Structural Models Of Choreography
By Kip Garvey

There are two models that comprise the structural foundation of our choreographic theory. The model adopted by CALLERLAB and subsequently most callers is the 4 x 4 model of pairings and sequence. In this model, there are four Pairing States and four Sequence States.

4 x 4 Model of Pairings and Sequence

All Men with original Partner	Men In Sequence, Ladies In Sequence
All Men with original Opposite	Men OUT and Ladies OUT of Sequence
All Men with original Corner	Men IN Sequence, Ladies OUT of Sequence
All Men with original Right Hand Lady	Men Out of Sequence, Ladies IN Sequence

All Relative Pairing States are SAME. The first two Relative Sequence States are SAME. The remaining two Relative Sequence States are MIXED. The model does not recognize a MIXED Pairing State. Rather, MIXED pairings integrate into the SAME/MIXED Sequence States by implication. In general Line formations, MIXED Sequence implies MIXED pairings; SAME Sequence implies SAME pairings. In general column formations, SAME Sequence implies MIXED pairings; MIXED Sequence implies SAME pairings. If this sounds convoluted, it may be. However, all the elements are there that totally describe our Setups regarding pairings and sequence. The question is, how useful is it? Is there any practical utility in it?

The major proponent of the 4x4 model was Dr. Bill Davis. Bill was literally a rocket scientist, an excellent caller, and a very good friend. He and I had many discussions regarding which model is preferable. The bottom line with Bill was that the 4x4 model is orthogonal, a characteristic often preferred by scientists and mathematicians.

However, it does ignore a very important aspect regarding calling square dance choreography. The fact is, most proficient callers focus on pairings and not so much on sequence. Both Davis and I proved this at subsequent CALLERLAB meetings where we asked well-known, proficient callers to call to a square of callers and their partners. Our

observations over the two-year experiment proved that callers do in fact focus primarily on pairings and concern themselves with sequence only prior to applying a Getout.

I prefer the 8 x 2 model for practical reasons. In this model, there are 8 Pairing States and two Sequence States. My contention is that callers do not concern themselves with the Sequence State of the square until it is time to resolve the square. More importantly, they seemingly never discern between SAME and MIXED Sequence States. Rather, they focus on pairings. The 8 x 2 structural model is pairing-centric, which is why I prefer it.

8 RELATIONSHIP STATES

S
A
M
E

- All men with original Partner
- All men with original Right Hand Lady
- All men with original Opposite
- All men with original Corner

M
I
X
E
D

- Head men with original Partner, Side men with original Opposite
- Head men with original Opposite, Side men with original Partner
- Head men with original Corner, Side men with original Right Hand Lady
- Head men with original Right Hand Lady, Side men with original Corner

2 SEQUENCE STATES

IN or OUT

Either model is correct in that extrapolation in either model still gives us the maximum number of Setups in a specific Formation/Arrangement of dancers, which is 16. [4 x 4 = 16; 8 x 2 = 16].

The two models overlap regarding Mixed Pairings versus Mixed Sequence. The fact is we need only base technical aspects regarding Pairings and Sequence on either Mixed Pairings, or Mixed Sequence, but not both. I choose Mixed Pairings primarily because it is pairings that callers attempt to resolve first, not sequence. Pairings are a caller's primary focus. I assert that there are only two Sequence States, IN or OUT. I take care of distinguishing between Mixed Sequence States by using formation-based rules of Relativity between

pairing states. This allows me to concern myself primarily with the Sequence State of the men and not worry about situations where men and ladies carry different Sequence States. In addition, this 'concern' only occurs at the point of Resolution, when I want to determine which Getout I want to use. Otherwise, I only focus on pairings, as do most proficient callers.

Breaking the 8 Relationship States down based on Relative Pairings (SAME and MIXED), I offer these Paring States.
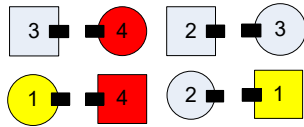
PAIRING STATES

- If Head men are *paired* with original Partner, Side men can ONLY be *paired* with original Partner (SAME) or *unpaired* with original Opposite (MIXED).
- If Head men are *paired* with original Opposite, Side men can ONLY be *paired* with original Opposite (SAME) or *unpaired* with original Partner (MIXED).
- If Head men are *paired* with original Corner, Side men can ONLY be *paired* with original Corner (SAME) or *unpaired* with original Right Hand Lady (MIXED).
- If Head men are *paired* with original Right Hand Lady, Side men can ONLY be *paired* with original Right Hand Lady (SAME) or *unpaired* with original Corner (MIXED).

The conclusion is this: **If we know how Head or Side men are paired, there are only two possibilities for the other men**. They are either similarly paired, or unpaired. This makes pairings a lot easier to follow.

Now we see that our eight relationship states are more easily broken down into two sets of four relationships. One set is SAME relative pairings. The other set is MIXED relative pairings. So, it is not just pairings we observe, it is Relative Pairings.

These Pairing States lead us to **Rules of Relativity**, which point out how relative pairings and relative sequence overlap.

When the square is in generalized lines, the Relative Sequence State is the same as the Relative Pairing State. If the Relative Sequence State is MIXED, the Relative Pairing State is MIXED. When the Relative Sequence State is SAME, the Relative Pairing State is SAME.

When the square is in any kind of column formation (Eight Chain Thru boxes, for instance) the Relative Sequence State will be the opposite of the Relative Pairing State. When Relative Sequence State is SAME, Relative Pairing State is MIXED. When Relative Sequence State is MIXED, Relative Pairing State is SAME.

It is not possible to divorce Pairings and Sequence. Understanding the Rules of Relativity allows callers to narrow down possibilities regarding pairings and sequence, which is a caller's goal.

Why is any of this important?

Callers see right away, either with their eyes or in their mind's eye, when dancers are paired or unpaired. Knowing the relative pairing state immediately links the state of the square to known Groups and Setups that callers use as waypoints. Callers move dancers from one waypoint to another, making certain observations as they go and knowing ahead of time where they are taking the dancers and what relationships the dancers will have when they arrive. These waypoints include Setups like Corner Box, Partner Line, Corner Line, Right Hand Lady Box, Right Hand Lady Line and other MIXED pairing Setups like Corner Box plus 2 Ladies Chain, or Corner Line plus 2 Ladies Chain.

Relative Pairings also lead us to the Relativity Restriction Rule, a very important rule for newer callers to understand. This restriction deals with Groups (Corner Group, Right Hand Lady Group, Partner Group and Opposite Group) and impacts what happens when callers bring dancers 'across the street', transitioning from one Group to the opposite of that Group. It is based on Relative Pairings and is the basis for understanding Technical Zeros.

The Relativity Restriction Rule is this formation dependent two-part rule:

A. When dancers are in normally arranged Facing Lines and the Relative Pairing State is SAME, going 'across the street' not only results in a Four Ladies Chain effect, but also *transitions* the dancers to the opposite Group from the one they start in.

B. When dancers are in normally arranged Facing Lines and the Relative Pairing State is MIXED, going 'across the street' results in a Four Ladies Chain effect but does NOT

transition the dancers to the opposite Group. Dancers remain in the same Group they start in.

If we examine this process from normally arranged Eight Chain Thru boxes, we see that the first part of this rule is similar, but reversed regarding the Relative Pairing State. Actually, the rule is easier to see and understand from this perspective because there is no Four Ladies Chain effect involved.

C. When dancers are in normally arranged Eight Chain Thru boxes and the Relative Pairing State is SAME, going 'across the street' does NOT *transition* the dancers to the opposite Group. Dancers remain in the same Group.

D. When dancers are in normally arranged Eight Chain Thru boxes and the Relative Pairing State is MIXED, going 'across the street' will *transition* the dancers to the opposite Group.

Regarding the structural models of choreography, the point is these observations are all pairing-centric and when Sequence is considered, it is only considered in passing or to establish a Setup for a particular Getout. This adds validity to my ongoing contention that the 8 x 2 model offers more versatility and is therefore more useful as an underlying model of choreographic structure.