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THE ANTHROPOLOGY OF CLOTH

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INTRODUCTION

Cloth spans many categories of human want and need. Modern machine-manufacturers distinguish apparel for the body from the coverings of walls and furniture, and from such "industrial" products as storage bags and filters. Hand-made cloth supplies equally varied domains. Within each domain, moreover, some fabrics meet practical exigencies while others communicate meanings or express artistic taste. In historical complex societies, several cloth traditions coexisted, from the domestic weaving of rural populations to court and urban industries. Contemporary complex societies show a similar range as home workers and cooperatives coexist with factories. In this essay, I review the role of cloth consumption in the consolidation of social relations and in the expression of social identities and values. I also attempt to relate cloth production to the mobilization of power by such units of social action as classes, dynasties, cities, religious institutions, and ethnic and gender sodalities.

That cloth is relevant to power is suggested by the relationship of stylistic change to political and economic shifts. Some understandings of style obscure this link, in particular the ones that view style as the homogeneous and uncontested expression of a discrete culture's worldview, or as propelled by its own logic—for example a tension between representational and geometric patterning. My approach is instead continuous with that of the art historian Meyer Schapiro, whose essay on style Kroeber included in *Anthropology Today*. According to Schapiro, political and economic shifts in great transregional systems of interaction "are often accompanied or followed by shifts in the centers of art and their styles. Religion and major worldviews are broadly coordinated with these eras in social history" (194:310). To explore this

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proposition, I consider the main aesthetic options associated with textiles—i.e. woven cloth. Boas and his students studied aesthetic options, but in the 1950s and 1960s anthropologists abandoned this problem to art history and museology, only recently rekindling their interest (88, 200, 202). In reviewing the contributions of other disciplines, I concentrated on a few world areas—Indonesia, West Africa, the Northwest Coast of North America, Mesoamerica, and the Andes. Although far from exhaustive, these cases suggest processes that might apply to cloth in general, including the nonwoven felts and bark cloths or *tapa* that I have excluded for want of space.

A final concern of this essay is the relationship of handmade to factory-made cloth. I sketch the worldwide predation of machine-woven and roller-printed European textiles, and conclude with a discussion of various counterdevelopments.

CLOTH AND SOCIAL RELATIONS

In many societies lace, embroideries, or patterned weavings enrich the trousseaux of brides and fill their chests of household linens and heirlooms. Prepared by women and their mothers in anticipation of marriage, some of these textiles may be inherited by daughters, uniting a female line (72, 155, 169, 198). Cloth exchanged at marriage also unites spouses [as when each provides the other's wedding attire and minimum future wardrobe (46, 114)] and in-laws. "When a man receives raffia," writes Douglas of the competitively polygynous Lele, "he hopes to use it to acquire a wife, or to sweeten relations with his wife and her kin. . . . raffia keeps its high value because it gives command over women" (54:120–21).

Men are the weavers in Lele society, as they were among the Pueblos where grooms, receiving processed corn, gave the cloth that eventually accompanied their wives to the grave (116:98–101). In Indonesia where women weave, bride-givers and bride-takers make gifts of cloth and metals, respectively, and in the wedding ritual, a tubular cloth envelops both, transmitting the "soul force" of her lineage (80:19–20; also 106). Among Quechua-speaking Calcha in Potosi, a groom's consanguineal female relatives weave marriage gifts for his bride (143), the converse of a recently expanded obligation in Korea for the bride's family to supply ritual silks to the groom and his kin (114).

Distributions of cloth at death consolidate ties among the living, as Weiner's (230) Trobriand study demonstrates. Funerary rituals described for Madagascar evoke the awesome cloth prestations that various categories of living people—affines, descendants, the immediate family, royal subjects—bestow on the dead as shrouds, mummy wrappings, or sumptuous apparel and furnishings for an afterlife (27, 70, 129:170–79). The Hopi slashed such gifts

before burial in order to deter graverobbers (117:42). Elsewhere cremations and burials have included spindles, yarn, and needles for future use (9, 96, 127:59–77). Why the dead appreciate cloth varies with the cultural context. When the Tlingit burned food to assuage the hunger of deceased chiefs, they added "blankets" to the fire for warmth (65, 191). The Maori, preparing their dead chiefs for transition to the status of ancestor, thought that cloaks provided conversation and affections, placating the corpse as it slept (140:180; see also 231:219). Other descriptions emphasize how cloth gifts transmit information about the dead person's social and ceremonial status to the "society" he or she is about to join (48, 112).

Some funerary rituals dazzle the assembled audience with ostentatious expenditures of cloth. In royal burials on Sumba, 100–200 cotton ikats (symbolic substitutions for sacrified slaves) were buried with high chiefs (102:16). But other rituals emphasize continuity with a simpler, less spectacular past. During the Odwira ancestral rite, an early twentieth century Asante king discarded his "gorgeous" royal robes to don bark cloth, the first cloth of his people and, except in ritual contexts, the "garb of the poorest slaves" (173:132–34). Similar sartorial appeals to the past, and to a society's most lowly, have been noted for mortuary and investiture ceremonies in Japan (45), India (96), Indonesia (77), Mesoamerica (195:15), and elsewhere in Africa (122).

Cloth intensifies sociality not only at marriage and death but in rituals of birth, initiation, and curing, too. As Fox summarizes for Indonesia's outer islands, it "swaddles the newborn, wraps and heals the sick, embraces and unites the bride and groom, encloses the wedding bed, and in the end, enshrouds the dead" (77:97). Not surprisingly, offerings of cloth, and the ritual use of protective cloth, are also widely reported to sustain relationships with animal and ancestral spirits and divinities. In episodes of spirit possession, a returning or restless essence is frequently believed to seek not only a human body in which to dwell, but human apparel, and to reveal its identity through demands for specific items of cloth and clothing (e.g. 221). A major transforming medium, cloth also delineates and adorns sacred spaces; bedecks ceremonial dancers; drapes temples, shrines, icons, chiefs, and priests; and enriches umbrellas and palanquins (e.g. 55). Mayan brocaded blouses or *huipiles* clothe patron saints and virgins (149), while Andean herders propitiate earth and mountain spirits with a special textile bundle (105, 239). On a much vaster but comparable scale, the resplendent silks of medieval Lucca met an insatiable ecclesiastical demand for wall and pillar hangings, altar decorations, priestly vestments, processional paraphernalia, and wealth for the Vatican treasury (50).

Beyond reinforcing kinship and religious relations, cloth has helped to consolidate many a political system. The relatively unstratified Lele used

woven raffia to "smooth all social relations, [resolving] occasions of tension, as peace offerings" (54:107). The Maori also used textiles with political intent, celebrating chieftainship and communicating goodwill. During hostilities, captives to be spared and corpses to remain uneaten were so designated by having a cloak of the chief placed over them (140:178–79). In the Northwest Coast potlatching ceremonies, donors of the most prestigious Chilkat "blankets" tore them into strips for distribution among supplicants whom they did not consider worthy—and who, esteeming the pieces, reconstituted them as leggings and aprons (65:344–346). Especially dramatic were the kingdoms and empires that amassed great storehouses of tributary textiles. In a well-known account of the Inka state, Murra describes cloth as "a primary source of state revenues, an annual chore among peasant obligations, a common sacrificial offering. . . . No political, military, social, or religious event was complete without textiles being volunteered or bestowed, burned, exchanged, or sacrificed" (153:722; see also 18:297–302; 154, 183).

Weiner explores how treasure in the form of cloth, as well as "hard" valuables, can enhance the authority of political elites (231). Closely related was the use of cloth as a medium of exchange, substituting for shells, iron bars, and gold or silver coinage when these were in short supply. The Lele used woven raffia to pay diviners of their healing cult, as well as fines, wergild, and tribute (54). More fully developed cloth currencies include the white cotton strips (value added if dyed) of the Senegal Wolof (7), the narrow strip cloth of the Tiv that was coiled like bandages for transport (52), and the cloth monies of the Aztec (9) and Moghul (18) empires. Especially impressive was imperial China, whose divisible units of value in silk gave rise to the first paper bills (237).

CULTURAL MEANINGS

Not only is cloth catalytic in consolidating social relations; easily invested with meaning, it also communicates identities and values. Frequently noted are the cloth and clothing tracers of rank in historical chiefdoms and kingdoms where elite apparel, furnishings, and pageantry made ostentatious use of luminescent or decorated fabric while commoners, and often women, appeared drab (2, 9, 18, 150, 164, 188, 216:23). Sumptuary regulations, when enforced, bolstered the visual hierarchy. In traditional Sumba, elites administered the death penalty to commoners in royal apparel unless it had been given to them by royalty (2:33; 80:157–62). The Aztecs reserved a feather-embellished, limb-encasing costume to honor the bravest warriors, but did not monitor everyday dress, which was surprisingly varied (8, 9). Where elite monopolies on adornment were fragile because other classes had access to wealth, sumptuary laws proliferated. Mercantilist Tokugawa Japan

extended regulation to the fiber content of sandal thongs (175), while Europeans of the same period, whether for moral or elitist reasons, closely monitored extravagance in women's dress (12:25, 38–39; 78, 100, 101, 151:179–82).

Differentiated textiles can also indicate kinship, residence, and ethnic groups, although it is problematic whether this role is age-old or recent—the consequence of a nineteenth and twentieth century explosion of design possibilities associated with the availability of industrial yarns and dyestuffs, and of modern political strategies to manipulate ethnicity (James J. Fox, personal communication; 181, 216). Notwithstanding this ambiguity, scholars have proposed the existence of deeply rooted indexical codes for the brocaded *huipiles* of highland Guatemala and for their embroidered Chiapas and Oaxacan equivalents (9, 195, 213, 235); the colorful embroideries of Eastern Europe (71, 233); the three-color warp-patterned belts, ponchos, and shawls of the Andes (143, 227); the woven bands and embroideries of China's minority populations (106); and the warp ikats of Indonesia (15, 76, 77, 80:41–43), not to mention Scottish tartans. Evidence resides in artisans' attributions of color and motif ideas to ancestors, and in sumptuary regulations. In Solor, Indonesia, persons wearing the pattern of a descent group other than their own risked being classed as thieves and having their clothes torn off (80:41; see also 77).

Scholars of Southeast Asia read messages of gender into the cloth that women produce in complementary opposition to men's creative output of metal swords, rhetorical speech, or sacred letters. These scholars have also identified "male" and "female" stages of the weaving process, male and female parts of the fabric and the loom (128, 136; see also 206). Treating North African women's weaving as a subordinate, nonverbal discourse, Messick shows it to reveal the relationship of mothers to sons. "Male" warps are first set up in an analogy to childbirth; "female" wefts then interlace them, suggesting maturation (146). The mother-daughter relationship is similarly argued to find expression in the arranging of warp stripes on Andean textiles (35).

Many cloth traditions orchestrate zoomorphic and serpentine motifs that evoke mythical beings and cosmological truths. Scholars of Quechua cloth find ancient concepts of the underworld and water in zigzag and eye designs (105). Walter Morris, a textile researcher and organizer of weaving cooperatives among the Tzotzil speakers of Chiapas, suggests that rhomboid shapes in *huipil* brocading represent Mayan concepts of the world's coordinates, while toads are the Earthlord's musicians whose singing brings rain (149). For the Quiché Maya in Highland Guatemala, the Tedlocks propose a correspondence between *huipil* brocading and the architecture of their houses, the layout of their milpa gardens, and the form of their music, stories, and rituals of

divination (213). A similar analysis compares the underlying structures of Toba Batak sacred texts and textiles (157), while Adams proposes that the two end zones and the center field on Sumbanese cloth mirror both the three main sections of the typical village and the marriage negotiations between bride and groom, mediated by a "heddle" (3, 5). When time sequences are available, motifs have also been "read" for syncretisms. The Paracas embroideries of the Peruvian coast, dating from the fifth to the third centuries BC, offer a stunning example (59, 193).

Religious beliefs and taboos surrounding cloth encourage interpretation. Like the shroud of Jesus, some cloths, however plain or worn, transmit the aura of authoritative persons or sacred events, perpetuating a group's "identity with the past" (231:212; see also 18:287–93; 39). Alternatively, cloth acquires religious significance through the strict observance of taboos in its manufacture. Either men or women should not touch the loom; women should not touch it while menstruating; artisans should be wary of indigo, an inauspicious substance, and of the urine alkalines used with it; women should abstain from sex before handling wool (1, 65, 75, 84, 89, 102, 117, 123, 146). Among Asante, if a weaver committed adultery with the wife of another weaver, it was necessary to sacrifice a sheep to the loom (173). Producers also propitiate spirits in the hope of acquiring particular motifs, avoiding mistakes, or imparting a sacred protective power to their output. Before submerging cloth in baths of indigo, Yoruba women sacrifice to the Orisha patron of dyeing (168). Descriptions of similar rituals exist for the Quiché Maya (213), for Sumba (2, 3, 5), and in a European folklore of fairy participation in textile manufacture (29, 49, 199). Also replete with examples are the early ethnographies of the Maori (see 231) and of the Pueblos, whose men spun, wove, and embroidered in the Kivas (see 117).

Although humans impute a wide range of social and religious meanings to cloth, attempts to interpret textiles as "texts" are often problematic. When motifs are abstract, interpreters must rely heavily on oral reconstructions of mythical, heroic, or historic associations. In West Africa, where (it is argued) the an-iconic ideology of Islam "geometrized" motifs, pattern names are welcomed as clues (e.g. 173). Yet the names attached to many African and Afro-American motifs and designs refer to playful proverbs and anecdotes, manifesting a lively creativity in themselves (14, 60, 115, 123, 167, 170:80–84; 191). In her survey of Andean weavers, A. Rowe took steps to avoid confusing significance with local names (179:82).

Apart from the ambiguity of names is the reluctance of informants to collaborate in the semiotic or symbolic reading of the cloth they produce or use. One can brush off their skepticism, lamenting (like Wasserman Hill) that indigenous populations, "genuinely unaware of the true meaning or . . . hesitant to inform anyone outside of their immediate community," convey but

a "diminished echo of what once had more profound significance" (227:14; see also 80:43, 90). According to Price & Price, the early students of Maroon art cherished a misconception "that the arts of 'tribal peoples' are invariably intended as 'symbolic' statements—most often of a sexual or religious nature." Even some modern ethnographers are reluctant "to take no for an answer when [the existence of] iconographic meaning is in question" (170:188–93; see also 124:136).

An overemphasis on the message in cloth implies that producers and users belong to the same, discrete culture and share in its codes and meanings. Yet even cloths that are used for ritual and social (let alone merely practical) purposes need not be made by known and proximate artisans. As far as I can tell, it is primarily sacred rituals of continuity and reaffirmation that require domestic as opposed to foreign fabrics, and then not exclusively (see 45, 55, 70, 77, 96, 122, 173). In other contexts, people value imported cloth for its utility, prestige, or symbolic associations. Imports, even when they come from nearby villages or moieties, hardly satisfy the definition of style that Kiel (113:122) has criticized in a recent essay on music—"a deeply satisfying distillation of the way a very well integrated human group likes to do things." Intensely sociable communities do indeed give rise to styles, but such communities are rare. More commonly, social units that are both larger and smaller in scale—elites, classes, gender or ethnic sub-groups, cities or institutions—organize stylistic developments in an ever-shifting visual landscape, responsive to geography, history, trade, and artisan mobility (see 31).

Writing about eastern Indonesia, Fox (77) distinguishes ceremonial cloth on which the motifs have meaning from beautifully executed but "socially neutral" fabrics. People save the former for their burials but appreciate the latter for artistry. A similar distinction, in a different language, is offered by Steiner, who contrasts cloth woven, dyed, and decorated "by a member of a particular society for use by an individual of the same social group" with cloth produced for outsiders. The former "may be treated as a single expressive bundle revealing [shared] cultural or ideological attitudes" while the latter represents "a delicate stylistic and functional balance struck at a particular historical moment between two cultures in contact" (211:104). Also suggestive is Ben-Amos's (20) comparison of modern tourist arts with pidginization in languages. Both render meanings accessible, minimizing the knowledge that receivers need to interpret, or at least feel touched by, communicative gestures (see also 86, 87).

In the case of tourist arts, concerns of saleability shape the final product, as do efforts either to highly formalize motifs or to make them accurately depict the natural world. All three of these audience-expanding strategies flourish under capitalism and are often described as if it were capitalism that brought them into being. In such a formulation, the arts have become commodities in

opposition to their precapitalist status as "gifts." Like Appadurai, I think this "exaggerated contrast between Marx and Mauss" can be overcome by recognizing in gift exchange "a particular form of the circulation of commodities" (12:11–12; see also 91). The following sections attempt to show that any "socially neutral" as distinct from "ceremonially significant" cloth subordinates didactic communication to an *interplay* of economic and aesthetic concerns, even if didactic elements constitute one of the artisan's sources of inspiration.

THE PRODUCTION OF STYLE

According to Boas, the early Western collectors of the objects of others erred in two interconnected ways: first in treating representational depiction as the highest standard of artistic ability, as if other alternatives were degenerative manifestations of poor training or unresolved technical problems, and, second, in their attribution of fetishistic meaning to motifs and patterns (28). Echoing Lowie who, in *Primitive Religion*, postulated the "esthetic impulse as one of the irreducible components of the human mind . . . a potent agency," Boas insisted that the "desire for beauty" is universal and distinguishable from religion. All peoples, regardless of the scale of their society, take joy in the virtuoso mastery of rhythms and symmetries and in the perfection of form (132:260; 28:350).

In *Primitive Art*, Boas determined statistically that Northwest Coast Indians were as likely as foreigners to assign different meanings to the same motifs or utilize different motifs to convey the same meanings. Concluding that even a uniform cultural background did not guarantee a consensus on significance, he was skeptical of pattern names as data (28: 123–24, 351–55). Modern anthropologists criticize him for erecting an unnecessary dichotomy between the aesthetic and the communicative, and for his excessive fascination with rhythmic repetitions as if patterning were about mathematics (38). Yet Boas anticipated a recent turn of anthropology in his eagerness to place art in the context of transregional interactions. He and his diffusionist colleagues underestimated the role of power and inequality in shaping these interactions, but they appreciated the connection between aesthetics and productive activity. Since their time, the intense debate between "symbolists" and "materialists" has obscured this connection, leading a materialist like Cook to decry the "narrow cultural or aesthetic approach which reifies artistic qualities and downplays or ignores economic and social contexts to craft production" (42:18).

There is substantial evidence that even the most localized cloth producers respond not only to their own training, but to other artisans in their environ-

ment. A. Rowe's detailed studies of highland village and small-town brocades in Guatemala (181), and of patterned warp-stripe belts and ponchos near Cuzco (179), dispute any claim that "ancestors dictated outcomes." Borrowing and competitive imitation—what she calls "mutual influences"—were too important. Mutual influence can come from other crafts: tattooing, carving, basketry, ceramics. In producing their famous Chilkat blankets, nineteenth century Tlingit women copied from patterns that men painted on boards (97, 98, 191), just as San Blas Cuna women incorporate men's body-paint motifs in their *mola* blouses, made from commercial cloth (92, 166, 190). Nor must influence provoke imitation; virtuoso contrast is suggested by Maori and Suriname Maroon women, who emphasize angular motifs in their textiles, consciously opposing the "sensuously curvilinear" wood carvings of men (140, 170).

A few investigators identify the nonvisual arts as a source of inspiration. In a well-known example, Thompson compares the syncopated rhythms of West African music with the "syncopation" of prestigious cloths, assembled from up to 100 strips, each less than six inches wide and punctuated with colorful striped bands. The cloths, he suggests, are "enlivened by rich and vivid suspension" of the decorated segments, randomly placed to replicate "the famed off-beat phrasing of melodic accents . . ." (214:207–22; see also 205:196). Exemplary, too, are the claims for rhythmic commonalities between poetry and embroidery in Berber Morocco (90), between poetry and weaving in Indonesian and Mayan traditions (158, 213), and between ritual chanting and appliqué work among the San Blas Cuna (95).

Key ideas for cloth producers to emulate or oppose derive from the cloth of other groups, including the other gender. The "syncopated" narrow-strip cloaks just described are an outstanding West African men's cloth. Originating in the medieval (Mande) Empire of Mali, the tradition of weaving on the narrow, horizontal, "belt" loom spread at the hands of itinerant tradesmen and craftsmen (see 214). Highly reputed are the *kente* cloths of the Asante Kingdom, woven in Bonwire near Kumase, and the *asoke* fabrics of the kingdoms of Oyo and Nupe whose craft towns like Iseyin and Ilorin remain in production today. These and related textiles acquired their patterning in large part through the incorporation of imported yarns—colorful wools, silks, and ravelings that circulated in trans-Saharan caravans as early as the Middle Ages and eventually also through the Atlantic ports. Although West African women were vigorous traders, men had better access to the caravan network—a factor in their monopoly of the narrow-strip tradition (see 32, 60, 107, 124, 125, 167, 168, 205).

Another ingredient in the male-woven narrow-strip cloths was the labor of women who (especially in polygynous households, or where Muslim rules of

female seclusion prevailed) cultivated, processed, and spun the thread for the cotton ground. Whether women did this in a servile capacity or as independent producers was subject to variation (see 69, 176), but in several strategic locations they developed their own cloth styles and did not spin for men. One women's style emphasizes brocades of imported polychrome yarns, calling to mind the narrow-strip weaving of men. As the cloth of the Igbo village of Akwete (13) or the ancient Kingdom of Benin (21) shows, however, women's patterned weaving diverges from men's in at least two respects. Women indulge in zoomorphic and more or less representational motifs, presumably anathema to Islam and not part of the narrow-strip tradition. And they weave their cloth on relatively wide, "single heddle" vertical looms—descendants of the raffia loom still used by male weavers in Central Africa. In contrast, West African men's looms with their pedals and double heddles reveal a kinship with the hand-freeing pit looms and pedal looms of India and the Mediterranean (167). Consistent with these alternative trajectories, the imported yarns in women's cloths seem not to have come through the trans-Saharan caravans, but through the Atlantic ports of the European slave trade (13, 21, 60, 115).

Nor is brocading the only women's tradition to consider. Yoruba women, when not engaged in the production of striped cloth for everyday use, make a cotton fabric whose aesthetic is achieved through post-loom dyeing with indigenous indigo. Called *adire*, this batik-like fabric displays representational as well as abstract motifs: zoomorphic figures, historical referents, and an imaginative array of everyday objects such as umbrellas, sugar lumps, scissors, and the letters "OK." Organized into large, repeated or alternating blocks, the motifs are formed through one of two resist methods. Either they are sewn on, using raffia, or, if the underlying cloth is a smooth factory textile, they are painted on with feather pens and a yam or cassava starch. The raffia resists are more precise, the starch resists more expressive; but either way, the stylistic achievement is a match to men's, especially in two urbanized centers of production, Ibadan and Abeokuta. Today, men manufacture leather or metal stencils for *adire*, facilitating its spread to a competing textile center long famous for *male* (deep pit) indigo dyeing—Kano in the north (15, 60, 167, 168, 203).

The development of women's cloth styles in specialized production centers in West Africa is unusual although not unique. Javanese batiking is also a woman's craft with an urban center of gravity, while women artisans contributed to some important courtly cloths, for example the Inka tapestries. Nevertheless, when men's and women's styles coexisted in historical complex societies (including classical Greece and Rome), women more often produced their cloth in rural households and villages, men in the towns and cities; men more than women benefitted from the opposite gender's dedica-

tion to tasks of minor aesthetic relevance, like processing fibers and spinning (18, 36, 37, 60, 83, 148, 196, 215).

Notwithstanding its special characteristics, the West African configuration illustrates how artisans, in control of a total product, bring ideas to bear on raw materials in the creation of divergent and competing styles. Materials are in turn sensitive to economic and political shifts. Restructured trade networks place in circulation unprecedented possibilities, including new inventions, just as they give rise to shortages of strategic goods. Opportunities and obstacles also flow from the decisions of power holders. Because cloth production requires exceptional investments of labor and materials, it is always potentially competitive with the agricultural and military exigencies of a polity. ("Sheep eat men" was the expression for this in sixteenth century England.) Yet when carefully managed, the residues of fiber cultivation can fertilize other crops (see 163, 199, 207). Moreover, as Murra emphasized (153), cloth enhances the goals of evolving states. Easy to store and transport, prestige textiles awe clients, smooth the rough edges of diplomacy and earn foreign exchange. Cloth manufacture also absorbs population that might otherwise migrate or, from lack of income, die or not be born (142, 196, 199). Power holders, caught on the horns of these various dilemmas, generally respect but may distrust the manufacture of cloth. In 1563, Spanish colonists ordered the cessation of Mayan brocading, intent on mobilizing Indian labor and yarn for their own textile *obrajes*, and on repressing the "pagan" images in Indian cloth motifs (164, 195, 204:324–25; 213:126). Especially common is for royalty to entice skilled weavers and dyers to a court. How artisans respond to overtures and reprisals gives rise to yet other shifts (30, 31, 37, 197).

Vansina has reconstructed the seventeenth century trade patterns that encouraged the Bushong Kuba to sponsor a plush-pile raffia textile in what is now Southern Zaire. Important to this industry were royal plantations of raffia palm dedicated to fiber at the expense of oil and bamboo, imported slaves to tend the trees, and the mobilization of women at court through marital privileges reserved to royalty. As with the Inka, the instruction of court-bound women in the textile arts—here the skill was embroidery—underwrote an eventual advantage in aesthetic competition with other production centers. The Lele, neighbors of the Kuba, wove but did not embroider raffia—a difference consistent with their less prosperous economy, in which women remained in horticulture and raffia palms were also exploited for wine (219, see also 4, 48, 53, 54). Reconstructions like Vansina's require an understanding of the aesthetic options in cloth production to which I now turn, illustrating the relationship of these options to shifting trade networks and, where possible, to power holders' decisions and artisanal mobility.

WARP AND WEFT

According to Picton & Mack (167), the three essential variables in textile aesthetics are the interlacing of warp and weft, "post-loom" decoration, and the nature and color of fibers. In this section I look briefly at some weaving options, relying on the following minimum definitions. The softness and flexibility that distinguish cloth from basketry can be achieved by soaking, heating, and pounding coarse fibers or cortexes, producing felts and *tapa* that share a boundary with paper. Far more ubiquitous, however, is to spin or reel pliable warp and weft yarns, setting the former up on a loom and interlacing them at right angles with the latter. Where the weft elements are more closely spaced than the warp elements, having a higher thread count (number per inch), they dominate on the surface of the fabric, creating a weft-faced weave. In warp-faced weaves, a higher count obtains in the warp than in the weft, while in "balanced" weaves, the counts are about the same.

Variations in one-over, one-under "plain weave" are called "floats." These result in "twill" weaves if diagonal and in a regular sequence, "satin," or other weaves if more varied. Although lustrous fibers, differentially reflecting light in the warp and weft, show a pattern in the absence of color, weaves are more often patterned through variously colored stripes, checks, and plaids, and through the addition of "supplementary" colored weft or warp floats. Discontinuous weft floats, worked up in localized zones, form "brocades." Finally, in one-over, one-under "tapestry weaving," independent, colored wefts fill in a series of mosaic-like areas which, because they are structural and not supplementary, are separated by slits unless joined by an interlocking technique. Whereas the ground for brocading is often warp-faced, tapestries are weft-faced by definition (see 22: glossary; 25, 63, 167:53–57).

Several important weaving traditions suggest an historical divergence of weft-faced from warp-faced weaving. Writing of the pre-Columbian north coast of Peru, Wallace traces an "evolution" from warp stripes "produced with no deviation from the simple plain weave process," through the addition of weft stripes to make balanced plaids, to more complex forms of weft elaboration, with tapestry as an end point (225). Considered by many the apogee of pre-Columbian Peruvian textiles, some Inka tapestries had ratios of 67 warps to 250 wefts per inch, with up to 500 wefts in certain pattern details (24). In contrast, pre-Columbian weaving in Mesoamerica was predominantly warp-faced, patterned through twills and supplementary weft brocading (9, 118).

The ikat traditions of Asia and the Pacific suggest a similar development. Ikat is distinguished by the pre-loom decoration of unwoven fibers that, grouped in bundles, are tied off here and there with a binding material, then stained or dyed. In its simplest manifestation, ikatting lends aesthetic interest

to the suspended fibers in unwoven Polynesian and Maori "grass" skirts. At its most complex, it embellishes the *patola* (singular *patolu*) silks of the Gujarati region of India. Known as "double" ikats, these silks are patterned through the pre-loom dyeing of both warps and wefts and have balanced or weft-faced weaves. In between are the cotton warp ikats of rural Indonesia, characterized by resist-dyed elements in the warp alone and by a warp-faced weave (102).

Woven ikat creates hazy transitions between colors from whence its European nickname, "flame cloth." Especially valued for this shimmering, shot-mottled quality are the Gujarati double ikats. Acquiring a "state of the art" reputation in wide networks of transregional exchange as early as the Middle Ages, these cloths reached courtly and chiefly elites in Indonesia through Indian and subsequently Dutch traders (33, 102). Indonesia is known for only one double ikat—a sacred cotton cloth called *gringsing*, woven with rigorous attention to ritual in a single village of Bali. Elsewhere in the archipelago, rural ikat weavers incorporated some features of *patolu* without, however, using ikat-dyed weft yarns (80: 183–87). In her survey of Indonesian textiles, Kahlenberg refers to cotton warp ikats as "tribal," while attributing silk, weft ikat, and other forms of weft decoration to "Indianization" (111, 112).

The association in Indonesia and the Andes of weft-faced and warp-faced weaving with "elite" and "folk" cloth styles, respectively, brings us to identify two sorts of constraint that, historically, inhibited the weft-faced alternative. The first has to do with loom-types. The back-strap loom, widespread in rural household production in India and Southeast Asia, Middle and South America, and among the Ainu of Japan, required neither specialized craftsmen for its construction, nor costly materials. The same can be said for the vertical looms of Central and Eastern Africa, and of the two North American weaving traditions, the Pueblo and the Northwest Coast Salish (178). Horizontal looms with a fixed warp beam and take-up roller were substantially larger than the back-strap or vertical loom. More expensive to construct, they required an investment that was best justified by weavers enmeshed in courtly and urban development. The draw loom, an extreme example, has been associated since the early Christian centuries with elaborately figured damasks and brocades in silk and linen. Requiring a second operative "to sit above . . . and manipulate the [harnesses of precisely grouped] heddles by pulling strings according to the pattern," this loom was rarely found in rural households (83:32).

Although tapestries can be woven on vertical looms, the back-strap loom inhibits weft-faced weaving because of variable tension on the warps. In contrast, horizontal frame looms with their constant warp tension encourage the weft face. In Indonesia, frame looms coincided with weft ikat and

balanced silk plaids, woven in the coastal trading centers and princely courts, whereas back-strap looms were rural and used for warp ikat (80:13–14, appendix; see also 33). While back-straps are the only loom type to be documented for pre-Columbian Mesoamerica (9, 118), the famous *qompi* tapestries of the Inka were woven on wider frame looms (23, 183, 192, 220). West African men's looms share a genealogy with the Old World frame looms, but are narrow and use a drag stone for tension. Perhaps these compromises with capital intensity are related to the tendency in narrow-strip textiles for (fancifully named) weft-faced pattern blocks to be separated by blocks of (unnamed) warp-faced weave. Picton & Mack marvel at the Bonwire weavers of *kente* for alternating the textile structure within each strip (167:119–27; see also 60).

A dense weft-faced surface depends not only on loom complexity but also on the strength and fineness of the warping yarns. As Bennett & Bird (24:210–12) wrote of Peruvian tapestries, weft counts of over 200 per inch require "a perfect yarn for the warp." In the Old World, flax and silk often served as warps for weft-faced weaves of cotton or wool (74, 229:360). Even so, these fine but strong fibers depended for their quality on climate and soil conditions, and on the labor invested in their cultivation. Silk improved with the slower breeding of worms (207), flax with moisture control, frequent fallowing, and the painstaking removal of weeds (66:85–91; 199). Cotton, the most common of the domesticated fibers, varied along these lines (37) and according to staple (as did wool). Until Europeans organized a world-wide commerce in cotton and cotton breeding, the stronger long-staple variety was confined to the New World. In the Old World, short-staple cottons were a problematic source of warping yarns except in regions of dense human capital like Bengal, reputed for attentive cultivation and fine spinning (37, 74, 138, 229). Even in the New World, labor was a key ingredient in "perfect" cotton warps, as the civilizational centers of the Peruvian coast would indicate (22–24, 26, 51, 221a, 225).

A fascinating case of fiber influence over stylistic change were the Chilkat blankets of the nineteenth century—actually capes, dance skirts, kilts, and leggings misnamed by European purveyors of Hudson Bay blankets (65). The Chilkat part of the name refers to a Tlingit subgroup centered on Alaska's Chilkat river whose women put together new factors of production as their menfolk assumed a mediational role between Athabascan trappers in the interior and European fur traders on the coast (see 234:182–92). Like the southern Salish, the Tlingit wove mountain-goat hair. Indeed, as hunters of this animal their access to its fibers out-distanced the Salish who, not goat hunters, had to send women and children into the mountains in the goats' birthing season to collect tufts of hair from bushes and trees, and to supplement this fiber with dog hair (89, 217). Possessing a lovely softness, goat's

hair is also easy to dye, but these qualities could not be maximized in a weft-faced textile until a strong warp fiber became available. The trade realignments associated with European contact brought cedar bark, the basis of coastal cloth traditions, into the configuration. Spinning goat hair into a two-ply yarn, Tlingit women wrapped it around cores of cedar bark, creating the desired strong warps. In addition, they adopted the unusual "half-loom" of the coast. Consisting of only one beam, this apparatus allowed warp yarns to dangle freely as well as be trimmed at the bottom to create a rounded shape. Suited for twining, not weaving, the dangling bark-strengthened warps supported the weight of a dense weft-faced twine, executed in discrete pattern areas as in a tapestry (28, 56, 57, 65, 98, 191).

Chilkat women derived their patterns from men who, in painting them on boards, systematically formalized the zoomorphic figures of genealogical crests, stressing oval-shaped eyes, multiple profiles, distorted anatomical relationships, and a biaxial symmetry that, filling every space, appealed to audiences wider than the crest affiliates (97). Weft yarns were dyed to replicate as many of the paint pigments as possible. Thanks to the Tlingit location on northern and interior trade routes, Alaskan copper was available for a fugitive, yet coveted, blue. After Chilkat warriors had raided Hudson Bay installations in the mid-nineteenth century, putting themselves on a stronger footing with European traders, blue also came from indigo-dyed commercial cloth boiled in water (98, 191). The possibilities for blue, as well as for the cedar-bark warping fibers, gave the Tlingit a monopoly of the region's most prestigious and inspiring textile. Recall that at some of the potlatches chiefs tore "blankets" into pieces for wider distribution (65:344–46).

The point of comprehending the fiber and loom contributions to weft-faced weaving (or twining) is not to relegate warp-faced cloths to a lesser category of textile. O'Neale argued that "warp-made patterns take more foresight, preparation and skill than weft-made patterns" (159:156–57)—an observation well confirmed by the year or more that it takes to create a warp ikat, in which up to 4,000 pre-dyed warp elements might be used (77, 80, 102, 111, 112). The supplementary wefts for one shed of weft patterning in a Mayan (warp-faced) brocade takes ten minutes to arrange, the piece as a whole requiring six month's of weaving time (181). Andean weavers use warp floats in reversible, double cloth weaves, and, with supplementary warps, create three-color animals and shapes within a series of warp stripes, again with great expenditure of time and skill (35, 105, 179, 180, 227).

Specialists have argued that the back-strap loom permits more artistic control than looms with fixed warps (181, 195). Designs are picked up by hand or sticks, rather than by using a prearranged heddle setup operated through the loom mechanism. Except for tapestry weaving, which is also

"pick-up," and for the draw loom damasks whose preplanning is highly complex, frame-loom weaves are often plainer than the weaves of simpler looms. Plain weaves were above all characteristic of the treadle loom, on which commercial goals made speed of operation and width of fabric more important than patterning. The commercially motivated treadle-loom complex dates to the Middle Ages in Asia and Europe, to European colonization in the New World.

POST-LOOM DECORATION

If cloth producers were historically challenged to explore the potentialities of weft-faced weaving and of the warp-faced alternative, aesthetic competition also induced them to liberate design motifs and patterns from the grid-like geometry of warp and weft. The difficulties involved lend a special aura to two Old World textiles that were widely exported in the preindustrial era. One was Chinese silk embroidery, famous for shadings so subtle as to resemble brush strokes, and capable of depicting clouds, rocks, and gardens in high relief (133). Indian craftsmen of the Coromandel coast, mastering the complex chemistry of cotton dyeing, produced the other: hand-painted chintzes overflowing with images of paradise that included not only trees, birds, and flowers, but meandering tendrils and vines as well (81, 104).

Interested in an export market, Indian craftsmen modified the colors and images they painted on cloth to conform to the respective tastes of European and other Asian consumers (81, 103, 151:194). As we will see below, so successful was their penetration of Europe that it provoked European cloth makers to industrialize textile printing. In Java Indian chintz, along with Chinese embroideries (and ceramics), influenced batiking, another tradition in which birds, fantasy animals, and winding, unfolding leaf sprays and tendrils playfully move on cloth as if in three dimensions. Javanese women achieve these intricately curvilinear motifs through the free-hand drawing of resists with pens or canting vessels containing molten wax (1, 80:49; 137: appendix). Characteristic of post-loom decoration, their art benefitted from the smooth surface of a precision weave. Centuries ago, Java's most prestigious textiles were the *kain kembamgan* cloths of the interior courts on which gold leaf was glued to depict wooded mountain landscapes. Batiking "took off" in trading centers of the North coast when merchants appeared with plain Indian cottons and their successor, the machine-loomed cottons of Manchester (80:124; 137). A similar dynamic lay behind the explosive growth of freehand *adire* "batiking" in Nigeria (60).

Compared with the case in the Old World, both main forms of post-loom decoration—embroidery and resist dyeing—appear to have been undeveloped in the pre-Columbian Americas. Admittedly fragmentary archeological evi-

dence shows that tapestry weaving was the predominant aesthetic trajectory in Peru, while in the Mesoamerican and Pueblo traditions embroidery was unusual until European missionaries promoted it (118). South American artisans used a batik-like method to decorate gourds, pottery, and string bags, but not cloth (164:48). Should we infer an association between post-loom decoration and sociocultural complexity? Did the New World lack this aesthetic alternative as it lacked the plow and wheeled transport? Such a conclusion underestimates the potential for weavings, like computer printouts, to overcome the matrix of warp and weft through labor-intensive refinement. Not a few draw-loom silk and linen damasks illustrate this principle, their minute, row by row alterations in the sequencing of warp over weft being the source of intricate curved effects. Refined tapestry weaving (and twining) is similarly able to depict curves, approximating the painter's art. Spanish colonizers recognized this quality in Inka tapestries whose artisans they drafted to weave for Europeans (154).

If anything contradicts the apparent association of post-loom batiking and embroidery with sociocultural complexity, it is the intriguing textile traditions whose dyed or embroidered patterns deliberately, but unnecessarily, evoke horizontal and vertical alignments as if they were bound by the grid. Reminiscent of the transfer of textile designs from cloth to pottery on which Boas commented (28), and which has been noted for ancient Peru (see 17:10–14), examples include some of the resist-dyed designs on Javanese and Nigerian batiks and the plush-pile embroidery on Kuba raffia "velvets" (4, 205:196–201). Almost perverse in its punctilious adherence to the warp and weft matrix is embroidery *a point compte*, every thread counted. In Eastern Europe, thread-counted embroideries coexisted with freer, curvilinear embroideries, each elaborated to the highest degree (71). In Mesoamerica, European introduced embroidery initially constituted an "acculturated" alternative to the angular designs of Indian brocading, emphasizing small winged birds and floral sprays. Today, however, the availability of machine-woven cloth in the areas still dedicated to Indian motifs has fostered embroidered imitations of the brocades. Easier to execute than the "real thing," the embroidery stitches blur the sharp outlines of the presumably grid-bound motifs, suggesting an unfocused photograph (149).

Finally, a set of stylistic possibilities for enhancing or rejecting the loom's geometric discipline emerges from the facile use of scissors or a razor on commercial or factory cloth, creating designs through subtraction, composition, or appliqué. Characteristic of small, trade-oriented coastal populations in Africa and the New World, these possibilities flourished where indigenous weaving and dyeing were absent or in decline. Three well-known examples invite comparison: the *pelete bite* cloth of the Kalabari at the mouth of the Niger Delta, the narrow-strip compositions of the Suriname Maroons, and the

reverse appliqué *mola* blouses of the (hammock-weaving) Panamanian Cuna. In each case, since the nineteenth century men have exported an indigenous commodity or earned wages as migrants to towns and cities, and have used a portion of their earnings to purchase cloth for women. Women in turn elaborate the cloth for wear and exchange among themselves or to give to men for apparel and ritual purposes. Their products also enter tourist markets.

For the Cuna, elaboration involves juxtaposing the bright, contrasting colors of commercial cottons to create pictures in reverse appliqué. Indigenous traditions of men's body painting and ritual chanting inspire a repertoire of complex designs to which are added popular, consumer, and media themes from Ali Baba to lottery tickets, swim fins to Romulus and Remus. Stacking cutouts of diminishing size so as to enhance color contrast, artisans fill all of the spaces on a blouse front, undaunted by the difficulty of hemming rounded, realistic motifs (92, 94, 95, 166, 190). In the nineteenth century, Suriname women assembled rectangular pieces cut from solid-color commercial cloth in order to construct capes for their husbands. Since the interwar years, they have preferred to work with already colorfully striped factory cottons. In contrast to Cuna women, the women of Suriname eschew the grid-free potential of scissors and needle, their textile representing a counterpoise to the sumptuous curves of men's wood- (and their own calabash-) carving. Like many Afro-American quilts, (222), Maroon capes are seen as evoking the rhythmically "syncopated" West African strip cloths, implying a continuity of aesthetic rules even though the actual construction requires no weaving (170).

Access to inexpensive commercial and machine-woven fabrics led Kalabari women, equipped with razor blades, to cut and draw selected threads from tightly woven Indian Madras and English ginghams. In the *finate bite* version of this "design by subtraction," producers eliminate only wefts, whereas in *pelete bite* warps as well as wefts disappear. Both methods target the lighter threads for removal, leaving behind a darkened ground to frame motifs, many of which resemble the indigo resist-dyed patterns of Yoruba *adire* and other women's cloths of the West African interior. Drawn work demands less labor than resist-dyeing with the notable exception of curved shapes, above all the "undulating python." According to Eicher, motifs that ignore the grid are the most difficult to excute and confer the most prestige (61, 62).

Cloths manipulated with scissors or razor highlight the relationship of style to the empowerment of social groups. Perhaps it is significant that each producing population, historically touched by the European slave trade, kept a distance from it. New Calabar was a slaving conduit, not source, while in the New World the Maroons fled, and the Cuna avoided, enslavement. Whatever the background reason, each group has retained a relative political autonomy despite increasing commercial engagements, in part through the (tourist)

export of exciting textiles (see 94). The women who make the fabrics seem also to be empowered, having engaged the social, ritual, and aesthetic interest of mobile men whose earnings they claim.

COLOR

Both pattern weaves and post-loom decoration usually, although not always, depend on variations in color to achieve their effect. Color, in turn, depends on the availability of dyestuffs, mordants, and skilled dyers, and on the chemistry of fibers. Until the European invention and manufacture of the coal tar or aniline dyes in the second half of the nineteenth century, dyeing was an arduous and easily monopolized process. In the classical and Byzantine empires of the Mediterranean, purple came from a glandular secretion of the whelk mollusk (the murex or purpura), which was fished and sun-dried near Tyre. It took 1200 murexes to obtain 1.4 g of dye, while a pound of murex-dyed wool equalled a stone mason's daily wage. So exotic an origin guaranteed exclusive use to those who were "born to the purple," even in the absence of royal restrictions (152:14–15, note 6; see also 197).

Another renowned dyestuff of the Old World was kermes from the shield lice of the Coccidae family. Parasitic on evergreen oaks in the Mediterranean, this insect was harvested while pregnant with eggs, killed with vinegar, and dried in the sun, yielding a red upon soaking in water. Although accounting for as much as 60% of the cost factors in some textiles, the dessicated bodies of the insects could be transported to dispersed centers of dyeing and did not give rise to state monopolies in the manner of murex purple, usable only when fresh (152:17).

A similar dynamic characterized New World dyeing in the days before the anilines. A murex-like shellfish harvested on the Pacific coast of Central America constituted the source of a rare purple *(purpura patula)* that was traded to the Guatemalan highlands and as far north as Oaxaca. To this day mauve—the New World's murex purple—is the most prestigious color in the brocaded and embroidered cloths of these regions (160, 164, 181, 184, 185, 235). Meanwhile, the Mediterranean kermes had a parallel in cochineal, produced from an insect parasitic on the nopal cactus, native to Mexico, Central America, and Peru. This dyestuff attracted the attention of the Spanish colonists, who organized nopal plantations on which Indian laborers harvested up to 225 pounds of insects per acre three times a year, the exported surplus displacing European kermes (152:63). Madder, a root, provided less-costly reds in both the New and Old Worlds.

It is no accident that a discussion of textile dyeing should highlight red, by all accounts the most difficult color to achieve before synthetic dyes and, among colors, the most noticed (18:291, 304; 186). Blues posed fewer

problems, their major source—plants of the indigo family—being widely cultivated in Old and New Worlds. Moreover, although indigo processing is lengthy and putrifying, it is not overly demanding of technical skill. Dyers first obtain a precipitant from the soaked leaves of the plant which they then mix with an alkaline solution to create a bath. Cloth dipped in the bath emerges greenish or white but oxidizes to blue upon drying, the depth of the blue depending on the number of baths and the quality of the dye (168, 210).

A world survey would show that while alkalines were occasionally difficult to acquire, they could be no more complicated than household urine, and while the best blues came from the tropical indigoes, many other variants would do. Neither drawback made blues as scarce as reds, the more so as indigo is one of few dyestuffs easily fixed on cotton. No wonder that the cotton traditions of both Old and New Worlds are memorable for their blues, or blues combined with the colors of natural cotton—generally whites and browns, except in Peru where naturally pigmented cottons came in burnt oranges and grays, and in shades from ecru to chocolate (23:114; 221a; see also 164:22). Finally, in the days before anilines, dyers also manipulated various roots and barks while raffia and other basts like flax acquired their colors mainly from bleaching and staining (4, 199).

That red was special and hard to come by can be seen from the eagerness with which the cloth artisans of Africa and North America, both areas on the margins of the Coccidae reds, avidly unraveled cochineal or kermes-dyed commercial cloth for yarn. With the exception of gold thread and a native silk called "sunyan," magenta ravelings from the silk industries of Lyons and the Middle East, traded through the trans-Saharan caravans, were the most prestigious elements in the weft blocks of many a West African men's cloth (108, 125, 167). In the American southwest, cochineal-dyed European cloth provided ravelings for Pueblo and Navajo weavers from the 1600s until the American Civil War, after which machine-woven and synthetically dyed American flannels became the source, followed by industrial yarns. Throughout, the ravelings and yarns that mattered were red (117:29–32).

Dyers on the Coromandel coast of Southern India, source of the brilliantly painted chintzes as varied as a "summer garden," derived their reds from several substances, among them the roots of an indigenous madder, *Rubia tinctorium*, the trees and shrubs of the genus *Morinda*, and *Oldenlandia umbellata* or *chay*. The latter, also an indigenous root, was pivotal, particularly when it came from the shell-rich flats of the Kristna delta where calcium deposits added lustre to the dye. Northern Sri Lanka (then Ceylon), the Madura region of southern India, and the shell flats of the connecting islands, were also a source of good chay (81:21). Red dyes, like most other dyes except indigo, are used in combination with metallic oxides called mordants, from the Latin root, "to bite." These oxides change the molecular structure of

fibers so that the dye will bind. Although receptive to indigo, cotton actually repels other colors except in combination with highly specific mordants. Gittinger describes the South Indian manipulation of mordants to vary the purity, density, and evenness of hues in cotton dyeing, noting the particular difficulties of working with red (81:21).

The case of chintz raises the second aspect of the color challenge. For chemical reasons, dyes are harder to fix on cellulose than protein fibers. Chinese, Japanese, and European artisans failed to generate a dyeworks chemistry as sophisticated as that of southern India because, Gittinger implies, with their respective silks and wools, they did not have to (81:21). Elsewhere colorful textile traditions owe as much to fibers as to dyes. The pre-Columbian textile artisans of Mesoamerica, women back-strap weavers, relied more heavily on twill than color for decorative effect. Prestige cloths, moreover, incorporated color as much through the addition of feathers and gold or silver thread as through dyeing. Rabbit's hair, combined with a wild silk, "took on brilliant colors . . . reputed to be fade resistant," but the border decorations in this fiber were small and rare (9:12; 118). The reason for these limitations is that, although cochineal, indigo, and shell-fish purple were accessible as dyestuffs, their chromatic potentialities could not be realized until the post-conquest appearance of abundant wool (and silk).

In the Guatemalan highlands, wool from Spanish-introduced sheep provided the foundation for a new, *male* weaving style, based on the commercialized treadle-loom production of a monochrome broadcloth for tailoring. But wool also entered the brocading tradition of women, facilitating an expansion of the extent and density of woven decoration even in villages where brocades had been suppressed. In the twentieth century, aniline-dyed cotton and then synthetic yarns have replaced dyed wool with similar effect (34, 160, 164, 181, 195).

Pueblo weaving, dating to around the first century AD, at first emphasized "blankets" in a plain, cotton twill, striped in the whites and browns of the undyed fiber, plus blue. Following their revolt against the Spanish in 1680–1692, however, the Pueblos became refugees among the Navajo, who by then were herding sheep. Male Pueblo weavers traded their output not only for the ravelings of commercial cloth, but also for wool and cochineal. As European merchants and missionaries added embroidery needles and floral motifs to the mix, the plain cotton twills acquired embroidered wool borders with red and blue motifs (116, 117).

The historical interactions that influenced Pueblo embroidery brought about the transfer of their weaving know-how to Navajo women, new to the craft. From the outset, however, Navajo cloth, wool and not cotton, was produced outdoors to meet external (especially Spanish) demand. Kent derives from this history an explanation for the Navajo willingness to make concessions to

tourists and Anglos in the late nineteenth century, when (like the Cuna) they playfully depicted pop-art motifs in bright, even "garish," colors. Their experiments, economically expedient for their survival but peripheral to their culture, were a prelude to the twentieth century production of Navajo rugs, for which East Coast trading houses supplied subdued color ideas and Oriental-type designs (116, 145, 218:189–90). Meanwhile the Hopi, the Pueblo group with the greatest distance from the Rio Grande entry point of the Spaniards, maintained their cultural boundaries, becoming the specialized suppliers of all Pueblo ritual cloth, including a white, fringed band, symbolic of clouds and falling rain, on which the use of indigo is taboo (116, 117).

Like the Pueblos, the Maori created a new cloth style at the point when contact with Europeans gave them access to wool. Their pre-contact cloth was based on native flax, soaked (although not retted), beaten to a silky quality, and twisted into thread for the twining of lustrous cloaks. Cook admired and acquired these fabrics, which his countrymen misnamed "mats." For decoration the cloaks had a narrow *taaniko* border formed by wrapping bleached wefts around dark, mud-dyed warps. The cloaks of chiefs boasted appliquéd strips of brown, white, or black dog's hair and, when especially prestigious, the red feathers of the parrot. In ordinary *taaniko* patterning, which consisted of a fine line motif of abstract, angular shapes, red was rare—a product of the *toatoa* trees of the northern district that were the monopoly of one kinship line (140:154, 178). With the introduction of sheep's wool, Maori women began competitively to enhance the size and complexity of *taaniko* borders, making triangles into diamonds and chevrons, transforming fine lines into solid areas, and spreading the patterning on the finest cloaks from one to three borders whose widths were also increased. Significantly, it is cloaks with extensive patterning in red as well as black and white that grace the royal visits, weddings, funerals, and cultural competitions of the present-day Maoritanga revival (140:208; 141).

The potential of wool to resolve design challenges related to color, enabling the creation of new styles, was a feature of the Chilkat blanket: Goathair carried the color while cedar bark gave the strength. Cedar bark twiners of the coast, in fact, had decorated their "blankets" with paint or feathers, or a narrow border of goathair (56:74–75; 98). Similar interactions occurred in ancient Peru. South coast weaving expanded in the Early Horizon (1400 to 400 BC) as brilliantly dyed camelid yarns appeared from the southern highlands to be added to cotton warps. In E. B. Dwyer's words, the combination brought about "the rapid expansion of the use of tapestry and also an increase in the complexity and fastness of color" (58:74; also see 17, 26). In the 1930s and 1940s, O'Neale and Kroeber showed a statistically significant correlation between the increasing proportion of wool to cotton in Peruvian tapestries and

the florescence of polychrome, up to 15 different colors being identified (159, 161).

In confronting the aesthetic challenges posed by weft-faced weaving and post-loom decoration, some textile artisans emulated established options while others pioneered alternatives. A similar dynamic pertained to color. In Indonesia, heavy reliance on cotton impeded replication of the rich silk *patolu* colors, a spectrum of reds, oranges, purples, greens, and yellows as well as blue. Yet it encouraged the elaboration of somber blues and tree-bark rusts that, in combination with white, distinguish fine batiks and warp ikats. Along these lines one wonders by what interactions the famed Hausa dyers came to beat into their cottons more precipitate of indigo than these cloths can absorb, producing not only a blue-black sheen on them, but blue on the skin of the wearer (176, 203). Did this indigo-in-excess style, so prestigious among desert nomads like the Tuareg, emerge as an aesthetic alternative to the brightly colored silk and woolen embroideries of other Hausa and Fulani, better placed, perhaps, to acquire the necessary protein fibers, dyestuffs, and ravelings?

O'Neale & Kroeber (161) analyzed an all-white Peruvian textile along these lines. On the eve of Inka expansion, Chimu weavers on the northern coast were adapting the tapestry techniques of polychrome wool to white cotton, alternating plain weaves with "monochrome tapestry bands." The resulting fabrics "might be cited as indications of inability for one reason or another to procure the requisite amount of wool"—an assessment consistent with northern Peru's less constant exchange between highlands and coast than occurred in the South (161:48–49; see also 17). Notwithstanding the likely influence of a wool shortage, O'Neale & Kroeber advised against negatively comparing the white-on-white tapestries with their colorful South coast equivalents. Each evolved to conform to "its own highest standard," to wit, "wool will take richer colors, cotton yield greater sheerness of texture" (161:48–49).

That there can be an aesthetic of sheerness in the absence of any color is suggested by a fourteenth century Indian poet's celebration of Deccan muslins: "the skin of the moon removed by the executioner star would not be so fine. . . . it looks as if one is in no dress at all, but has only smeared the body with water" (quoted in 150:8–10; see also 18:295). Mediterranean and European linen artisans emphasized fineness and sheen at the expense of color, perfecting costly bleaching techniques in competition with silk and wool dyers. Nevertheless, in the long run, and on a world-wide basis, color seems always to have attracted attention, the counterexamples of religious ascetics in their black, white, and saffron robes only confirming the rule (18:290–92; 47, 197, 236).

EUROPEAN FACTORY CLOTH

The preceding sections reviewed the aesthetic issues that shaped historical cloth styles. Where possible, I related the crystallization of a style to economic and political shifts that facilitated a convergence of strategic materials, ideas, and skills within a developing social unit. Similar shifts underlay the breakthrough to the capitalist production of textiles in Europe as nation-state makers, directly and through merchants, primed artisans to compete in new and wider domains. Colonial markets were one such domain, including the market that clothed plantation slaves (120). Another was internal to Europe. As wealth from other continents flowed to classes whose sumptuosness had previously been curtailed, it transformed the dynamics of style into the dynamics of fashion, accelerating cloth demand.

Europeans were hardly the first to tailor their garments. The narrow, brocaded men's cloths of West Africa were traditionally assembled with an architect's eye for shapes—an example of widespread Islamic (and Jewish) craftwork with needle and thread. Limb-encasing pants and jackets also protected various peoples from the rigors of climate and war. We have seen, moreover, that opportunities for color contributed to the stylistic development of many handmade fabrics. Yet variations in tailoring and coloring stopped short of the perpetual mutations—the high velocity turnover—attributed to fashion, whether one understands this phenomenon as a dialectic of imitation and vanity following the sociology of Spencer, or as a system of consumption, forever expanding through internal differentiation and rapid obsolescence (see 12, 16, 187).

Historians trace fashion, in Europe, to the precociously mercantile cities of the Italian Renaissance—home, Sombart argued, to the first capitalist factories, set up to make silk cloth (100, 151, 208) But Renaissance fashion was still predominantly male and elite, awaiting the revolutions that would make it an open system. These came in the form of the English revolution of the seventeenth century and the French Revolution of 1789, both of which toppled sumptuary laws in a spirit of momentary democratization and because "fashion or the alteration of Dress is . . . the Spirit and Life of *Trade*" (quoted in 151:182; see also 16:297–300; 78, 101). In a recent book (10), Benedict Anderson establishes a connection between the invention of the printing press, the entrepreneurial thrust of merchants to open and profit from markets, and the emergence in Europe of nation states from a less structured geography of parochial communities overlaid by universal empires and religions. Labeling the nexus "print capitalism," he credits it with the provision of vernaculars through which "citizens" could develop their private and national selves. "Fashion capitalism," to borrow the phrase, was closely related, its "endless" possibilities for variation allowing consumers to communicate national and

individual, public and private, social and sexual meanings, guided by " 'taste-makers' and their affiliated experts who dwell at the top of society" (12:32; see also 147).

Both fashion capitalism and the colonial system stimulated European cloth makers and their patrons to lower production costs. In the case of spinning and weaving, organizational innovations were initially more critical than technological ones, the spinning wheel and frame loom having been invented in the Middle Ages, and outside of Europe at that (40, 66). Especially significant was the putting-out system through which merchants of the seventeenth and eighteenth centuries avoided the expensive labor of urban guild manufacturing, advancing raw materials, "urban" spinning wheels and looms, to peasant households, organized to produce the "pieces" of finished goods (40, 120; see also 99). Far more developed in Europe than in Asia (see 37, 83), the putting-out system multiplied the output of household linens for colonial as well as domestic consumption, and of the so-called "new draperies"—light, woolen broadcloths, made from the long-staple fiber of well-fed sheep, and inexpensive enough to permit the wastage of tailoring.

Subsequent innovations in spinning and weaving grew out of a concerted English effort to compete with Indian cottons, above all the painted floral chintzes described in the preceding section, and their less costly, printed "calico" equivalents. Lighter and softer than the broadcloths, cheaper than continental silks, these imports of Britain's East India Company attracted consumers in all social classes, challenging native industries (104:36; 151, 234:270–71). Key moves in the effort to displace them were the import of plantation cotton, the application of steam power to "mule" spinning in 1790, the spread of the power loom and emergence of the factory system in the 1820s and 1830s (234:273–74; 83), and the eventual mobilization of labor through the wage. Wolf highlights the magnitude of the spinning transformation: "whereas an Indian hand spinner of the eighteenth century had taken more than 50,000 hours to process 100 pounds of cotton," by 1825, automatic mules had "reduced operative time to 135 hours" (234:273).

English and Dutch merchants of the seventeenth and eighteenth centuries encouraged Indian artisans to modify the decoration of chintzes (and calicoes) as a gesture to European taste. So commercially successful were the evolving styles that these merchants' own compatriots felt driven to invest in the experimental dyeing of *fustians*, a European (cellulose) textile of linen warps and cotton wefts. The long-standing rivalry between England and Holland energized the experiments, these two powers having competed in the seventeenth century to entice Protestant dyers away from Counter-Reformation polities, and in the eighteenth century to promote an alliance of applied chemistry with commerce (40, 151, 197). By 1752 their respective innovators had initiated copper-plate printing on cloth and, inspired by printing press

technology, were putting the plates on rollers by 1783 (104:36). According to Mukerji (151), roller-printers were no less central than steam-powered spinning and weaving to the industrialization of textile manufacture, otherwise known as the industrial revolution.

Between mechanized looms and roller printers, European factory textiles in no time outdistanced Indian imports and were flooding the colonial system. Although accustomed to competition and rivalry over cost as well as style, world producers of handcrafted textiles were vulnerable to the onslaught. Several aspects of colonialism worsened their predicament. Missionaries criticized indigenous peoples for adopting Western finery (see 122:357), but they also imposed new standards of appearance as a criterion of religious conversion and issued European clothing to children in mission schools. These schools, moreover, taught embroidery, sewing, and knitting—textile arts that made extensive use of European cloth and yarns, while undermining the transmission of indigenous skills, above all patterned weaving (89, 116, 117, 140, 170).

Mission Christianity was neither the first nor the only religion to influence textile history. The medieval diffusion of Islam was simultaneously a diffusion of cotton cultivation and dress codes (229). Christian missions, however, coexisted with a productive system dedicated to marketing commercial cloth for profit and capable, thanks to its factories and railroads, of flooding the world with "knock-offs." Dutch and English factory manufacturers duplicated Javanese batiks, roller-printing copies so precise as to include the hairline capillaries that occur in hand dyeing when the wax paste develops cracks (137: appendix). Europeans also made factory versions of *adinkra*, the terra-cotta mourning textile of the Asante that is printed in all-over repeats using calabash stamps. Disliked by *adinkra* lovers, the mill-printed version even simulated the embroidery that Asante producers added for prestige, themselves imitating an earlier and more costly incorporation of woven *kente* (168; see also 44).

Trading companies, eager to market industrial batik and imitation Indian textiles in Africa, advanced bolts of cloth on credit and kept records of the acceptance or rejection of particular samples. In this way they discovered that the Yoruba, whose women used indigo in *adire* cloth, preferred the color blue, while in Ghana oranges, blacks, and terra cotta were more popular. European designers also pondered the sensitivities of African consumers to the smell, feel, and launderability of printed fabrics (44, 108:263; 156). As Steiner suggests in a study of Manchester and Rouen textiles produced for West African markets, European manufacturers "were not only covering the colonies with fabrics; they were also quietly uncovering European fabrications of the colonies" (211:92).

Imitation prints had a parallel in imitation weaves. In the early twentieth

century, Rattray, the Colonial District Commissioner of Ghana, aided by Roth, the authority on looms, enthusiastically collected information on warping sequences, brocading designs, and their respective names. Publishing the information in 1927, Rattray reported that "one, at least, of the Manchester firms is weaving cotton goods for West Africa in conformity with these suggestions," fulfilling the "mutual obligations" of commerce and anthropology (173:218, incl. note 1). In the 1930s, German manufacturers, already suppliers of dyes and threads to Jewish weavers of a brocaded ritual cloth in Yemen, began exporting jacquard-woven imitations of the cloth—an ironic interaction (119).

Not only did hand-loom weavers face the competition of cheaper, industrial imitations of their output; in many parts of the world they also encountered European competition for raw materials. In New Zealand, colonizers organized a reconnaissance of the varieties and locations of wild flax, over 1000 tons of which were shipped to London in 1831, undermining the manufacture of Maori cloaks (140:127, 149–51). In Nigeria, the British forced cultivators to produce American cotton as a crop for Lancashire (60, 108:265–267; 203:87). Like cotton-growing schemes elsewhere in Africa (69:52–56; 79), this one threatened not only the indigenous hand-weavers, but also agricultural resources for food production and the gender division of labor.

The most dramatic collapse of cloth traditions to occur in a context of fiber exports was that of plantation slaves in the Americas. Recruited in regions of Africa with important weaving and dyeing traditions, these laborers spun, wove, and dyed hardly any of the cotton they grew. European linen and cotton manufacturers clothed most plantation slaves (120) and were also the source of yardgoods from which Afro-American women composed artistic quilts (222). More benign, but nevertheless revealing, was the fate of nineteenth century silk weavers in China and the Mediterranean as French silkworms succumbed to disease and Lyons factories mechanized silk weaving.

The production of silk fiber and thread grew up together in China and the Mediterranean, where reeling workshops were located near mulberry trees. As French demand increased, both local and foreign entrepreneurs upgraded these workshops through the application of steam. The artisanal communities of Bursa, a Turkish city and hinterland with a high reputation for finished silk goods, were reduced to producing thread, with profound consequences for the internal labor process, including its gender division and artisans' sense of autonomy in their work (171, 172). Similarly, the creation of export-oriented steam filatures in the South China silk district brought about the decline (and feminization) of silk weaving. Here 10,000 male weavers, trained in the martial arts, looted thread mills, their activism matched by "Luddite" mill-burning in Turkey (207; see also 171:497).

Finally, European textile predation benefitted from an evolving demand

structure in the colonies, as destabilized elites and emergent status-seekers seized upon European fashion and fabrics for display and distribution. One need not concur with Sahlin's proposition (188) that "the capitalist mode of production is organized by *mana*" to appreciate that European commodities and complexes were, in some contexts, welcome (see also 18:304–6; 39). In the Guatemalan highlands, a strong line of continuity exists in women's back-strap cotton weaving and in the draped, brocaded *huipiles* and skirts that women wear. Men, however, particularly as they became engaged in the coffee economy of the twentieth century, adopted tailored clothes, the broadcloth coming from male highland weavers using Spanish-introduced treadle looms and wool as well as from European suppliers (160, 181). Not exactly participants in the world diffusion of the London business suit, these men nevertheless illustrate the subtle role of fashion capitalism as well as factory cloth in European expansion.

LIMITS AND COUNTERDEVELOPMENTS

By whatever means, subtle and direct, England had 70% of the international trade in textiles by the late nineteenth century (6:10), yet its cloth was far from covering the world and would soon be in retreat. Among the limitations it encountered were some internal to the factory system itself. Expanding initially and heartily through the export of machine-woven and roller-printed fabrics, this system provoked borrowing and imitation with a consequent dispersal of know-how and capital goods. Compared with most other industries, mechanized textile production is less demanding of capital than of labor, making it an ideal import-substitution sector in ex-colonies and peripheries wishing to create factory employment for large or growing populations. Moreover, the unionization of cloth and garment workers in the first industrial countries accelerated the flight of capital. So strong were these interacting trends that by 1980 an estimated 30% of manufacturing jobs in the developing countries were in textiles, against only 14% in the countries that were first to industrialize (6:9). Much like their European forerunners, Third World textile factories exploit predominantly female labor (see 67) and compete for yarn with hand-loom weavers (137, 162, 212).

A second, internal limitation on the textile predation of Europe and the United States was the inability of their citizens to sustain a posture of unmitigated imposition vis-à-vis the art production of other peoples. With initial contact, Europeans collected African, Asian, and American artifacts as curiosities. In a subsequent, mission-influenced phase, they destroyed them as fetishistic or worthless, as when the Spaniards legislated against "pagan" Mayan brocading. The third period, defined by the consolidation of colonial

empires, led to the acquisition of artifacts for ethnographic museums whose inferior status in museum hierarchies reinforced the evolutionist assumption that primitive art was technically and conceptually inferior to the representational paintings and sculptures of the West. In the twentieth century, Western artists, intellectuals, and fashion designers have internationalized art, discovering aesthetic and cultural value in the carvings, paintings, pottery, and weavings of formerly colonized peoples (86, 135, 139).

So has a wider public discovered this value, as manifested in the explosion of boutique and tourist outlets through which Third World textiles reach consumers in the first industrial societies. Several researchers have traced the reorganization of rural household cloth production as a consequence of this new demand. The entrepreneurs who link peasant weavers and embroiderers to tourist and boutique markets vary according to whether they are foreign or indigenous, men or women, and subordinated or not to better-capitalized actors higher up in the merchandizing chain. Typically, entrepreneurs are a source of raw materials that they put out to the rural households for elaboration during the slack times of the agricultural cycle, or on a more constant basis if peasants have little land. Entrepreneurs also supply credit for the purchase of treadle looms, sewing machines, or other pieces of labor-intensifying equipment. Household members, weaving or sewing for piece rates, experience degrees of exploitation comparable to that of the "proto-industries" of the European countryside on the eve of industrialization. Typically they lose artistic control over the final product as manufacturing is decomposed, and as men or women, the elderly or children, take up activities that had earlier been the province of another group (see 142). Typically, too, women are paid at lower piece rates than men for the same work while young girls, working for dowry, receive the least of all. Rural populations subjected to land shortages and political repression seem especially vulnerable to exploitative conditions, which may be why some accounts (e.g. 41, 42, 68, 126, 130, 131, 228) are considerably bleaker than others (e.g. 99, 189, 238).

Where merchants organize handicrafts, whether on the household or the workshop level, alterations are inevitable, not only to accommodate foreign taste, but also because of the conditions of production. Negligence and care might coexist, however, as rural artisans make shoddy cloth for export but apply high standards to cloth for indigenous social and ritual ends and for the occasional discerning tourist (86, 94, 109, 185, 195:8). There is also machine competition. Factories in India and England make *pelete bite* for sale to tourists (61:10; 62), while American manufacturers turn out "gringo shirts," a Guatemalan denim-like garment with a brocaded *huipil* insert (126). Yet the tourist and boutique market is socially stratified and includes a growing

subgroup whose members are willing to pay to have the "real," or at least the most expensive, thing (see 86, 209). Hand-weavers and dyers, undermined by factory competition and the intervention of merchants, may retain a small niche as a consequence of luxury consumption, particularly if they are protected by a government (68). Not protected, Guatemalan women have resorted to selling family and heirloom *huipiles*, first to producers of gringo shirts, more recently to merchants in Mexico where they have migrated as refugees (126; Geraldine Casey, personal communication).

The reference to government protection suggests a third internal limitation on the expansion of European factory cloth—the philanthropic efforts of museum curators and craft activists to mobilize financial and educational resources for the preservation of weaving and dyeing skills. In the 1880s, railroad construction in North America provoked a wave of nostalgia for the disappearing frontier and as a result, Anglos took an interest in Pueblo weaving. This interest led to craft shows at the Chicago Exposition in 1893, the Louisiana Purchase Exposition in 1904, the San Francisco Exposition in 1939, and the Museum of Modern Art in 1940, as well as to Federal support for Indian artisans during the Depression (117). In the same vein is Samuel's recent support for Tlingit 'Chilkat' twiners (191); Morris's for weavers in Chiapas (149); and a Peace Corps project, one of many, that advances credit to West African dyers and encourages the formation of cooperatives (223). Nor do the initiatives all come from the first industrial "core." Various Third World governments such as Mexico sponsor craft production, partly from appreciation and nostalgia but also because cottage industries, even more than textile factories, employ "redundant" labor. Political authorities have long viewed textile work as an antidote to the migrations and struggles of what the English call "congested districts" (68, 146, 184, 185, 228); indeed late nineteenth century English officials sponsored weaving in Indian jails (104:124).

Third World government projects of craft preservation bring us to the counterdevelopments that historically confronted the explosive force of European factory textiles. With decolonization in the twentieth century, political and social elites in Asia, Africa, and Latin America have included among their claims to legitimacy the acquisition and display of "traditional" handmade cloth. A potent symbol of authenticity, such cloth seems above all necessary in funerary and independence rituals whose focus is the relationship of the precolonial past to the future. The demand for traditional cloth further increases when elites encourage or require regional or ethnic subgroups to adopt differentiated versions of the "national" dress as emblems. Although the Scottish tartans "invented" for this purpose were not initially manufactured by Scots (216), more commonly home-production is a subsidiary goal. As Mead (140, 141) argues for the Maoritanga revival in New Zealand, the use of

hand-crafted symbols to construct political and social identities encourages full employment in the symbolized group.

In Ghana, *adinkra,* the terra cotta mourning cloth of the past, is fashionable today for secular dress, but in a range of colors. Moreover, although factories produce roller-printed imitations, elite consumers seek status from the more authentic and costly hand-printed version (168:96). The inclination of such fashion mediators to tap into central traditions is common (see 16:297) and has stimulated an expansion of handwork, the more so as elite groups grow demographically, absorb middle classes, and abandon the enforcement of sumptuary regulations (e.g. 15:53; 32, 60, 89, 117, 141, 205, 226). According to Johnson (108), West Africa's handweaving sector has grown absolutely in recent years, notwithstanding a declining share of the overall market.

Non-elites as well as elites generate revitalizations of handmade cloth—for example the peasant women of Highland Guatemala, who in recent years have returned to wearing brocaded *huipiles* after a period of relative abandonment, perhaps because other, more overtly political, statements have led to assassinations and reprisals (93; see also 144:81). Earlier in this century, India supplied the outstanding example of sartorial revolt. Aided by road and railroad construction in the late 1800s, Manchester cottons had penetrated much of this country, creating a severe trade deficit and artisan unemployment (18: 307–309; 212). Addressing these problems at the same time as he identified a captivating symbol of moral and political autonomy, Gandhi campaigned for the renewed production of hand-spun and hand-woven white cotton *khadi,* and for the boycotting and burning of English textiles. In contrast to the elite-led Scottish self-assertion against England in the nineteenth century, the Indian movement emphasized simplicity and universality. Draped in *khadi,* people of a vast subcontinent appeared homogenized, their various regional, religious, ethnic, status, age, and gender identities submerged in a colorless and untailored statement of spiritual worth (18, 19, 39). In the same way, and for similar reasons, the Chinese revolutionary cadres of the 1940s turned "drabness into a mode" (201:130).

Gandhi's movement promoted hand-spinning as well as hand-weaving and had no role for dyestuffs. In these respects it was a more totalizing counterdevelopment to European factory products than many others that, on closer inspection, turn out to reflect a complex interplay between the factory and the hand. As the sections on aesthetics revealed, machine-spun yarn was a boon to hand-loom weaving, whose expansion it underwrote. Some yarns were improved by machines, being stronger and more even than their forerunners (151:222–23; but see 37, 177, 221a). In addition, weavers appreciated release from the need to find, or spin, sufficient yarn (160:7–13). Even the English industrial transformation reflected the discrepancy between

spinning and weaving, the displacement of hand-spinners by the jenny and mule coinciding with a threefold increase of handloom weavers between 1795 and 1833 (234:273–74). Significantly, the export of industrial yarn outperformed the export of machine-woven cloth, notwithstanding colonial projects to have it otherwise. By the 1890s, Nigeria alone imported 200,000 pounds of Manchester cotton yarn annually, a figure that reached 4,000,000 pounds per year for West Africa by 1961. Supplemented by indigenous factory yarns, this volume was almost entirely destined for hand-weavers, some of them new to the art thanks to the availability of yarn (84, 108, 167:115). Meanwhile South Indian hand-weavers, having kept their Asian and African export markets during the colonial period, remained viable after Independence because of English, Japanese, and domestic mill-spun yarn (212).

Nor is mill-spun yarn the only industrial commodity to have facilitated, and even stimulated, a florescence of hand-work in cloth. Plain factory textiles contributed to the sophisticated batik traditions of Java and Nigeria, providing a smooth, tightly woven surface on which to paint, free-hand, the wax or starch resists. Inexpensive and smooth factory cotton also gave a spur to the saturation indigo dyers of Kano (203), and to embroiderers on every continent—the latter advantaged by mill-spun and synthetically colored thread as well (71, 117, 185, 198). Most dramatic, perhaps, are the cloth traditions that depend entirely on commercial and factory textiles for their execution—the appliquéd *molas* of the Panamanian Cuna, Kalabari *pelete bite* cloth, and the compositions of the Suriname Maroons. In these cases, European factory cloth was a resource for, rather than a threat to, indigenous stylistic development (see 86, 87).

The contribution of factory products to handmade cloth is but one of many contradictions in today's textile world. Among Navajo weavers, skills are no longer passed from mother to daughter because daughters go to school and the craft, although still marketable, has come to depend on a fragile apprenticeship system (177; see also 146). In Nigeria, Yoruba *adire* dyers and Kalabari thread cutters obtain their raw materials by circumventing a government ban on imported textiles, legislated to protect not only nascent industries but indigenous hand-loom weavers (14, 62). The batik artisans of Indonesia do the same thing in relation to a similar ban, but now face the competition of nearby silk-screening batik factories, set up with Chinese capital (J. J. Fox, personal communication; 165). In the United States, meanwhile, both textile sweatshops and home-production are on the increase again. Were the migrant women who now flood these sectors uprooted through political and economic shifts associated with cloth as well as agricultural production (see 73, 224)?

CONCLUSIONS

I have reviewed the role of cloth in the consolidation of social relations and assessed its capacity to communicate social identities and values. In addition I emphasized that the patrons and producers of historical textiles sought to enhance their aesthetic interest and, where possible, lower the cost of their manufacture. Patrons and producers pursued these goals in a competitive field in which, to succeed, they had to command labor and resources, skills and ideas, with greater effect than their rivals. I illustrated the paths they took in terms of the major variables in cloth styling—the interlacing of warp and weft, the options for post-loom decoration, and the problem of color. In each instance, I was able to cite examples in which social units—dynasties, classes, elites, ethnic groups, women—enhanced their position while creating a distinctive cloth style.

Machine-woven, roller-printed textiles emerged out of this very "dynamic of style." Moreover, European factory textiles and their framework of fashion capitalism did not suppress the stylistic development of other peoples, but intensified it. Fashion capitalist culture went on, however, to generate ideologies in glorification of itself. A pervasive ideology holds that Europe was histoprically on the move when all other places were stagnant so that in their expansion Europeans encountered not style dynamics but unchanging "traditions" which they then destroyed. For Western anthropologists whom this ideology encumbers, the (comparative and historical) study of cloth is salutary, as it places Europe in a world of processes that are unique to no one people. Social groups, building on but also transcending their own heritage as they interact and jockey for position, have long articulated aesthetic with economic concerns, whatever their place of origin or productive mode.

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