Nick Ilvento
DSE6620

MLB ASSIGNMENT

1. After analysis of Juan Soto's batting styles, I've determined this a pretty tough matchup, but a do-able one. One thing about Soto is that he loves to hunt the fastball. He hits above .300 in 7 of the 9 subsections within the strike-zone when given a Four-Seam. I also want to account for the fact that Soto knows Scherzer's favorite pitch is the fastball. Given this, and the fact there is not much history between the two, I believe we can get away with only off-speed pitches. I predict Soto to hunt the fastball like usual and we may be able to fool him for a couple strikes with off speed pitches. Here's a look at Soto's averages for the off-speed pitches that Scherzer throws.
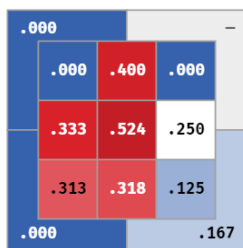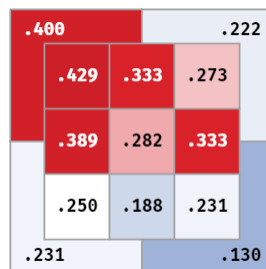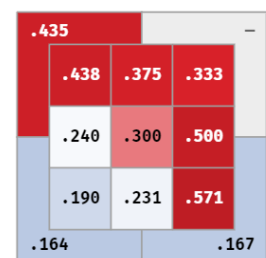
Curve: Slider: Changeup:

There are a couple week spots in Soto's hitting style that can be exploited such as the low and inside curveball, any low slider, and a down and outside changeup. While these are good pitches to focus on, these charts also show the risk of this strategy. if any of these pitches are inaccurate there is a good chance Soto is running the bases. However, Scherzer has proven himself to be one of the most accurate pitchers in the league, so I believe this risk may pay off. If we can match one of Scherzer's strong pitches to one of Soto's weakness's there is a good chance we will get at least a force-out.
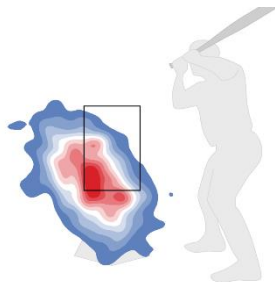
Changeup: Slider:
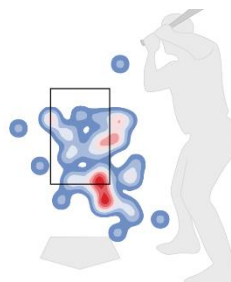
I would suggest to focus on the pitches above. Give the fastball hungry Soto a combination of down and away changeups mixed with low sliders. It is important to put accuracy above all else in this situation and to not hang any pitches in a zone where he can blast it. I'm not against a fastball on the first pitch to set this all up, but I would be careful, Soto hits .460 when he connects with a first pitch fastball.

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2. The first decision I thought was interesting was when the Giants chose to play the shift against Bellinger. Bellinger's single went right between the 2nd baseman and the shortstop. If the Giants don't play the shift, they most likely get an out there as that ball would have been hit directly to the 2nd baseman. I would like to see Bellinger's spray chart and hitting stats against sliders and fastballs. Since these are the only two pitches Doval throws, it would be important to know how often Bellinger hits into the shift on these pitches.

Another decision I thought was notable was Doval's choice to only throw sliders against Bellinger. I am not sure how good Bellinger is against the slider, but after the 4th or 5th one in a row, Bellinger caught on and got a hold of it. If I'm Bellinger, I see the shift and knowing the pitcher only throws two pitches, I would expect the majority of his pitches to be sliders. Especially because Doval was throwing a ton earlier in the inning and having some success. From there all Bellinger had to do was wait on a slider and give it his best swing. Easier said than done, but guessing right on the pitch type gives the hitter a tremendous advantage.

Another major decision in the inning was taking Doval out and replacing him with the starter Kevin Gausman. This was a quick decision made by the Giant's coaching staff as Doval had only allowed one run and thrown just 16 pitches. I do believe it was the right decision though being as this is an elimination game and you got to go with the guy you trust. The Dodgers seemed to be taking advantage of Doval's slider and Gausman provides more variation on the mound. This decision ended up paying off as Gausman retired the side after being put in a tough situation. Tough call from a coaching standpoint whether or not to put a cold pitcher in there, but I agree with it.

The last event I thought was interesting was Taylor deciding to bunt with one out. I understand what he was trying to do, but it seems a little risky in the 9th inning of an elimination game. The risk reward on that play wasn't there for me, but I would like to take a look at Taylor's bunting statistics to decide if this was the right decision. I would also like to investigate Taylor's odds of hitting into a double play there. Bellinger ended up stealing anyway and the Giant's were most likely to keep the run from scoring even if he lays that bunt down. In my eyes, a sac-fly scores a run there and the Dodgers should have taken what they were given instead of trying to create a perfect scenario.

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3. Robbie Ray had an incredible season in 2021, leading the league in strikeout percentage and winning an AL Cy Young award. Despite his success, Ray decided not to extend his time with Toronto and he was picked up in free-agency by the Seattle Mariners to start the 2022 season.

Statcast Statistics

Season	Age	Pitches	Batted Balls	Barrels	Barrel %	Barrel/PA	Exit Velocity	Max EV	Launch Angle	Sweet Spot %	XBA	XSLG	WOBA	XWOBA	XWOBACON	HardHit%	K%	BB%	ERA	xERA
2015	23	2257	369	20	5.4	3.7	89.7	114.0	12.3	31.4	.243	.370	.318	.308	.353	35.8	21.8	9.0	3.52	3.91
2016	24	3176	481	33	6.9	4.3	89.9	116.3	12.3	32.2	.246	.407	.332	.317	.408	39.3	28.1	9.1	4.90	4.25
2017	25	2715	371	23	6.2	3.5	89.9	112.7	14.4	31.5	.215	.370	.282	.297	.395	41.0	32.8	10.7	2.89	3.76
2018	26	2287	286	25	8.7	4.8	90.1	116.0	14.6	36.4	.217	.362	.312	.309	.392	41.6	31.4	13.3	3.93	4.04
2019	27	3064	422	45	10.7	6.0	88.9	114.3	14.8	38.9	.228	.428	.322	.322	.432	38.6	31.5	11.2	4.34	4.60
2020	28	1064	137	18	13.1	7.2	91.6	112.8	22.9	38.0	.254	.487	.390	.379	.462	46.0	27.1	17.9	6.62	6.44
2021	29	3141	469	46	9.8	6.0	90.4	115.3	17.6	34.3	.219	.398	.287	.293	.401	43.1	32.1	6.7	2.84	3.60
2022	30	3047	494	39	7.9	5.0	89.7	111.7	14.7	34.0	.223	.373	.315	.295	.367	39.1	27.4	8.0	3.71	3.59
2023	31	91	11	0	0.0	0.0	87.5	111.5	14.3	18.2	.192	.270	.388	.341	.273	45.5	15.8	26.3	8.10	5.00
Player		20842	3040	249	8.2	4.9	89.9	116.3	14.8	34.2	.228	.393	.314	.309	.395	40.1	29.3	10.0		
MLB					6.9	4.7	88.4	122.4	12.2	33.1	.245	.406	.316	.315	.369	36.3	22.1	8.4		

! Note: All figures in this table cover the period 2015-present.

As shown above, Ray's ERA increase by almost an entire run and his strikeout percentage dropped about 5%. This was definitely an unexpected decrease in performance, lets take a deeper look into the two seasons.
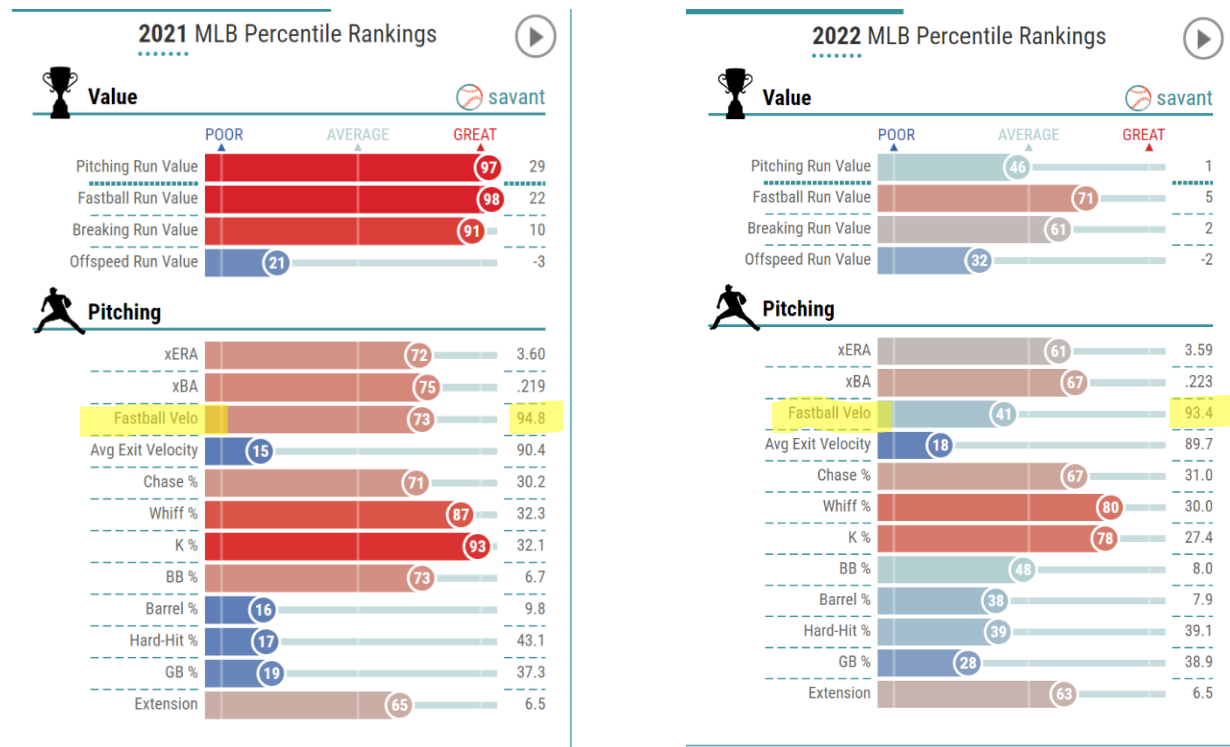

The most notable difference between 2021 and 2022 for Robbie Ray is the decrease in fastball velocity. Although his exit velocity stayed quite constant, Ray's fastball velocity dropped by over an entire mile per hour. This clearly hurt Ray's 2022 performance and in a league where every mile-per-hour matters, it's tough to have success when your pitch speeds drop. Luckily for Ray, this decrease in fastball speed is
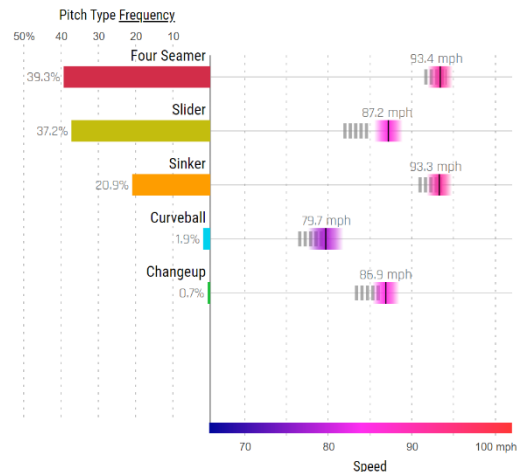
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most likely attributed to him trying to develop a new pitch, instead of other more threatening factors like age or injury.
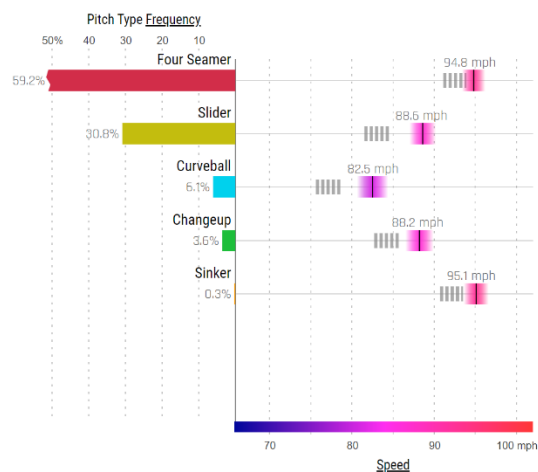
As shown above, Robbie decided to add a Sinker into his arsenal for the 2022 season. In 2021 he threw 8 Sinkers for no hits and it was his fastest pitch. Maybe taking note of this, Ray worked on the Sinker the following offseason and decided to bring the new pitch with him to Seattle. I suspect Ray was trying to add speed and variation to his fastballs in the form of a Sinker. Unfortunately this plan did not work out and the Sinker was his worst pitch in 2022. Lets compare in to his other most used pitches that year.

Slider:

	Season	Total Pitches	Pitches	Pitch Types	%	PA	AB	H	1B	2B	3B	HR	BA	SO	Swings	Misses	Sw%	Whiff%	K%	wOBA	EV	Spin Rate
Ray	2022	3047	1134	🟡	37.2	274	261	48	26	10	3	9	.184	102	578	228	51.0	39.4	37.2	.246	89.0	2188

Four-Seam:

	Season	Total Pitches	Pitches	Pitch Types	%	PA	AB	H	1B	2B	3B	HR	BA	SO	Swings	Misses	Sw%	Whiff%	K%	wOBA	EV	Spin Rate
Ray	2022	3047	1197	🔴	39.3	327	295	66	38	16	1	11	.224	87	662	171	55.3	25.8	26.6	.307	90.3	2269

Sinker:

	Season	Total Pitches	Pitches	Pitch Types	%	PA	AB	H	1B	2B	3B	HR	BA	SO	Swings	Misses	Sw%	Whiff%	K%	wOBA	EV	Spin Rate
Ray	2022	3047	637	🟠	20.9	158	134	40	28	2	1	9	.299	23	302	69	47.4	22.8	14.6	.406	87.2	2184

The pitching-type splits above show the negative effect Sinkers had on Robbie Ray's game. Compared to his other two main pitches, against the Sinker, batters had their highest average of .299, the lowest Whiff%, lowest Strikeout%, and highest On-Base Average. It's clear that the sinker not only dropped

Ray's fastball velocity, but it also worsened almost every other advanced pitching metric recorded for Ray in 2022.

For Ray, I would suggest completely abandoning the Sinker moving forward. It was a nice experiment and a good effort to keep batters on their toes, but I see no positive signs resulting from throwing the Sinker. He has success when he's not throwing it, as shown in 2021, so I believe this pitch to be unnecessary and a provides a risk the pitching staff and team should not be willing to take.

4. **Bo Bichette Report:**

Decision Making/ Plate Approach:

Bichette has been an aggressive, but successful hitter throughout the course of his career. The first thing that stood out to me about his hitting style is the success he has on the first pitch. Bichette has recorded more hits during an 0-0 count than any other count in his career. To compliment this, his batting average on first pitch fastballs is 0.416.
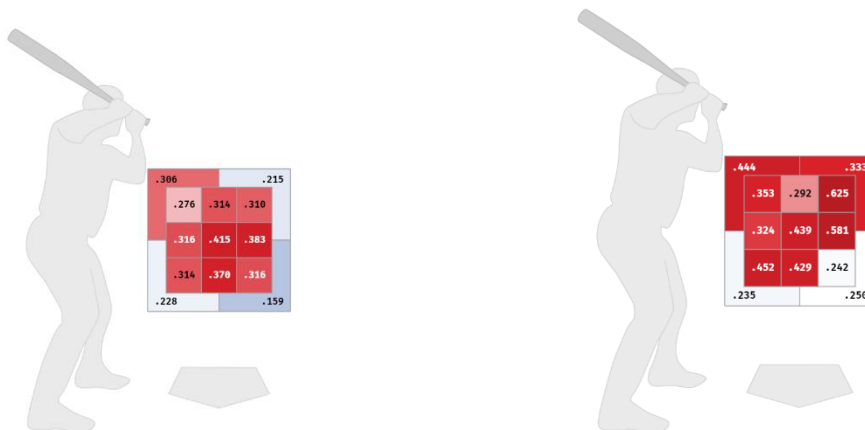
**The chart on the left is his overall batting average chart for the last three years and the chart on the right contains his first-pitch averages. It is worthy to note that on the first pitch, Bichette's batting average increases in almost every single sub-section of the chart. **

An aggressive hitter like Bichette can bring different kinds of value to the team in aspects like hitting confidence and opposing pitcher demoralization. His aggressive style allows him to get in pitcher's heads from the moment he steps into the box. Also, the guys behind him are sure to feel more confident if Bichette hypothetically connects with his first pitch. He may not be the guy that's going to help extend the opposing pitch count or retain from striking out, but he can help get the team fired up with his bold plate approach.

Contact Ability / Hit Tool:

Bichette handles the bat with extreme precision and is not picky with what he chooses to swing at. Proving to be in the 90th percentile in SweetSpot% and 98th percentile in xBatting Average last year, Bichette has been crushing it in the box. It is far and away the biggest strength of his game and what he has become known for over his short, but explosive career.
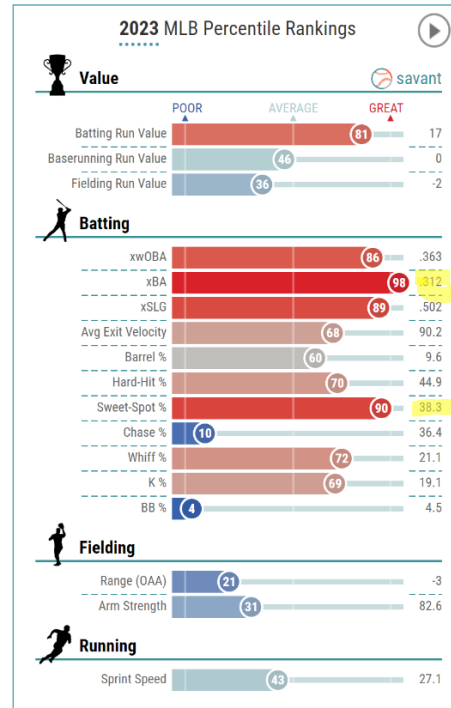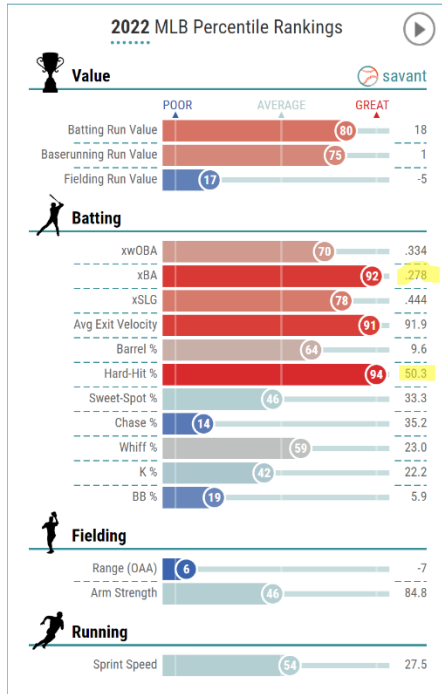
While his barrel% is just above average, his other hitting metrics look phenomenal. Bichette's contact ability is shown through his consistent average and his aggressive style. Not to mention he can hit every pitch, and he can hit it hard.

Lets take a look at his batting average by pitch type for the last two years   AVG.

Year	Pitch															AVG.
2022	Fourseam (FA)	778	146	159	42	27	12	0	3	12	0	42	0	1	0	1	.288
2022	Slider (SL)	624	183	194	50	30	11	0	9	11	0	50	0	0	0	6	.273
2022	Sinker (SI)	473	130	138	39	29	8	0	2	7	0	20	1	0	0	10	.300
2022	Changeup (CH)	244	81	88	21	12	3	1	5	7	0	15	0	0	0	4	.259
2022	Cutter (FC)	218	51	54	20	14	5	0	1	2	0	8	0	1	0	0	.392
2022	Curveball (CU)	155	50	53	15	9	4	0	2	2	0	16	1	0	0	1	.300
2022	Splitter (FS)	30	11	11	2	0	0	0	2	0	0	3	0	0	0	1	.182
2023	Fourseam (FA)	738	134	148	47	34	5	1	7	12	0	28	2	0	0	2	.351
2023	Slider (SL)	585	163	166	42	30	7	2	3	2	0	41	0	1	0	5	.258
2023	Sinker (SI)	432	119	126	37	30	5	0	2	7	0	13	0	0	0	2	.311
2023	Cutter (FC)	165	47	51	16	12	3	0	1	4	0	12	0	0	0	2	.340
2023	Curveball (CU)	137	46	47	13	6	3	0	4	1	0	10	0	0	0	0	.283
2023	Changeup (CH)	130	47	48	17	8	7	0	2	1	0	5	0	0	0	3	.362
2023	Splitter (FS)	38	14	14	3	2	0	0	1	0	0	4	0	0	0	0	.214

The averages on the right show how versatile Bichette has been in the box. Aside from the Splitter, which is by far the rarest pitch, almost all his averages are above .300. Showing signs that he has great

intelligence in predicting the pitch and the talent to turn those pitches into Runs. Any team in search of more Runs should be taking a good look at Bichette to determine if his aggressive play-style fits their team. He could be a great addition if you are looking for a Power-Bat kind of player who can bring life and energy to the dugout.

Ball In Play Quality:

The Ball in Play Quality from Bichette is above average, but maybe not what'd we'd expect from a guy who hits with his type of power. After analysis of his Spray Charts, it's clear the Bichette is often late on the fastball. In fact, last year he hit just as many fastball homeruns to the opposite side of the field as he did to left field (4 in each).
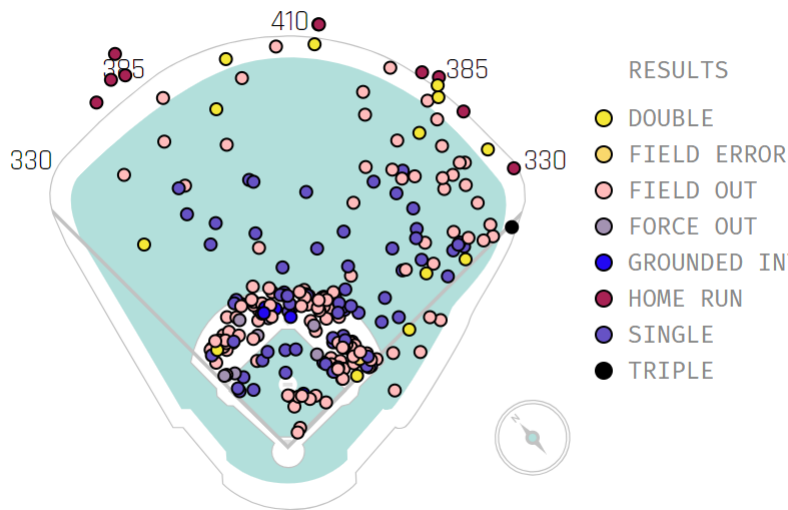
It's also clear from the spray chart that Bichette often hits singles that land in the infield. I assume these are hard-hit ground balls that are able to make their way into the outfield because of Bichette's power. This is a valuable trait to have as it allows Bichette to achieve more hits even when his accuracy is a bit off.

Fielding:

Unfortunately, Bichette is not the type of player to go after if you need a lock-down shortstop. While he has shown a slight improvement from 2021, Bichette has never reached above 1 Outs Above Replacement recorded in a season. Given that shortstop is arguable the most important fielding position, I would not recommend trading for him if your defense struggles already or if the shortstop you have can field the ball well.

Rk.	Player	Team	Year	Pos	Runs Prevented	OAA
45	Anderson, Tim		2022	SS	-1	-2
46	Bichette, Bo		2023	SS	-2	-3
47	Correa, Carlos		2022	SS	-2	-3
48	Farmer, Kyle		2022	SS	-3	-3
49	Kiner-Falefa, Isiah		2022	SS	-2	-3
50	Wendle, Joey		2023	SS	-3	-3
51	Turner, Trea		2023	SS	-4	-5
52	Bichette, Bo		2022	SS	-5	-7
53	Abrams, CJ		2022	SS	-6	-8
54	Crawford, J.P.		2023	SS	-6	-8
55	Walls, Taylor	TB	2022	SS	-6	-8
56	Abrams, CJ		2023	SS	-6	-9
57	Cruz, Oneil		2022	SS	-7	-9
58	Rosario, Amed		2022	SS	-7	-9
59	Witt Jr., Bobby	KC	2022	SS	-7	-9
60	Crawford, J.P.		2022	SS	-8	-11
61	Hernández, Enrique		2023	SS	-10	-13
62	Rosario, Amed		2023	SS	-11	-14

These are the Outs-Above Replacement for each starting shortstop over the last two years. Bichette is near the bottom of the list in both of his seasons and is on the negative side for both. It is clear that he makes some mistakes and that his offensive prowess is much more threatening.

Overall, Bichette is built for a team with a struggling offensive and a good defense. He can change the momentum of the game with his powerful bat and his hitting style will bring confidence to any dugout. Bichette has some challenges to overcome on the defensive side, but I do think his skills in the batter's box outweigh them. He can provide that extra spark on offense that ends up being the difference in a lot of games.