

The History of Paperfolding

A German Perspective

by
David Lister

The history of paperfolding has been dominated by the question of whether paperfolding originated in the east, in either China or Japan, or whether paperfolding in Europe had a separate origin and history of its own. Was paperfolding carried to Europe by land along the Silk Route or perhaps by the merchant and sailors who traded with the east by sea? There is no answer to this question. The information which we seek does not exist and for until we find more evidence, we simply do not know what happened.

When we limit our enquiry to the history of paperfolding in Europe, we are not much better informed. The evidence is very sparse and is scattered throughout Western Europe. We can only piece things together as well as we can and we do not know enough to make a full comparison of paperfolding in Spain, France, England or Germany. The general impression we gain from such historical information as we have is that paperfolding developed more or less uniformly over the whole of Europe. Ideas travelled across national boundaries with ease and perhaps we should not speak of a Spanish history of paperfolding or a French history or a German history. This does not, however, prevent us from pointing to particular aspects of paperfolding which belong to Germany and not to other countries. We must also bear in mind that although Germany was united by a common language, politically, it was, until 1871, a group of many separate states.

It has been suggested that paperfolding had an early hidden history in the folding of

cloth. Apart from an Egyptian map drawn on papyrus, and now in a museum in Milan, we have no early examples of the folding of paper, but we do have many illustrations of folded and pleated clothing dating from the Egyptian, Classical and Byzantine eras. Clothing with simple pleats seems to be a long way from the complexities of paperfolding as we know it today. However, the Sixteenth Century brought new ways of folding cloth, which suggest that the folding and pleating of cloth could have contributed to the development of paperfolding of the modern kind.

The first evidence that we have of folding from Germany is not of folding paper, but of folding table napkins. The sixteenth century saw the refinement of table manners and the increased use of napkins at mealtimes to wipe the fingers and mouth in the days before individual forks became a universal part of the equipment of every civilised table. With the Renaissance and the increase in prosperity and luxurious living, grandiose displays of table decorations became fashionable at the many courts of Italy and the new fashions for display spread from Italy to the northern Europe.

One of the customs was to fold table napkins into elaborate centrepiece table decorations in the form of animals, birds, sailing ships and other impressive models. The starched napkins were pleated, first in one direction and then the pleated napkin was cross pleated so that the second pleats were at right angles to the first. The resulting doubly-pleated napkins formed a pliable medium that could then be moulded

to form the birds and other creations. Several napkins were often used to complete the creation and they were attached together by being stitched with red thread. This was a long way from our modern idea of folding from a single square of paper without using cuts or fasteners or glue! Italian books mention the pleated folding of napkins, from the middle of the 16th century, but the most famous Italian treatise was that of Matthias Geiger, published in 1629. His book, „Li Tre Trattati“ contained table decorations of most elaborate animals, birds, fishes, dragons and ships in full scale. The book also included just a few designs for the folding of individual napkins in the way which is still familiar today. Among them we can recognise our familiar waterbomb base. It is disappointing, however, that we are not shown any napkin folds derived from this base.

Twenty eight years later, in 1657, in Munich, Georg Phillip Horssdorfer expanded Matthias Geiger's book and translated it into German. A copy still resides in the library at Munich. Several of Geiger's original illustrations were reproduced, some of them in mirror image and one of them upside-down! However the treatise was considerably enlarged, and in particular, the number of designs for individual napkins was increased. The elaborate pleated pieces intended to decorate the centre of the tables did not resemble modern paperfolding, but some of the designs for individual napkins were not unlike those we still know today. Accepting that it dealt with cloth and not paper, Horssdorfer's book may accordingly be looked upon as the first book of instructions for folding in the modern style. One of the best-known of modern napkin folds is the water lily. It takes several forms, but all of them made directly by blintzing, with the corners repeatedly folded to the

centre. Horsdorffer does not include the water lily as such in his book, although there is one that somewhat resembles it. Nevertheless, the water lily was known in napkin folding at the time, because it was included, although not illustrated, in a list of napkin folds given by an English writer, Giles Rose in a book published not much later, in 1682.

The „Blintz“ fold, represented by the water lily is very characteristic of Western folding. If you have in your hand a square of paper, or any other shape of paper, such as a bus ticket, there seems to be an irresistible urge to twist it or fold it up. For some reason this gives us great pleasure and this instinct may lie at the root of all paperfolding. One simple way of folding it is to put in the diagonals and horizontal book fold creases. The waterbomb base or preliminary may be the result. Alternatively, you may fold each corner to the centre in what we now call a „blintz“. (The name, „blintz“ was given to the fold around 1950 by Gershon Legman, because it resembled a sort of pancake called a blintz in parts of eastern Europe. The fold is, however, hundreds of years older than Gershon Legman!) Perhaps you will blintz the already blintzed paper a second time and arrive at a double blintz or even a triple blintz. There are lots of variations, because you can fold one blintz directly on top of the other or alternatively you can turn the folded paper over before proceeding.

Blintzing the paper leads to the windmill base or to that sequence of folds which Robert Harbin, in 1956, termed the „Multiform Series“. The Multiform Series includes many models, all of them closely related. They include the double boat, the windmill, the salt cellar, the little bird which the Spanish call the Pajarita and which used to be known in Germany as a dragon.

Ultimately the fold we know as the Gondola or Chinese Junk is derived from the blintz, although it is much more complicated than the others. Many of the multiform folds are very old and the multiform models were common in European folding until the latter part of the 19th Century.

We know, however that as well as the windmill base, the waterbomb base was also known in the West. A popular western paperfold has long been the swallow or glider, which is made from a waterbomb base. There is also a reference in a play, „The Duchess of Malfi“ by the English playwright John Webster, dating from 1614. The play refers to the „paper prisons in which boys trap flies“. This looks very much like the waterbomb itself, which has certainly been used for this very purpose by young boys in the east as well as in the west.

Japanese paperfolders discovered the waterbomb base long before 1614. It seems that the waterbomb base originated as a formalised cover for the neck of a sake bottle, with the creases neatly arranged in the form of alternating valley and mountain folds, radiating from the centre. Later, the sake covers appear to have been transformed into stylised butterflies, which were (and still are) used in Shinto wedding ceremonies. There were many slightly different variants, but usually the male butterfly (or Ocho butterfly) was more elaborate than the female (or Mecho) butterfly. While we have no evidence or any precise date, everything points strongly to these butterflies evolving sometime during the long period of the Heian dynasty. The Heian dynasty lasted from 782 AD to 1185 AD, and the Mecho and Ocho butterflies probably originated during the latter two hundred years of the period, but because the evidence is so vague it is very difficult to be precise. The butterflies were ceremonial

or formal origami, and not recreational or „play“ origami, yet they are the oldest evidence we have of radial bases as opposed to grid bases, like the waterbomb base. The bird base and the crane derived from it were popular in Japan by the end of the fifteenth century, and this implies that the bird base was already known in Japan for many years before that.

It must be emphasised that while in the West we knew the waterbomb base, we did not know the bird base or its related frog base until sometime around 1870, when Japanese conjurors are said to have brought it to the west and made the rapid folding of a miraculous flapping bird a feature of their acts.

Vicente Palacios has drawn our attention to the similarity between the crease pattern of the multiform models (including the pajarita) and the square diagram used for several centuries by astrologers as a basic design for horoscopes. The resemblance is truly remarkable, and one wonders why the square diagram was adopted to represent the circular movement of the stars and planets. In other words, where did the astrological square come from if it was not taken from the multiform crease pattern? According to Vicente Palacios of Spain, the „astrological square“ first appeared in the Twelfth Century and was devised by Gerardo Cremone, an Italian who lived in Toledo from 1114 AD to 1187 AD. There is no evidence that actual astrological squares were ever folded up into blintz folds, but they may have been and perhaps one day a folded example will come to light. There is, however, a later development that suggests a connection between the folded multiform models and the astrological square. During the time of the Reformation and the counter-Reformation in the 16th and 17th Centuries the custom grew up of

preparing „paten briefs“ (loosely but inaccurately translated into English as „baptismal certificates“) which were presented to babies by their godparents at the time of their christening. In those days babies were christened very soon after birth. A folded piece of paper in the form of a double blintz was prepared, with the child's dates of birth and christening and it was decorated with religious pictures and pious messages. Paten briefs of this kind were common in the 16th, 17th and 18th centuries and were popular in Bavaria and the surrounding countries, extending into Alsace and Switzerland, and as far away as Swabia. They were not known in England. The custom continued into the 19th Century and by coincidence, the paten brief of Friedrich Fröbel, the founder of the kindergarten, who was born in 1782 is still preserved and may be seen in the Fröbel Museum at Bad Blankenburg.

The paten briefs were definitely folded and it may be conjectured that they derive from similarly folded horoscopes in the form of the astrological square, and which were prepared on the birth of a child in earlier years. Perhaps the paten briefs took the place of earlier horoscopes with the increasing ecclesiastical opposition to superstition and astrology during the Reformation and Counter-reformation. It must be stressed that we have no positive evidence that there was any connection between the astrological square and the paten briefs, yet the similarity of their pattern of lines or creases is very suggestive.

The same pattern of double blintzing was not confined to formal documents. Kurt Londenberg, in his book, „Papier und Form“ (1972) illustrates two very interesting examples. One, from Swabia, is said to date from 1460 and appears to be a mere novelty, while another from around 1800 is

a commercial advertisement. Unfortunately, only one side of each fold is shown and we do not have a full picture of either of them.

Although we have only occasional paperfolding before 1800, there is enough indirect evidence to show that in the 18th Century, paperfolding must have been a widespread childhood pastime in Europe. One of Fröbel's followers, Eleanore Heerwarte wrote that before paperfolding became a kindergarten occupation, and even before Fröbel's time, it was an amusement in nurseries and in the homes of rich and poor. Grandmothers and nurses made boats and windmills, salt cellars and such like to amuse children. Dominique Buisson of France has said that in the 18th Century, long before Fröbel created his kindergartens, paperfolding was introduced into schools in France, where the pupils folded stars, boats and birds.

Fröbel was born in 1782 at Oberwischbach in the Thuringian Forest and we have the letters which he later wrote to his brother, in which he remembered the winter evenings they spent together playing games on the table. He recalled that one of their pastimes was paperfolding. We do not have any more details of what models were folded, but one fold associated with Fröbel was a model of a miner. It was none other than the fold known elsewhere as the „suit of clothes“. It is also known in Japan. The model is made in two parts, one for the top half of the man and the other for his legs. Both parts are folded from the windmill base.

There are other indications of the popularity of paperfolding in Germany at the end of the 18th Century. In his book „Ameisenbüchlein“, published in 1806, Christian Gottlieb Salzmann wrote: „Should you meet a person who possesses the skill to produce

a variety of figures by folding paper, do not consider it to be too trifling, but try to learn from it“.

The most famous paperfolded models from Germany, which were made around 1810, about the time that Salzman was writing, are the famous paper warriors on horseback which are now exhibited at the German National Museum at Nuremberg. They are said to have been made by a man named Senff for his young son. The horses and soldiers are heavily painted, which is something that would be frowned upon today, but they are very lively and we may wonder just what is the objection to painting our models. Both the soldiers and the horses are folded from variants of the blintzed multiform or pajarita fold, and they are another indication of the prevalence of this kind of folding in Europe at that time as in past ages. The warriors on horseback have continued to appear in German books about paperfolding, although, surprisingly, they do not seem to have been known in other parts of Europe.

It was Friedrich Fröbel who was responsible for the greatest contribution to the development of paperfolding anywhere in Europe during the 19th Century. It was his belief that children should learn from their play and he had the inspired idea of forming a Kindergarten, where they should be nurtured by their teachers, but encouraged to grow naturally. The first Kindergarten was opened at Bad Blankenburg in 1837, and Fröbel later established a teacher training college for women at Kelihaue, from which young women trained by him travelled all over the world to spread his educational theories.

We do not know precisely when or how paperfolding was introduced into the curriculum of the kindergartens, but it does

not appear to have been included in Fröbel's original scheme. While we do know that Fröbel himself later encouraged the use of paperfolding as one of the „gifts“ to children, we do not hear very much about paperfolding until after Fröbel died in 1872. His own writing on the subject was limited to an apparently incomplete fragment, not published until ten years after his death. This was restricted to mathematical folding, and we have to deduce Fröbel's later ideas from the writings of his disciples. It seems, however, that geometrical folding (or „Folds of Intellect“) formed the original basis of Fröbel's ideas about folding. From paperfolding the child would discover for himself the fundamental concepts of geometry. As an introduction to this, the children were encouraged to experiment with the „Folds of Life“. These were none other than the traditional folded paper toys whose origins were lost in the mists of time. One of the first books describing Fröbelian paper folding was the „Manual Pratique des Jardins d'Enfants“ edited by J-F Jacobs, which was written in French and published in Brussels in 1859. He does not give illustrations of models or instructions for folding them, but among the models he lists are many which are still familiar to us. They include the salt-cellar, the windmill, the sailing boat, the bird (perhaps the pajarita, but certainly at that date, not the flapping bird), the double boat and the gondola with seats, (probably the Chinese junk). As can be seen, most of these folds were blintzed folds and related to the windmill base.

It was, however, a third category of folding for which the kindergartens came to be best known. These were neither the Folds of Intellect nor the Folds of Life, but the „Folds of Beauty“, which were intended to develop the child's artistry and sense of creation. The Folds of Beauty were star patterns which were developed from the

blintz and double blintz. Once more, the folding was firmly anchored in the windmill or multiform. It has been suggested that the idea came from Japan, where such folds are also known, but there is no evidence for this, nor is it necessary to make such a derivation. It is surprising how many different and varied patterns can be made by playing with the blintz. Children were encouraged to make collections of these folds in books and their albums of patterns are today cherished memorabilia of the Fröbel movement, even in Japan. Sadly, it was all too easy for such a system to become stereotyped and misunderstood. In the hands of teachers who were not properly trained and who did not properly understand its educational purposes, Fröbelian paperfolding declined and was criticised not for encouraging children's creativity but for stifling it. It was the tragedy of paperfolding in the kindergarten that because it concentrated so much on the Folds of Beauty, it neglected the Forms of Life. There seems to have been no understanding that new models of animals or objects could be invented with the result that creative paperfolding as we understand it today, with all its infinite variety was never perceived or practised.

Nevertheless, Fröbel's young ladies took his paperfolding with them all over the world and made a great contribution to the spread of paperfolding throughout Europe, and beyond, to North America, to Argentina and even to Japan itself, where the kindergarten was established among little pupils clothed in kimonos. Fröbel's folds mingled with the traditional Japanese children's folds. Despite the ultimate failure of Fröbelian paperfolding in schools, for some fifty years it flourished and children and grown-ups learnt to fold and became familiar with a growing collection of

traditional folds gathered from all over Europe.

But this was merely a preparation for something much greater. Sometime around 1860 or 1870 (we do not know the exact date), Japanese conjurors began to tour the West and they included in their stage acts amazing new paperfolds like the Flapping Bird and the Jumping Frog. These folds depended on a new technique of folding. As in the familiar waterbomb base, the creases radiated from the centre of the paper. However, the crease pattern was much more complex and subtle. The bird base and the frog base held the key to a much more creative kind of folding than had been possible with the windmill base or multiform. Illustrated magazines began to appear in Europe showing the flapping bird and jumping frog illustrated by French wood engravers. Before the days of photographic reproduction, their illustrations appeared in recreational journals, not only in France, but also in England and Germany. So far, instructions for the flapping bird has been found in England in the *Boy's Own Paper* for 26th June, 1886 and in a French book published in 1889, both illustrated with the same wood cuts. So far, instructions for the flapping bird have not been found in a German magazine. Nevertheless, it is most likely that they were printed in Germany and are only waiting to be discovered!

The first steps to creating new models from the new radial bird and frog bases were taken by the Spanish philosopher Miguel Unamuno¹ of Salamanca University in Spain in the early years of the 20th Century. His ideas were taken to Argentina, where they were developed by Dr. Solorzano Sagredo, Giordano Lareo and Ligia Montoya.

¹ Richtig: Miguel de Unamuno

However, the achievements of Unamuno and his followers remained unknown to the rest of Europe until the 1950's, when another new impetus came from Japan, this time one which was to completely transform the art of paperfolding.

First, however Germany made yet another contribution to the development of paperfolding. In 1919, immediately after the end of the war of 1914 - 1918, the Bauhaus was formed by Walter Gropius as a centre for the study of design in architecture and industry. Its ideas transformed European design, long after the Bauhaus itself was suppressed in 1933. A New Bauhaus was founded in Chicago in 1937. The interests of the Bauhaus were wide-ranging and some of the artists associated with it turned to study the possibilities of paper and developed their own individual approaches to paperfolding. They were mainly interested in structures. We have seen the results in industrial design and in such ventures as the mass-production of portable buildings. Some of them use pleating, not very different from the napkin folds of the Renaissance. Unfortunately, there has so far been no detailed study of the paperfolding of the Bauhaus and one is urgently needed. In the meantime there is a Museum of the Bauhaus in Berlin, where everything to do with the Bauhaus may be studied.

Like Unamuno in Spain, Akira Yoshizawa in Japan discovered ways of using the bird base and the frog base to create entirely new kinds of paper models. He was largely self taught, but he was a genius. In this he resembled the Spanish guitarist Andrés Segovia, for like him, Yoshizawa, by his single effort, transformed his art beyond recognition. Even in Japan, it was not until 1952 that Yoshizawa's work was discovered, with the publication in a Japanese magazine of twelve Zodiac figures that he had created.

By a remarkable stroke of good fortune, the work of Yoshizawa came to the notice of Gershon Legman in 1953. Gershon Legman was an American then living in France, who had made an intensive study of paperfolding. He immediately recognised the importance of Yoshizawa's new kind of paperfolding and he was able to organise an exhibition at the Stedlijk Museum in Amsterdam of models which Yoshizawa had sent to him. From Gershon Legman the news spread first to Robert Harbin in England and then, by means of Robert Harbin's book, „Paper Magic“ it reached Lilian Oppenheimer in New York in 1957. Lilian Oppenheimer had also been studying paperfolding and in October 1958, she founded her Origami Center. In March 1959, she flew to Japan to meet Yoshizawa and in May of the same year she helped to promote another exhibition of paperfolding at the Cooper Union Museum in New York. Gershon Legman sent his collection of Yoshizawa's models and Yoshizawa also sent some additional ones. They were the most important exhibits in the exhibition and made a tremendous impact. Modern Origami was born. For a time paperfolding technique came to be dominated, not now by the windmill base, but by the bird base, which Yoshizawa had used so effectively.

New books about paperfolding (or „Origami“ as it now came to be known), began to appear, some of them coming from Japan. Lilian Oppenheimer's Origami Center acted as a focus for paperfolding in America and for a time throughout the western world, but it was not long before paperfolding came to be organized in Europe. The British Origami Society was founded with the help of Lilian Oppenheimer in 1967, partly because Mrs. Oppenheimer's daughter Rosaly Evnine lived in London and Mrs. Oppenheimer

regularly came to visit her grandchildren there. The British Origami Society in turn helped to inspire the formation of other societies in other parts of Europe. In Germany, René Lucio formed Origami Munich, and then Origami Deutschland was formed by Paulo Mulatinho and Silke Schröder as a member's society in 1989². With the holding of annual conventions and the publication of magazines, German paperfolding is now well established and has members throughout the country and with friendly links with paperfolders throughout the world. With the reunification of Germany, the Fröbel museum at Bad Blankenburg has become a shrine to paperfolding.

Paperfolding in Germany has come a long way from the napkin folding of the Renaissance and the windmill base which for so long dominated paperfolding. It has come a long way from the folding of Fröbel, whose name for many years became synonymous with paperfolding. Paperfolders of Germany are making great contributions to the modern art of origami and also to the close international friendships which are so characteristic of the gentle art of paperfolding.

Kommentar:

Anmerkung: Das ist nicht korrekt. Origami Deutschland wurde vor Origami München gegründet.

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