

Fundamentals in Origami History

By Julia Bloom

Origami is a popular art form that continues to delight and inspire people of all ages with its artistry and seemingly infinite possibilities contained in a sheet of paper. Yet the history of origami, and paperfolding in general, goes back far into history and contains contributions made in countries around the world. This fundamentals in origami history contains just a small part of that rich history, journeying from the origin of paper in China to the evolution of modern Origami in the 1950's and beyond. People have folded paper, cloth, and similar materials from a time before written records, so we will never know for sure who was the first person to think of folding flat materials for practical purposes or pleasure. Yet the ongoing popularity of modern Origami, and the mathematical and scientific purposes folding methods are used for today, testifies to the continued human fascination with folding.

The Origins of Paper and Paperfolding

Origami, named for the Japanese word “to fold paper” is an ancient and unique art form that continues to inspire and delight people today. But while the specific paper folding style developed in Japan, the act of humans folding paper for practical and recreational use goes back much further in time, and can be found throughout the world. While the existence of paper and parchment goes back to ancient times, We do not have a definite date for when people started folding paper, either for recreational or practical use. Papyrus, the first known form of paper, was first produced in the first millennium BCE. Documentation of this dates to between 2560-2550 BCE. Paper development later occurred in early China, where a felt-like type found in a tomb is dated to between 140 and 87 BC. The Chinese court official Ts'ai Lun is credited as developing the first sheets of what we consider paper, made from fabric, tree bark, and other materials to improve on the old record written on pieces of silk and tree bark. The oldest piece of this kind of paper dates from 110 AD and refinements continued as Buddhism spread throughout east Asia. Buddhist monks looked for the finest, whitest paper to write scriptures on, and papermaking came with the new religion to Japan around 550 AD. Papermaking in Japan is attributed to a monk named Tam-Chi or Doncho, who introduced a thin type in 610AD. The Prince Regent of Japan was unsatisfied by the quality of the new paper and promoted experiments to improve it, leading to the development of high quality Japanese paper over time. (“History of Paper,” “Miscellaneous Collection,” “Really Old Origami,” “Origins of Paper,” “History of Origami.”)

Medieval Paperfolding

The Chinese tried to keep their system of papermaking secret despite its spread to Japan and Korea. According to the ancient Arab historian Thaalibi, during wars between the Chinese and Arab countries around 751, Chinese prisoners shared papermaking methods with their Arab captors. This led to the spread of papermaking to the Middle East, and eventually to Arab controlled areas such as Medieval Spain and North Africa. By the mid 1100's, papermaking was a trade in these areas, and it

quickly spread to the rest of Europe. And where paper existed and was made, paper folding soon followed. The 12th century saw the introduction of specially folded astrological charts, introduced by Gerardo Cremona. These charts are square in shape, and creased in a way that resembles the Double Blintz or Windmill Base folds. Although references to paperfolding are sparse in the following centuries, there are occasional hints at its presence in everyday lives. A play by Englishman John Webster, "The Duchess of Malfi" written between 1612 and 1613, mentions paper prisons used to catch flies, which seems to be another reference to the Waterbomb base or the Balloon model. The 15th century also saw napkin folding come into fashion as a way to decorate dining tables of rich nobility. The book "Le Tre Trattari" was published by Matthia Gieger in Italy in 1639 as a primer on elaborate napkin folding, and many of these folds were included in a German book on napkin folding, "Vollständiges Vermehrtes Trincir-Buch" in 1665. These works contain a few folds still in use today, such as the Waterbomb base. Later 16th century baptismal certificates, designed for the christenings of young children, were also folded in Double Blintz style, but it is unknown if there is any connection between the folds in these two kinds of documents. (Danovich, "Really Old Origami," "History of Paper," "The Connection," "Miscellaneous Collection," "Origins of Paper.")

The Nineteenth Century

In 1797, the Senbazuru Orikata and the Chusingura Orikata were published as the first examples of written works using drawn diagrams to show how to fold origami. The models depicted in them, human figures from a play and a series of linked cranes, are examples of recreational folding. This differs from ceremonial folding, which includes much older models such as the Mecho and Ocho butterflies and may date back as far as the Heian period between 794-1185 AD. By the Nineteenth century, paper folding would have been a popular pastime for young children in Europe, as their guardians would fold various models for entertainment, and children would try to replicate these models for themselves. In 1837 Friedrich Froebel, an educator and pedagogue, opened the first of his Kindergarten classes as a new way of educating young children. He developed his system of folding paper using three categories of folds: "The Folds of Truth," "The Folds of Life," and "The Folds of Beauty." Although the kindergarten movement would spread around the world, and Froebel's folds would travel with it, his system of folding allowed for very little creativity and innovation, leading it to become stagnant and fall out of everyday use. In 1850 the Kayaragusa (or Kan no Mado) was published, containing examples of how to fold recreational and ceremonial origami models. This work was part of a collection of information written for private use, but is still a valuable resource on origami in Japan before the 20th century. Starting in the 1860's, magicians from Japan started visiting the West with the end of Japan's isolationism. They showed tricks using folded paper to audiences, including the "Flapping Bird" model that would move with a simple hand gesture.

The beginning of the Twentieth century brought an uptick in the development and spread of paperfolding, which would peak in the 1950's and 60's, as modern Origami began in the United States and the Western world. Many books on paper folding would be published in the early years of the century, including Harry Houdini, who published his own book of folding "Paper Magic," in

1922 which documented various folding methods and magic tricks that could be done with them. Other stage magicians, including William Murray and Francis Rigney, published a book on paper folding, including their “Fun With Paperfolding,” in 1928. (“Paperfolding a German,” “Kayaragusa,” Mitchell, “History of Paper.”)

The Twentieth Century and Modern Origami

In 1938, an Origami club was founded in Spain, called the Asociación Española de Papiroflexia (AEDP) and it is the longest existing Western Origami club in the world. It was founded by Miguel de Unamuno, an essayist and playwright who was introduced to Origami through the Pajarita model. The word Papiroflexia was coined by Doctor Vincente Solorzano Sagredo that same year from the Latin words for “bend” and “paper.” Sagredo would later immigrate to Argentina, where he published a few other books on folding. The 1950’s saw the beginning of modern Origami when Akira Yoshizawa, an amateur folder, became famous in Japan after he folded twelve models of the Chinese Zodiac animals for the magazine *Asahi Graf* in 1952. He had taught himself Origami that was different from the styles of the time that either were simple designs meant for children or complex ones for adults. Unlike contemporary Origami, the style in the early Twentieth century involved extensive cutting in addition to folding, such as models published by Kosho Uchiyama. Yoshizawa originated several folding techniques, including the “sideways turn” fold and wet folding using damp paper. In 1953, Gershom Legman, a prominent researcher focused on paperfolding, was able to contact Yoshizawa after several attempts over the past two years. The two began a correspondence, as Yoshizawa sent several Origami models to Legman. Following the publishing of the *Asahi Graf* article with Yoshizawa’s models, an exhibition of his work was held in Toden Service Center in the Ginza shopping district of Tokyo. The news of this exhibition excited Legman, who saw the possibilities of a similar exhibition in the West and the prestige and interest it would bring to modern Origami. Thanks to the efforts of Legman and Yoshizawa, an exhibition of Yoshizawa’s Origami at the Stedelijk Museum in Amsterdam was held in 1955, making it the first Western exhibition of Origami. The exhibit attracted much attention, and excited the public’s interest in folding anew in Europe. That same year, Yoshizawa published a book on Origami called “New Origami Art,” where he showed the process of folding models by using a series of dotted and straight lines to show mountain and valley folds. The following year, prominent American folder Sam Randlett published “Paper Magic” with the help of his friend Robert Harbin. This book used the dotted and straight line method of Yoshizawa’s to define the steps of folding, while adding additional folds such as the crimp and rabbit ear, and a series of bases used to begin models. This folding system is known as the Yoshizawa-Randlett system, and is still used today to describe the steps in folding all kinds of models. (“Miguel de Unamuno,” “Papiroflexia,” “A Tribute,” “Akira Yoshizawa,” “The Exhibition,” “FOCA, OUSA.”)

Prominent Origami Figures

Prominent American paper folding figure Lillian Oppenhiemer first became intrigued by Origami around 1950, when her second husband, Issac Kramer, demonstrated the Flapping Bird model at a party. After attending a class in papercrafts, Lillian dedicated herself to learning about paper folding

and collecting books on the subject. When the book “Paper Magic” by British magician Robert Harbin was instrumental in stirring Lillian’s passion. Published in 1956 the book contained basic paper folding models, folding methods, and a bibliography of contemporary folders. A friend of Lillian’s son Bill sent her a copy, and through the book, Lillian was introduced to the many people around the world practicing paper folding. She also coined the term “Origami” to describe the practice of folding paper, borrowed from the Japanese word relating to paperfolding. Lillian also travelled widely to personally meet the folder mentioned in Harbin’s bibliography, including Ligia Montoya and Akira Yoshizawa. Gershon Legman had also worked to contact prominent folders around the world and establish them into a network, and together with Lillian’s efforts, they started a network of folders who would go on to inspire others and found Origami clubs and societies around the world. She started corresponding with Harbin’s network of folders as well, developing strong friendships while sharing her passion for Origami and learning more folding techniques. Lillian created a folding group at her home in New York City, called “Origami Mondays,” where people could socialize, fold models, and learn from each other. Lillian attracted attention to the art form of Origami through articles published in the Japanese expatriate newspaper “Hokubei Shinbo,” and later the famous column “About New York” by Meyer Berger, published in the New York Times. Lillian met with Mr. Berger in 1958, and his column about Origami was published on June 27th, 1958, attracting widespread public interest in Origami. She also appeared on the Jack Parr Show, further exciting interest among the public for those who wanted to learn how to fold. Lillian had stated classes in folding in 1956, at the Japan Society in New York. She named her class series “The Origami Center,” and eventually started publishing a newsletter for those unable to attend the popular classes, called “The Origamian.” In the early 1960’s Lillian contributed models along with other origamists for the exhibit “Plane Geometry and Fancy Figures ”at the Cooper Union Museum in New York. This exhibit was the first major exhibition of paperfolding in the United States, and continued to attract public interest in the art form. (“Lillian Oppenheimer and Friends,” “FOCA, OUSA,” “A Legacy of Alice Gray,” “History,” “Miscellaneous Collection,” Orlean.)

The Beginning of Origami USA

A friend of Lillian’s, Alice Gray, was asked by her Directors at the American Museum of Natural History to decorate a Christmas Tree with Origami figures for the 1964 holiday season after seeing her decorate a desk sized tree in her office. Alice agreed, and found that the tree delivered that year was 25 feet tall. With the help of numerous volunteers from the museum, the Origami Center, and local youth groups, enough models were folded to cover the tree. The tradition of the Origami Tree still continues at the museum today, with a new set of models decorating it each year. As Lillian aged in the 1970’s, her friend Michael Shall convinced her to set up a parallel society in addition to the Origami Center that could function as a formal organization dedicated to teaching and sharing Origami with members from all over the country. This organization was named “The Friends of the Origami Center,” and it was incorporated in 1980 as an all volunteer, not for profit cultural and arts organization. FOCA was registered as a 501c (3) organization that worked to promote Origami through conventions, a newsletter, and other activities. In 1987 the Friends officially purchased Lillian’s supplies business, which is run as a mail order service today that allows members to obtain

high quality origami paper and books of folding methods. On July 1st 1994, the Friends of the Origami Center of America was renamed Origami USA as it continued to gain members and recognition as a professional, non-profit organization. In the late 1980's and early 1990's, what became known as the "Bug Wars" originated within the Origami Detectives club in Japan. This friendly competition revolved around who in the group could design and fold the most impressive and realistic origami insect figures, from Cicadas to ants. It had only been in the 1970's that origami figures using folds different from the Yoshizawa-Randlett system became possible, opening the doors for a new type of complex and modular Origami. As Origamists who doubled as mathematicians started to diagram origami folds and folding possibilities using computer programs, they came up with new methods that could fold complex models such as insects, greatly widening the dimensions of Origami itself. Over the next few decades, brand new models such as polyhedra and cuckoo clocks were perfected and folded, as Origamists, including famed folder Robert Lang, created new and ever more elaborate models. The Bug Wars quickly spread to the West as Origamists worked to try the new possibilities evoked by modular and mathematically designed model folding. Today there are a few origami focused museums in the world, including the Origami Museum of Zaragoza in Spain, and the Nippon Origami Museum in Japan. There are numerous origami clubs and organizations worldwide, including Origami USA and the British Origami Society. These organizations hold yearly conventions, including Origami USA's Chicago origami Convention (COcon) and the Pacific Coast Origami Convention (PCOC.) The British Origami Society also holds biannual meetings, and both societies host regular meetings and folding sessions for their members and the public. Recently conventions focusing on the mathematical and scientific possibilities of Origami and folding have come into prominence, as scientists such as Robert Lang have explored methods of folding complex medical equipment and even DNA. As Origami continues into the Twenty First century, the passion of the many folders who practice it, whether for fun, as art, or for scientific progress, will keep the art form alive for years to come. ("History," "Lillian Oppenheimer and Friends," "FOCA, OUSA," "A Legacy of Alice Gray," "Miscellaneous Collection," "Convention Information," "Conventions," Orlean.)

Origami continues to inspire people through its rich history, artistic possibilities, and the scientific and mathematical applications of folding today. With many organizations dedicated to folding around the world, it is easy for newcomers to join and learn about Origami, and make their impact on the folding community. Whether people fold for leisure, artistic excellence, or technical experimentation, they are drawn to the endless creativity and possibilities of folding. The history of Origami is long and complex, but the next chapters of the art are still being written today. No matter what kind of a folder you are, you can also help design the next chapter of Origami.

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