The term “craftsmanship” is defined as skilled work and usually applies to a small-scale production. In his essay, On Craftsmanship, Frayling defines it as a desire to do a job well for its own sake (1). The term evokes associations with masters and apprentices, guilds, and the hierarchy of competence.

In the distant past there was no difference between art and craft. Even now we think of ancient Greek pottery as pieces of art. In Renaissance Florence in the 1470s artists were running workshops along with other artisans. At that time, masters such as Leonardo da Vinci, Albrecht Dürer, and Michelangelo Buonarotti kept convincing their sponsors that their work was as intellectually engaging as poetry or literature. This view eventually created a divide between the crafts and what became high art. As a consequence, decorative arts, such as textiles, pottery, or furniture making, were for a long time regarded as an inferior kind of art. The Industrial Revolution increased this divide by introducing the issue of mass production, which was contrasted with the uniqueness of high art pieces (2). This sparked both the reevaluation of craftsmanship and an effort to improve the aesthetics of industrial products, and led to the establishment of a new art-related category, industrial design. Pivotal in the reexamination of aesthetic value of the crafts at the end of the 19th century was the Arts and Crafts movement in England. Two individuals were central to this: John Ruskin, whose contribution was previously discussed in this series, and the poet, writer, and designer William Morris (1834–1896) (3, 4, 5). Morris, like Ruskin, was closely associated with the Pre-Raphaelite Brotherhood through William Bourne-Jones and Dante Gabriel Rossetti. He was educated at Oxford and trained as an architect. In 1861 he established, with others, a decorative arts company, Morris, Marshall, Faulkner, and Co, which later became Morris & Co. The firm became internationally known for its furnishings and wallpaper and textile design. Fig. 1 shows one of the designs for furnishing textiles designed by Morris. Later in his life, he founded Kelmscott Press and became involved in book design. In Germany, the Ruskin–Morris ideas were appreciated but the thinking was more focused on merging arts and crafts with industrial production, the central concept of the Bauhaus at the beginning of the 20th century (6).

Consideration of mass production continues to be fundamental in how we discriminate between art and nonart, with as much value placed on the aesthetics as on the unique character of an artwork. Industrial design remains separate from high art. This is an interesting, and somewhat paradoxical, divide: although a designer can create an object highly pleasing aesthetically, such as a car, a dress, or a piece of furniture, the process of duplication prevents it from being considered as high art. One could argue that the aesthetic argument should be the principal one here, because design contributes at least as much to our aesthetic universe as the high art. It makes sense to see the high art and design as components of the same aesthetic-forming process, and artists and philosophers address this extensively. The definition of art broadened in the 20th century when Marcel Duchamp (1897–1968) introduced ready-mades into art. In the 1950s Pop-Art artists started to use many industrially produced objects in their work. American philosopher John Devey (1859–1952), one of the American Pragmatists, looked at art as an expressive process rather than strictly a physical outcome (7). Richard Schusterman (1949–) developed his view, also arguing for the equal position of popular art and high art (8). More recently Youriko Saito wrote about aesthetics involving everyday objects and phenomena (9). In contemporary art the value of “making” decreased with the rise of conceptual art in many varieties. As the concept rather than the making has become fundamental for the artistic process, many contemporary pieces are made without the physical participation of the artist (although one could argue that this has always been the essence of architecture).

Similarly to the arts, there are the conceptual and practical dimensions in the process of science. One can argue that traditional laboratory work involves a lot of craftsmanship, requiring the knowledge of materials and a range of practical skills fundamental for designing experiments. On the other hand, involvement in, for instance, big data studies highlights the conceptual component, and there the concept of a laboratory-as-a-workshop fades away. As academia edges nearer to business with translational projects, a new division emerges, into an academic–craftsman who conducts studies in the laboratory and an academic–entrepreneur who manages teams (10). An important part of the scientific craft,
common to all varieties of science, remains academic writing. Lastly, there is one key characteristic of the crafts which successfully survives in science: the master–apprentice relationship. Research laboratories continue to attract postdoctoral fellows and staff on the basis of the status and prestige of their leading investigators (11).

Thus in both in the arts and in science, the concept of craft is closely related to creative work. In both, the traditional divide into thinkers and doers is, to a large extent, artificial. The point is that, in both science and the arts, craftsmanship complements and enhances creativity.

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**References**


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**Fig. 1. Strawberry Thief.**