Thinking with an Accessory Approach to the Draft Board

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Changes	SS	C	OF	RHP	LHP	3B
3	24	23	7	8	44	42
4	26	24	13	15	49	44
5	28	34	14	18	53	58
7	54	87	39	20	68	80
10	61	120	53	24	76	124

Intro

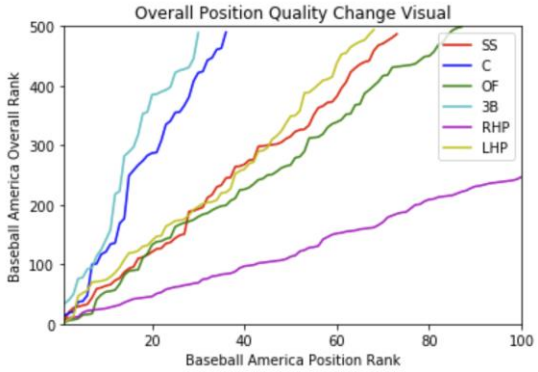
In the 2019 draft, the Cubs selected Ryan Jensen in the first round with the 28th pick. Baseball America ranked Jensen #109 on their top draft prospect list. When asked about Jensen going so high, Jim Callis of MLB Network said, “College Pitching is just not very deep, and were going to maybe see a couple more college arms pushed up into the first round”. What were the Cubs doing? From afar, it looks like they did not stick to the board. Only they know, but this writing is a short presentation of an umbrella approach that could serve as an accessory to using the Draft Board and reacting dynamically to how the draft board falls.

The data was scraped from the Baseball America Top 500 Draft Rankings. Demographics in this writing are only broken down for position group. They could be broken down further for high school / college junior / college senior classification but were not for this writing. For all examples in this writing, the Baseball America Top 500 Draft Rankings serve as “The Board”.

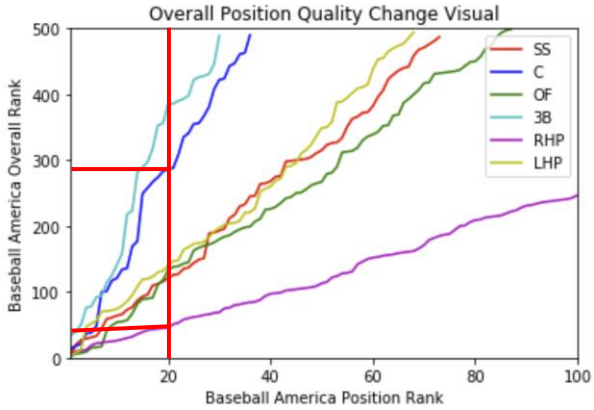
I realize there are draft components that I am not as knowledgeable about as I perhaps should be. I always have open ears and look forward to listening to experts. I look forward to the day that I earn the opportunity to work with scouts, analytics team, and all baseball operations personnel in the context of thinking about the draft.

In this writing I will write about visually measuring position depth on a draft board, calculating and visualizing how fast the deterioration of overall quality of player is for specific position groups / demographics, and briefly the instantaneous change in the overall quality of player with respect to the next player taken in a specific position group / demographic.

Measuring Position Depth



The above visual is used by taking different points on the horizontal x-axis (rank relative to position group / demographic) and finding where the different curves (SS, C, OF, 3B, RHP, LHP) meet that point on the y-axis (overall rank). For example, *examining the 20th best player on the board for all different position groups / demographics, what is that player's overall rank*?



Victor Mederos is the 20th ranked right-handed pitcher on the draft board. His overall ranking is 46. Calvin Harris is the 20th ranked catcher on the draft board. His overall ranking is 287. Overall, along the horizontal x-axis (relative position ranking), the change in overall ranking is faster for the catcher position group than the right-handed pitcher position group.

In other words, the quality of overall ranking deteriorates faster for the catcher group in comparison to the right-handed pitcher group up to the 20th spot for each group. We can state that the depth of the right-handed pitcher group is deeper than the catcher group at the point of the 20th best player for each position group / demographic.

The same intuition can be applied to the different position groups at different points along the x-axis. While effective for examining the depth of a position demographic, this approach is incomplete.

Look at the LHP, SS, and OF curves. They bundle together closely for different values on the x-axis and take turns overlapping and steepening/flattening. Change is not constant, and neither is its direction. *At different times on a draft board in the draft, things speed up and slow down with*

respect to the rate of change in quality of player for a specific position group / demographic as you move down the board.

Calculus is not necessary to understand the speed a draft board moves at with respect to position group / demographic. The data is tee'd up by the draft board to create a dynamic system that makes it easier for end users in a draft room to see and react to future draft board speed changes for specific position groups / demographics.

Measuring Speed Down the Board

	Name	School	OVR_Ranking	Change
1	Nick Gonzales	New Mexico State	5	0
2	Ed Howard	Mount Carmel (Ill.) HS	20	15
3	Casey Martin	Arkansas	27	7
4	Nick Loftin	Baylor	29	2
5	Alika Williams	Arizona State	31	2
6	Jordan Westburg	Mississippi State	33	2
7	Masyn Winn	Kingwood (Texas) HS	44	11
8	Colt Keith	Biloxi (Miss.) HS	59	15
9	Carson Tucker	Mountain Pointe HS, Phoenix	61	2
10	Drew Bowser	Harvard-Westlake HS, Studi...	64	3

These are the top 10 shortstops on Baseball America's Draft Rankings. The "Change" column is synonymous with how far down the draft board (in overall ranking) you go to reach that player from the player directly above him in a position group / demographic. This specific column will be elaborated on later. But this is the input to ***Speed Change***. ***Speed Change is the distance traveled down the board for a specific position group from the top player to the Nth player.***

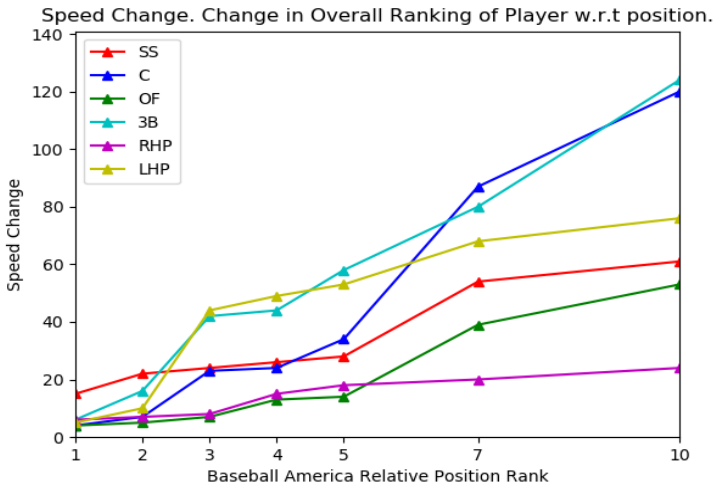
From Nick Gonzales to Ed Howard, there is a speed change of 15 spots down the draft board. From Nick Gonzales to Alika Williams, the speed change in overall ranking is 26 spots down the draft board (15+7+2+2). Again, speed change is *not* constant. The application for this position group is that maybe a club would value a player like Jordan Westburg more because speed down the board accelerates for the Shortstop position group.

	Name	School	OVR_Ranking	Change
1	Patrick Bailey	North Carolina State	14	0
2	Tyler Soderstrom	Turlock (Calif.) HS	18	4
3	Austin Wells	Arizona	21	3
4	Dillon Dingler	Ohio State	37	16
5	Drew Romo	The Woodlands (Texas) HS	38	1
6	Kevin Parada	Loyola HS, Los Angeles	48	10
7	Jackson Miller	Mitchell HS, New Port Rich...	100	52
8	Casey Opitz	Arkansas	101	1
9	Daniel Susac	Jesuit HS, Carmichael, Calif.	117	16
10	Zavier Warren	Central Michigan	121	4

These are the top 10 catchers in Baseball America's Draft Rankings. Speed starts slow, picks up after Austin Wells is taken, and explodes after Kevin Parada is taken. The speed change from

Patrick Bailey to Jackson Miller is a huge 86 (0+4+3+16+1+10+52) spots down the board. The intuition is that when Wells goes off the board, the speed of deterioration of overall ranking on the board for future catchers is fast. To further explain the significance, there are 79 spots between Austin Wells and the 4th catcher below him. In comparison, there are only 23 spots between Patrick Bailey and the 4th catcher below him.

The speed change for all position groups set for the beginning of the draft are represented below:



Changes

	SS	C	OF	RHP	LHP	3B
1	15	4	4	6	5	6
2	22	7	5	7	10	16
3	24	23	7	8	44	42
4	26	24	13	15	49	44
5	28	34	14	18	53	58
7	54	87	39	20	68	80
10	61	120	53	24	76	124

In the first visual, speed change is the distance between any two points (relative position rank on the x-axis) for a specific curve. When the slope of a line steepens, speed change is picking up in distance down the board to find the next best player for that position group / demographic at a given ranking.

The second visual is a gradient comparison of every speed change at a specific position rank with respect to the top ranked player. A dark red box represents the fastest speed change across the

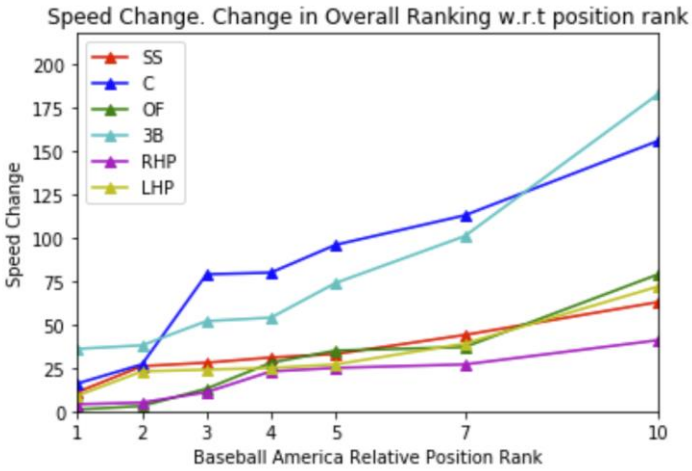
position groups / demographics. A dark blue box represents the slowest speed change across the position groups / demographics.

Looking again at the Shortstop and Catcher groups, Shortstop speed change starts out hot (going from the overall rank of Nick Gonzales to Ed Howard and Casey Martin), but things cool down. Catcher speed change down the board starts slow but explodes at the 7th best catcher. (Difference on the board between Patrick Bailey and Jackson Miller)

The visuals above are set for the top of the draft board. In addition, visuals are set to be used dynamically throughout the draft. For instance, if the draft board looks like this after 38 selections:

Name	School	Position	OVR_Ranking
Nick Bitsko	Central Bucks East HS, Doy...	RHP	19
Austin Wells	Arizona	C	21
JT Ginn	Mississippi State	RHP	23
Cole Wilcox	Georgia	RHP	24
Chris McMahon	Miami	RHP	30
Jordan Westburg	Mississippi State	SS	33
Aaron Sabato	North Carolina	1B	35
Dillon Dingler	Ohio State	C	37
Justin Foscue	Mississippi State	3B	40
Alex Santos	Mount St. Michael Academy,...	RHP	42

The board is a bit mixed up. As expected, clubs are positioning with respect to financial constraints and are using different rankings for players. The new draft board brings different speed changes for the different position groups / demographics:



Changes	SS	C	OF	RHP	LHP	3B
1	11	16	1	4	9	36
2	26	27	3	5	23	38
3	28	79	13	11	24	52
4	31	80	28	23	25	54
5	33	96	35	25	27	74
7	44	113	37	27	39	101
10	63	156	79	41	72	183

Nick Bitsko is the top player on the board. But Austin Wells or Justin Foscue could be worth taking. For both these players, they are not the top player on the board. But knowing there is still a bottleneck in right handed pitching at this point in the draft (slow speed change), it may be worth it to delay taking the right handed pitcher and get in front of the coming speed change in third basemen and catcher position groups.

Like the case with visually examining position group / demographic depth in the first visuals, speed change should not be considered all encompassing. At this point, after the catcher group moves to the 79th spot on the board, the changes from one catcher to the next are not as aggressive [(79 → 80), (80 → 96), (96 → 113)]. All the values are still dark red. *Speed change only examines the change from the top player to the board to the Nth player*. What happens in between 1 to 5 in a position group / demographic ranking for this approach is irrelevant for speed change.

We can change the table to represent only the instant change of overall board ranking with respect to the current top player in a position group / demographic. It looks like this:

Changes	SS	C	OF	3B	RHP	LHP
2	15	4	4	6	6	5
3	7	3	1	10	1	5
4	2	16	2	26	1	34
5	2	1	6	2	7	5
6	2	10	1	14	3	4
7	11	52	1	2	1	14
8	15	1	24	20	1	1
9	2	16	8	11	1	1
10	3	4	5	16	1	2

In this table, taking Shortstop Colt Keith (8th ranked Shortstop) means moving 15 spots down the board from Masyn Winn. In the 3rd Basemen group, taking Casey Schmitt (4th ranked 3rd Baseman) would mean moving down 26 spots on the board, followed closely by Coby Mayo 2 spots down the board.

We could think about the values in the 2nd table as measuring the steepness/slope of the curves from our prior line chart. The steeper the curve, the greater the instant change in overall quality of player for a specific position group / demographic. The flatter the curve, the closer the two players are on the overall draft board and slower the instant change.

Conclusion

Knowing how fast a draft board is moving in various ways could serve as an accessory tool to using the draft board. In this year's limited draft, when the overall quality of player decreases steeply down a draft board with respect to position groups like this year's catcher and third base groups, a club could get stuck being late to a "run".

As stated in the introduction, this is an accessory approach to using a "stick to the board" approach. There are many items not including in this writing that are crucial to draft preparation and draft day. No model/system/idea are all encompassing. I will be running all visuals throughout the draft and look forward to thinking about the draft and the draft board with this approach during the actual event.