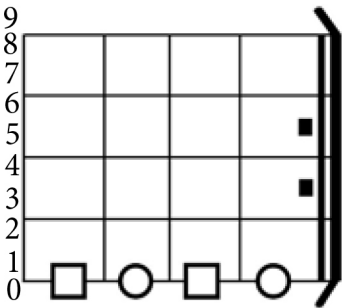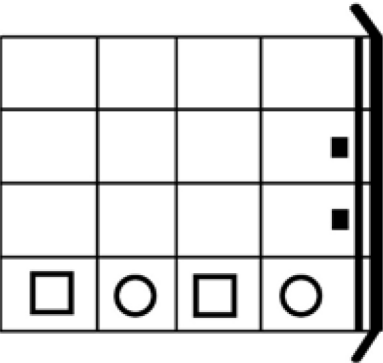# Short introduction to Graphic Juggling Notation

This line notation is not on any musical key so you kind of can deside in what key you wish to use, or even change key of the notes in middle of the score.

Here we see kind of musical line notation.
Square means right hand inside throw and circle means left inside throw.
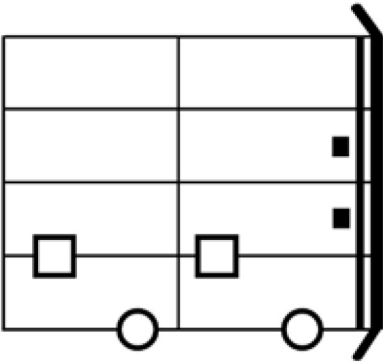
☐ Right hand

◯ Left hand

For jugglers the bottom line means a siteswap value of zero. first gap between lines means siteswap value 1 and so on. All even value siteswap throws are on lines (stay on same hand) and all uneven values are in gaps (change hand where it will be thrown again).

On this first image there is juggling pattern that is in siteswaps called 0. In image there's bar mark used to to explain that the pattern in one beat long.
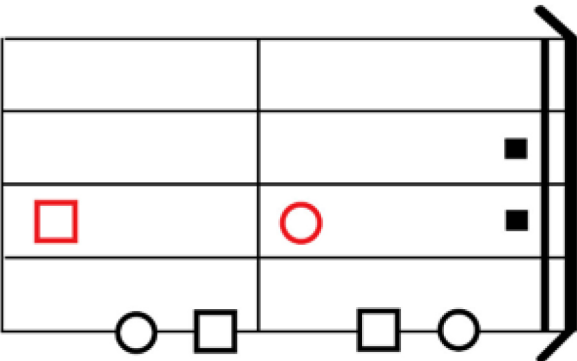
On this image we have one object, one beat long siteswap pattern called 1.

1 |1 |1| 1

On this image we have one object, two beat long siteswap pattern called 20
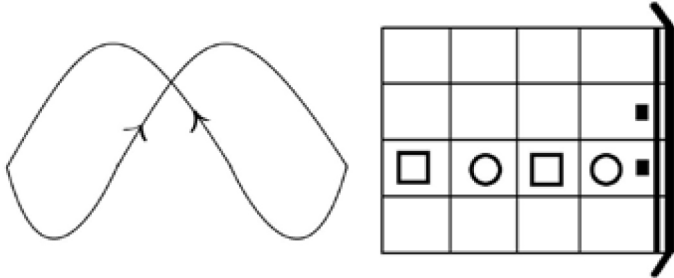
20|20

On this image we have one object, Three beat long siteswap pattern called 300
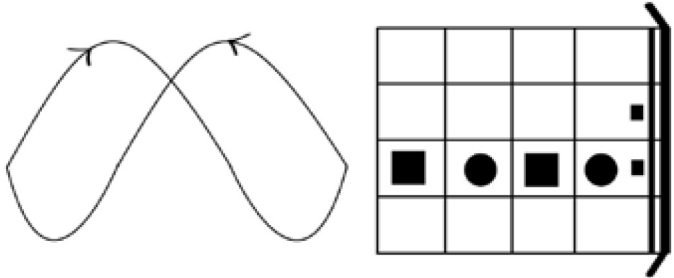
300|300

Black square means right hand outside throw
Black circle means left hand outside throw.
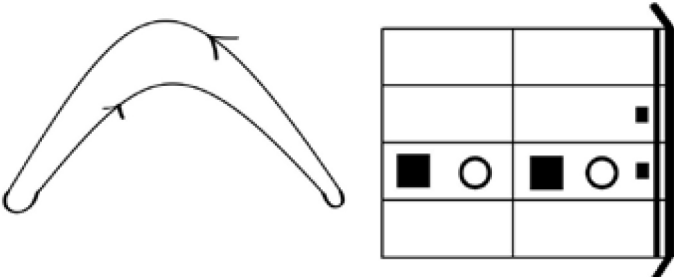
■ Right reverse   ● Left reverse

Regular 3 object cascade
3 object, one beat long sitswap pattern called 3 done with inside throws.
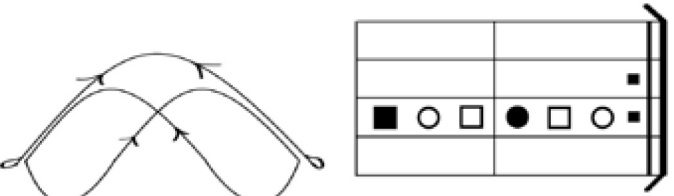
Reverse 3 object cascade
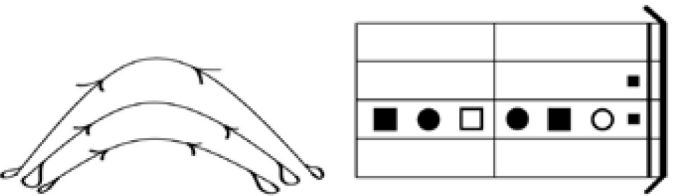3 object, one beat long sitswap pattern called 3 done with outside throws.

Half shower
3 object, two beat long sitswap pattern called 3 where right hand makes outside throws and left inside throws.

Tennis
3 object, three beat long sitswap pattern called 3 where every third throw is done from outside.
right out, left in, right in, left out, right in, left in.

Arches
3 object, three beat long sitswap pattern called 3 where two of the three throws is done from outside.
right out, left out, right in, left out, right out, left in.

More examples of this kind of patterns in appendix.

Bodythrows in Graphic Juggling Notation

□	Right hand	
—	object goes behind body	
⊢	Comes back to front	

○	Left hand	
○—	object goes behind body	
●—	Comes back to front	

AA AB AC AD AE
BA BB BC BD BE
CA CB CC CD CE
DA DB DC DD DE
EA EB EC ED EE

AA AB AC AD AE
BA BB BC BD BE
CA CB CC CD CE
DA DB DC DD DE
EA EB EC ED EE

C   D

B   E

A

Here's all the simple bodythrow routes around human body
where thrown object goes one round around jugglers body.
(goes behind it and comes back to front)

Few examples of symbols used when object goes two rounds around jugglers body

⊢ 2nd. time object goes behind body from right hand
⊩ 2nd. time object comes back to front from right hand

○● 2nd. time object goes behind body from left hand
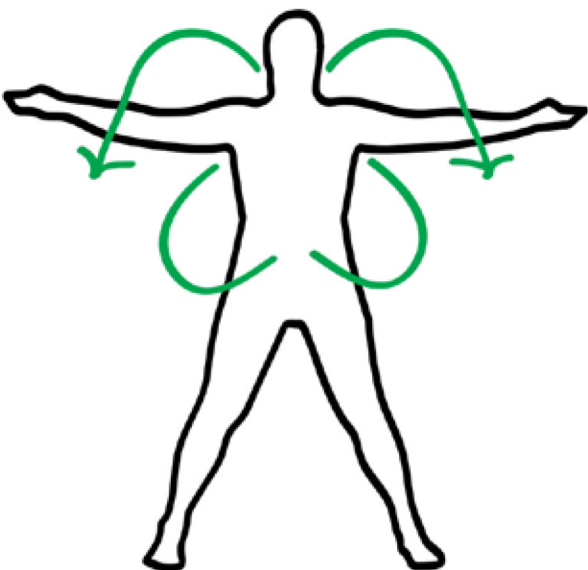●— 2nd. time object comes back to front from left hand

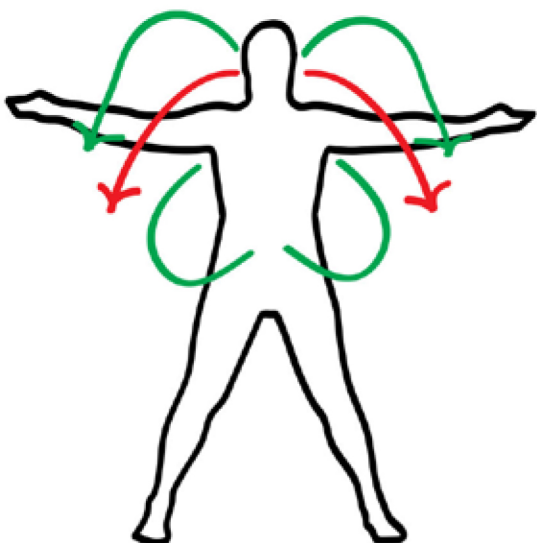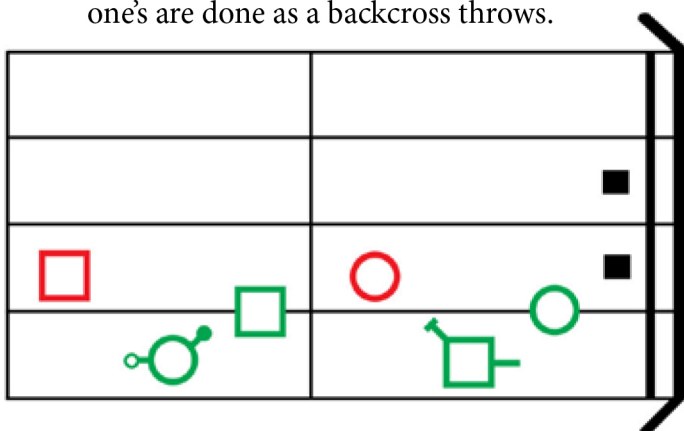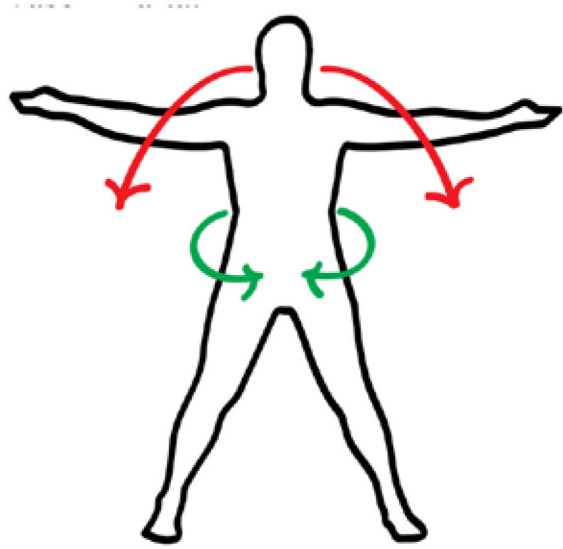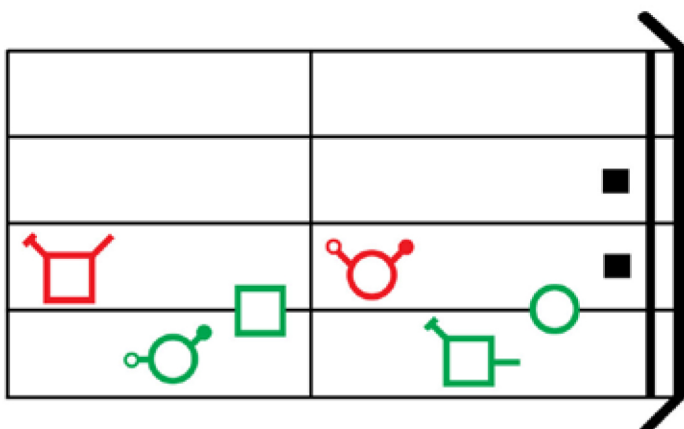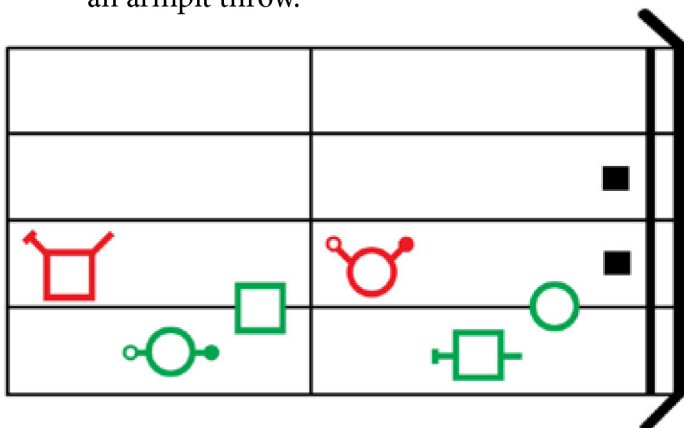Here is a two object siteswap pattern 312 where the one's are done as a backcross throws.

Here is a two object siteswap pattern 312 where the three's are done as behind the neck throws and the one's are done as a backcross throws.
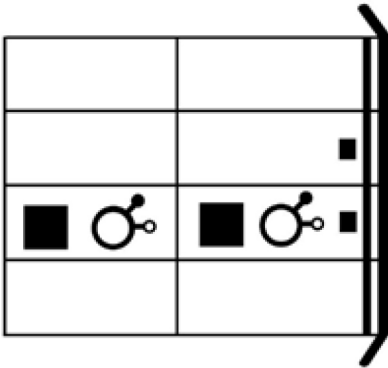
Here is a two object siteswap pattern 312 where the three's are done as behind the neck throws and the one's are done as an exchange behind the back or as an armpit throw.
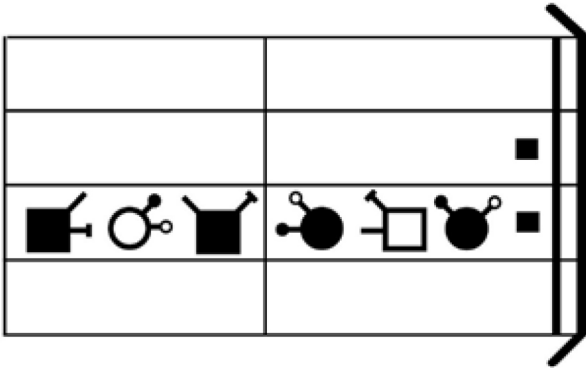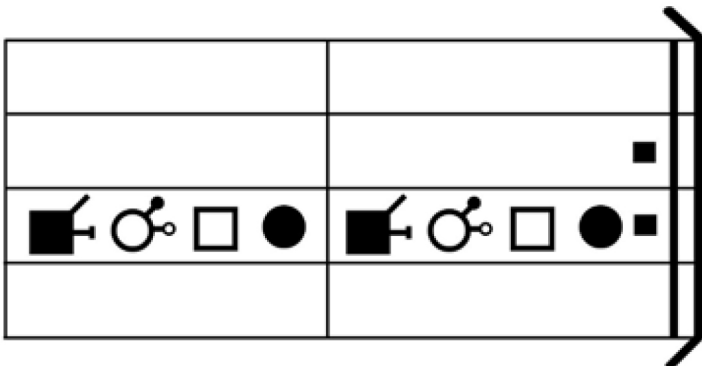
More examples of this kind of patterns in appendix.

Windmill pattern: Two beat long 3 object siteswap pattern 33 where right hand throws outside throws and left hand throws under arm throws under right arm.
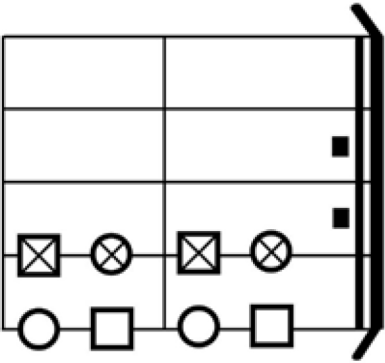
Mill's Mess' pattern: 3 beat long 3 object siteswap pattern 333
3 right hand throws outside throw that is caught by left hand under the right.
3 left hand throws under arm throws under right arm.
3 right hand throws from over the left hand to be caught with left hand over the right.
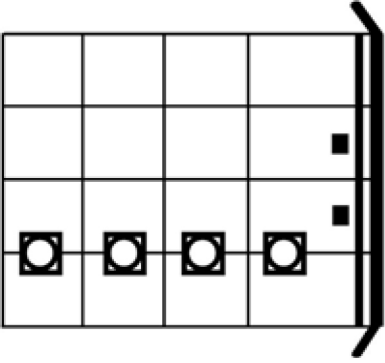then the same with oppsotie hands.

Half mess pattern: 4 beat long 3 object siteswap pattern 3333
3 right from outside to be caught with left under right
3 left from under right arm
3 right inside throw
3 left outside throw

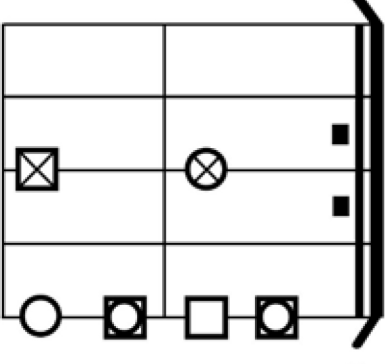More examples of this kind of patterns in appendix.
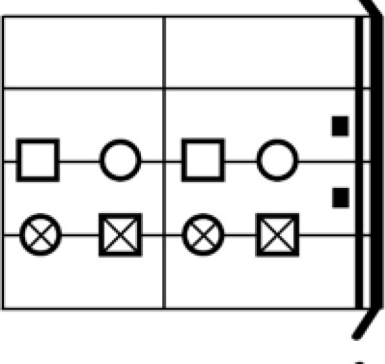
Syncronous juggling patterns:
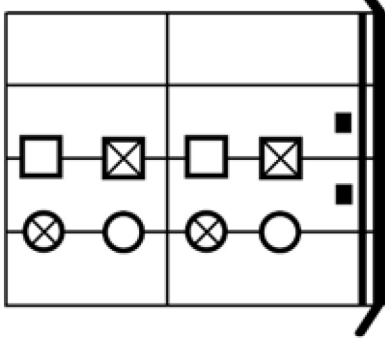
syncornous two beat one object pattern (2x,0)(0,2x)

syncornous one beat two object pattern (2,2)
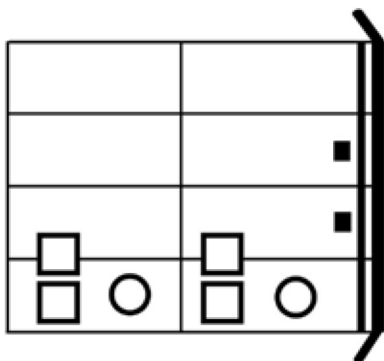
Syncronous two beat one object poattern (4x,0)(0,0)

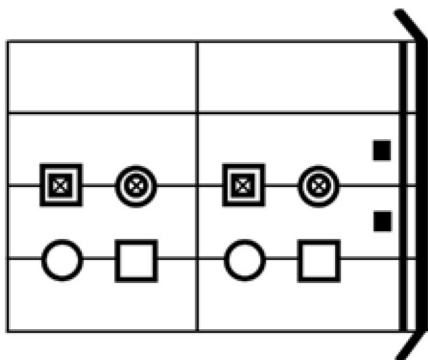The Box
Syncronous two beat three object pattern (4,2x)(2x,4)

Syncronous two beat three object pattern (4,2x)(4x,2) where right hand does all the fours aand left all the two's

x in symbol means that instead going to where it should it goes to the opposite.
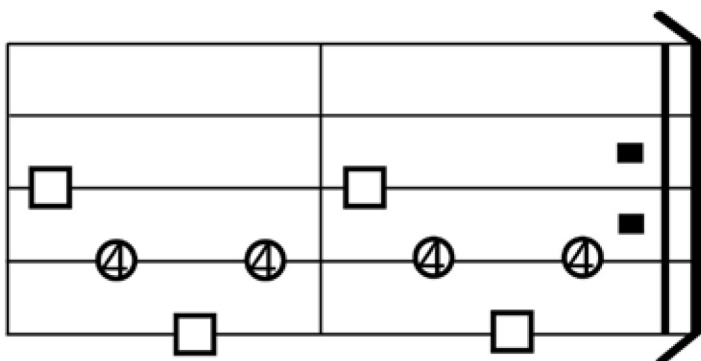for example
4x is crossing and
5x is straight

Multiplex juggling patterns:

two beat, two object multiplex pattern [21]1
where right hand throws throws 2 and 1 at the same
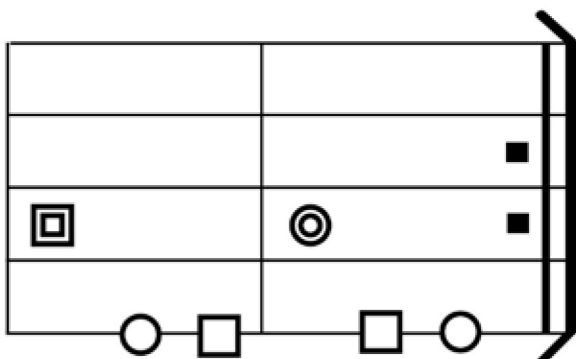moment and then left throws 1 back to right.

Two beat, 5 object, syncronous multiplex pattern
([4x,4],2)(2,[4,4x])
where right hand throws throws 4x and 4 at the same
moment when left throws 2, Then on next beat left
hand throws throws 4x and 4 at the same moment
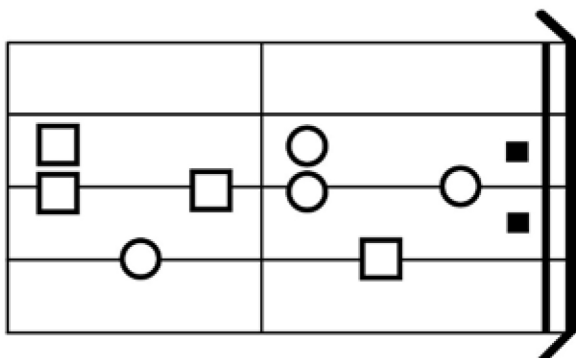when right throws 2

Four beat, five object, multiplex pattern
4[2222]0[2222]

right straight throw 4
left holds 4 objcets in hand [2222]
right hand is empty 0
left holds 4 objcets in hand [2222]

Three beat, two object multiplex pattern [33]00

right throws two objects at the same time as 3 and 3
left hand is empty, right hand is empty, left throws
two objects at the same time as 3 and 3
right hand is empty, left hand is empty,

Three beat, 5 object multiplex pattern [5,4]24

All possible symbols needed in async, syncronous, multiplex, and syncronous multiplex patterns.

☐ Right hand ■ Right reverse / outside throw

⊠ synch pattern, right throws crossing throw

✖ synch pattern, right throws crossing outside/reverse throw

⊠ Sync throw, both hands same siteswap value, right straight throw, left crossing (ends in squeeze catch?)

⊠ sync throw, both same siteswap value, right outside straight throw, left crossing (ends in squeeze catch)

✖ Synch throw, both hands same sitswap value, right normal straight, left outside crossing

▣ Synch throw, both hands same siteswap value, inside throws

◉ Synch throw, both hands same siteswap value, right throws outside, left regular inside throw

◉ Synch throw, both hands same siteswap value, outside throwsthrows

⊠ Multiplex from right, same siteswap value, other object crossing other straight

⊡ 2object Multiplex right hand, other object crossing inside, other outside to same hand.

⊠ 2object multiplex right hand, same siteswap value, other object crossing reverse throw, other regular to same hand

▢ 2object multiplex throw from right, same siteswap value, both regular

■ 2object multiplex throw from right, same siteswap value, other outside, other regular

○ Left ● Left reverse / outside throw

⊗ Synch pattern left crossing to right

⊗ sync pattern, left outside crossing throw

◉ Synch pattern, both hands same siteswap value, left straight throw, right crossing

◉ Synch pattern, both same sitswap value, left outside throw, right regular crossing

⊗ Sync patterm both hand same siteswap value, left straight, right outside crossing

⊠ Synch pattern both same siteswap value, both crossing

◼ Synch pattern, same siteswap value, right regular straight throw, left outside throw

⊗ Synch pattern, same siteswap value, both outisde crossing throws

◎ Multiplex from left, same siteswap value, other object crossing other straight

⊙ 2object Multiplex left hand, other object crossing inside, other outside to same hand.

⊗ 2object multiplex left hand, same siteswap value, other object crossing reverse throw,
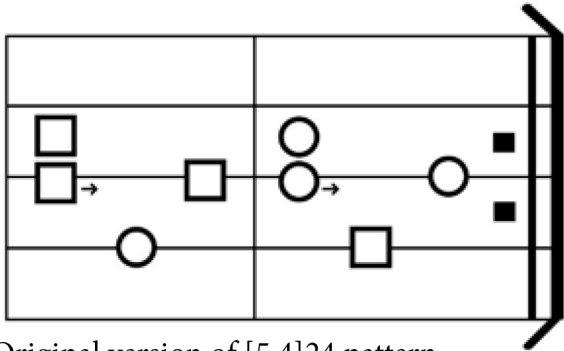
◎ 2object multiplex throw from left, same siteswap value, both regular

◉ 2object multiplex throw from left, same siteswap value, other outside, other
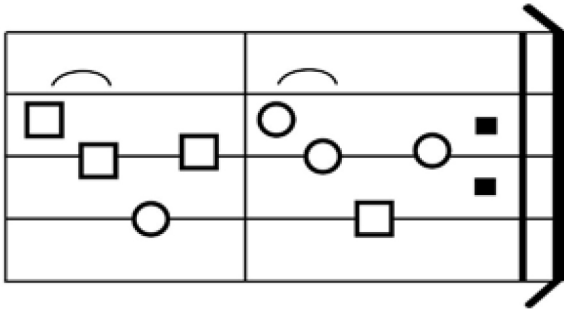
shortly about how to translate multiplex pattern in to polyrhytmic??? pattern

As juggling notations are rerally stright about alternating hands and also real life juggling is quite limited to that. But with graphic juggling notation it is easy to show how to break down multiplex throws in to separate throws. When normal we would be juggling right, left right, left and so on. Now we break multpiplex throw in like right righ, left, right. That during the one beat there is two separate throws instead of one.
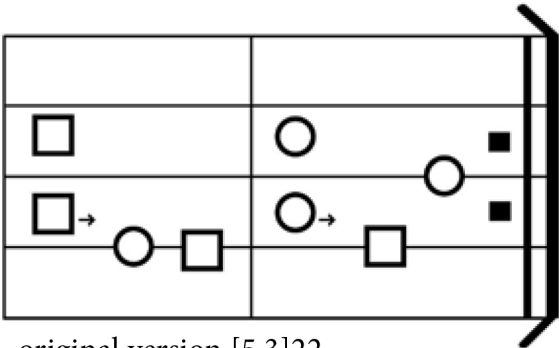
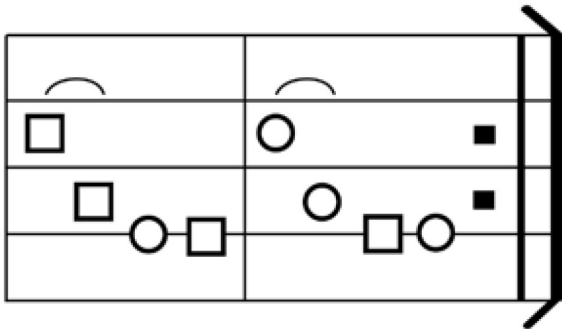as for notation there's arch linking these symbols together.

Original version of [5,4]24 pattern

polyrhytmic version:
Fast Right 5 following Right 4
Left holds a 2
Right trhrows 4
Fast left 5 following left4
right holds a 2
left trhrows 4

original version [5,3]22

polyrhytmic version:
Fast Right 5 following Right 3
Left holds a 2
Right holds a 2
Fast left 5 following left 3
right holds a 2
left trhrows 2

Here is minimalistic juggling/music piece we have been performing in Performance titled: Manifesti, it has been performed by two performers with 2 juggling balls and ukulele.