

TIBETAN XYLOGRAPHY AND THE QUESTION OF MOVABLE TYPE

R I C H A R D P . P A L M I E R I

Since its invention, printing has attracted the attention of innumerable specialists representing disparate disciplines and, seemingly, every imaginable point of view. But even a novice surveying the literature on the subject of printing quickly recognizes that three major themes, or lines of inquiry, emerge from the tangle of scholarship on the subject. The first theme addresses the question of the origin and diffusion of printing. For some, the important issue is geographical; for others, biographical; and for still others, chronological. The second theme focuses on the craft and technology of printing. The most salient topics include block printing and printing with movable type, presses, inks, and paper. The third theme is that of the relationship between printing and certain aspects of history, most notably processes of change, the development of civilization, and the democratization of human knowledge.

While it may be convenient to identify these three themes in the literature on printing, it is also necessary to recognize that relationships exist among them. A study of the origin of printing will embrace questions of technology and technique, for example, and the conclusions reached will contribute meaningfully to ideas about cultural history. Of particular interest here is the dichotomy commonly drawn between xylography—printing with woodcuts—and printing that employs movable type. This is the subject of a vast literature, and the distinction has challenged many to demarcate the boundaries of these two traditions in time and place.

The central argument of this study is that, at least in some places, the distinction between block printing and printing with movable type

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is blurred. More specifically, this study will describe a curious form of Tibetan printing that combines xylography with certain aspects of movable type.¹

Tibet and Tibetan Printing

Tibet is a region of central Asia constituting much of western China. Most of Tibet is dry plateau, but its margins include the Hindu Kush in the west, the Kunlun and Astin Tagh in the north, the mountains of Sikang in the east, and the Himalaya in the south. Most of the population of Tibet inhabits the more arable valleys of the Tsangpo drainage in the area just north of the Himalaya. Some Tibetans are pastoral nomads, however, and inhabit the extensive grasslands of the north and east. Almost all Tibetans, though, speak dialects that, while related to Chinese, are written in an alphabetical script derivative of India's Devanagari. From India, too, came Buddhism, the principal religion of Tibetans, who practice it in a monastic form called Lamaism.

Tibetan printing is ancient, and, while its origins are obscure, there is little doubt that it diffused from China proper when block printing was well established there.² Among the block prints discovered in Sinkiang, at the oasis settlement of Turfan, for example, are Tibetan printed charms that date to at least the 13th century. Even today, charms are one of the principal objects printed by Tibetans, and they have a seemingly endless variety of them.³ Many are used as amulets, and specialized ones are intended to protect the wearer from disease, injury, and misfortune. But the most common, perhaps, are *lungta*, the ubiquitous prayer flags of Tibetan Buddhists.⁴

Printed on cloth or handmade paper, *lungta* are often attached to poles or tied to branches raised over houses, on cairns, and at

¹Tibetans continue to employ block printing for religious texts and literature, although more modern printing technology is now used for secular works.

²Two standard works on this subject are Thomas Francis Carter, *The Invention of Printing in China and Its Spread Westward*, 2d rev. ed. (New York, 1955), and Tsien Tsuen-Hsuei, *Science and Civilisation in China*, vol. 5, *Chemistry and Chemical Technology*, pt. 1, *Paper and Printing*, 3d rev. printing (Cambridge, 1987). According to N. Chopel, "Tibetan Wood Carving," *Bulletin of the Tibet Society* 6 (1973): 38–39, a Tibetan tradition gives credit for the invention of printing to a stonecutter. The suggestion that Tibetan xylographic printing diffused from China at least as early as the 14th century is found in David Snellgrove and Hugh Richardson, *A Cultural History of Tibet* (London, 1968), p. 160.

³Of interest is the collection of Tibetan charms reproduced in Nik Douglas, *Tibetan Tantric Charms and Amulets* (New York, 1978).

⁴Literally, "wind-horse" (Tibetan *Klung rta*). An interesting discussion of the etymology of the term is found in Lawrence Austine Waddell, *The Buddhism of Tibet*, 2d ed. (Cambridge, 1934), pp. 411–12.

mountain passes and other topographic prominences for the purpose of gaining religious merit and augmenting or amplifying the luck of individuals for whose benefit the flags are printed. The powers of *lungta* also benefit the community and countryside in which the prayer flags are erected. Indeed, the mere printing of such flags is a pious act, made more efficacious both by multiplying the number of *lungta* in service and by the fluttering of the *lungta* in the wind.⁵

While some differences in size, shape, wording, and symbols exist among *lungta* of various Tibetan regions and periods, most share certain characteristics. They are rectangular, or nearly so, for example, and are printed with black ink on a white or light-colored field.⁶ All are bound by a solid-line border and carry, in their four corners, the names or images of the tiger, the lion, the dragon, and *Garuda*, a mythical bird-like creature. The printed text on prayer flags may vary a bit, but all include mantras, sacred formulas, invocations to various deities, and, importantly, a space for the insertion of the birth year of the individual commissioning the printing. Often, in the center of the *lungta*, a horse bearing the Tibetan *norbu*, or jewel of religion, is depicted. Sometimes, in place of the horse and jewel, the Tibetan *lantsa*, a mystical monogram, occurs.

It is not surprising that such consistency of content exists among *lungta*. Their sacred nature and religious uses are compelling conservative forces promoting such consistency and invariability. Moreover, the technique employed in the preparation of Tibetan printing blocks perpetuates the original form of the *lungta*. When blocks are worn, or when blocks are needed for some other purpose, new ones are carved from hardwood blanks. An original paper imprint is glued, face down, on a blank and, when dry, is moistened and gently rubbed off, leaving a thin layer of paper and ink behind. Waste is cut away with various knives, chisels, and gouges of different shapes, leaving the inked lines standing in relief. The result is a faithful reproduction of the original printing block.⁷

⁵Thus, *lungta* are related to a variety of Tibetan devices that replicate invocations mechanically. Among these, the most famous, perhaps, is the Lamaist prayer wheel. In any case, such ritual devices can be viewed as mechanisms for encouraging individual submission to collectivities that transcend the boundaries of biological kinship. The display of numerous "wind-horses," for example, may symbolize individual commitment to increasingly large and complex systems of reciprocal relations. This argument certainly is consistent with the thesis developed by Émile Durkheim in his *The Elementary Forms of the Religious Life* (New York, 1915), pp. 472–73.

⁶Occasionally, *lungta* are printed with red ink.

⁷A complete discussion of this process can be found in Ian Alsop, "Tibetan Woodcut Prints," *Bulletin of the Tibet Society* 8 (1974): 27–29. See also *Catalogue of the Tibetan*

Turning to the question of printing *lungta*, it should be noted that impressions are commissioned from those who possess the blocks, often lamaseries or individual lamas. Typically, the block is inked with a small brush.⁸ Then paper, slightly dampened, or cloth is laid on the inked surface and rubbed, usually with a pad but sometimes simply with the heel of the hand. In this way, the image of the *lungta* carved into a block is transferred to the paper or cloth, which is gently peeled off and dried. This process is repeated until the number of prayer flags commissioned is completed. When dry, the birth year of the individual for whom the *lungta* have been printed is written in the appropriate spaces to individualize the prayer flag and to empower it. Only when this is done is a fee charged to cover the expense of ink and paper or cloth. In addition, a subvention is expected but not mandatory.

Three Tibetan Printing Blocks

While I was engaged in the study of high-altitude pastoral systems among Tibetans in the Nepal Himalaya in 1972–73, certain Tibetan printing blocks for *lungta* were brought to my attention. Two of these I was able to purchase. One is from the region of Dolpo in western Nepal; the other, collected in Khumbu in the eastern Nepal Himalaya, is from the town of Tingri Dzong in Tsang, southern Tibet. Together with an example from central Nepal collected during an ethnographic survey,⁹ these blocks form a group distinct from ordinary printing blocks in one important way: all employ a kind of movable type, or keys,¹⁰ both to speed the process of printing and to eliminate calligraphic errors that could diminish the power of the *lungta*.

All three blocks are rectangular and similar in size. Two depict the traditional horse in their center; the other, the Tibetan mystic monogram called *lantsa*. All three have rabbets along their vertical sides to accept oblong keys for printing. Like miniature printing

Collection and Other Lamaist Material in the Newark Museum, vol. 3, *Writing and Printing Equipment* (Newark, N.J., 1971), pp. 107–8.

⁸Much Tibetan ink is produced locally from lampblack. The typical inking brush is made from animal bristles, folded in half and bound by a cord. Occasionally, such brushes will be found attached to printing blocks by a cord to keep them at hand.

⁹This block is now in the collection of the Ethnological Museum of the Japanese Ethnological Society, 132 Shimo-Hoyo, Hoyamachi, Kitatama-gun, Tokyo.

¹⁰It should be noted that these keys are not examples of true movable type since, as will be seen, they are not separate and molded letters intended to be arranged and rearranged to build up a complete text. For this distinction, I am indebted to a reviewer of my original manuscript.

blocks, the ends of each key are carved with the words for animals associated with one of the years in the Tibetan duodecimal calendar: mouse, ox, tiger, hare, dragon, snake, horse, sheep, monkey, bird, dog, and pig. While not important here, it should be noted that each animal is paired with one of five elements (wood, fire, earth, iron, and water) to complete a cycle of sixty years, called by Tibetans *rapchung*. When asked his age, a Tibetan will give his birth year as ox or tiger, for example, and, when coupled with the element in force at the time of birth, the age of the individual can be calculated readily by reference to a chronological table.¹¹ With *lungta* blocks like those described above, one can readily see how, by inserting the correct key into the rabbet on the margin of the printing block, repeated impressions can be made quickly and accurately without recourse to inscription.

The rabbet of the Dolpo block (fig. 1.) is on the left side, which produces a print with the birth year on the right. Unfortunately, the original keys for this block have been lost. A photograph of the block collected in the Tibetan village of Tsumje in the central Nepal Himalaya by Jiro Kawakita of the Institute of Geography of Osaka City University has been published¹² and shows one of its original keys fitted in its rabbet, but this is on the right side of the block. Though the photograph is not clear, the block and key, which are not described in detail, bear strong resemblance to the *lungta* block and keys (fig. 2) from Tingri Dzong.

Like the Tsumje block, the Tingri Dzong block has in its center an image of a horse carrying on its back the jewel of religion. And, like the Tsumje key, each Tingri Dzong key is long and narrow and is drilled so that it can be stored with its mates on a cord tied through a hole in the main block. This hole is found in the projecting handle of the Tsumje block, a feature lacking in the Tingri Dzong block. Two other differences between these blocks are worth noting. One is that the rabbet of the Tingri block is found on the left side (like that of the Dolpo block), which produces a print with the birth year on the right; the other is that the Tsumje block will produce a *lungta* that is bounded by a rectangular border. The Tingri Dzong block will produce a *lungta* with an irregular border, one that deviates from rectangular shape in order to encompass the left rear hoof of the

¹¹Such a table can be found in Waddell (n. 4 above), p. 452. For a complete discussion of the Tibetan calendar, see Giuseppe Tucci, *Tibet*, trans. J. E. Stapleton Driver (New York, 1967), pp. 143–53.

¹²Jiro Kawakita, "Ethno-Geographical Observations on the Nepal Himalaya," in *Peoples of the Nepal Himalaya: Scientific Results of the Japanese Expeditions to Nepal Himalaya, 1952–53*, ed. H. Kihara (Kyoto, 1957), 3:1–362, see esp. p. 167.



FIG. 1.—Printing block from Dolpo in western Nepal

horse. The photograph of the Tingri Dzong *lungta* (fig. 3) makes this irregularity clear. Also clear is the arrangement of mantras and symbols that surround the central figure of the horse.

The Tingri Dzong Block, Keys, and Lungta

The Tingri Dzong block is carved of hardwood; the specific kind is difficult to determine because the block is covered with ink, which obscures the original grain and color of the wood. It is approximately 18 by 13.5 centimeters in height and width, and 2 centimeters in thickness. The printing surface has been raised about 2 millimeters above the shoulder of the block. This surface covers most of the block, although the upper and lower margins are about three times wider (approximately 15 millimeters) than the side margins. Cutting through the left side margin and border is the rabbet described above. It is 8 millimeters deep and measures 12 by 31 millimeters in width and length.

Prominently depicted on the block is a prancing horse that faces right. Clearly shown are its mane, long tail, bridle, tack, and, on its back, the jewel of religion. Completely surrounding the horse is the



FIG. 2.—Printing block from Tingri Dzong in Tibet

assemblage of mantras that, when printed, generate the luck that blesses persons who commission the *lungta*. Marks left by wood-carving tools are evident on both the front and back of the block, as are a number of wormholes. Not to be confused with these is an angled hole connecting the left side of the block with its back. This was drilled and once held the cord that kept the keys from being misplaced.

The original six keys that accompany the block average 9 centimeters in length. They are slightly wider in their middle section (13 millimeters) than at their ends, which taper to 12 millimeters for a snug fit in the rabbet. Likewise, their thickness varies from middle to end, averaging 10 millimeters in their middle section and 8 millimeters at their ends, thus conforming to the depth of the rabbet into which they fit. A hole has been drilled in the center of each key to accommodate the cord mentioned above. Carved on the ends of one side of each key are words for the Tibetan calendrical animals, each word inverted with respect to the other so that, when used, the symbols will always be correctly oriented to the rest of the printing. Also raised on the ends of keys is a continuation of the border that



FIG. 3.—*Lungta* print pulled from Tingri Dzong block

surrounds the rest of the *lungta*. Like the block, the keys are made of hardwood, are black with ink, and show obvious signs of tooling and wear.

Clear prints of *lungta* from the Tingri Dzong block are made easily, even by a novice. The one pictured, employing the key for the birth year mouse, represents only my second attempt to print with this device. Use of the key proved simple.

Conclusions

While it is difficult to generalize from only three Tibetan printing blocks used for *lungta*, the evidence at hand is suggestive. For example, the widespread origins of the blocks discussed, one from western Nepal, one from central Nepal, and one from southern Tibet by way of Khumbu in the eastern Nepal Himalaya, raise the suspicion

that a more intensive and deliberate search of those regions of Asia inhabited by Tibetans would result in the discovery and identification of many more blocks that employ a system of keys in printing. Perhaps a more careful search of existing private and museum collections would do the same.

The cultural context of Tibetan *lungta* suggests another conclusion that may be of interest to scholars interested in the development of printing and movable type. That is, while it is obvious that the use of keys for printing multiple copies of *lungta* is efficient and saves labor, the noneconomic and religious need for precision and accuracy, which was required to empower prayer flags, seems to be at least an equally important motive for using keys.

With reference to the development of printing, Tibetan *lungta* blocks may be viewed as an evolutionary branch in printing history, one that developed in a specific region to solve a certain parochial problem, but one of no consequence to the larger issue of the development of movable type.¹³ But another possibility exists. Tibetan printing blocks that employ keys may have evolved after the origin elsewhere of movable type. In this explanation, such blocks would be viewed as imitative and derivative rather than generative.

¹³For example, the increasingly mechanical production of these objects may represent a development coterminous with the increasing population size and density of Buddhist communities. Thus, the Tibetan technological innovation described here may be portrayed plausibly as a religious adaptation to the problem of unifying increasingly large and differentiated populations into a single moral and political community. On this point, the contributions to the analysis of religion offered by Durkheim (n. 5 above), pp. 473–74, are noteworthy.