the potential incongruity between Technological Capitalism and religious faith. Technological Capitalism increasingly involves science. Since the mid-nineteenth century technology has been the handmaiden of science.

Improvements in technology have made scientific advance increasingly possible – better instruments for experimentation being one prominent example – and at the same time much technological advance has taken the form of applied science.

Scientific thinking and religious thinking, while not incompatible in principle, do operate along separate lines. Scientific thinking involves induction, deduction, experimentation. It is based on critical reasoning, on a continuing process of winnowing out old theories with new theories taking into account fresh experimental results. Religious thinking is atavistic. It looks to revelations that took place in the past. It wants to emulate the virtues of the past. For instance in the Muslim world *salafists* emulate the era of the *salaf*, the first three generations of Muslim life under the guidance of the pure Caliphs.

Rejecting Technological Capitalism, while adhering to Merchant Capitalism, is not a very good idea if your goal is economic development. Productivity growth mainly flows out of advances in technology. Turning your back on technological progress from a commitment to religious ideology has become a major problem for schools in the Muslim world. True it is a problem outside of the world of Islam. That said, it is a particular problem in the Islamic world because Islam does not make a clear distinction between the secular and the sacred, in government, in politics, in education. In Islamic countries creating nation-states based on secular principles - and secular principles alone - is a major challenge, perhaps impossible to achieve. The career of Muhammad, hero of Islam, looms over the Islamic world shaping nationalism throughout the region once controlled by the Caliphs.

The notion that religion would die out in the modern world is naive. True the spread of the nation-state system, and the victory of capitalist states adhering to secular principles – exalting and competition in political and economic life - over Communist states, has marginalized one form of religion: Communism. Again capitalism, emerging out of religion, has weakened the influence of ancient religions in some parts of the world, notably eroding devotion to Christianity in Europe. But it has hardly eradicated it.

In point of fact in some parts of the world the resistance to capitalism has strengthened the hand of religious purifiers, gaining adherents to their faith through one of the oldest forms of religious advertising, martyrdom.

## Footnotes

- [1] Dylan (2014: 188)
- [2] Dylan (2014: 580)
- [3] Dylan (2014: 590)
- [4] Dylan (2014: 661)
- [5] Central to the view taken here is the fact norms change. To be specific norms about the creation and the use of capital have changed dramatically. This is mainly – but not exclusively - because ideology, especially religious ideology, has interacted with social and economic institutions, all three evolving in tandem. A corollary is that the impediments to the emergence of capitalism thrown up by religious views have been longer lasting where certain social norms are intertwined with the religious mandated norms. To take this position is to emphasize the importance of ideas, beliefs, held by populations. However this is not the whole story. Material forces matter as well. The slow development of precision instruments – technology *par excellence* – is also crucial to the blossoming of modern capitalism in all of its fulsome glory. This paper steers a middle course between materialist theories of long-run economic performance – see Morris (2010, 2013) – and idealistic approaches like that advanced by McCloskey (2010). In any event that norms are flexible in the long-run calls into question the applicability of mainstream economic modelling that rests on the assumption that norms are invariant, a point emphasized by McCloskey (2010).

- [6] Summarized from the account in Doniger (2009: 140-141).
- [7] Summarized from the account in Doniger (2009: 282-284).
- [8] Quotation taken from Doniger (2009: 117-118).
- [9] The so-called Neolithic Revolution appears to have independently occurred in seven regions of the world between 11,000 BCE and 5000 BCE: namely Oaxaca and Peru in the Americas, the Eastern Sahara in Africa, the Indus Valley in India/Pakistan, the Yellow/Yangzi River Valleys in China, New Guinea and the Fertile Crescent in the Middle East (Iraq/Iran/Syria). For a review of the evidence see Diamond (1997: 104-156), Morris (2010: 81-129) and Mosk (2013: 242-245).
- [10] For an array of theories describing how Axial thought emerged out of the myths, rituals and magic practiced by hunting and gathering peoples and early Neolithic Civilizations see inter alia Aranson, Eisenstadt. and Wittrock (2005); Bellah (2011); Bellah and Joas (2012); and Eisenstadt (1986). The thesis presented here – that Axial thought emerged out of the clash/cooperation forged between settled agrarian civilizations and nomadic groups committed to the Central Asian Cultural Complex - is my own.
- [11] This technological change is described in great detail by Anthony (2007: 223-224).
- [12] This passage is taken from Beckwith (2009: 12). As Beckwith says, this is the paradigm. Giving a wide range of specific examples in Beckwith (2009: 1-12) – the Kalmyks, the Shang dynasty, Rome (Romulus and Remus), Hsiung-nu, Persia, the Turks, the Mongols –

he demonstrates that numerous variants exist, all basically sharing the common Central Asian Culture Complex myth.

- [13] For practices of the various versions of the *comitatus* see Beckwith (2009: 12-28).
- [14] See McEvedy (2002: pg. 8 ff) and Anthony (2007). Drawing upon an impressive array of information about horses, wagons, chariots, archeological sites and language Anthony makes an impressive case for the homeland being situated north of the Sea of Azov, stretching eastward past the Volga and Ural Rivers. See Anthony (2007: 84, 132). Much of the evidence advanced by scholars involves dating the split-offs of various languages from Proto-Indo-European that probably developed circa 4500 BCE. In Kennedy's preferred schema, Anatolian split off around 4000 BCE; Tocharian next; Celtic and Italic next; Armenian and Greek next; followed by the splintering into Indo-Iranian, Balto-Slavic and Germanic. McEvedy (2002: 10) pretty much agrees with the timing of the split-offs – he accepts the notion that it gradually occurred between 3000 BCE and 1500 BCE – but provides a different model. In his framework there is an initial division into a Hittite group and two Indo-European groups (east and west Indo-European), the latter two groups subdividing into a welter of languages including Hindi, Farsi, Polish, Russian, Greek, Albanian, French, Italian and Spanish. Doniger (2009: 87-95) considers some additional scenarios, including one according to which an Indus Valley group responsible for the Vedas was the original Indo-European group, subsequently expanding westward and northward.
- [15] See Liu (2010: 6 ff.).

- [16] McEvedy (2002: 96).
- [17] For the specific beliefs of - as well accounts of the lives of the Axial age heroes (demonstrating the sufferings, rejection, wanderings they experienced due to their adhering to their principles) – see Ch'en (1977), Lin (1943), Peters (1990), Reat (1994), and Van Norden (2002a, 2002b).
- [18] See Norenzayan (2013) on the importance of martyrdom.
- [19] For an illuminating discussion of competing faiths that were marginalized as the major Axial religions managed to defeat their rivals, see Russell (2014).
- [20] See Chapter 2 in Mosk (2008).
- [21] For details see Liu (2010: 24 ff).
- [22] This paragraph draws heavily for Liu (2010: 76 ff).
- [23] Mecca emerged as a major trading center after Petra – and Palmyra in Syria, its successor entrepôt conurbation – lost its cache due to fighting between the Byzantine rump of the Roman Empire and the Parthian/Persian Empire to the east. See McAuliffe (2006) for an interesting discussion of the politics prevailing in Mecca at the time of Muhammad's youth.
- [24] For the life of Muhammad see Ramadan (2007).
- [25] Quoted in Kuran (2011: 105).
- [26] On doctrinal differences between Islam and Judaism see Johns (1990) and Peters (1990).

[27] The most important sectarian split within Islam – that dividing the Sunni and Shi’a communities – occurred within a century following Muhammad’s death. While the split involved the question of who was the rightful Caliph (political/spiritual) leader of the Islamic community, it intensified later on. Particularly decisive for subsequent disputes over scriptural authority was the fact that Islamic armies brought Persian and later Indian lands under their control. Before Islam arrived, Persians were mainly followers of Zoroastrianism, a faith rooted in pronounced dualism, the forces of pure Light opposing the materialistic forces of Darkness. It was a faith sharing many beliefs with Gnosticism; indeed perhaps the seeds of Gnosticism sprouted in Persia. As Islam evolved from a core faith largely restricted to Arabian lands to one governing a diverse ethnic community consisting of peoples gradually abandoning earlier beliefs - rooted in Christianity, or Judaism, or Manichaeism, or Zoroastrianism, or Buddhism, or Hinduism - it became a “big tent” religion, housing under its umbrella a variety of potentially conflicting worldviews and a remarkable variety of rituals.

[28] See Kuran (2011: 172 ff).

[29] Quoted in Labib (1969: 79). According to Rubin (undated) the Byzantine Empire allowed the charging of interest within the Christian community. Perhaps this was because the secular Emperor was more powerful than the Church in the Byzantine world, while the Catholic Church did not have an all powerful emperor to contend with, even after the Holy Roman Empire was created.

- [30] See Kuran (2011: 138), Labib (82 ff) and Tsugitaka (2012). Labib goes so far as to argue that the Karimi set up stock exchanges (*funduqs*). It should be noted that in his detailed study Kuran (2011) there is no mention of the exchanges.
- [31] See Leicester (1965), McClellan III and Dorn (2006), and Saliba (2007).
- [32] Intensifying the distinction between the sacred and the secular was the decision of the Roman Catholic Church to declare it was a corporation, running its business according to its own, new, canon law (*jus novum*). This occurred during the late eleventh and early twelfth centuries, intensifying a split that had been in the making for centuries as the Church struggled over its relationships with the Holy Roman Emperor and the feudal lords. See Brady (1991), Marcus (1990), Kuran (2011: 102 ff), and Morrison (1969). Rubin (undated) argues that the fact that European merchants could handle their legal affairs through secular courts as opposed to religious courts made it easier for European merchants to build upon the bill of exchange and the fashioning of trusts than was true for Muslim merchants dealing exclusively with religious courts.
- [33] According to Stark (2003) Jews were treated equally badly in the Islamic world and in the Christian world. He shows that the anti-Semitic violence that besmirched the Christian west during the Crusades was matched by attacks upon *dhimmi* Jewish communities. Speaking personally I find this unconvincing for two reasons. Prominent Jews, allowed to practice usury banned to Christians, operated as financiers in the West whereas, as we have seen, under Islam ways around charging interest were well entrenched for Muslims prior to the Crusades. Second Jews were accused of being the

killers of Jesus by Christians; Muslims, denying that Jesus was crucified (and denying that he was a deity), were less likely to despise Jews than were Christians of the Middle Ages convinced the blood of Jesus was on Jewish hands.

[34] See Hirschman (1977).

[35] For details of this thesis see Rubin (undated).

[36] See Kuran (2011: 72-73).

[37] On the evolution of the various monastic orders see Décarreaux (1964), Lawrence (1984) and Wittberg (1994). Coulton (1989) paints a grim picture of the monasteries, admittedly those surviving into the late Middle Ages when corruption and cruelty was all too common among the ranks of Abbots and run of the mill monks. As one example of cruelty practiced by Abbots, Coulton mentions the practice of burying peasant women and serf women caught stealing alive. The idea was to dig a grave so deep that the stench exuded from their rotting flesh would be snuffed out by the layers of dirt thrown onto their bodies.

[38] See Duby (1981).

[39] For the details of this argument, see Mosk (2011, 2013).

[40] For an extensive treatment of Mercantilism see the classic account of Heckscher (1955) and Chapter 5 of Findlay and O'Rourke (2007).

- [41] On the inefficiency of the guild form of organization see Ogilvie (2000, 2004, 2007).  
Ogilvie demolishes the naive argument that guilds were actually efficient. After all they survived for a long time: doesn't that mean they were efficient? No it does not. It simply means that it was difficult to undercut the monopolies the guilds managed to create.
- [42] Marx (1936: 163 and 823).
- [43] For details on all of the points made here see Chapter 2 in Mosk (2008).
- [44] For Neo-Confucianism in China see Berling (1980) and Ch'ien (1986). As an illustration of the eclectic nature on Neo-Confucianism the school of Lin Chao-en described by Berling stressed the importance of undergoing nine steps of mind-cultivation, basically a derivative of Buddhist meditation practice, itself a distant relative of yogi meditation developed in Hinduism.
- [45] It appears Edo's population reached the half million mark, partly because servants and casual labor flocked to the capital to service the estates of the *daimyo*. For estimates of population size for, and a discussion of population growth in, the great metropolitan centers Osaka and Edo, see Mosk (2001: 46-50).
- [46] See Richardson (2005) and Richardson and McBride (2009).
- [47] This is the thrust of the argument made by Richardson (2005).
- [48] In late Medieval Venice the institutional relationship between guild and religious brotherhood was a bit different. A religious brotherhood was known as *scuola* while the

craft guild corresponding to it was called an *arte*. In practice the overlap between *scuola* and *arte* was very high. See Mackenny (1987).

- [49] On guild rent seeking see Ogilvie (2000, 2004, and 2007).
- [50] On the development of scientific instruments see Anderson, Bennett and Ryan (1993); Daumas (1972), Hawkes (1981), Morrison-Low (2007), and Turner (1990).
- [51] The career of Leonardo da Vinci illustrates how competitive fragmented Europe had become by the time of the Renaissance. Commencing his career in Florence as an apprentice in a Florentine painter's guild, the Company of St. Luke, Leonardo went on to work under the sculptor Verrocchio who took in commissions of all sorts: art, armor, jewelry, and church bells were all part of the business. Showing no loyalty to Florence, Leonardo moved on to Milan where he advertised himself as a military-engineer (in a letter to Duke Lodovico), apprised of secret techniques for manufacturing catapults, chariots, and cannons. In Italy, divided into a myriad of squabbling city states, an artist had to go where the patronage was good, the opportunity to bring in commissions strong. Accepting the patronage of Cesare Borgia Leonardo travelled throughout Italy, eventually ending up at the Vatican in Rome. Returning to a Milan in 1515 that was recaptured by Francis I of France Leonardo ended up living in France where he died.

In terms of the theme of European pursuit of precision, it is worth mentioning that one of the most remarkable features of Leonardo's painting is its remarkable attention to detail. Characteristic of the Renaissance, Leonardo acquired a detailed knowledge of anatomy based on years of studying cadavers and skulls.

As well Leonardo's story illustrates the how the fragmentation of Europe gave patronage leverage in competing with guild attempts to control technology and training during the late Middle Ages/Renaissance.

[52] See Landes (1983: 72-75, 80-81, and 86-87). Mokyr (1990) refers to the mechanical clock as a macro-invention, one spawning a myriad of micro-inventions. In particular Mokyr (1990: 50) emphasizes the fact that the practice clock-making induced specialist artisans to reach for new standards in the accuracy required to create reliable mechanical devices. In short manufacturing along precise lines became an indicator of quality, something sought after by elites. For a classic account of mechanical inventions see Usher (1929).

[53] White (1978: 126-127).

[54] White (1978: 198-199).

[55] It is worth noting that Huygens sought a patent for his clock with pendulum as regulator from the government of France. It was turned down because the French government wanted to avoid dealing with protests from the master clockmakers who used the political clout of their guilds to stifle patent competition. See Turner (2008: 269-270).

[56] See Mackenney (1987: Chapter 5).

[57] For the importance of alchemy to the Scientific Revolution of the seventeenth century see Moran (2005).

- [58] This description rests heavily on the treatment given by McClellan III and Dorn (2006: 73).
- [59] For the general argument that this is the case see McClellan III and Dorn (2006). For an interesting treatment of the relationship between pure intellectual knowledge and applied technology see Mokyr (2002).
- [60] On the “patent medicines” and the terrible damage they did – especially to women who were encouraged to use them as a cure for so-called “hysteria” and as a aid to childbirth - see Hodgson (2003).
- [61] On the industrial revolution see Landes (1970, 1999) and Mokyr (1990).
- [62] On the expansion of the patent system during the first industrial revolution see Dutton (1984) and MacLoed (1988).
- [63] Smith (1937: 395).
- [64] See Mosk (2013).
- [65] See the chapters in the volume edited by Etherington (2005) for the British case. See Daughton (2006) for the French case. The French case is interesting because it highlights the conflict between nationalism and religion. In France republicanism was strongly associated with anti-clerical thinking. This had been the case ever since the French Revolution of the late eighteenth century. Republican dominated French governments were not favorably disposed toward the needs of Catholic clergy in the territories they had colonized.

[66] See Mosk (2014).

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## ***Appendix: Hypothetical Example of a Bill of Exchange: European Case (With Two Currencies)***

Two cities: Florence and Amsterdam

The currency of Florence is florins; the currency of Amsterdam is guilders.

The mint value of a guilder is 99.5 florins (based on the precious metals used in casting the florin and guilder coins).

The exchange rate for guilders in Florence is 100 florins = 1 guilder.

The exchange rate for florins in Amsterdam is 99 florins = 1 guilder.

Two principals in Florence: FP1 and FP2. FP1 loans 1000 florins to FP2 the borrower. The loan is in the form of a bill of exchange #1 (BE1) to be paid at date  $t+30$  days in guilders. The obligation is for the agent of FP2 in Amsterdam (AA1) to pay 11.1 guilders to the agent of FP1 at date  $t+30$  days (AA2 is the payee to whom AA1 makes the payment on date  $t+30$  days).

The agent (AA2) sends to the principle in Florence making the loan (FP1) a bill of exchange for 1111 florins that is collected on date  $t+30$  days (BE2).

The system looks like this:

Florence		Amsterdam	
FP1 (creditor)	Makes loan at date $t$ to FP2 to be repaid via two bills of exchange BE1 and BE2. The BE1 is negotiated at Amsterdam at its exchange rates: BE2 is negotiated in Florence at its exchange rates	AA2 Agent for FP1	Sends bill of exchange BE2 to FP1. Bill is negotiated in Florence in Florence's currency (florins)
FP2 (borrower)	Borrows from FP1 with BE1; sends BE1 to AA1 for future payoff of debt	AA1 Agent for FP2	Receives BE1; pays 11.1 guilders (Amsterdam currency) to AA2 at date $t+30$ days