

The Matching Concept (draft 1)

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1 Introduction

To introduce the Matching concept, I will first describe several examples as motivation for what we want the concept to do, without explaining how to derive them. Once I have sufficiently established the intuitive idea, I will then provide a formal definition for each case.

Suppose we wanted to do a Walk and Dodge from a 1/4 Box, as in Example 1. This is not the correct starting formation for Walk and Dodge, which requires mini-wave boxes. So we could instead have the outside belle do their part of a Reverse Swap Around, and everyone else do their part of a Walk and Dodge. This seems to be the “best approximation” of Walk and Dodge from here.

Example 1. Walk and Dodge



For a similar example, suppose we wanted to do a Peel Off from an Eight Chain, as in Example 2. Again, it is impossible to do a Peel Off from here. But there are many ways to fix it – in each tandem, either person could do their part of the Peel Off (ending in the center of the resulting line), and the other person would do something like step up beside them (to fill the remaining spots in the line). So we need to disambiguate somehow. In the below example, the centers are “preferred” – they get to do the actual call, and the ends have to fill in the gaps.

Example 2. Peel Off (preferring centers)



Sometimes it might be inconvenient to “prefer” particular dancers. Suppose we wanted to do a Cast a Shadow from the Three-and-One Lines in Example 3. The centers can do the call from this formation, but the ends do not have the right formation for their 1/2 Zoom. The easiest possible fix is for either of them to turn around, but it is inconvenient to designate them (“end beau” vs. “end belle”). We can instead observe that one of these would result in waves (before the Cast a Shadow), and one of these would result in two-faced lines. We can instruct the dancers to “prefer” the waves as the starting formation, yielding the result below.

Example 3. Cast a Shadow (preferring waves)



Finally, sometimes no disambiguation will be necessary, because the starting formation for the call is sufficiently restrictive. In Example 4, the side girls had better act as though they had the #1's part of Cooperate, since the other dancers will be unable to do the call otherwise. This turns the call into a Grand Working Forward Beaus Walk Belles Dodge, followed by Finish Cooperate.

Example 4. Cooperate



Having established some amount of intuition for the Matching concept, I will now explain how these calls are constructed, and give formal definitions. I will go through the examples in reverse order, since this happens to be the most natural way to explain them.

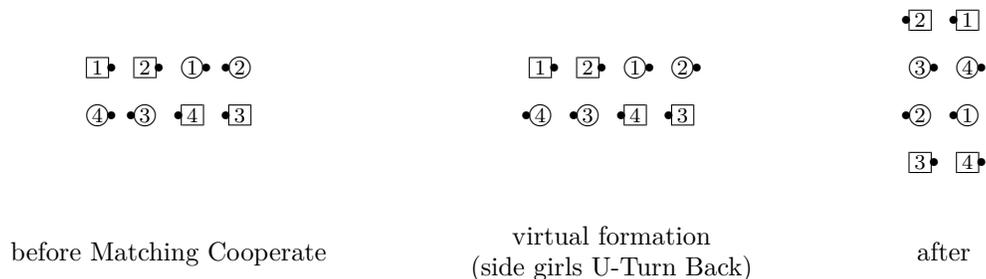
2 Matching <call>

The most straightforward usage of this concept is to simply precede a call with the word “Matching.”

Matching <call>. Working smoothly, have the minimal number of people (virtually) U-Turn Back to produce a legal formation for <call>, then do <call>.

The call in Example 4 is thus given as “Matching Cooperate.”

Example 5. Matching Cooperate



There are two components of the definition to take note of: the word “smoothly” and the word “minimal.”

First, regarding the word “smoothly,” the definition is given in terms of some people doing a U-Turn Back followed by the call. This will always give the correct result, and it is a valid way to dance the concept. But much like many other virtual-formation concepts, it is often “nicer” to smooth out the dance action. Parallelogram Circulate is never danced by taking it out; we simply go to spots.

In Example 5, I do not recommend actually producing the intermediate formation; because then the side girls would turn around to make the columns, then immediately turn around again to do the Circulate. Instead, it is more pleasant if they imagine they had started facing the other way, figure out where they would go, and slide into place without turning instead, as described in section 1. I think of this as analogous to the Right/Left Wing concept, where it is “preferable” to dance, say, Other Wing Peel Off as a Trail Off rather than a Slide followed by a Peel Off.

As for the word “minimal,” you might notice that in theory, the side girls could have remained in place, and everyone else could have turned around instead (producing left-handed columns, a valid formation for Cooperate). The “minimal” condition disambiguates which one to opt for. To make right-handed columns, only two people need to turn around; whereas to make left-handed columns, six people need to turn around. So we prefer the former.

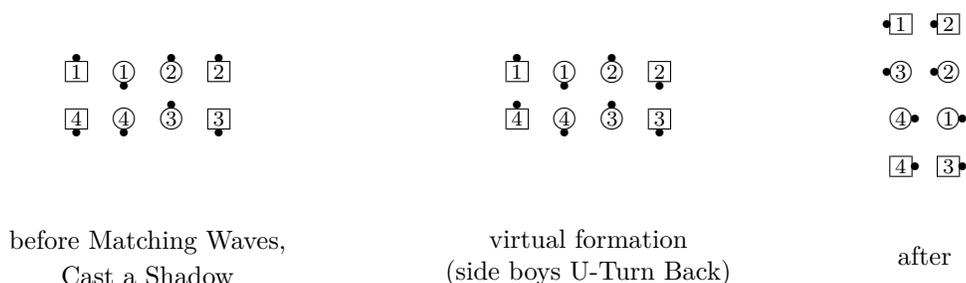
3 Matching <formation>, <call>

As discussed in section 1, sometimes minimizing the number of dancers who turn around is not enough to disambiguate. Therefore, we can also specify a target formation.

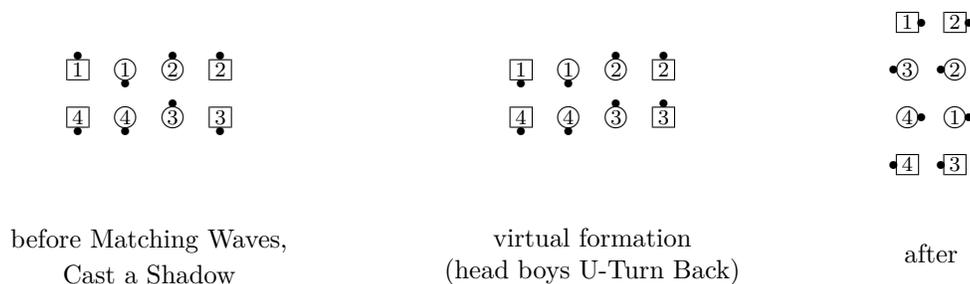
Matching <formation>, <call>. Working smoothly, have the minimal number of people (virtually) U-Turn Back to produce a <formation> from which <call> is legal, then do <call>.

Note that “Matching <call>” is shorthand for “Matching any formation, <call>.”

Example 6. Matching Waves, Cast a Shadow



Example 7. Matching Two-Faced Lines, Cast a Shadow



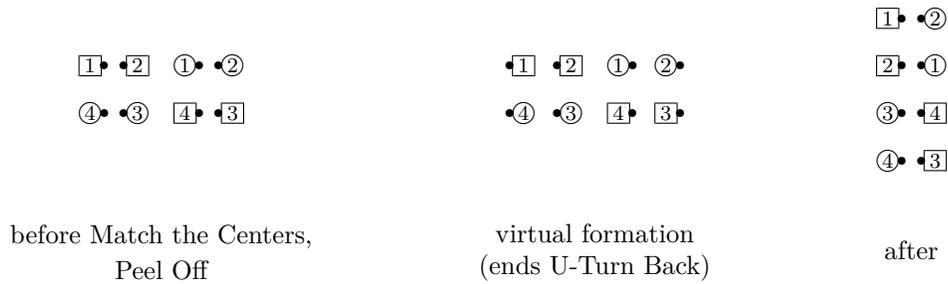
4 Match the <anyone>, <call>

Finally, as also discussed in section 1, it is sometimes more convenient to use designators to disambiguate.

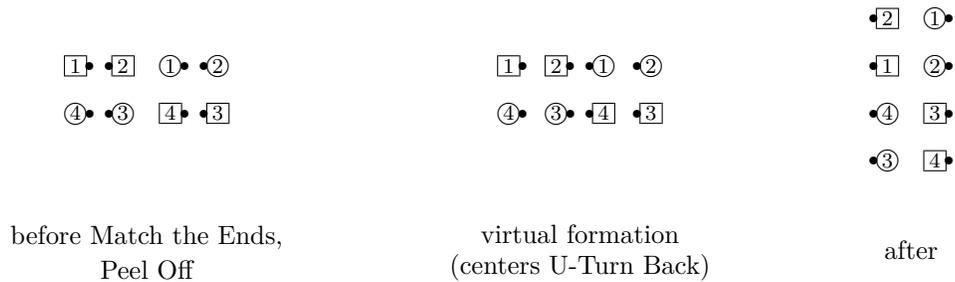
Match the <anyone>, <call>. Working smoothly, have the minimal number of people *other than the <anyone>* (virtually) U-Turn Back to produce a legal formation for <call>, then do <call>.

This is again a generalization: “Matching <call>” is shorthand for “Match the Nobody, <call>.”

Example 8. Match the Centers, Peel Off



Example 9. Match the Ends, Peel Off



Again, I recommend dancing this smoothly – the non-designees don’t need to turn around to produce the virtual formation and then turn around again to Peel Off; they can just do a Single Veer Out.

5 Further extensions

In this section, I introduce a number of additional features of the Matching concept.

5.1 Preference for symmetry

When Matching is used on a four-person call and the call is not specific enough to fully disambiguate, prefer the one that makes the starting four-person formation symmetric.

Example 10. Matching Swing and Mix



before Matching Swing and Mix



virtual formation
(side boy turns, not girl)



after

Example 11. Matching Wheel and Deal



before Matching Wheel and Deal



virtual formation
(head boy turns, not girl)

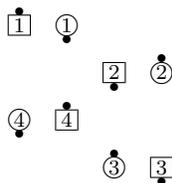


after

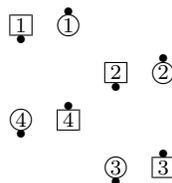
5.2 Working with phantoms

As is usual with phantom concepts, we generally assume local symmetry by default, which might be relevant for computing Matching.

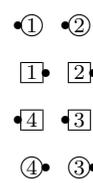
Example 12. Split Phantom Columns, Match the Centers, Bingo (symmetric)



before Split Phantom Columns,
Match the Centers, Bingo



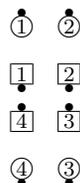
virtual formation



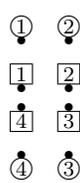
after

But as is also usual with phantom concepts, sometimes an asymmetric starting setup might be forced, which is also okay.

Example 13. Split Phantom Columns, Match the Centers, Bingo (asymmetric)



before Split Phantom Columns,
Match the Centers, Bingo



virtual formation



after

A Draft notes and feedback

This is a very early draft, so there are still more things to be said and questions to be answered:

- more examples
- should there be a formally defined “smoothing” process, so that concepts like Roll or $1/4$ Stable are allowed? or should those concepts just not be used together with Matching?
- should there be a preference against crashes, similar to subsection 5.1? (might be too hard to compute)
- ...

Feel free to provide any feedback on these things or anything else.

B Acknowledgments

This concept was inspired by a question Holden Hall asked me. (The question was whether you can just call “Walk and Dodge” from the formation in Example 1, since there’s only one way to do it. (The best I could come up with was “Own the Leaders Walk and Dodge by Leaders Like a Ripple, Zoom, Half Sashay, and Pass Thru,” which I feel like is a bit unsatisfactory. (Amusingly, this concept doesn’t even do the desired thing – you would have to say “Stable Matching Walk and Dodge.”)))

C Further examples

more to come...