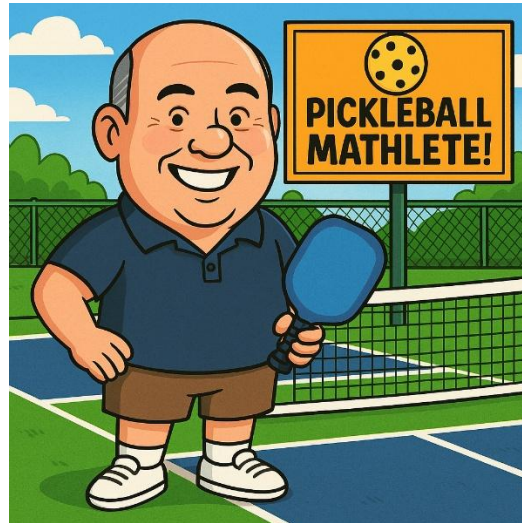


## The Pickleball Mathlete! A Match Analysis

Jennifer Dawson / Dayne Gingrich vs. Nathalie Bagby / Daryl Wyatt

Kevin Hillstrom: March 28, 2026



Today I will share with you metrics from a match that can be viewed on YouTube. This is the AARP Champions Mixed Pro Gold Medal Match featuring Jennifer Dawson / Dayne Gingrich vs. Nathalie Bagby / Daryl Wyatt. Dawson / Gingrich won the match in two games, scoring 22 points to 15 for Bagby / Wyatt.

Here is a link to the match: <https://www.youtube.com/watch?v=ErkhO4vSJ-A>

## Analysis Framework

I built a spreadsheet to record the following attributes.

- Player who attempted the serve.
- Player who returned the serve.
- Player who attempted the third shot.
- Player who attempted the fourth shot.
- Player who attempted the fifth shot.
- Did the serving team get to the kitchen?
- Did the serving team score a point?

The data entry tab in the spreadsheet looks like this:

	<u>Letter</u>	<u>Name</u>							
Team 1, Plyr 1	J	Jennifer Dawson							
Team 1, Plyr 2	D	Dayne Gingrich							
Team 2, Plyr 3	N	Nathalie Bagby							
Team 2, Plyr 4	W	Daryl Wyatt							

<u>Score</u>	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>	<u>Fifth</u>	<u>Kitchen</u>	<u>Point</u>
002	W	J	W	J	W	0	0
001	J	W	J			0	0
002	D	N	D	N	D	1	0
001	W	J	W	J		0	1
101	W	D	W	D	N	1	0
102	N	J	W	D	N	1	0
011	J	N	J			0	0
012	D	W	D	N	J	0	0
101	N	J	W			0	0
102	W	D	W	D	W	1	0
011	J	N	D	N	D	1	1
111	J	W	J	W	J	1	1
211	J	N	D	N	J	1	1
311	J	W	D	N	J	1	1
411	J	N	D	N	D	1	0
412	D	W	J	N	D	0	0

Once all points from the match are entered, I calculate a series of metrics.

- I know how often a player attempted a serve.
- I know how often a player's team got to the kitchen when s/he served.
- I know how often the player's team scored a point when s/he served.

Similar metrics are calculated for each player when attempting a second shot, third shot, fourth shot, or fifth shot.

If I know how often a player's team scores when s/he attempts a shot, and I know the average fraction of time a player's team should score when s/he attempts a shot, I can calculate the deviation between actual performance and expected performance.

For example, assume a team has a 42% chance of scoring a point when a team serves. Assume that Tom, a fictional player, plays on a team that scored 50% of the time when he serves. Assume that Tom served 20 times during a match.

- Observed Outcome: 50% Scoring Rate.
- Expected Outcome: 42% Scoring Rate.
- Serves Attempted: 20 Serves.

- Points Added:  $20 \text{ Serves} * (50\% \text{ Observed Rate} - 42\% \text{ Expected Rate}) = 20 * (0.08) = 1.6 \text{ Points Added.}$

## What Are “Points Added”?

In the example above, “Tom” must have some sauce on his serves, because his team scores 50% of the time when he serves. Across different levels, all the way up to the pro level, the serving team scores about 42% of the time, meaning by default that the receiving team holds the serving team from scoring about 58% of the time. Because Tom serves in an effective manner, he is adding points to his team. His team scores more often than other teams score when he serves. “Tom” should get credit an area he performs well at.

“Points Added” is an important metric.

If I can determine how many points a player adds on serves, returns of serve, third shots, fourth shots, and fifth shots (beyond a fifth shot points typically devolve into dinking rallies), I can determine how effective the player was during a match.

There is a lot to learn by analyzing “Points Added”.

I’ve coached players who are not effective servers. Their team scores 25% of the time when the player serves. By coaching the player to serve better, the player might achieve a 40% scoring rate. If the player serves 20 times during a match, the player just added  $20 * (0.40 - 0.25) = \text{three (3) points}$ . Three points is a big deal. The player is still a below-average server, but adding three points is often the difference between winning and losing.

Some players have deep returns of serve. Deep returns of serve are reflected in “Points Added”. If the serving team only scores 30% of the time when you return a serve, and you return 20 serves in a match, then your deep returns of serve are adding  $20 * (0.42 - 0.30) = 2.4 \text{ points}$ . More specifically, your deep returns of serve are subtracting 2.4 points from the opposition.

Third shots are important. I play pickleball in a club that has an unnatural fetish for quality drop shots on a third shot. Our better players routinely praise 3.0 / 3.5 players who attempt drop shots but hit them in the net. No! Do you know how many points you can score when you hit a third shot drop into the net? Zero! How many were you supposed to score? 0.42. Every time you hit a third shot drop into the net, you subtract 0.42 points.

A few years ago we had a competition in our club, a round robin of sorts where we adjusted player ratings for those who performed well via a ratings equation. Our better players

grumbled to me that one player was “not deserving” of being promoted. This player won two-thirds of her games! Our better players demonstrated her lack of “sophistication” in shot selection. “She can’t hit a third shot drop to save her life, she doesn’t deserve a higher club rating!!”

I watched the woman play two hours of matches. Guess what? Her third shots, while not beautiful, got over the net! She was adding points right and left. Her partner would hit fluffy third shot drops that hit the net. Her partner was subtracting points.

Fourth shots are a hidden super power! We have a player in our club who will take your lousy third shot drive and just cut it into the kitchen, point over. The opposition has a 20% chance of scoring a point when hitting a third shot to this player. If they do this twenty times per match (they shouldn’t do this), this player is taking away  $20 * (0.20 - 0.42) = 4.4$  points per game from the opposition ... essentially adding 4.4 points for his team as a consequence.

Fifth shots are important. If a player hits a third shot drive that is knocked down, the player attempting a fifth shot might choose to attack again, or might hit a nice drop shot to get to the kitchen. Either way, the player attempting a fifth shot is capitalizing on a theoretical last chance to add points before dinking rallies start. Some teams are good at executing “shake and bake” strategies – teams good at that add many points.

So, that’s a long-winded way of describing what “Points Added” is all about. By measuring who hits the serve / return / third / fourth / fifth, I can assign “Points Added” to each player on each shot attempt, giving the players an idea where they are strong and where they have opportunity to improve.

## The Worksheet - Offense

I maintain a worksheet that summarizes key metrics and “Points Added” for each player. I’ll show you the reporting tab here via screen shot ... I’ll summarize each section next.

### Match Statistics

<https://www.youtube.com/watch?v=ErkO4wSJ-A>

		Total Points
Team 1:	Jennifer Dawson Dayne Gingrich	22
Team 2:	Nathalie Bagby Daryl Wyatt	15

\*Goal = Get to kitchen or score point before getting to the kitchen.

		Scoring		Goal			
Offensive Statistics		Attempts	Points	Average	Goal	Average Pts Added	
Jennifer Dawson	Serves	27	13	48%	19	70%	1.7
	Thirds	16	5	31%	10	63%	(1.7)
	Fifths	19	10	53%	14	74%	2.0
Dayne Gingrich	Serves	20	9	45%	14	70%	0.6
	Thirds	26	13	50%	19	73%	2.1
	Fifths	13	4	31%	11	85%	(1.5)
Nathalie Bagby	Serves	17	5	29%	9	53%	(2.1)
	Thirds	10	5	50%	5	50%	0.8
	Fifths	12	4	33%	8	67%	(1.0)
Daryl Wyatt	Serves	23	10	43%	14	61%	0.3
	Thirds	29	9	31%	17	59%	(3.2)
	Fifths	15	5	33%	9	60%	(1.3)
Team:	Serves	47	22	47%	33	70%	2.3
Jennifer Dawson	Thirds	42	18	43%	29	69%	0.4
Dayne Gingrich	Fifths	32	14	44%	25	78%	0.6
Team:	Serves	40	15	38%	23	58%	(1.8)
Nathalie Bagby	Thirds	39	14	36%	22	56%	(2.4)
Daryl Wyatt	Fifths	27	9	33%	17	63%	(2.3)

		Scoring			
First	Third	Attempts	Points	Average	Pts Added
Jennifer Dawson	Jennifer Dawson	9	3	33%	(0.8)
Jennifer Dawson	Dayne Gingrich	15	7	47%	0.7
Dayne Gingrich	Jennifer Dawson	7	2	29%	(0.9)
Dayne Gingrich	Dayne Gingrich	11	6	55%	1.4
Nathalie Bagby	Nathalie Bagby	4	1	25%	(0.7)
Nathalie Bagby	Daryl Wyatt	12	3	25%	(2.0)
Daryl Wyatt	Nathalie Bagby	6	4	67%	1.5
Daryl Wyatt	Daryl Wyatt	17	6	35%	(1.1)

		Scoring			
Third	Fifth	Attempts	Points	Average	Pts Added
Jennifer Dawson	Jennifer Dawson	7	3	43%	0.1
Jennifer Dawson	Dayne Gingrich	4	1	25%	(0.7)
Dayne Gingrich	Jennifer Dawson	12	7	58%	2.0
Dayne Gingrich	Dayne Gingrich	9	3	33%	(0.8)
Nathalie Bagby	Nathalie Bagby	5	4	80%	1.9
Nathalie Bagby	Daryl Wyatt	0	0		
Daryl Wyatt	Nathalie Bagby	7	0	0%	(2.9)
Daryl Wyatt	Daryl Wyatt	15	5	33%	(1.3)

		Opp Scoring		Opp Goal				
Defensive Statistics		Attempts	Points	Goal	Average Pts Added			
Jennifer Dawson	Returns	23	9	39%	15	65%	0.7	
	Fourths	22	12	55%	16	73%	(2.8)	
Dayne Gingrich	Returns	17	6	35%	8	47%	1.1	
	Fourths	12	2	17%	6	50%	3.0	
Nathalie Bagby	Returns	22	13	59%	17	77%	(3.8)	
	Fourths	34	16	47%	26	76%	(1.7)	
Daryl Wyatt	Returns	24	9	38%	16	67%	1.1	
	Fourths	3	2	67%	3	100%	(0.7)	
Team:	Jennifer Dawson	Returns	40	15	38%	23	58%	1.8
Dayne Gingrich	Fourths	34	14	41%	22	65%	0.3	
Team:	Nathalie Bagby	Returns	46	22	48%	33	72%	(2.7)
Daryl Wyatt	Fourths	37	18	49%	29	78%	(2.5)	

		Opp Scoring			
Second	Fourth	Attempts	Points	Average	Pts Added
Jennifer Dawson	Jennifer Dawson	17	8	47%	(0.9)
Jennifer Dawson	Dayne Gingrich	3	0	0%	1.3
Dayne Gingrich	Jennifer Dawson	5	4	80%	(1.9)
Dayne Gingrich	Dayne Gingrich	9	2	22%	1.8
Nathalie Bagby	Nathalie Bagby	19	13	68%	(5.0)
Nathalie Bagby	Daryl Wyatt	0	0		
Daryl Wyatt	Nathalie Bagby	15	3	20%	3.3
Daryl Wyatt	Daryl Wyatt	3	2	67%	(0.7)

		Win Point			
Kitchen Success		Attempts	Wins	Average	Pts Added
Jennifer Dawson	Dayne Gingrich	40	22	55%	2.0
Nathalie Bagby	Daryl Wyatt	40	18	45%	(2.0)
Serves Ending in Kitchen Rallies	----->			46%	

42.0% <----- Probability of Scoring a Point

	Average Pts Added	Raw Serve	Raw Return	Raw Third	Raw Fourth	Raw Fifth	Average Offense	Average Defense
Jennifer Dawson	(0.4)	1.7	0.7	(1.7)	(2.8)	2.0	0.7	(1.1)
Dayne Gingrich	2.5	0.6	1.1	2.1	3.0	(1.5)	0.4	2.1
Nathalie Bagby	(3.5)	(2.1)	(3.8)	0.8	(1.7)	(1.0)	(0.8)	(2.7)
Daryl Wyatt	(1.2)	0.3	1.1	(3.2)	(0.7)	(1.3)	(1.4)	0.2

Yes, that's a lot of tiny numbers!

Let's start with the top portion of the table. In this section, I measure Offensive Statistics.

<u>Offensive Statistics</u>		<u>Attempts</u>	<u>Points</u>	<u>Scoring Average</u>	<u>Goal</u>	<u>Goal Average</u>	<u>Pts Added</u>
Jennifer Dawson	Serves	27	13	48%	19	70%	1.7
	Thirds	16	5	31%	10	63%	(1.7)
	Fifths	19	10	53%	14	74%	2.0
Dayne Gingrich	Serves	20	9	45%	14	70%	0.6
	Thirds	26	13	50%	19	73%	2.1
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Nathalie Bagby	Serves	17	5	29%	9	53%	(2.1)
	Thirds	10	5	50%	5	50%	0.8
	Fifths	12	4	33%	8	67%	(1.0)
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	Thirds	29	9	31%	17	59%	(3.2)
	Fifths	15	5	33%	9	60%	(1.3)
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Team:	Serves	40	15	38%	23	58%	(1.8)
Nathalie Bagby	Thirds	39	14	36%	22	56%	(2.4)
Daryl Wyatt	Fifths	27	9	33%	17	63%	(2.3)

We'll start with Jennifer Dawson, since she is at the top of this portion of the table. When she served, her team scored 13 times out of 27 attempts, for a scoring average of 48%. This is above the overall average I observe when charting matches (42%), so Jennifer added 1.7 points for her team in a match that her team outscored the opposition 22-15. That's a big deal!

- Side Note: "Points Added" results in a lot of double-counting. If Jennifer serves and attempts the third and attempts the fifth and her team ultimately scores, she is getting credit three times. At the end of this discussion, I share the fact that points added are a "raw" metric that is averaged via offense and defense at the bottom of the table for a complete view of how a player performed.

There is a column called "Goal". The metric measures how often a player/team either scores a point or gets to the kitchen. If a player hits a winner on a third shot drive, the player kind of achieved the "goal" of the point, correct? Similarly, if the player hit a third shot drive and a fifth shot drop and got to the kitchen, the player ultimately achieved the "goal" of getting to a 50/50 situation via a kitchen battle. Look at each player. What percentage of the time does a team achieve "Goal" when each player is serving?

- Jennifer: 70%
- Dayne: 70%
- Nathalie: 53%
- Daryl: 61%
- Jennifer / Dayne: 70%
- Nathalie / Daryl: 58%

Jennifer / Dayne had better success scoring points early in a rally or getting to the kitchen.

Read down the “Scoring Average” column. This column tells us how often the team scores a point when the player is attempting a serve / third / fifth shot. For the purpose of this spreadsheet/analysis, 42% is the baseline average. I’ve charted 3.0 players, I’ve charted PPA Professionals, the rate that a team scores after a serve / third / fifth shot varies between 42% and 44%. It’s kind of a universal truth, part of the math built into pickleball. Also interesting is the fact that the analysis doesn’t change if I plug 42% into the spreadsheet or 44% into the spreadsheet.

Let’s look at each player and each team on serves, third shots, and fifth shots.

- Jennifer: 48% on Serves      31% on Thirds      53% on Fifths
- Dayne: 45% on Serves      50% on Thirds      31% on Fifths
- Nathalie: 29% on Serves      50% on Thirds      33% on Fifths
- Daryl: 43% on Serves      31% on Thirds      33% on Fifths
- Jen/Dayne: 47% on Serves      43% on Thirds      44% on Fifths
- Nath./Daryl: 38% on Serves      36% on Thirds      33% on Fifths

It’s not hard to see where the problems are. Nathalie served 17 times (her team only scored on 5 of the 17 serves). Serves have a multiplicative impact. If you score on your serve, you get an additional serve ... not only do you earn a point, but you earn another 0.42 expected points because you get an additional serve. If your team only scores 29% of the time when you serve, you miss out on the two points you lost by not averaging 42% (in this case) but you also miss out on  $0.42 * 2 = 0.84$  additional points because you get to keep serving.

Both teams had one player who excelled on third shots.

- Dayne = 50% scoring rate ... plus, he took 26 of the 42 third shot attempts ... smart decision!
- Nathalie = 50% scoring rate ... however, she only took 10 of the 39 third shot attempts ... not a smart decision!

Always remember that we’re dealing with small sample sizes. If the trends reappear after analyzing multiple matches, then a shortcoming in talent or playing style is meaningful.

The analysis suggests Jennifer performed well on fifth shots. She took 19 of the 32 fifth shot attempts ... another good decision for her team. If your metrics are consistently better than a partner, make sure to adjust your style of play to obtain the math advantage you've earned.

Look at the summary statistics for both teams. Jennifer / Dayne earned offensive metrics that are about "average" ... not a lot better than the 42%-44% average I've historically observed. Nathalie / Daryl? They earned points in the mid-30% range, below average. This happens for one of two reasons (possibly for both reasons).

- Nathalie / Daryl are not able to generate offense due to their skill set.
- Jennifer / Dayne are very good at playing defense, making it hard for opponents to score.

It's been my experience that some players are simply better at playing defense than everyone else. This is their Super Power, and often it's hard to notice the Super Power. The player just notices that "games take a long time"! Of course they do. They take longer because it is so hard to score.

## The Worksheet – Offensive Combinations

I evaluate Offensive Combinations. I want to learn if certain players combining serves/thirds or thirds/fifths give the team an advantage.

<u>First</u>	<u>Third</u>	<u>Attempts</u>	<u>Points</u>	<u>Scoring</u>	
				<u>Average</u>	<u>Pts Added</u>
Jennifer Dawson	Jennifer Dawson	9	3	33%	(0.8)
Jennifer Dawson	Dayne Gingrich	15	7	47%	0.7
Dayne Gingrich	Jennifer Dawson	7	2	29%	(0.9)
Dayne Gingrich	Dayne Gingrich	11	6	55%	1.4
Nathalie Bagby	Nathalie Bagby	4	1	25%	(0.7)
Nathalie Bagby	Daryl Wyatt	12	3	25%	(2.0)
Daryl Wyatt	Nathalie Bagby	6	4	67%	1.5
Daryl Wyatt	Daryl Wyatt	17	6	35%	(1.1)
<u>Third</u>	<u>Fifth</u>	<u>Attempts</u>	<u>Points</u>	<u>Scoring</u>	
Jennifer Dawson	Jennifer Dawson	7	3	43%	0.1
Jennifer Dawson	Dayne Gingrich	4	1	25%	(0.7)
Dayne Gingrich	Jennifer Dawson	12	7	58%	2.0
Dayne Gingrich	Dayne Gingrich	9	3	33%	(0.8)
Nathalie Bagby	Nathalie Bagby	5	4	80%	1.9
Nathalie Bagby	Daryl Wyatt	0	0		
Daryl Wyatt	Nathalie Bagby	7	0	0%	(2.9)
Daryl Wyatt	Daryl Wyatt	15	5	33%	(1.3)

Jennifer / Dayne: The data makes it clear that Dayne serving AND hitting the third results in a good outcome ... a 55% chance of winning a point. When Jennifer serves and Dayne takes the third, a point was scored 47% of the time ... still above average. Interestingly, if Dayne took the third and Jennifer took the fifth, their team scored 58% of the time. This combination was the most common 3<sup>rd</sup>/5<sup>th</sup> combination, suggesting there might be strategic design in constructing a point going on. Or, it was a small sample size. If the trend repeated across several matches, we'd conclude that some element of strategic point construction was at play.

Nathalie / Daryl: The data illustrate how Daryl took over third shots, hitting 29 of 39 attempts. Unfortunately, the team did not perform well having Daryl take over third shots, scoring just 25% of the time that Nathalie served and Daryl hit the third ... scoring just 35% of the time when Daryl served and hit the third. While sample sizes are very limited, Nathalie / Daryl had some success when Daryl served and Nathalie hit the third shot (4 of 6, 67%). It's hard to tell if Daryl hitting thirds is a liability or Jennifer / Dayne manipulated the outcome via quality returns of serves. On thirds/fifths, the majority of combinations were controlled by Daryl ... resulting in a scoring rate of 33% (5 of 15). There were just five instances where Nathalie hit

both the third and fifth, but Nathalie / Daryl scored four times (80%). If this pattern repeated in other matches, a change in strategic approach to thirds/fifths might be in order.

## The Worksheet – Defense

My methodology repeatedly suggests that defense is under-valued. Consistently under-valued, in fact. There are players with fabulous/deep returns of serve. Those players make it hard for the offense to score, consequently, their brilliance is revealed in their ability to prevent the opponent from scoring. As mentioned earlier, I play pickleball with an individual who has a cut shot. When somebody (me) hits a lousy third shot drive, he just cuts the ball down into the kitchen, ending the rally. My offensive stats look terrible when I choose to hit third shot drives at him. This player possesses a skill that makes it very hard for the opposition to score.

Let's look at defensive statistics for each player.

<u>Defensive Statistics</u>			<u>Opp Scoring</u>			<u>Opp Goal</u>		
			<u>Attempts</u>	<u>Points</u>	<u>Average</u>	<u>Goal</u>	<u>Average</u>	<u>Pts Added</u>
Jennifer Dawson	Returns	23	9	39%	15	65%	0.7	
	Fourths	22	12	55%	16	73%	(2.8)	
Dayne Gingrich	Returns	17	6	35%	8	47%	1.1	
	Fourths	12	2	17%	6	50%	3.0	
Nathalie Bagby	Returns	22	13	59%	17	77%	(3.8)	
	Fourths	34	16	47%	26	76%	(1.7)	
Daryl Wyatt	Returns	24	9	38%	16	67%	1.1	
	Fourths	3	2	67%	3	100%	(0.7)	
Team:	Jennifer Dawson Returns	40	15	38%	23	58%	1.8	
	Dayne Gingrich Fourths	34	14	41%	22	65%	0.3	
Team:	Nathalie Bagby Returns	46	22	48%	33	72%	(2.7)	
	Daryl Wyatt Fourths	37	18	49%	29	78%	(2.5)	

Jennifer / Dayne: Both players possessed good outcomes when returning serves, as the opposition only scored on 39% of the times Jennifer returned the serve and 35% of the times when Dayne returned the serve.

Look at what happens when Dayne hits the fourth shot. He only attempted twelve fourth shots, but the opposition scored on just two of those attempts (17%). Dayne made it very difficult for the opposition to score. When you watch the video, you'll see that Dayne kept the opposition back, preventing the opponents from getting to the kitchen.

It is common to find players who excel at preventing the other team from scoring. This skill is equally important to the player who executes a great "shake 'n bake" on offense ... one skill is mostly invisible, one skill is highly visible!

Nathalie / Daryl: There is a difference between the players when returning the serve. Nathalie allowed the opposition to score 59% of the time when she returned the serve, Daryl allowed the opposition to score 38% of the time when he returned the serve. You don't get to control who returns serves, obviously. But it is common in mixed play for a male player with a heavy serve to cause the female player to not return deep. Likely by design, nearly every fourth shot was taken by Nathalie (34 by Nathalie, 3 by Daryl). Nathalie prevented the opposition from scoring 47% of the time, just a bit more than the typical 42% - 44% average. Clearly, Jennier / Dayne decided to hit nearly every third shot at Nathalie, targeting her. Their decision likely added a couple of points to their total.

## The Worksheet – Defensive Combinations

Similar to offensive combinations, we can evaluate each player based on who hit the second shot and the fourth shot. Here is the data from the worksheet.

<u>Second</u>	<u>Fourth</u>	<u>Attempts</u>	<u>Opp Scoring</u>		
			<u>Points</u>	<u>Average</u>	<u>Pts Added</u>
Jennifer Dawson	Jennifer Dawson	17	8	47%	(0.9)
Jennifer Dawson	Dayne Gingrich	3	0	0%	1.3
Dayne Gingrich	Jennifer Dawson	5	4	80%	(1.9)
Dayne Gingrich	Dayne Gingrich	9	2	22%	1.8
Nathalie Bagby	Nathalie Bagby	19	13	68%	(5.0)
Nathalie Bagby	Daryl Wyatt	0	0		
Daryl Wyatt	Nathalie Bagby	15	3	20%	3.3
Daryl Wyatt	Daryl Wyatt	3	2	67%	(0.7)

Jennifer / Dayne: The most common combination was Jennifer returning the serve and then attempting the fourth shot. Her team allowed the opposition to score at a 47% rate. While the sample size is small, the opponent scored four out of five times (80%) when Dayne

returned the serve and Jennifer took the fourth shot. If Dayne controlled the point (attempting the return and the fourth shot), the opponent only scored 22% of the time on a limited sample of nine (9) attempts.

Nathalie / Daryl: Interesting combinations here, don't you think? If Nathalie returned the serve and hit the fourth shot, her team allowed the opposition to score a whopping 68% of the time (13 for 19). If Daryl returned the serve and Nathalie hit the fourth shot, the scoring rate dropped to just 20% (3 for 15). This strongly suggests that Nathalie's returns of serve were not effective.

## Kitchen Points

My spreadsheet allows me to measure what happens if both teams end up at the kitchen. In theory, if both teams are evenly skilled at the kitchen, each team should win 50% of the points. Here is the portion of the table that focuses on Kitchen Points.

<b>Kitchen Success</b>		<b>Win Point</b>			
		<b>Attempts</b>	<b>Wins</b>	<b>Average Pts Added</b>	
Jennifer Dawson	Dayne Gingrich	40	22	55%	2.0
Nathalie Bagby	Daryl Wyatt	40	18	45%	(2.0)
Serves Ending in Kitchen Rallies ----->				46%	

First, look at the bottom row. 46% of serves ended up in a kitchen rally. Not surprisingly, the percentage increases as the quality of individuals playing increases. When you watch 3.0 players warm up they'll practice dinking, even though maybe 80% of their points do not result in a kitchen rally. Even here, at a Sr. Pro level, fewer than half of the rallies resulted in a kitchen exchange.

Of the eighty points where kitchen rallies happened, Jennifer / Dayne won 55% of the points. They were better than Nathalie / Daryl, accounting for +/- half of the total point differential.

The importance of Kitchen Success, as mentioned above, is directly correlated to player skill level. Players from 3.0 – 4.0 aren't getting into a lot of dinking rallies, suggesting that drilling and skills development are better focused on other aspects of pickleball (serves, returns, thirds, fourths). From 4.5 and beyond, Kitchen Success is related to ... success!

## Points Added: Summary Table

I create a summary table that illustrates how each player contributed to Points Added. This table might be confusing, because there are two different calculations of Points Added.

- Raw Points Added: Includes double/triple counting of Points Added, per the previous tables. This is what is reported for Serves, Returns, Thirds, Fourths, and Fifths.
- Points Added, Average Offense, Average Defense, Total Average: For offense, I calculate the average of Serves, Thirds, and Fifths. For defense, I calculate the average of Returns and Fourths. I sum each (offense + defense) to get to the total average for the match. Because of  $\#math$ , the totals will not equal the difference in the final scores between teams. I am averaging (for example) serves, thirds, and fifths and there are unequal number of attempts in serves / thirds / fifths. I've attempted more complex calculations and the story isn't fundamentally different, hence, I share the easy calculations here.

Here is the summary table.

<u>Points Added</u>	42.0% <----- Probability of Scoring a Point							
	<u>Average Pts Added</u>	<u>Raw Serve</u>	<u>Raw Return</u>	<u>Raw Third</u>	<u>Raw Fourth</u>	<u>Raw Fifth</u>	<u>Average Offense</u>	<u>Average Defense</u>
Jennifer Dawson	(0.4)	1.7	0.7	(1.7)	(2.8)	2.0	0.7	(1.1)
Dayne Gingrich	2.5	0.6	1.1	2.1	3.0	(1.5)	0.4	2.1
Nathalie Bagby	(3.5)	(2.1)	(3.8)	0.8	(1.7)	(1.0)	(0.8)	(2.7)
Daryl Wyatt	(1.2)	0.3	1.1	(3.2)	(0.7)	(1.3)	(1.4)	0.2

We observe that Jennifer / Dayne contributed positively to offense, while Dayne contributed positively to defense (remember – his fourth shot metrics were quite good). Nathalie / Daryl had different Points Added profiles. Nathalie struggled with serves and returns of serve, Daryl struggles the longer the point was constructed.

If the results repeated across matches, a coach would likely work with Nathalie on heavier serves and deep returns. Daryl would have homework assignments on third / fifth shots.

## Points Added: Conclusion

“Points Added” is directly calculated from the difference between an “expected” probability of scoring a point and an “actual” probability of scoring a point. In that aspect, the measure is similar to WAR in baseball ... “wins above replacement”. In baseball, calculations are performed to measure how many wins a baseball player contributes over the wins contributed by a “replacement” (i.e. AAA) player. In WAR, it's common for good players to be

worth two or three or four wins per season. For Points Added, it is common for a player to be worth two or three or four Points Added during a best-of-three pickleball match.

It has been my experience that the metric exposes strategic opportunities in pickleball. If one player's team scores 35% of the time when one player hits a third shot and scores 50% of the time when the other player hits a third shot, well, it's important to create situations where the 50% player gets opportunities. I've observed real-world situations where two players are not good at dinking but are good at ending points early. It shouldn't take a lot of logic to convince the two players to play a fast-paced game, preventing points from advancing beyond a fifth shot where possible.

Pay attention to players who are effective with fourth shots. Ben Johns comes to mind – when I've charted his matches, it's easy to be dazzled by his brilliance but one should not overlook just how good he is at keeping players back on 4ths/6ths/8ths/22nds. When Ben plays or Anna Leigh plays, it is incredibly hard for opponents to score. It's not hard for very average players to learn how to hit fourth shots deep to a left foot, for instance. It can easily be drilled, then measured via this framework.

“Points Added”. It's a helpful pickleball metric, designed to illustrate where you are having success and where you have opportunities to improve.