of relativity and quantum mechanics, began to replace the old physics. With this substitution, people gradually realized that there is a mysterious source of enormous energy inside the atom. Some scientists and writers dreamed about using this power for military or industrial purposes. Later, this dream came true with the discovery of atomic fission and chain reaction. The atomic bomb was the ultimate result of the power residing inside the atom.

See also Chemistry; Einstein, Albert; Helmholtz, Hermann von; Hertz, Heinrich; Marconi, Guglielmo; Maxwell, James Clerk.

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SUNGOOK HONG

PICASSO, PABLO (1881–1973), Spanish avant-garde painter.

Pablo Picasso is an undisputed giant of twentieth-century art. His formation as an avant-garde artist owed much to the fin-de-siècle artistic and literary culture of Barcelona and Paris. From the turn of the century through until 1914, his work evolved in response to far-reaching questions about the nature of art that were posed within that milieu. This development culminated in the invention of cubism, a towering intellectual and artistic achievement that irrevocably altered the course of European art by shattering the spatial field and reassembling its component parts from different angles.

EDUCATION AND EARLY CAREER
Pablo Ruiz y Picasso was born on 25 October 1881. His mother, María Picasso López, was of Italian descent; his father, José Ruiz Blasco, who came from a family of Córdoban landowners, was a painter and art teacher by profession. The adoption of his mother’s family name (Picasso) has been seen as a portent of the later rejection of the academic heritage of his father. The family moved around a lot in his childhood: from Málaga, where Picasso was born, to Coruña in the far northwest of Spain, eventually settling in Barcelona. Among his earliest paintings and drawings are some charmingly observed images of doves and the bullfight, subjects that recur throughout his life, revealing the extent to which his outlook was imbued by his Spanish upbringing. The works from his youth that are housed at the Museu Picasso in Barcelona attest to a solid grounding in the technical craft of painting. In 1895 Picasso was admitted to the School of Fine Arts in Barcelona. A further stint at the San Fernando Academy in Madrid between October 1897 and June 1898 brought to an end this period of academic training as he gravitated toward modernisme, a local variant of the art nouveau and Jugendstil styles current in other European capitals that flourished in cosmopolitan Barcelona.

It is customary to periodize Picasso’s work after this point on stylistic grounds. The Blue Period (1901–1904) ensued from his close association from 1900 with a circle of symbolist and decadent artists and writers who met at the café known as Els Quatre Gats. Picasso honed his skill as a caricaturist at this time in portraits of his friends, including a superb spoof of Jaime Sabartés (who in later life was Picasso’s secretary) as a decadent poet. Henri de Toulouse-Lautrec’s (1864–1901) acerbic depictions of Parisian nightlife were a source of inspiration. Isidro Nonell y Monturiol (1873–1911), a Catalan artist who specialized in portrayals of the poor, was another influence on Picasso during the Blue Period. The extent to which the beggars and other outcasts that populate the Blue Period pictures reflect the anarchist political views of his acquaintances is debatable. The pathetic blind figure in The Old Guitarist (1903), whose angular emaciated limbs recall the paintings of El Greco (Doménikos Theotokópoulos; 1541–1614), can be read as a cipher for the modern artist. The suicide in 1901 of the poet Carles Casagemas (who had accompanied Picasso on his first trip to Paris the year before) following an unhappy love affair provided raw material for a fin-de-siècle
musing on death and sexuality. The picture known as *La vie* of 1903, which sums up and concludes the Blue Period, took this incident as its starting point, though in its final state both the setting and the allegorical meaning of the composition are rendered enigmatic.

**PARIS**

In 1904 Picasso made the inevitable move to Paris in pursuit of his artistic career. There he took up residence at Montmartre in the Bateau-Lavoir, a suitably ramshackle abode for a bohemian artist. He began an affair with Fernande Olivier, who was living at the Bateau-Lavoir and was an aspiring painter when he moved in. Her memoir, *Souvenirs intimes* (1988; written in the 1950s), reveals that he introduced her to smoking opium and stifled her artistic career. Also in 1904 Picasso met the poets André Salmon and Guillaume Apollinaire (1880–1918). The latter was a brilliantly erudite writer who became an indispensable ally and muse to Picasso until his untimely death from influenza in 1918. It was Apollinaire who instigated the cult of genius that surrounded Picasso. Reportedly, Picasso and Fernande would go as often as three or four times a week to the Cirque Médran, where they sought out the company of circus entertainers. The clowns, jugglers, and acrobats became Picasso’s new subjects. The *Family of Saltimbanques* of 1905, which epitomizes the wistful elegance of the short-lived Rose Period (1905–1906), draws together this retinue of characters in the largest composition he had yet painted. Under cover of a group of itinerant fairground performers, Picasso represents himself as harlequin (a self-identification that is found in other works of this period) along with other members of his troupe, including Apollinaire as a rotund jester.

In 1906 the already formidable variety of his sources expanded to include non-European art, the passion for which he shared with Apollinaire and Salmon, who were collectors of African and Oceanic objects. Recently excavated Iberian artifacts that had gone on display in the Louvre were a source for the mask-like stylization in the *Portrait of Gertrude Stein* (1906). Picasso met Stein (1874–1946) in 1905, and she soon became a trusted confidant as well as an important patron. With his interest in the primitive already primed, in early 1907 Picasso underwent an epiphany in the presence of African masks and statues in the Museum of Mankind in Paris. The experience occurred while he was midway through painting *Les demoiselles d’Avignon* (1907) and led him to repaint the faces of three of the figures as scarified masks. Picasso later described this radical and confrontational work, which even the French painter Georges Braque (1882–1963) found disturbing, as his first exorcism picture. The fact that he recognized an almost sacral power in African masks suggests that his interest was not only formal; indeed attempts have been made to correlate his valorization of the primitive with denunciations of European colonialism emanating from anarchist political circles. Added to the array of primitive influences on Picasso at this moment is his admiration for Henri Rousseau (known as Le Douanier; 1844–1910), a self-taught painter of imaginary jungle scenes inspired by weekend visits to the Jardin des Plantes, for whom Picasso held a legendary banquet at the Bateau-Lavoir in 1908.

*Les demoiselles d’Avignon* was a hugely ambitious work that was preceded by many hundreds of studies. It is replete with references to European art but exhibits a markedly iconoclastic attitude toward that tradition, bearing out Picasso’s later claim that “Art is a sum of destructions.” One of the main points of reference is Paul Cézanne (1839–1906), who had come to be seen as the most important recent painter. The late bather compositions of Cézanne only became known after his death in 1906, an event that also prompted a major reassessment of his legacy. The lack of a unitary viewpoint in Cézanne is pushed to such an extreme by Picasso that the picture looks disjointed. At the same time there is an odd congealment of interstitial space, which stems from El Greco as well as Cézanne. It is small wonder that contemporaries found the picture incomprehensible. The title of the work evidently refers to a well-known red light district in Barcelona. Shifting the Cézanne bathers indoors, so to speak, compounds the formal violations with a transgressive eroticism. Picasso, who was no stranger to such locales, apparently feared that he may have contracted syphilis from a prostitute. The still horrifying disfigurement of the women in the *Demoiselles* can perhaps be associated with the ravages of a disease that was
then untreatable. Remarkably, the picture by Picasso that many now regard as the most important of the twentieth century lay rolled up in his studio for almost two decades after it was painted.

**CUBISM**

*Les demoiselles d’Avignon* was not yet a cubist picture though it points firmly in the direction of cubism. The ensuing couple of years were required in order to absorb its lessons. After 1908, Picasso tended to work on a smaller easel-scale, which permits a more serial and experimental mode of production. The overt eroticism and primitivism of 1907–1908 also receded. The works display a gradual subtraction of color and a growing emphasis on the analysis of form into simple geometric planes, which are heavily modeled but which articulate with each other in an ambiguous, reversible way. It has been suggested that Gertrude Stein who had studied psychology at Harvard may have introduced Picasso to William James’s *Principles of Psychology* (1890), which illustrates various kinds of visual illusion. The deliberate incorporation of such ambiguities produces a flickering effect as the eye scans the image. It also becomes more difficult to identify objects, as the distinction between figure and ground is eroded in favor of a more homogeneous integrated surface. These trends are demonstrated in a series of nudes and landscapes painted in the summer of 1909, when Picasso and Fernande were on holiday in the isolated Spanish village of Horta de Ebro.
taken at the time show how far the paintings’ cubic structure was inspired by the buildings themselves. Stein noted astutely that: “Cubism is part of the daily life in Spain, it is in Spanish architecture.” There is a constant interplay between painting and sculpture in Picasso’s work. On his return to Paris, Picasso made a bronze bust of Fernande, which transfers these cubist forms back into three dimensions.

Picasso was engaged in a close artistic dialogue with Braque by this stage, and although their relative contributions to the invention of cubism are hotly disputed by scholars, with the increasing convergence between them it can be difficult to tell the work of one from the other. Daniel-Henry Kahnweiler was the dealer for both artists up until the First World War. He signed exclusive contracts, agreeing to buy all their work, and in return discouraged them from exhibiting in the public salons. These business practices may have contributed to cubism’s hermetic character; they certainly meant that the work of Picasso and Braque was largely invisible in the public arena. Picasso’s Portrait of Kahnweiler (1910) is one of the masterpieces of high analytic cubism. A shorthand system of signs disposed on the main cubist scaffold is enough to indicate the main features of the sitter—Picasso’s caricaturist eye for the telling detail is exploited here to the full. An overall crystalline transparency permeates the figure. The silvery, nocturnal lighting has a strongly lyrical quality. It is a common misconception that cubism offers a more objective or complete view of the world by surveying objects from several different angles. Picasso cautioned that the reality of cubist painting is elusive and impalpable, like a perfume (the choice of analogy was one favored by symbolist poets).

With the invention of collage, the character of cubism changed dramatically. Collage looks cheap and shabby by comparison with the extreme refinement of high analytic cubism. Collage made possible the incorporation of preformed elements of reality into the pictorial field. The frame of reference widened to include popular culture and even the world of consumerism and advertising—all that the modernist critic Clement Greenberg would later denounce as kitsch. The combination of word and image in cubist collage often depends on a punning relation between the various elements—not infrequently in the case of Picasso with a sexual innuendo—that seems to emulate the way advertisements work. In 1912 Picasso made a sequence of papiers collés using newspaper cuttings that make persistent reference to war in the Balkan region as well as to antiwar protests. Here again the world of politics is like a base intrusion into a very spare pictorial field. The inclusion of mechanically reproduced imagery of various sorts relativizes the unique painterly gesture and prefigures, in this respect, the ready-mades of Marcel Duchamp (1887–1968), which sounded a death knell to painting. Unlike that other main claimant to the title of greatest twentieth-century artist, however, Picasso—despite the extreme iconoclasm of his work in this period—never abandoned his attachment to the craft of painting.

Picasso recalled waving farewell to Braque and the French painter André Derain (1880–1954) on the platform at Avignon at the outbreak of war. Their separation brought to a close one of the most extraordinarily inventive moments in Western art. By the age of thirty-three Picasso had produced some of the most astonishing paintings in the Western tradition; he had also dismantled that same tradition.

See also Anarchism; Avant-Garde; Cézanne, Paul; Cubism; Modernism; Painting; Primitivism; Toulouse-Lautrec, Henri de.

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