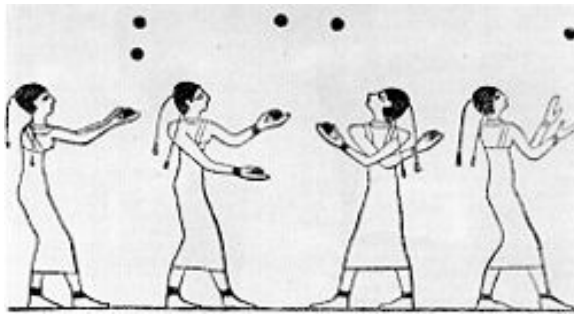


THE FLYING KARAMAZOV BROTHERS



JUGGLING THROUGH THE AGES

The term “juggling” comes from the Latin “joculare” meaning “to jest.” Juggling has been a form of entertainment for thousands of years, and has been performed all around the world. The earliest recorded instance of juggling is an Egyptian tomb painting that depicts female dancers and acrobats throwing balls. Scientists date these pictures to be between 1994-1781 BC, meaning that juggling is, at a minimum, almost 4000 years old!



Jugglers depicted in an ancient Egyptian tomb.

Thousands of miles away, in China, there are stories of juggling that date back to almost 800 BC. These stories are usually of warriors who would use juggling as a show of skill, sometimes ending a battle before it started. Sometimes they juggled balls, other times they would juggle swords. Drawings of jugglers are also found in ancient Aztec art in Central America, and there are accounts of juggling in early records of Norse, Indian and Polynesian civilizations. It is likely that juggling did not evolve in one place and spread outward, rather that it developed independently in many different cultures. Like the Chinese, soldiers in the army of the Roman Empire also used juggling as a pastime, and the practice spread throughout Europe as an acceptable form of entertainment. After the fall of the Roman Empire, juggling became regarded as a disreputable practice, with religious leaders

frowning on the performers, then called Gleemen. Jugglers of the time were only allowed to perform in marketplaces, fairs, streets and drinking establishments. Some were even accused of witchcraft. Juggling was in the arsenal of many of the court jesters, who used it along with poetry, music, and comedy to entertain the nobles.



Like modern street performers, these entertainers of the past would pass their hat around for tips among the on-looking crowds of taprooms and market places. After the Middle Ages ended, juggling was allowed to become a more mainstream form of entertainment in Europe again. In 1680 the first recorded juggling workshop opened in Nuremberg, Germany where the town council hired a juggler to teach others. Nearly a hundred years later, in 1768, an Englishman named Philip Astley founded the first modern circus. From then on jugglers would be associated with working in the circus. In the 1800s and early 1900s, juggling became a common part of Vaudeville in which variety shows with acts of all sorts toured the United States. In the 1950's, juggling started to grow as a hobby, with juggling enthusiasts forming the International Jugglers' Association.



At an IJA Juggling Convention there's always a "Big Toss-up" in which everyone at the event throws an armload of props into the air. (Generally, nothing is actually juggled in a Big Toss-up. It just makes a great picture.

There are now juggling clubs, conventions and competitions around the world. As the basics of juggling are more widely known and practiced today by amateurs, professional entertainers have been spurred to push the practice to greater heights. As a result, troupes such as the Flying Karamazov Brothers have emerged as masters of the art, performing feats never before imagined possible.

THE PHYSICS OF JUGGLING

An old riddle tells of a 148-pound man who had to cross a canyon over a bridge that could only support 150 pounds.

Unfortunately the man was carrying three one-pound cannonballs and only had time for one trip across. The solution to the riddle was that the man would juggle the cannonballs while crossing the bridge. In reality, juggling the balls would not have been much help since catching one of the cannonballs would have exerted a force on the bridge that would have exceeded the weight limit. The poor man would have ended up at the bottom of the canyon!

Though not very helpful in this particular case, juggling does have relevance beyond riddles or entertainment. Beek and Lewbel (1995) suggest the application of juggling in the study of human movement, robotics, and mathematics. Studying the mathematics of juggling became popular in the 1980's though juggling itself is an ancient tradition dating back to Egypt and Rome. Before the mid-twentieth century juggling was practiced mainly as entertainment. Public interest in juggling as a hobby increased after 1948 when the first juggling convention was held in the United States. That interest has persisted over the years as people continue to test physical limits for the number of objects juggled. Currently, the world record for the greatest number of objects juggled (This is defined as two catches of each object.) is 12 rings, 11 balls or 8 clubs. While these numbers may seem impossibly high, they are in fact attainable with the right combination of practice and knowledge of the mechanics of juggling. Good jugglers make juggling look so easy that it is difficult to imagine all the physics that comes into play. Gravity has a significant effect on the number of objects that can be juggled. A given object must be thrown high enough to allow the juggler time to handle the other objects before the given object comes back down. While throwing higher gives the juggler extra time, it also increases the risk of error. Juggling using low throws, on the other hand, requires the juggler to catch and throw quickly, also increasing the risk of error. The need for speed or height also changes dramatically as the number of objects being juggled increases.

Learning to juggle three balls can be accomplished in just hours or days. This learning time can increase to weeks or months for four balls, months or years for five balls and so on.

Shannon's Juggling Theorem:

$$(F+D)H=(V+D)N$$

F = air time for each object

V = the time a hand is vacant

D = the time a ball spends in a hand

N = number of objects

H = number of hands

Shannon's Theorem, named after the brilliant mathematician and juggler, Claude Shannon. It relates the variables involved in juggling.

(Thanks to Dan Berube at The Merrimack Repertory Theater for the 'History' and 'Physics' sections of this guide.)

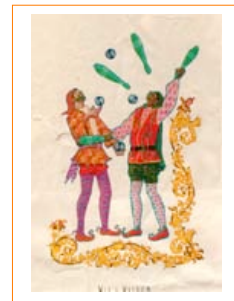
YOU CAN LEARN TO JUGGLE!

There are lots of great videos easily found on the internet for helping you to learn almost any juggling including the basic three-ball pattern.

For those who prefer a live experience, there is a weekly juggling class held right here in New York City taught by Flying Karamazov Brother, Rod Kimball. For details, visit www.jugglingclasses.com

THE HISTORY OF THE FLYING KARAMAZOV BROTHERS

In 1972, founding Karamazov Brothers Howard Patterson and Paul Magid lived across the hall from each other in the dorms at The University of California at Santa Cruz. Howard was studying Biology and Music. Paul was studying English Literature.



Founding Karamazov Brothers Howard Patterson and Paul Magid in the early days.

They began performing on April 23, 1973 at a Renaissance Faire in California. In 1974, they were joined by Paul's high school best friend Randy Nelson and in 1976 by juggler/technician, Timothy Furst.

While in Spokane, Washington for the 1974 World's Fair, they named themselves "The Flying Karamazov Brothers", after the great Russian novel, "The Brothers Karamazov" by Fyodor Dostoyevsky, and took names from the book. Paul, Howard, Randy, and Tim became Dmitri, Ivan, Alyosha and Fyodor.

In 1980 they got their first big break, performing at the Goodman theatre in Chicago. In 1981 they won an Obie award performing in New York City. That year, Randy left the troupe and along came Sam Williams. 1983 they premiered their groundbreaking production of Shakespeare's

"The Comedy of Errors" at the Goodman Theatre directed by Robert Woodruff.



The Obie awarded for the show, "Juggling and Cheap Theatrics"

Randy rejoined the troupe for that show and remained for the group's first Broadway run with their show, "Juggling and Cheap Theatrics" at the Walter Kerr Theatre. In 1991, Michael Preston joined the group. In '98 and '99, current members Mark Ettinger and Rod Kimball came on board. Howard retired in 2007 and Nick Flint joined. In 2008, current member Stephen Bent arrived.



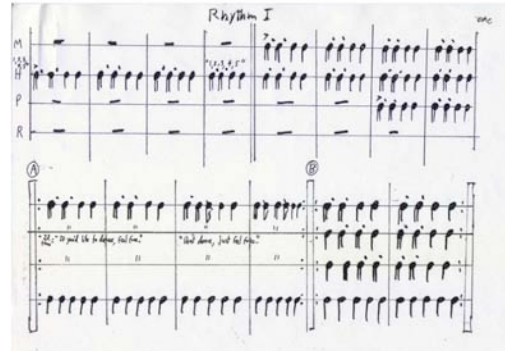
Over the years, the group has produced dozens of shows and has enjoyed many television and movie appearances including Seinfeld, Mister Roger's Neighborhood and the movie 'Jewel of the Nile'.



Karamazovs Fyodor (Tim Furst), Dmitri (Paul Magid), Ivan (Howard Patterson) Smerdyakov (Sam Williams), Alyosha (Randy Nelson) and collaborator Avner Eisenberg drawn by the great caricaturist Al Hirschfeld



A bit from the show, “L’ Universe”



Some of the notation for “Rhythm 1”

MUSIC AND THE FLYING KARAMAZOV BROTHERS

Nearly every piece the Brothers perform can be thought of in terms of the ensemble’s unique use of music.

The first piece in the show is set to “In the Hall of the Mountain King” by Edvard Grieg of Norway. Note how the sections of music are aligned with sections of juggling and movement.

The next piece of music is called “Taiko” This is the Japanese word for “drum” and is a traditional Japanese style of drumming. The Flying Karamazov Brothers have always used music with odd rhythmic structure and frequently shifting meter. “Taiko” is a prime example, as it switches meters between two, three and four beats per measure almost constantly. It was written by former Karamazov Brother, Howard Patterson.

“Rhythm 1” uses juggling itself to create music. The performers wear gloves with snaps sewn into the palms to amplify the sounds of the catches. This piece has five beats per measure, so it’s fun to try to count along. Written by Howard Patterson.

“Angel Backdrums” uses a Karamazov invention called “backdrumming”. Alexei hits drums with juggling clubs while juggling! This ends with some 50’s Rock ‘n’ Roll by Johnny Otis.

The Ballet is set to an excerpt from Gioachino (pronounced “joe-a-KEY-no”) Rossini’s opera “William Tell”. For comic effect, this recording is slightly faster than the piece is traditionally played.

The next piece of music is a canon called “Nos Nobis” (literally, “not to us”) A canon is a piece of music in which the melody starts, then while that melody plays, another voice starts a version of the same melody, then a third voice and sometimes more. A simple canon in which all parts are the same is called a round. It is not known who wrote this piece.

“Beginning of life” was written by Mark Ettinger. It moves freely from one meter to the next. In usual Karamazovian fashion, the juggling fits tightly to the music. Using throws of various heights, every throw matches the duration of a beat or group of beats.

The melody for the intermission song is the “Ode to Joy” from Ludwig van Beethoven’s Ninth Symphony.

The “Table Piece” makes music in a unique way with some very unexpected “instruments”

The “Polish Appalachian Clog Dance” was written by long-time Karamazov friend, Doug Wieselmann. It combines influences from the folk music of Poland and the American Appalachian region.

“4x4” is a piece by the Karamazov’s own Mark Ettinger which mixes juggling and music in a very surprising way.

“4x4” is topped off with a quick rendition of “The Marseillaise”—the French national anthem by Claude Joseph Rouget de Lisle.

“Glowing Balls” (or “Music of the Spheres”), like “Beginning of Life” matches every throw to a moment in the music.

Discipline #4. The Karamazov Disciplines are a series of four juggling etudes or exercises. This one is accompanied by Alexei playing Chopin’s Nocturne for Piano in B flat minor.

“Jazz” is improvisational group juggling. It shares ideas of structure with jazz music such as having a basic theme and improvising around it. Dmitri and Alexei work as the rhythm section and Zossima and Pavel are the soloists. Jazz also includes a loosely executed excerpt from Richard Wagner’s “The Ride of the Valkyries”.

Enjoy the show!

