2019 MLB REGULAR SEASON ANALYSIS

15,000+ VIZUAL EDGE SCOUTING ENTRIES

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Working with Major League Baseball teams for the last 15 years has enabled Vizual Edge to complete a detailed breakdown of various trends between the core visual system and on-field performance statistics.

Over 15,000 Vizual Edge evaluations have been completed since 2011 by current or former Major League Baseball players or prospects. The primary sample of players within the database consists of high school or college players entering the amateur draft. The players represented are position players or designated hitters only, not pitchers.

During the 2019 MLB regular season, 321 players had at least 250 PAs. 116 of those 321 players (36%) had previously completed a Vizual Edge baseline evaluation. By digging deeper into our database of the 116 'qualified' players, we looked at a variety of statistics and correlations found between MLB standard and advanced metrics, and Vizual Edge baseline evaluation data. MLB statistics provided by BaseballReference.com, with advanced stats provided by FanGraphs.

2019 MLB REGULAR SEASON ANALYSIS
DRAFT POSITION

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FIRST ROUND DRAFT PICKS

As expected, players who possess first-round talent are typically better overall, but how do their visual skills compare to everyone else?

Here we can see that 2019 qualified players who were drafted in the first round in their respective years, had better visual scores in every category. Not only do top-level players possess the talent needed to be drafted in the first round, but their visual skills are also better compared to players of lesser talent

The most noticeable differences are seen in depth perception and recognition scores. Depth perception is key for a hitter's ability to judge the spin, speed and trajectory of a ball, and first round draft picks had 14% better depth perception than later picks, which helps them make contact at the plate.

Additionally, having better a quicker recognition response time enables hitters to quickly identify an incoming pitch type, and players with quicker recognition scores, typically have a better overall baseball IQ.

	1st Round Picks	Non-1st Round
# of Players	39	77
Edge Score	81.2 (3% better)	78.8
Depth Perception	88% (14% better)	77%
Convergence	38 (6% better)	36
Divergence	23 (10% better)	21
Recognition	0.86s (16% quicker)	1.02s
Tracking	0.53s (2% quicker)	0.54s

DRAFT PICK BREAKDOWN

The table below breaks down the draft position and Vizual Edge scores of the 116 qualified players. Similar to the first-round analysis above, players who were selected with the top 30 picks in their given draft year, also had better overall visual scores compared to later picks.

Having a stronger convergence score is critical for a hitter's ability to focus on an incoming pitch as it approaches the plate, while lower scores may also affect a hitter's ability to connect on high-velocity pitches.

These top 30 picks also had much quicker recognition times compared to players selected later in the draft, 24% quicker response times compared to those drafted 200+.

	Picks 1-30	31-100	101-200	200+	International Signings
# of Players	36	33	22	16	9
Edge Score	81.9	79.5	79.6	76.7	76.1
Depth Perception	88%	82%	80%	68%	75%
Convergence	40	35	34	33	39
Divergence	23	22	20	22	18
Recognition	0.86s	0.92s	0.92s	1.13s	1.40s
Tracking	0.53s	0.52s	0.52s	0.56s	0.61s

2019 MLB REGULAR SEASON ANALYSIS
ON-BASE PERCENTAGE (OBP)

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ON-BASE PERCENTAGE (OBP)

Players getting on base throughout the course of a game impacts a team's offensive success. Finding players that can not only frequently get on base, but also in critical moments, can be hard to look for.

Digging into players that have an OBP at or above 0.335 (which would qualify for Top 140 during the 2019 regular season) has shown clear differences in player's visual categories.

Players who have an OBP at/above 0.335 have better scores in each of the main visual categories, particularly convergence, and recognition.

Having a better ability to focus on an incoming pitch, especially the final third (convergence), and quickly identify and process pitch type/speed (recognition), is critical for determining when to swing, and ultimately helps players get on base.

2019 League Avg: 0.323
OBP >= 0.335 qualified for Top 140 in 2019

	Above 0.335	Below 0.335
# of Players	52	64
Edge Score	80.2 (1% better)	79.1
Convergence	39 (11% better)	35
Divergence	23 (10% better)	21
Recognition	0.91s (11% quicker)	1.02s
Tracking	0.53s (2% quicker)	0.54s

ON-BASE PERCENTAGE (OBP) CONT.

Similar to the analysis above with players who have an OBP at/above 0.335, we take an even deeper look at players who get on base significantly more than other players in the league.

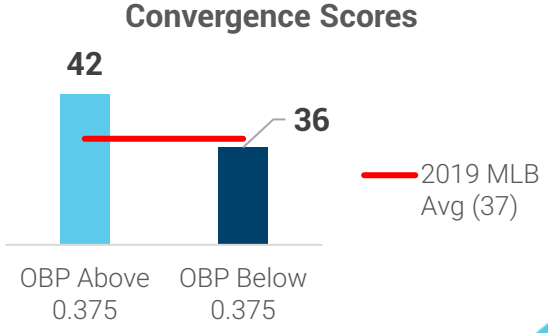
The 10 qualified players who had a 2019 OBP at or above 0.375, also had better visual scores across the board.

Again, we see a clear difference in their convergence scores, with a 17% better convergence score compared to those who have an OBP below 0.375.

A 13% quicker recognition response time, along with a 6% quicker tracking time, are the difference between being prepared to swing, and the overall decision making of a hitter at the plate.

2019 League Avg: 0.323
OBP >= 0.375 qualified for Top 35 in 2019

	Above 0.375	Below 0.375
# of Players	10	106
Edge Score	80.6 (1% better)	79.5
Convergence	42 (17% better)	36
Divergence	23 (10% better)	21
Recognition	0.85s (13% quicker)	0.98s
Tracking	0.51s (6% quicker)	0.54s



2019 MLB REGULAR SEASON ANALYSIS
PLATE DISCIPLINE: PART 1

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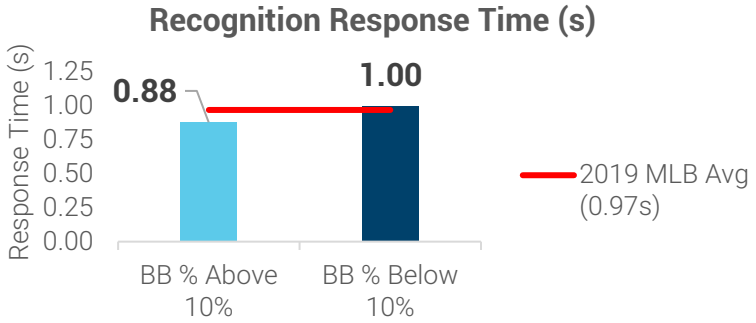
WALKS-PER-PLATE APPEARANCE (BB%)

Players with better plate discipline tend to draw more walks than the average hitter. When evaluating base on ball %, players were bucketed into two categories – greater than or equal to 10% and less than 10%.

The key visual skill that stands out with this analysis is recognition. Players who drew 10% or more walks during the 2019 regular season, had 12% quicker recognition response times, which relates to a hitter's ability to quickly process the incoming pitch type, and decide ball or strike.

2019 League Avg: 8.50%
BB/PA % >= 10% qualified for Top 100 in 2019

	Above 10%	Below 10%
# of Players	34	82
Edge Score	80.2 (1% better)	79.4
Convergence	38 (6% better)	36
Divergence	22 (5% better)	21
Recognition	0.88s (12% quicker)	1.00s
Tracking	0.53s (2% quicker)	0.54s



WALK-STRIKEOUT RATIO (BB/SO)

In addition to hitters who draw more walks per PA, a higher walk-strikeout ratio is also a good indictor of a hitter's plate discipline.

Taking a look at the differences between players with BB/SO ratios at/above and below 0.50, we can see clear differences in visual scores across the board. Each visual skill relates to a hitter's ability to identify the pitch and quickly make a decision of a ball or strike.

Divergence – important for a hitter to first locate the ball out of the pitcher's hand.
Depth Perception – helps the hitter judge the breaking point of a pitch, impacting decision to swing
Convergence – critical for focusing on the pitch in the final 10-20 feet to the plate
Recognition – key for a hitter to quickly identify and process the incoming pitch type and decide whether or not to swing
Tracking – overall reaction speeds to a pitch

2019 League Avg: 0.37
BB/SO >= 0.50 qualified for Top 100 in 2019

	BB/SO Above 0.50	BB/SO Below 0.50
# of Players	27	89
Edge Score	82.0 (4% better)	78.8
Depth Perception	83% (2% better)	81%
Convergence	43 (23% better)	35
Divergence	25 (19% better)	21
Recognition	0.87s (13% quicker)	1.00s
Tracking	0.52s (4% quicker)	0.54s

2019 MLB REGULAR SEASON ANALYSIS
PLATE DISCIPLINE: PART 2

VIZUAL EDGE
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OUTSIDE SWING % (O-SWING%)

Digging a little deeper into the visual scores behind hitters with lower o-swing %, we can see some clear differences in average scores between players above and below 29%.

Outside swing % (o-swing %), the percentage of pitches a batter swings at *outside* of the zone, is another good indicator of a hitter's overall plate discipline.

It's no surprise that players who had o-swing % at or below 29% in 2019 had better convergence, recognition and tracking scores, but having a slightly better divergence ability is key for a hitter to lay off pitches outside the zone.

Along with recognition, divergence gives the hitter the ability to recognize spin, pitch type, and pitch shape **earlier** and **more accurately**. This allows hitters to determine ball or strike earlier swinging at less pitches out of the zone.

2019 League Avg: 31.6%
O-Swing % =< 29% qualified for Top 110 in 2019

	Below 29%	Above 29%
# of Players	39	77
Edge Score	80.3 (1% better)	79.2
Depth Perception	80%	82%
Convergence	39 (11% better)	35
Divergence	23 (10% better)	21
Recognition	0.85s (17% quicker)	1.02s
Tracking	0.52s (5% quicker)	0.55s

ZONE SWING % (Z-SWING %)

Hitters who are able to decide whether or not to swing on pitches in the zone, often can set the team up for success.

Here we look at players who had zone swing percentages (z-swing %) above 71%. Though not all the visual skills are better in this particular analysis, two key skills stand out.

Depth perception is important for a hitter's ability to identify and judge the breaking point of a pitch in the zone.

Convergence, arguably the most important skill for hitters, helps the hitter focus on the ball in the final 10-20 feet to the plate, particularly with high-velocity pitches.

Being more prepared for an incoming pitch, and seeing the break of a ball or location of a high-velocity pitch, drastically impacts a hitter's decision to swing at pitches in the zone.

2019 League Avg: 68.5%
Z-Swing % >= 71% qualified for Top 125 in 2019

	Above 71%	Below 71%
# of Players	43	73
Edge Score	80.3 (2% better)	79.1
Depth Perception	85% (8% better)	79%
Convergence	38 (9% better)	35
Divergence	21	22
Recognition	0.97s	0.96s
Tracking	0.54s	0.53s

2019 MLB REGULAR SEASON ANALYSIS
CONTACT QUALITY

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HARD BALL %

Hard ball percentage (hard %) is the percentage of a batter's hard-hit batted balls.

Typically, the higher the hard %, the better the barrel contact.

Here we can see that players with hard % at or above 45% (7% higher than the 2019 MLB average), have better scores across the board. Most notably, we can see that players who hit more hard balls had on average 14% better convergence scores, and 24% quicker recognition response times.

Having a higher convergence score helps the batter see incoming pitches better. Combined with stronger convergence scores, a quicker recognition response time can help the batter identify the incoming pitch and adjust at the plate to ensure solid contact is made.

2019 League Avg: 38%
HB % >= 45% qualified for Top 45 in 2019

	Above 45%	Below 45%
# of Players	17	99
Edge Score	81.8 (3% better)	79.2
Depth Perception	81%	81%
Convergence	41 (14% better)	36
Divergence	22 (5% better)	21
Recognition	0.76s (24% quicker)	1.00s
Tracking	0.50s (7% quicker)	0.54s

SOFT BALL %

Soft ball percentage (soft %) is the percentage of a batter's soft-hit batted balls.

Typically the higher the soft %, the weaker the barrel contact. Therefore, players with a lower soft % tend to make poor contact *less* frequently.

The table on the right shows that the players who had soft % at/below 14% had better visual scores across the board. On average, 8% better convergence scores, which suggests they are better at seeing a pitch in the final third and making better contact on the barrel. We also see 5% better divergence scores, and 12% quicker recognition response times, suggesting players with lower soft ball % were quicker to identify and process pitch type.

2019 League Avg: 17%
SB % =< 14% qualified for Top 80 in 2019

	Below 14%	Above 14%
# of Players	28	88
Edge Score	80.9 (2% better)	79.2
Depth Perception	82% (1% better)	81%
Convergence	39 (8% better)	36
Divergence	22 (5% better)	21
Recognition	0.88s (12% quicker)	1.00s
Tracking	0.52s (4% quicker)	0.54s

2019 MLB REGULAR SEASON ANALYSIS
BABIP & BATTED BALLS

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BATTING AVG ON BALLS IN PLAY (BABIP)

When truly judging a batter's hitting ability (excluding homeruns), a great indicator is their BABIP, which is their batting average on balls in play. Looking at players with BABIP above and below 0.320, which is 22 points higher than the MLB average (0.298), we see clear differences in a few key visual skills. Though the average convergence scores between the two groups are relatively the same, the biggest difference is in the player's divergence and recognition scores.

Players with BABIP above 0.320 have divergence scores that are 32% better than players below 0.320. Having a significantly higher divergence score helps the batter locate the ball out of the pitcher's hand earlier and thus is more likely prepared for the incoming pitch.

Recognition is important for a player's ability to identify a pitch type and respond appropriately. Here we see that players with BABIP above 0.320 have 8% quicker recognition response times (0.89s), compared to players below 0.320 (0.97s)

Players getting hits and on base more frequently are more likely to have an impact for a team's offensive success.

League Avg: 0.298, 0.333 qualifies for Top 75

	Above 0.333	Below 0.333
# of Players	31	85
Edge Score	80.1 (1% better)	79.4
Depth Perception	85% (6% better)	80%
Convergence	36	37
Divergence	23 (10% better)	21
Recognition	0.87s (13% quicker)	1.00s
Tracking	0.52s (4% quicker)	0.54s

GROUND BALL % (GB%)

Groundball percentage is the percentage of a batter's balls in play that are ground balls. Typically, players who have lower GB % are less likely to groundout or ground into a double play.

Players that had a GB % below 40% scored better in all of the visual skills. Two skills that stand out are convergence and recognition, in which players who were below 40% for GB % had 11% higher convergence scores, and 17% quicker recognition response times.

These numbers suggest that the players who have stronger convergence scores and quicker response times are able to see incoming pitches better, and can adjust appropriately to ensure a groundball is not hit.

League Avg: 42.9%, 40% qualifies for Top 125

	Below 40%	Above 40%
# of Players	50	66
Edge Score	80.0 (1% better)	79.3
Depth Perception	84% (6% better)	79%
Convergence	38 (9% better)	35
Divergence	22 (5% better)	21
Recognition	0.95s (3% quicker)	0.98s
Tracking	0.54s (2% quicker)	0.53s

2019 MLB REGULAR SEASON ANALYSIS
WAR & DEFENSIVE WAR

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WINS ABOVE REPLACEMENT (WAR)

Wins above replacement (WAR) relates to a player's total contributions to their team. Players with WAR at or above 3.0 in 2019 had not only high convergence scores (6% better), but also 15% quicker recognition response times.

Recognition scores are closely related to a player's overall baseball IQ, and it's no surprise that players with higher WAR values have significantly quicker response times.

WAR >= 3.0 qualified for Top 125 in 2019

	Above 3.0	Below 3.0
# of Players	33	83
Edge Score	80.1 (1% better)	79.4
Depth Perception	81%	81%
Convergence	38 (6% better)	36
Divergence	21	22
Recognition	0.86s (15% quicker)	1.01s
Tracking	0.52s (4% quicker)	0.54s

DEFENSIVE WINS ABOVE REPLACEMENT (dWAR)

Defensive wins above replacement (dWAR) relates to a player's total contributions to their team on the defensive side of the game. Players with dWAR at or above 0.50 in 2019 had better scores in majority of visual categories.

Similar to WAR, players with higher dWAR values had 9% quicker recognition response times, which not only relate to their baseball IQ, but also their decision making on the field.

Being able to quickly process and make an accurate decision on the field can be the difference between winning and losing a game.

Interesting to note that players with higher dWAR numbers also had better depth perception skills, which correlates to a player's fielding abilities and judging of pop-ups/flyballs.

dWAR >= 0.50 qualified for Top 65 in 2019

	Above 0.50	Below 0.50
# of Players	44	72
Edge Score	80.4 (2% better)	79.1
Depth Perception	84% (6% better)	79%
Convergence	38 (6% better)	36
Divergence	21	22
Recognition	0.91s (9% quicker)	1.00s
Tracking	0.54s	0.54s