

# INTRODUCTION

## Crafts and Technology: A History Of Tension and Cooperation

The relationship of crafts to technology, like that of art to science, has often been intimate but never constant. Until the 17th century, many craftworkers and artists also were scientists and inventors, and many technical discoveries evolved from their work. Pioneering research by Smith shows that:

- craftworkers are often the first to understand the basic properties of their craft materials;
- the beauty and desirability of craft objects in some cases has inspired scientific research; and
- the technical knowledge of artists and craftworkers has at times; been directly applicable to science (Eklund, 1978).

Abundant examples of these interactions have been cataloged for ceramics and metalwork (Smith, 1980) but the use of renewable resources by craftspeople and artists also benefited early science and industry. The first textile dyes, for example, were derived from plants and animals. Weavers in Phoenicia, Mesopotamia, South America, and Aztec Mexico collected or grew herbs, shells, and insects and extracted their dyes. Increasing mechanization of the European textile industry in the 1700's stimulated an unprecedented demand for natural dyes. The search for synthetic fixatives for dyes created the first large-scale chemical industry (Rhodes, 1980). The natural dye industry flourished until 1856, when the first substitute was synthesized. Organic chemistry blossomed as the search for chemical analogs and replacements expanded (Baranyovits, 1978).



*Photo credit: Mark Skinner*

The skilled hands of Magdalena Ruak weaving a coconut leaf bird in the Mariana Islands

The development of medicine and botany also was linked closely with arts and crafts. painters, drafters, and engravers recorded plants and animals in intricate detail. As early as the 16th century, their work was used to train medical students in human anatomy. Traditional plant lore was preserved in printed herbals. More recent botanical illustrations were based on scientific accuracy and visual realism, traits that persist in the later insect and bird paintings of Maria Merian and John Audubon (Rhodes, 1980).

The close partnership between the arts and science did not last.

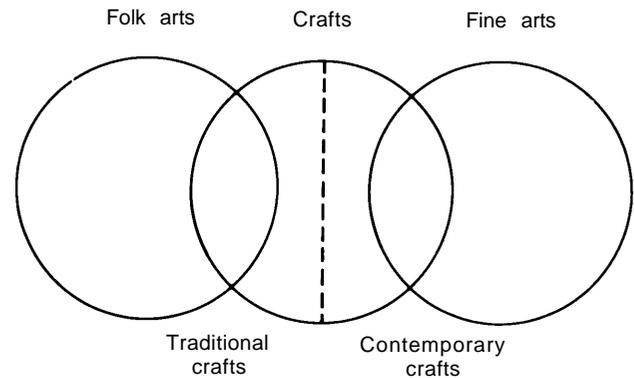
“Despite occasional attempts at reconciliation, the separation of science and art was so complete by the 20th century that C. P. Snow was able to define them accurately as two separate worlds” (Meeker, 1978, p. 187).

After World War II, science and technology began to change American lives in important and apparently ever-faster ways. Artists often responded defensively, and their uneasiness was not lessened by suggestions that the visual arts were irrelevant to technological society (Bornstein, 1981) or that industrial processes could not, by definition, apply to any of the arts.

Some experts feel that the period of greatest tension is past (Meeker, 1978). As evidence, they cite the use of technology by certain fine artists and craftspeople to solve unique problems. These technologies include new methods to conserve and authenticate works, new tools and materials, and hundreds of uses for small and large computers (Hours, 1981; Shore, 1982).

Much of the literature of the 1970's examined these changes, often from a theoretical viewpoint (see Topper and Holloway, 1980). Few writers, however, focused explicitly on the role of technology in crafts. Sometimes generalities were obscured by the failure to distinguish between traditional and contemporary crafts (fig. 1). Traditional craftworkers, some of whose work can be considered folk art, emphasize perfecting old forms drawn from their community. Therefore, technological innovation may either be rejected or slowly incorporated.

Figure 1.—Relationships Among Crafts, Folk Art, and Fine Art



**DEFINITIONS:**

**Craft:** An object produced with the help of only such devices as allow the manual skill of the maker to condition the shape and design of each individual product. (Adapted from 25 Code of Federal Regulations 308.3a)

**Traditional draftsman:** A craftworker who accepts and depends on a communal esthetic shaped over time, who perfects older forms, and who receives information and training by informal means. (Adapted from Teske, 1982-83)

**Contemporary craftsman:** A craftworker who expresses an individual esthetic, who seeks to create new forms, and who has often received formal education and training. (Adapted from Teske, 1982-83)

**Technology:** Equipment (e.g., tools, implements, machines, and devices) and organizational forms; “hardware” and “software.”

SOURCE: Office of Technology Assessment

Contemporary craftspeople are more closely akin to fine artists. They express an individual esthetic that prizes uniqueness, and often they have been formally schooled in advanced technology. Contemporary craftspeople are more likely to benefit directly from technological change. Both types of craftworkers may benefit indirectly from the longing for the hand-made that accompanies “high-tech” societies (Greene, 1980; Paz, 1974). Demand for crafts and craft classes may increase.

Crafts in the United States:  
A Valued Activity

The U. S. Congress officially encouraged American crafts with the establishment of the Indian Arts and Crafts Board, the National Endowment for the Arts, and the American Folklife Center. These actions recognized the importance of crafts in U.S. culture. The craft tradition gives meaning to everyday objects,

linking them to history and contemporary life. Crafts may also be “the focal point or gathering place for a cluster of ideas which may derive from some of the most important philosophical perspectives in the experience of a group of people” (Toelken, 1983). As such, craftwork fills an abiding need to create with the hands. According to a 1974 Harris poll, 40 percent of all Americans engage in craft activities and another 20 percent would like to become involved (Glassman, 1975).

American craft traditions also have certain tangible benefits. A large number of people and businesses are involved, and their products make a substantial contribution to individual and collective economies. The size of a major annual week-long craft fair, held until 1984 in Rhinebeck, N. Y., indicates the magnitude of these contributions. At least \$6 million of crafts were sold in 1983, a volume triple that of 1976 (Greene, 1980), and complementary events added almost another \$2 million. Some 3,000 wholesale businesses sent buyers to the fair and 35,350 retail visitors attended (The Craft Report, 1983). Local merchants estimate that they take in another \$3.5 million during the course of the fair (The Washington Post, 1983).

Crafts have also entered department stores. The Hecht Co., in metropolitan Washington, D. C., sold \$42,000 worth of crafts during its 10-day “West Virginia, USA” promotion in 1981. Bloomingdales spent \$25 million in 1982 to add 800 new craftworkers to their “America the Beautiful” series (The Washington Post, 1982).

Crafts are important to the economies of several States, especially in the Northeast. Vermont crafts have a larger impact on the economy than the maple syrup industry (Halkett, 1983). Crafts’ contribution is \$10 million to \$11 million, a figure equalled in New Hampshire and Mississippi (Hart, 1983).

Additional craft-specific information on the economic contribution of crafts is difficult to obtain and often relies on crude estimates. For example, American quilting is a \$50 million to \$100 million business annually, and antique quilts bring prices as high as \$10,000

(Ricci, 1982). Yet the number of quilters involved and their annual income is unknown. Probably each quilter earns less than the minimum wage for long hours of painstaking work (Ricci, 1982). Industry sources may keep specific information on individual crafts because they supply large numbers of avocational craftworkers with leather kits, dyes, yarns, etc.

Traditional craftspeople sometimes choose not to market their work, or they may use channels different from those of contemporary craftspeople. Their contribution, therefore, is not included in most estimates above. No way exists to value their products precisely. The Indian Arts and Crafts Board, for example, estimates the annual retail sales of Native American arts and crafts is several hundred million dollars but admits that this estimate is too crude even for planning purposes (Hart, 1983).

Individual income from craftwork may be low but nevertheless vitally important. Crafts provide a unique source of money for some elderly or housebound people and are especially valuable for individual income in certain areas of high unemployment (Halkett, 1983; Southern Highlands Handicraft Guild, 1975). Consequently, State governments and regional organizations use crafts for local development. The Southern Highlands Handicraft Guild and the States of West Virginia and Kentucky have been among the first to do so. They have successfully promoted their crafts in major national department stores, guild craft centers, and State park gift shops. Economic goals often are combined with others: preserving traditional crafts, encouraging an appreciation of local culture, and providing nonfinancial services for members and citizens.

Negative aspects of the craft business also exist. Department stores and wholesalers sometimes are insensitive to craftworkers’ problems. The store operators may be unwilling to depart from high-sales-volume procedures and may stock inexpensive imported crafts in “American” displays (Teske, 1983). The effects of guilds and State craft stores are controversial; their benefits may not be equitably distributed among all craftworkers and economic improve-

ment sometimes may decrease cultural well-being (Camp, 1983).

Crafts also are part of a large underground economy. The illegal traffic in wildlife prod-

ucts may total \$10 million annually (The Farmington (N. M.) Daily Times, 1981), and design pirating is a constant concern of craftworkers (Halkett, 1983).