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The Loudspeaker on the Tower

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THE LOUDSPEAKER ON THE TOWER

BELFRY AND MINARET

For a quarter of a century, now, I have tried to avoid using a microphone, even when addressing a large audience. I use it only when I'm on a panel, or when the architecture of the auditorium is so modern that it silences the naked voice. I refuse to be made into a loudspeaker. I refuse to address people who are beyond the reach of my voice. I refuse to address people who are put at an acoustic disadvantage during the question period because of my access to a microphone. I refuse, because I treasure the balance between auditory and visual presence, and reject that phony intimacy which arises from the distant speaker's overpowering "whisper."

More often than not, both host and audience have accepted my decision. The auditorium is hushed, people strain to listen, the few who have impaired hearing move to the front. Several young persons have told me by letter that, since the evening we first met, they have trained their voices to increase their reach and timbre - as rhetors have done for a long time.

But there are deeper reasons why I have renounced the microphone - its use in those circumstances in which I am physically present. I believe that speaking creates a place. Place is something precious that to a large degree has been obliterated by the homogeneous space generated by speedy locomotion, standardized planning, screens and loudspeakers. These powerful techniques displace the voice and dissolve speech into a message, coded sound waves that fit universal space. "Speakers" can make a voice omnipresent in a physical space of any size. But only the viva vox has the power to engender the shell within which speaker and audience are in the locality of their encounter.

I can now look back on many conversations that came about as a result of my refusal to let my voice be digitally deconstructed and mechanically synthesized before it would be heard. A majority of those who shared in these reflections express their satisfaction at my insistence on the "naked" voice. They accept as not unreasonable my insistence on limiting an audience to the range of the speaker's organ. Although they are people used to be blared at, they do not object to making space in the first row for others who are hard of hearing and these, in turn, do not object to moving to the front. But when the discussion comes to grips with more general issues, people tend to divide into two groups. There are those for whom the sense of difference between original and copy, between physical presence and screen, between carnal touch and its replacement by mechanical or electronic vibrators comes as an intuitive certainty, and there are others for whom this intuition appears antiquated and romantic, if not precious and specious.

The following reflection on the history of the church bell touches on the epoch-specific nature of sound in its relation to place, rather than space.

Several years ago I was in Cologne to guide a friend during a stopover on her first European trip. S. is a university teacher from New Zealand, a lawyer and excellent flutist, well traveled in Asia, but a stranger to cathedrals. I, however, have passed many a quiet hour in this forest of Gothic columns, listening to its solemn silence. It was only through her that I became aware of the significance of the inaudible hum of the bell in history.

It was still early in the morning when we stepped out of the train station onto the bustling square, with the famous cathedral a few meters away. S. stopped; she wanted to lean against a buttress. Visibly upset, she asked if I felt the same strange thing which was coming over her, pulling, enveloping, transporting her. What she felt was *fey*, a foreign and disorienting experience.

It took me some time to grasp what S. was referring to. The cathedral's bells were ringing, and she felt in her belly the deep hum of one particular bell, named "Saint Peter," the largest bell on the Rhine, weighing twenty-four tons, measuring three yards across, whose sound reaches out twenty miles. What had hit her must have been that sound from the bell that is too low for the ear but not for the guts.

I have grown up with bells.¹ Their sound is part and parcel of each European place that I remember, inseparable from the hue of its colors and the refraction of the air. I had been saddened by the irrelevance of bells to New York's Madison Avenue. I had been irked by the ostentatious aggressiveness of secularized chimes on the University of Chicago campus. In South America, I have often marvelled at the wide spaces in Brazil that have never been reached by their sound, or mourned for the thousands of bells in the Paraguayan Missions that were melted down as cannons, but not before they had sunk deep into the memories of the Guaraní. In the Far East, I have learned to accept the absence of church bells, and more than once I have been offended when missionaries sounded off with their electrical counterfeits. My friend from the antipodes now made me aware of a kind of "placement by sound" that has been lost.

I know that the bell shape, today most familiar from statistical graphs, is a medieval invention. Before then bells looked like inverted pots, bowls, or beehives, but never like the inward sloped cup with a flared opening that we call a bell. This shape resulted from a definite break with all previous forms. The hallmark of the new form was a change in the waist from convex to concave, scarcely noticeable at first. But then it became obvious that the new form unlocked an unknown potential resident in the bronze. It gave the bell a controlled second sound, superior to the strike tone but, surprisingly - far below the strike - it brought out a peculiar hum that is felt rather than heard. By the late thirteenth century, the bell had taken on the gradual inward sloping sides that reinforce its droning murmur, its whispering throb.

At the time of the meeting with S., I was in Cologne looking for paintings that reveal the radical change in men's and women's costume in later medieval towns. Therefore I was struck by the fact that the bellfounder's trade was no older than the tailor's. The parallelism began to intrigue me.

¹ Until quite recently, the Roman Catholic landscape was marked by a bell which rang three times a day, stopping work in the fields and conversation at table. Those who happened to be together stood up to recite three Hail Marys - called "the Angelus." This triple invitation has a three-step history. The evening bells were first heard in Milan after 1296, as a kind of curfew, a sign that fires should now be extinguished to the recitation of a Hail Mary. Within the next fifteen years, the custom caught on from Hungary to Thuringia, from Avignon to Naples, as an explicit reminder of the Angel's Annunciation to Mary. By the end of the fourteenth century, the same three Hail Marys were also said in the morning, reminding the faithful of the watch Mary held beneath the cross of her Son. The noonday sign of the same bells, announcing the time for the lunch break, was only introduced during the fifteenth century under the leadership of the kings of France as a prayer for victory over the Turks, or for peace. The fusion of the three daily prayers, to which all the faithful - no matter where they might be - were invited, was accomplished during the two decades before the Reformation, and established itself very quickly as a ritual giving rhythm to the day.

From Ann Hollander² I know that clothes began to be cut only in the course of the twelfth century. People began to wear sleeves and bodice and collar instead of wrapping themselves in lengths of cloth - as Indians still do - or donning a sack with holes for head and arms, which a sash could tighten around their waist. In no European language before 1400 is there a word for the tailor. The social project of shaping body percepts by dressing in cloth that has been cut and then stitched together is a late medieval event. And so, seemingly, is the founder's art that shapes the sound of the bell, and with it the place to which people belong.

Bells like Saint Peter were heard in Europe at a time when the sense of place went through an extraordinary transformation. Horse-powered technology enabled people, formerly living in hamlets, to move together into true villages. Urbanization fostered the regular village market. The Church created parishes with resident curates and devised a whole new set of laws regulating marriage and community life. During the early Middle Ages, settlement patterns of Central Europe took on many of the characteristics that obtained well into the nineteenth century. Communities reached out as far as their bells could be heard, intermingling in a new way.

The bell's crown was flattened, its shoulders were squared, the sides were flared down to the mouth, and the wall's thickness was calculated and attuned. As a result of these changes in font and metal work, the characteristic bell sound of each region became a familiar part of late medieval geography. A technical device had been shaped to embody God's word in a metallic sound that originated on the church's steeple, and that dressed each parish in its distinctively tailored acoustic mantel, from bells swaying and chiming in the northwest, responding with carillon sounds to the hammer in Flanders, wildly swinging and ringing out around the Mediterranean.

It would be silly to chase through pre-history in a search for the inventor of the bell, if by that term we mean any metal vessel that is struck to elicit a sound. In Exodus 28.33, Moses legislates Aaron's dress: around the skirt of his blue tunic golden jingles are to be strung on a purple cord, alternating with pomegranate-shaped ornaments. Similar appurtenances have been found in graves between Cyprus and the Sudan. They contrast sharply with the Meso-American jingles made of clay. The earliest dated bell found in China goes back to 1250 B.C. In the West, a few cast bells have survived from the earliest metal age, one from Nimrud is dated 612 B.C. But unlike China, where the art of bell-casting - invented more than 500 years earlier - remained alive without interruption, in the West it was lost in the course of antiquity. The Roman tintinnabulum (the sound of the word says what it means) was made of riveted metal plates. The tintinnabulum and crepitaculum sounded at best like our cow bells.

The Chinese used their bells to convene imperial assemblies. They employed four different tongued bells to command soldiers "in battle and in dance." In the cemetery next to my bedroom in Japan the wind continued to ring the bamboos and jingles for the gods, long after the incense had burned out at night. Roman gardens were guarded by a figure of Priapus, equipped with bells chiming in the breeze.

Noise-making instruments seem to be used everywhere, not only to call attention but also to clean the air of unwanted spirits, and to break up thunder clouds. According to Josephus, King Solomon suspended a golden bell on the top rafter of the Temple to frighten away birds. The Romans attached tintinnabula to their shields, to call the enemy's attention to Medusa's paralyzing

² Seeing Through Clothes. Fashioning Ourselves (New York: Arno, 1980, orig. ed., 1975).

face sculpted on a bronze plaque in the center of the shield. Bells opened a space for the procession of bacchantes. In Astarte's cult, the priests hit a ring, giving a shrill sound.

Greek and Latin authors make no distinction between the cup-shaped open bell and the nearly closed sphere of the jingle. Most bells of Mediterranean antiquity were small enough to be fastened to clothes or to be held and shaken with one hand. The larger ones, like gongs or rods, were used to open the fish market, the baths, and the circus. Plutarch writes of "bells, on nets, that were stretched across the river, and that rang when people, by swimming, tried to escape the besieged city of Xantus." Dogs, horses, cows, goats, pigs and sheep wore jingles around their necks. In Pompeii, two horse skeletons have been found, each with three bronze bells still attached. Shepherds and other "rude" people wanted to be buried with the bells that had been fastened around the neck of their beasts. The tinkling had kept vampires and ghosts away from their goats and cows, and could now protect their corpse from such preternatural creatures. To stress this point, a Christian martyr, Sisinnus, was buried with a bell around his neck by court order. The Roman magistrate wanted to show his distaste for this defendant, a man as unreasonable as a beast.

The Greek night watchman was also known as a codonophore, a bell-carrier. Pompeian public women used bells as earrings. During the Middle Ages madmen, lepers, hangmen and public fools were compelled to sew bells to their coats or caps.

The sound effect of struck metal has always been two-faced: rational and eerie, useful and fey. Metal evokes different spirits than the tam-tam. The drum gives voice to materials drawn from living creatures - from wood and skin. Shell and jingle, bell and gong, elicit subterranean voices from spirits deep down in the earth where the metal was mined.

In the time of the Church Fathers, the Christian hierarchy was as wary of bells as of all other tools that make noise. Preaching against superstition, John Chrysostom brings up the striking of metal objects. He feels the need to denigrate the sound by quoting St. Paul (1 Cor. 13.2): "If I lose charity I am no better than an echoing bronze, or the clash of cymbals ... I count for nothing." St. John Chrysostom execrates the use of bells as amulets or talismans: "... and what shall I say of the jingles, attached to the wrists with purple strings, filled with who-knows-what follies, when we should not entrust our children to any protection but that given by the cross?"³ For a different reason, Ignatius of Antioch urged his collaborators to abstain from the use of clappers and bells. He enjoins his deacons to invite each Christian to the liturgy by his own name - "omnes nominatim inquire." With the growing number of faithful, deacons could not possibly discharge this duty, and a special clerical rank, variously called cursor, praeco, or monitor was established for this purpose. The rejection of bells stressed both the non-superstitious and the non-public character of the early Church.

This changed even before the persecutions had ceased. As the Church mutated from a fraternity into an organized community, bishops used gongs, clappers, chimes and bells to announce the beginning of services. "Signum" became the technical term for the sound and its source. It was used for the noise, and the tool employed to make it (the sound). Signum tangere, signum commovere, become equivalent to "convocation."

³ "In epist. I ad Cor., Hom. 12, 7," Migne, Patrologiae cursus completus. Patrologia graeca (PG) (Paris: 1844-1864), 61, 105-106.

About 320 an experienced hermit, Pachomius, abandoned the solitary life to become the leader of a large community of monks who henceforth lived under his rule in the Thebaid, along the Nile. There the Egyptian sacred trumpet was adopted to gather the monks for assemblies, and a novice was sent around with an "awakening hammer" to knock at the door of each cell. By the fifth century, the two tasks were gathered in one instrument, a hollow "sacred wood," the semantron, set up in the court of the monastery. Later, the sideron, a metal device, occasionally replaced the hollowed-out wood. Under the name of bilo and klepalo, these instruments and their sounds remained familiar to Russian monks well into the eighteenth century. Some were hand-held, others could be carried on the shoulder and struck with a hammer, sometimes by an assistant walking alongside. Two soundboards could also be suspended on a branch, and pushed to knock against each other. The Greek missionaries in the Slavonic north extolled the virtues of this simandrum. In 1200, Anthony of Novgorod quotes Theodore Studites, "The Greek simandrum was given to us by the angels." The sound of the metal or wooden gong was compared to that of the trumpets mentioned in the Old Testament; the power to keep demons at a distance was attributed to it. The best of these instruments gave off a deep, balanced and well-rounded roar, but their sound had none of the harmonics nor hum of the bell.

When the Arabs occupied Jerusalem in 638 after a four month siege, they drew up the so-called covenant of 'Umar. A number of detailed regulations were imposed on Christian liturgical practice, among them restrictions on the signals to be used in the call to worship. According to Islamic belief, bell ringing sends forth vibrations that disturb the peace and repose of the invisible spirits of the dead, which wander through the air.⁴ The cross was banned from the outside of the church building, the routes on which pigs could pass the city were harshly defined, and the level of noise-making by Christians was restricted. When Godfrey of Bouillon and his crusaders entered the city in 1099, a member of his retinue reported that Jerusalem, under Muslim rule since 638, contained not one bell, and that bell ringing was unknown in the city. By that time bells had become common in Europe.⁵

In Europe, the first use of a church bell can be approximately dated. In 535 a deacon of Carthage, Fulgentius Ferrandus, wrote to his friend Eugippius, the abbot of a monastery in Naples. The letter accompanied an object, already used in North Africa, and introduced him to a "holy custom of the most blessed monks of ringing a resonant bell." From later references to the way the object was used, namely, moved by means of ropes, we know that this is the first reference to the ringing of hung bells for Christian service. However, nothing in the reports on the "signum" in early Christian centuries reveals any belief that the sound hallowed either place or time or person.

This changed with the Church's penetration among the Celts. The sound itself acquired a meaning that goes beyond synchronization of action, and cannot easily be reduced to superstition. In Ireland the staff, book and bell were the objects from which the Celtic missionary never got

⁴ Satis N. Coleman, The Book of Bells (New York: John Day Co., 1938). See also F.W. Hasluck, Christianity and Islam under the Sultans (Oxford: Clarendon Press, 1929), p. 189, n. 1.

⁵ "For more than four and a half centuries of Arab domination (638-1099), the nâqûs [a kind of clapper that developed out of the sixth-century use of two suspended logs that were made to swing toward each other, hitting] served Christians in Jerusalem as their sole instrument of convocation." Edward V. Williams, The Bells of Russia (Princeton: Princeton University Press, 1985), p. 11, citing: Albertus Aquensis (or Albert, Chanoine d'Aix-la-Chapelle), Geschichte des ersten Kreuzzuges (Jena: Diederichs, 1923), vol. 1, Die Eroberung des heiligen Landes, p. 315. Williams provides an extensive bibliography. See the Appendix for the Covenant of 'Umar.

separated.⁶ These missionaries had found and appropriated an instrument whose sound became characteristic for the approach of a holy man. A new clang made the aura of a holy person perceptible to the ear. In an eleventh-century jeweled box in Dublin, we can still see St. Patrick's Clog-an-udachta (the testament bell). Such an object might have been found in the saint's grave.⁷ St. Columban is frequently pictured swinging a bell. Boniface must have used one in his travels in Friesland. This handshaken instrument became a symbol of the Word of God preached to the heavens. The old Celtic bells were held in such extraordinary esteem, that the bell-shaped boxes for their conservation belong to the greatest treasures of Irish and Scottish jewelry. In Northern England, these missionary bells were revered as relics, like the bones of saints.

For this new object a new name was coined, which is probably of Celtic rather than Continental origin: clocca. The Italians later called it campana, referring to the province from which most clocks came. Nola might refer to a town in that area. Caccabulum, used for the jingle, may just reflect the sound.

A pleasant sounding bell was a rare exception in 615. That year, King Clothar was surprised to discover a "sweet-sounding" bell in Cologne, and was so impressed by it that he had it transported to Paris to enjoy its sound. In Carolingian times, the metallic sound of clanking plates had for long supplanted the monastic trumpet, and in the West the wood-sound was restricted to some special, penitential occasions. The bell became the convocational instrument in the West, while striking the wood was favored in the Christian East.⁸

Since they had served as the emblem of the missionary, cast bells had been treated in Christian Europe as if they were a kind of person. Bells consistently had names. The name and "vocation" of the bell are inscribed on its crown. "Laudo Deum verum (I praise the true God)... plebem congreco (I gather His people) ... vivos voco (I call the living)... defunctos ploro (I mourn the dead) ... pestem fugo (I drive off the plague) ... fulgorem frango (I break the storm clouds)..." are typical inscriptions.⁹ As I write this in a Mexican village, two bells are ringing. I know their names because I recognize their voices. I am surprised that today the Rosary will be said so late, and it takes me some time to figure out the reason. Like everyone else I hear the sound of the third tolling of the

⁶ Large bibliography in Henri Leclercq, "Cloche, clochette," "Clocher," "Clochettes celtiques," in Dictionnaire d'archéologie chrétienne et de liturgie (Paris: Librairie Letouzey et Ané, 1948), 2nd part of vol. 13, col. 1954-1991.

⁷ The first known makers of Christian bells of the riveted type were "Tasag," "Cuana" and "Mackecht" - three smiths whom St. Patrick brought to Ireland in the fifth century. Percival Price, "Bell", in The New Grove Dictionary of Music, Stanley Sadie, ed. (London: Macmillan, 1980), vol. 2, pp. 424-437. Extensive bibliography.

⁸ After the Rule of St. Benedict (530-540) a "... reference gives clear evidence of the presence of the semantron in the West. Amalarius of Metz in chapter 21 of De ecclesiasticis officiis (823), specifically compares the different characters of the wood and the bronze in calling the faithful to services: 'Furthermore, the pomp of signals, which was produced by bronze vessels, is abandoned, and the sound of wood, somewhat more humble than the sound of bronze, is produced as required to call people to church. It is possible even that this, a more humble custom of the Roman Church than that in use today, is copied from ancient times and especially from that time when [the church] was in hiding ... [Constantinople] maintains the use of wood, not because of lack of bronze, but because of a venerable tradition' [Migne, Patres Latini (PL), 105,1201]." Williams, pp. 11-12.

⁹ Other examples: "funera plango ... fulmina frango ... sabbata pango ... exito lentos ... dissipo ventos paco cruentos."

passing bell¹⁰ that lets me know that Don José is still breathing, and that we are all sharing in his last hour. Bells everywhere spread news and drive off demons.

The Christian bell welds people into a fraternity of prayer. The centripetal social function is complemented by a centrifugal one; as far as the bell can be heard and felt it incorporates those who listen into a common acoustic space. Nothing expresses this better than the solemn ceremony of excommunication that came into use after the year 1000: "by the bell, book and candle" twelve priests with lighted torches in their hands assembled around their bishop to condemn the sinner to live beyond the reach of the diocese's bells. The sacred power of the bell appears clearly in the rituals.¹¹

The first preserved text of a special blessing for church bells stems from Spain, and is dated a few years before the peninsula was overrun by Muslims.¹² The ceremony opens with the solemn exorcism of the molten metal. The unclean and evil spirits which attached themselves to it at the time of its birth in the bowels of the earth are expelled from the bubbling mass. The priest prays that this bronze become as pure as the trumpets used at the Lord's behest in Sinai ... that God endow the sound of this bell with the power to cleanse hearts of torpor and sloth, extinguish the flames of lust, and lighten the burden of sin in all those whom it reaches ... that God give it the power to bring strength to the depressed, consolation to the sad and the courage of repentance to sinners.

It is a straightforward sober ceremony of blessing. There is not a word in this early text about the strange rites which, a century later, treat the bell as someone rather than as something, leading Charlemagne to forbid the "baptism" of bells - ne cloccas baptizent - in 789.

Even before the cast bell had replaced the riveted metal sheets of the tintinnabulum, some monasteries around Lake Constance made it the subject of a special ritual. Out of respect for the clang of metal, the blessing of this sacred vessel was henceforth reserved to the bishop of the diocese in which it was to announce the Lord. It was this very solemn consecration that came to resemble the ceremonies whose subjects are persons, like baptism or even the ordination of priests.

First a special kind of "baptismal" water was ritually readied. The bell was washed with it inside and out. It was then anointed with chrism, the oil prepared each Holy Thursday at the Solemn Mass by the bishop, which is then used in the ordination of priests, kings and altars. Four times the outside and three times the inside of the bell is marked with oily crosses. Each bell - like a child - was given a baptismal name. As in baptism, salt was added to the water. To top off the ceremony, special incense was lighted beneath the bell for the blessing of the Book. The deacon concluded the

¹⁰ First rung, according to Venerable Bede, on the occasion of the death of Abbess Hilda in 680. A. Holder, ed., Historia ecclesiastica gentis anglorum (Freiburg: Mohr, 1985), book 4, chap. 23, p. 23. cap. 23, p. 23.

¹¹ Over the centuries the bell became a major actor in folktales. You could hide beneath it, mostly protecting yourself from the devil. The bell had healing powers. You did not even have to touch it, the sound alone could straighten out a cripple. It broke the spell of darkness. When soldiers tried to steal it as fodder for their cannons, the bell stuck to its hometown; if carried off it flew back. Sometimes it was stubborn, and refused to sound when rung - for instance, by a priest suffering from interdict. At other times it rang out to call attention to a fire or the approach of the enemy. It warned or told the future. Bells that had drowned rose from the water in the night of St. John's and began to ring over the moors and lakes. By the fourteenth century, an oath taken on the bell threatened him who swore with more horrendous punishment than an oath taken on the Gospel. The bell itself reaches as far as its sound, it pursues the evildoer and it can kill. See Ernest Morris, Legends O' The Bells (London: Sampson Low, Marston & Co., Ltd., 1974).

¹² See the Appendix for examples of liturgical texts.

rite by reading the Gospel with all the solemnity otherwise reserved for High Mass. In some regions bells, up to this day, have godparents who stand by in the ceremony. The bell is dressed in a white baptismal dress after the blessing is over, and before it is rung the first time. For practical and symbolic reasons, the bell was installed at the highest point in the building, a tower or belfry. Towers have been associated elsewhere with religious buildings. Pagoda, pyramid, the Mesopotamian ziggurat or the columns used in Persian fire worship, not to mention obelisks in Egypt or Ethiopia, or the temple ramparts in Jerusalem, all somehow fit into one class. All these symbols speak of visible heights that can be climbed, really or mentally. None of them is primarily voiced. The building of towers to spread a religious sound is an invention made at the dawn of the Middle Ages under the forms of the campanile and minaret.

From the fifth century, basilicas begin to sprout bell towers. San Apollinare Nuovo and San Apollinare in Classe in Ravenna have round towers. A mosaic in Santa Maria Maggiore in Rome, done under Sixtus III (432-440), shows a church with two round ones. The desire to hang the bell in a high place precedes the existence of bells powerful and heavy enough to warrant a special building to house them. In 752, Pope Stephen III erected a belfry for three church bells at St. Peter's in Rome. The weight of the tintinnabulum and the wish to make it heard combined to counsel building this special piece of architecture. In the eleventh century, the bell tower became a common sight, and by the twelfth century it was an integral part of any parish church or cathedral. Slowly, it also found acceptance in the Greek church. Around 865, the doge Ursus sent twelve bells from Venice to the Emperor Michael III, known as "the drunkard." They were installed in a magnificent belfry near Santa Sophia, and within a century we hear of bells in nearby Lavra, then on Mount Athos. But the bell did not compete with the simandrum as the means of convocation. It is certainly an exaggeration to say that the bell is a western invention, and was not used in the Greek church before the eleventh century. But it is equally certain that the most common means to call the faithful to service was the "holy wood."¹³

Minarets were unknown in the time of Mohammed and during the first centuries of Islam. When the Prophet and his followers arrived at Medina, they prayed without any preliminary call. But the hadith tell that Mohammed, noticing that the Jews used the sofar to gather their congregation, and the Arab Christians the nâqûs, wanted his own way to do the same. He ordered Bilal to climb to the city's highest roof and shout the call to prayer. The invitation reached as far but no farther than the voice of a man. The first record that a special tower was used habitually for that purpose dates from 903. However, it was not yet a minaret especially built for the purpose, but a preexisting watchtower on the ramparts of the city. Up to now, neither the functional nor the architectural origins of the minaret have been properly studied.

The belltower is in the service of a metal tool and not, as in the case of the minaret, at the service of the human voice. A mechanically produced sound unites the parishioners. Mohammed, who was also an iconoclast, defined the size of the community by the reach of the muezzin's shouts. The western church instituted mechanical devices to sound and translate God's invitation to prayer.

Hi-fi loudspeakers installed on top of a church or mosque constitute a profound innovation. The substitute bell, a product of electrostatic or electronic synthesis, transmits a make-believe copy of a device. It brings to its apogee the conviction that any man-made device can be put into the

¹³ Leclercq, col. 1970.

service of God. When a loudspeaker is installed on the top of a mosque to transmit a taped shout of a muezzin a break with an essential part of the Koran is publicly broadcast: the strict rule against making an image.

The belltower is part of a mechanical arrangement. It provides a wood or masonry support for a metal tool that has been incorporated into Christian worship. It is profoundly unlike the minaret which, like a pulpit, exposes one of the faithful and enhances the range of his voice.

The belief that technological devices can be intimately associated with the celebration of a Biblical religion is, arguably, one of the deep roots out of which the European attitude toward technology has grown. From very early, the Church claimed the ability to appropriate and bless for its use "whatever there is" - *ecclesia omnia benedicat* was the motto until the late Middle Ages. Hundreds of rituals have come into use and were recorded. Each fixed the set of rules or procedures in these blessings. Buildings and domestic animals, swords and plows, bridal beds and candles are among the innumerable things thus solemnly lifted into the sphere of faith. The blessing of the church bell is only one of these liturgies, albeit a very solemn one. Its sound somehow creates the community around it. This power is recognized in the Slavonic East as much as in the Latin West.

Lynn White has observed that during the early centuries of the second millennium a clear difference in the approach to material things crystallises, henceforth distinguishing the Eastern Greco-Slavonic from the Western, mostly Roman Church. While in the West mechanical devices are pressed into liturgical use, the Eastern Church remains wary of any replacement of bodily acts by technical means. This is clearly shown in the opposite attitudes of the two churches to the use of the organ. In the late Middle Ages its use encroaches upon plainsong (often called Gregorian chant) which, in spite of regional differences, dominated all liturgies of the West. The Byzantine churches, however, resist its use within the church building. But this is not the case with the bell. Early on, wandering Celtic monks who were metallurgists brought the art of bell casting deep into the Rus, so that by the Renaissance Russia had become the most bell-studded country in Christendom. It is remarkable that the Russian church, which so carefully guarded silence within its church buildings, allowing only the human voice in the liturgy, filled the air with the sound of bells.

Even more noteworthy than this ecumenical acceptance of the bell in the Eastern and Western Church is the recognition of the bell's civic importance during the nineteenth century. During the waves of liberal-inspired anticlericalism in the Southern European countries, the "right to the bell" became a major point of contention between the Catholic bishops and the civil authorities. What rights does the prefect have to silence bells after seven p.m.? Or to order their ringing to announce the outbreak of a fire? Or the passage of a high government official through town? Must city hall then pay the ringer? May the city council forbid the ringing of the death bell in time of epidemics, to avoid frightening the citizenry? From a study of French court orders and supreme court decisions in this matter, it becomes evident that the sound of the bell - well into the early twentieth century - establishes in a powerful way a dominion over the space it fills.

S. came from the antipodes. She was physically innocent of bells. She felt inwardly overpowered by the voice of Saint Peter in the left tower of Cologne. By sharing this overwhelming invasion of her intimacy, she brought me to the awareness that I have been living, these last decades, among people for whom bell sounds are just one of the many recognizable patterns that emerge out of the noise in which they live and die.

Appendix I.

The Covenant of 'Umar regulated public display of both visual and aural Christian symbols. In addition to limiting the sounding of the nâqûs, bans were also imposed on the building of new churches, on street processions at Easter, and on the display of crosses on churches. "At the beginning of the eighth century, the striking of the nâqûs at a Christian monastery while Caliph Al-Walîd stood in the pulpit of a nearby mosque to pronounce the khotba resulted in the monastery's destruction." Williams, pp. 191-192, note 18.

The Covenant of 'Umar (Caliph from 634 to 644) is a complex document transmitted in several recensions. For studies of the covenant, see A. S. Tritton, The Caliphs and their Non-Muslim Subjects. A critical study of the Covenant of 'Umar (London: Frank Cass, 1970). Orig. ed., 1931. See also Antoine Fattal, Le statut légal des non-musulmans en pays d'Islam, Recherches publiées sous la direction de l'Institut des Lettres Orientales de Beyrouth, 10 (Beirut: Imprimerie Catholique, 1958), pp. 60-69. Williams, p. 191, note 13.

"Simon Ockley renders the passage from the Covenant of 'Umar as "they shall not ring, but only toll their bells." The History of the Saracens (Cambridge: Printed for the Sole Benefit of Mrs. Anne Ockley, by permission of Henry Lintot, Esq, 1757), vol. 1, p. 224. From this error [the sound in 'Umar refers to two logs hitting one another], N.I. Privalov states that 'Caliph Umar's proscription is the first documented information on the use of bells in Christian churches of the East.'" Williams, p. 191, note 14.

Appendix II.

EXORCISMUS AD CONSECRANDUM SIGNUM BASILICE:

Adjuro te, nequissime spiritus et imunde, per divine Maiestatis inseperabile nomen, ut notum nostre humilitatis confusus agnoscas, et Christi a nobis invocata virtute precipitatus abscedas atque fugias ab hoc metallo, cui Deus condens indidit sonum et fortitudinem. Sicut te nosti nicil contulisse creando, ita ab eo cum omnium tuarum evanescas contagiis pollutionem: ut eius cultibus serviat expiatum, qui operatus est verbo quod suis in ministeriis formatur favore et intellectu.

BENEDICTIO EIUSDEM: Omnipotens Domine Deus, qui precepisti Moysi famulo tuo opus formare ductilium tubarum, quibus perstreptibus certo discretoque sono, Israhelitici populi cognosceret multitudo quo se in solemnitatibus letabunda curreret, quandoque ad terram repromissionis gradiens, quod ceperat iter perageret, vel adversus bella gentium perditarum armata prosiliret: figurans per hec omnia quod melius in Ecclesia que nunc est catholica perficeretur sub gratia. Respice nunc propitius pietate solita, et hoc vas, concretum generibus metallorum, sanctifica more tubarum illarum, quibus precedentibus Israhel tuus ad hereditatem perducitur, quam ei paraverat tua divina pollicitatio; earumque veritatem habeant, quam in veste summi pontificis Aaron tintinnabula habuerunt innexa. Ut his sonantibus, que tibi dedicamus, domus tue pandatur ingressus, et ad laudandum ac deprecandum te fidelis adunetur conventus: quibusque tinnientibus hoc tua virtus conferat auditoribus, ut cordis secretum timor penetret tuus.

Sancte crucis signaculo adversus impugnationes diaboli totus victor muniatur homo, et ad capescendam in celestibus hereditatem pollicitam mens spei robore suffulta alacriter currat: fiatque legis tue recordatio, et rememoretur preceptorum tuorum observatio; et ut non a mandatis tuis deviantur, sit hic fidelibus tuis semper in signum sonus. Torpor et pigredo huius fugiant concusse sono; libidinum evanescant incendia; ira absistat mortificata et omnia vitia contabescant: ut purificata corda et corpora sacerdotum et ministrorum et omnis Ecclesie membra, tempore orationis ad promerendam indulgentiam corde contrito genua flectant, et indulgentiam quam deprecari fuerint obtineant.

Sit etiam signorum istorum sonitus, Domine, Judeis et perfidis terrificatio valida resipiscenda malitia: languidis et mestis consolatio et relevatio oblata. Et qui posuisti signum tuum arcum in nubibus, pollicens ne ultra per diluvii aquas humanum genus deleas, in hisque offerimus propitius adtente et misericordie tue non abnuas pietatem, ut cum ista tibi in suo servierint tinnitu, omnem plagam omnemque flagellum, quod excipere peccatores merentur, preveniente misericordia, sic tua operetur pietas, ut omnia adversa fidelis populus evadat et gratie tue muneribus se percepisse congaudeat. Amen. Ferdinand Cabrol & Henry Leclercq Monumenta Ecclesiae liturgica (Paris: Fermin Didot, 1900-1913), vol. 5, Marius Férotin, Le liber ordinum. Quoted by Leclercq, "Cloche," col. 1963.

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