SD APPLICATION NOTE 3

DISCONNECTED
and
IGNORE

The '`disconnected`' concept has not enjoyed a lot of popularity over the last several years. An article in the Zip Coder magazine described it as the "lost concept"[1] . This may be, in part, because people don't always perceive it as having a sound logical basis.

In recent years there has been increased interest in "theoretical" or "computational" approaches to calls and concepts. Calls and concepts that were conceptualized by examples rather than by algorithmic rules haven't fared very well. The '`disconnected`' concept may have been a victim of this. It has mostly been conceptualized by examples that people run into on the dance floor.

Common usage has given rise to the principle that, if the call is not a shape- or orientation-changer, you work to spots:

```
4GV  3B^  4BV  3G^  1GV  2B^  1BV  2G^

       BOYS DISCONNECTED swing thru

4GV  4B^  1BV  3G^  1GV  3B^  2BV  2G^
```

and the principle that, if both groups are doing disconnected calls, whoever "owned" the center at the start will own it at the end:

```
3G^  4BV  3BV  2G^  4GV  1B^  2B^  1GV

GIRLS DISCONNECTED crossfire WHILE THE BOYS crossfire

2BV   4G^   3GV   3B^

1BV   1G^   2GV   4B^
```

But applications that go beyond these simple principles have not been very popular.

In this note I will try to explain how I (and `Sd`) believe the concept works.

The CALLERLAB definition says that the designated people do the call as if they had slid together, that is, as though the intervening spots weren't there.

[1] Choreo Corner, *Zip Coder XXVII*, 2(June 1998), 23-28

```
                    4GV  3B^  4BV  3G^  1GV  2B^  1BV  2G^

        BOYS DISCONNECTED <anything> -- do the call as if from here:

                              3B^  4BV  2B^  1BV
```

If the call is not a shape-changer, they go back to the same spots. Otherwise, they "stay near the original centers' spots", and all gaps are closed:

```
                                              3B>
   3B>
   3G>                                        2B<
   2B<
   2G<    GIRLS DISCONNECTED lockit  -->   1G^ 2GV 4G^ 3GV
   4G>
   4B>                                        4B>
   1G<
   1B<                                        1B<


                                   3B>
                                   2B<

    -->  (close the gaps) -->   1G^ 2GV 4G^ 3GV

                                   4B>
                                   1B<
```

From the 'crossfire' example, we know that the designees can sometimes all crowd into the center:

```
                    4B^  3GV  3B^  4GV  2G^  1BV  1G^  2BV

                        GIRLS DISCONNECTED crossfire

                              1GV  4G^
                         4B^ 3B^         1BV 2BV
                              2GV  3G^
```

But they can't always do so:

```
3GV  4B^  4G^  3BV  1B^  2GV  2BV  1G^

BOYS DISCONNECTED switch to a diamond

                 4B>
  3GV  3B^  4G^       2GV  1BV  1G^
                 2B<
```

What was the problem in that last example? It was that having all the designees crowd into the center would have pushed the others out. So we have the principle that the designees crowd into the center as much as they can *without displacing the others*. With '`crossfire`' they were able to go into the center because they saved space by stacking themselves 2 people deep.

When the disconnected dancers do a shape- or orientation-changing call that has them maneuver around the others, we are going to restrict their maneuvering to one direction for now.

```
3GV  4B^  4G^  3BV  1B^  2GV  2BV  1G^

         BOYS DISCONNECTED
```

In this case, all of the maneuvering is done along a left-to-right axis. We paint imaginary stripes on the floor perpendicular to that axis, showing what left-to-right positions are occupied by the designated people.

```
     ---       --------       ---
    |   |     |        |     |   |
    |   |     |        |     |   |
    |   |     |        |     |   |
3GV |4B^| 4G^ |3BV  1B^| 2GV |2BV| 1G^
    |   |     |        |     |   |
    |   |     |        |     |   |
    |___|     |________|     |___|
```

After doing the call, the designated people redistribute themselves on the same stripes. They fill the stripes from innermost to outermost, taking whatever space is is provided, and avoiding unnecessarily pushing the inactives outward.

In the current instance of Switch to a Diamond, the centers of the resulting diamond can occupy the center stripe. In fact, the there is room left over—they are only one person wide, and the center stripe is two people wide. So, can the points go into the center also? They would now occupy a width of three, which is greater than the stripe width. This would unnecessarily push the inactives outward. There is room for the diamond points in the outer stripes, so they don't need to occupy the center stripe.

So the center stripe actually gets thinner.

```
     ---       --------       ---
    |   |     |        |     |   |
    |   |     |        |     |   |
    |   |     |        |     |   |
3GV |4B^| 4G^ |3BV  1B^| 2GV |2BV| 1G^
    |   |     |        |     |   |
    |   |     |        |     |   |
    |___|     |________|     |___|

BOYS DISCONNECTED switch to a diamond
     ---       ---       ---
    |   |     |   |     |   |
    |   |     |   |     |   |
    |   |     |4B>|     |   |
3GV |3B^| 4G^ |   | 2GV |1BV| 1G^
    |   |     |2B<|     |   |
    |   |     |   |     |   |
    |___|     |___|     |___|
```

What happens if we do a '`disconnected flip the diamond`' from here? The centers of the resulting wave want to occupy the center stripe. But that stripe is only one person wide. We can't have just one of them occupy the center, and the Solomon rule[2] says we can't put half of each in the center. We either put in zero people or two. The rule is that we always put someone in, unless we have run out of people. So, in this case, the two centers go into the center stripe, widening it slightly. This is a case where widening was necessary.

```
     ---       ---       ---
    |   |     |   |     |   |
    |   |     |   |     |   |
    |   |     |4B>|     |   |
3GV |3B^| 4G^ |   | 2GV |1BV| 1G^
    |   |     |2B<|     |   |
    |   |     |   |     |   |
    |___|     |___|     |___|

BOYS DISCONNECTED flip the diamond
     ---       --------       ---
    |   |     |        |     |   |
    |   |     |        |     |   |
    |   |     |        |     |   |
3GV |2B^| 4G^ |3BV  1B^| 2GV |4BV| 1G^
    |   |     |        |     |   |
    |   |     |        |     |   |
    |___|     |________|     |___|
```

[2] The Solomon rule (I Kings 3:16-28) says that cutting people in half is generally not a good way to solve a problem.

If the call had been ‘`disconnected drop in`’, all four people would have have gone into the center stripe. The outer stripe would have been closed.

```
     ---       ---       ---
    |   |     |   |     |   |
    |   |     |   |     |   |
    |   |     |4B>|     |   |
3GV |3B^| 4G^ |   | 2GV |1BV| 1G^
    |   |     |2B<|     |   |
    |   |     |   |     |   |
    |___|     |___|     |___|

    BOYS DISCONNECTED drop in
             --------
            |        |
            |        |
            |3B>  4B>|
     3GV 4G^|        | 2GV 1G^
            |2B<  1B<|
            |        |
            |________|
```

Here is another case in which the outer stripes disappear:

```
     ---       --------      ---
    |   |     |        |     |   |
    |   |     |        |     |   |
    |   |     |        |     |   |
3GV |4B^| 4G^ |3BV  1B^| 2GV |2BV| 1G^
    |   |     |        |     |   |
    |   |     |        |     |   |
    |___|     |________|     |___|

        BOYS DISCONNECTED lockit
                 ---
                |   |
                |   |
                |4B>|
                |1B<|
        3GV 4G^ |   | 2GV 1G^
                |3B>|
                |2B<|
                |   |
                |___|
```

(The boys' wave actually has no gap across the middle—it is impossible to show it correctly in a text file.)

The designated people don't need to occupy the center stripe:

```
 ---       ---            ---       ---
|   |     |   |          |   |     |   |
|   |     |   |          |   |     |   |
|   |     |   |          |   |     |   |
|3G^| 4BV |4G^| 3BV  1B^ |2GV| 2B^ |1GV|
|   |     |   |          |   |     |   |
|   |     |   |          |   |     |   |
|___|     |___|          |___|     |___|

     GIRLS DISCONNECTED crossfire
          ---          ---
         |   |        |   |
         |   |        |   |
         |2G^|        |3GV|
      4BV|   |3BV  1B^|   |2B^
         |1G^|        |4GV|
         |   |        |   |
         |___|        |___|
```

A '`girls disconnected lockit`' would be illegal from the above formation. All four girls would need to occupy a stripe in the center—the Solomon rule prevents any other solution. But no stripe is available in the center.

There is one more case in which it is necessary to push the inactive people outward. There might not be any more available stripes farther out. When the designated people reach their last stripe, they use it, even if it pushes the inactives outward. New stripes are never created.

```
         ---          ---
        |   |        |   |
        |   |        |   |
        |2G^|        |3GV|
     4BV|   |3BV  1B^|   |2B^
        |1G^|        |4GV|
        |   |        |   |
        |___|        |___|

    GIRLS DISCONNECTED peel off
     --------            --------
    |        |          |        |
    |        |          |        |
    |        |          |        |
4BV |2GV  1GV| 3BV  1B^ |3G^  4G^| 2B^
    |        |          |        |
    |        |          |        |
    |________|          |________|
```

If there is a stripe at the outside of the setup, it is filled as necessary.

```
       ---                       ---
      |   |                     |   |
      |   |                     |   |
      |3B^|                     |4BV|
      |   |4G^  1G^  3GV  2GV|   |
      |2B^|                     |1BV|
      |   |                     |   |
      |___|                     |___|

       BOYS DISCONNECTED peel off
 --------                       --------
|        |                     |        |
|        |                     |        |
|3BV  2BV| 4G^  1G^  3GV  2GV |4B^  1B^|
|        |                     |        |
|________|                     |________|
```

If the last stripe is the one in the center, it gets filled appropriately, however far the inactives have to be pushed out.

```
        2GV  3G^
2BV 1BV          3B^ 4B^
        1GV  4G^

GIRLS DISCONNECTED peel off

2BV  1BV  1G^  2G^  4GV  3GV  3B^  4B^
```

(But this isn't a real instance of '`disconnected`'.)

Here are some examples showing 6 active people:

```
3B^                    4BV
    2GV  3GV  1G^  4G^
2B^                    1BV

IGNORE THE SIDE GIRLS, TRIANGLE peel and trail

3BV  3G^  2GV  2BV  4B^  4G^  1GV  1B^
```

```
        1GV  2G^
1B^ 4B^          2BV 3BV
        4GV  3G^

IGNORE THE SIDE BOYS, TRIANGLE peel and trail

1G^  1BV  4B^  4G^  2GV  2BV  3B^  3GV
```

The '`ignore`' concept is the way to make 6 people work disconnected. Naming them explicitly ("heads and side girls") is unwieldy, and is not supported by `Sd`.

In both of these cases, the designated people started in a center stripe two people wide, and the outermost stripes.

```
4B>       4G<       1G>
     3B^       1BV
3G<       2G>       2B<

IGNORE THE HEAD BOYS, THOSE FACING START, pass the ocean

3G^  4GV  3B^  2B^  4BV  1BV  2G^  1GV
```

In this case, the designated people started in a center stripe one person wide, and the outermost stripes. They must push the inactive people out slightly.

When The Stripes Aren't Simple

Up to this point, we have been assuming that the designated people are spread out only along one axis, so that stripes can be used, and that they are totally compressed along the other axis. I know of no comprehensive theory that can describe the situation in which the spreading out can be arbitrary. Fortunately, it appears that, for setups with only 8 people, only a few cases can arise.

It seems that, when the selected people are disconnected along both axes, they either work to spots (the obvious easy case) or they work in a simple way around whoever is causing them to be disconnected. Gaps are closed as needed.

About the only straightforward and sensible case of this is is a call done by the points of an hourglass.

```
      4G>   1G>
         4B>
   3B^         1BV
         2B<
      3G<   2G<

GIRLS DISCONNECTED peel off

         1G<

         4G<

         4B>
   3B^         1BV
         2B<

         2G>

         3G>
```

(A '`girls concentric peel off`', or just '`girls peel off`', would have gotten the same result.)

```
           4G>   1G>
              4B>
        3B^           1BV
              2B<
           3G<   2G<

  GIRLS DISCONNECTED follow thru

              4B>
3B^  3G^  2G^       4GV  1GV  1BV
              2B<
```

(A ‘`girls concentric follow thru`’ would have moved the girls outside of the head boys.)

Here are some cases in which a diamond is formed. Notice that the girls work only around the side boys. They are inside of the head boys.

```
           4G>   1G>
              4B>
        3B^           1BV
              2B<
           3G<   2G<

GIRLS DISCONNECTED peel to a diamond

              1G<
              4B>
     3B^ 2G^          4GV 1BV
              2B<
              3G>
```

```
            4G>   1G>
               4B>
         3B^         1BV
               2B<
            3G<   2G<

 GIRLS DISCONNECTED 1/2 circulate

               4G>
               4B>
     3B^ 3G^         1GV 1BV
               2B<
               2G<
```

Everyone Disconnected

The disconnected concept is usually not used with phantoms. However, an interesting extension was recently introduced in the Zip Coder article mentioned previously. This is '`everyone disconnected`'. (Sd also lets you say '`all disconnected`'.) In this case, the "stripes" must be able to distinguish the matrix spots occupied by live dancers and the unoccupied spots. The live dancers work to the live stripes according to the usual rules.

```
3B^    .    1G^   2GV    .    4BV

2B^    .    4G^   3GV    .    1BV

 EVERYONE DISCONNECTED mini busy

       .    3BV   1GV    .

2G^    .    2BV   4B^    .    4GV

       .    3G^   1B^    .
```

The "Ignore" Concept

This concept, like '`disconnected`', has suffered from a lack of sound theoretical understanding. The CALLERLAB definition says to do the call as though the other spots weren't there. That's a lot like disconnected.

I believe that, except for "space invader" calls, the '`ignore`' concept should be treated as '`disconnected`' for the other people. The same rules about working to spots, or filling stripes and closing gaps, should apply. Hence we have:

```
4BV  4G^  3GV  3BV  1B^  1G^  2GV  2B^

IGNORE THE HEAD GIRLS, GRAND swing thru

3BV  4B^  3GV  2GV  4G^  1G^  2BV  1B^
```

```
        3B^   2G^   4BV   1GV

        3G^   2B^   4GV   1BV

 IGNORE THE SIDE BOYS, in roll circulate

        3G^   3BV   4BV   2GV

        4G^   2B^   1B^   1GV
```

```
          4BV                    2G^
              3B^  3G^  1GV  1BV
          4GV                    2B^

IGNORE THE HEAD BOYS, TRIANGLE, peel and trail

    4G^  3GV  3B^  4B^  2BV  1BV  1G^  2GV
```

When the call is a space-invader (e.g. '`press`' or '`truck`'), the '`ignore`' concept can't mean to work around the others as though they weren't there. Space-invading calls work in absolute position.

When some people are ignored for a space-invading call, they simply don't do it. The others do the call, using the usual absolute definition of where they go.

```
          4B>   4G>   1B>   1G>

          3G<   3B<   2G<   2B<

     IGNORE THE SIDE BOYS, press ahead

     .    4B>    .    4G>   1B>   1G>

    3G<   3B<   2G<    .    2B<    .
```