



Microstats & Applications of Blue Line Data

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What are Microstats?

- Specific event types used to analyze the game at a microscopic level.
- Corsi, Fenwick and +/- are *macroscopic*.
- Paradigm shift! Why? or how? instead of what?
- Example: offensive zone entries.



The Tracking Project

- Why not record all blue line events?
- New possibilities: Zone time, TOA per entry, rate of shots in offensive/defensive zone, etc.
- 400-500 5v5 events per game.

The Stats



NUM	CF Per Entry W/		TOA per Entry W/		W/O Control		CF Per Entry W/O		TOA per Entry W/O		% W/ Control	
	FOR	AGA	FOR	AGA	FOR	AGA	FOR	AGA	FOR	AGA	FOR	AGA
2	0.693	0.819	12.1	11.6	106	115	0.262	0.441	13.1	14.0	48.79%	40.41%
4	0.773	0.814	12.0	12.6	157	137	0.318	0.322	11.9	12.6	45.86%	49.45%
5	0.779	0.748	13.4	11.6	156	155	0.218	0.367	12.2	12.9	40.91%	43.43%
6	0.743	0.743	12.2	11.6	111	115	0.252	0.279	11.5	11.8	52.16%	52.67%
7	0.782	0.809	12.0	12.9	128	133	0.320	0.299	12.7	11.9	54.12%	49.43%
9	0.834	0.945	14.6	12.7	119	124	0.209	0.322	12.6	13.6	43.33%	36.73%
14	0.741	0.538	12.7	11.7	38	35	0.448	0.398	13.4	12.7	41.54%	42.62%
15	0.798	0.670	13.3	10.9	145	109	0.198	0.331	11.8	13.8	39.33%	48.58%
16	0.799	0.833	11.8	12.8	122	125	0.286	0.311	12.1	11.8	52.34%	47.70%
17	0.748	0.758	12.6	11.5	129	115	0.249	0.382	13.3	12.3	36.76%	45.24%
22	1.026	0.944	14.0	11.8	44	45	0.251	0.288	12.2	12.9	45.68%	44.44%
25	0.831	0.740	13.4	11.5	128	121	0.280	0.381	13.4	12.8	35.68%	45.25%
27	0.792	0.732	12.4	12.4	97	99	0.298	0.386	13.1	14.0	47.28%	44.07%
46	0.768	0.597	12.9	12.5	101	111	0.207	0.279	12.0	12.4	44.81%	40.96%
61	0.685	0.750	10.4	13.8	96	87	0.292	0.401	12.0	12.8	54.29%	45.28%
62	0.629	0.873	12.1	14.2	121	128	0.264	0.322	13.4	12.1	47.16%	44.35%
65	0.834	0.780	11.6	11.6	211	189	0.312	0.366	12.3	13.3	49.28%	47.79%
68	0.686	0.696	11.5	12.7	73	92	0.384	0.348	14.0	12.3	54.09%	42.86%
74	0.798	0.976	12.5	12.8	100	99	0.251	0.303	13.4	12.0	48.45%	46.20%
90	0.696	0.982	12.4	13.0	84	90	0.191	0.390	12.2	13.4	41.26%	38.36%
93	0.706	1.000	11.9	13.8	115	106	0.252	0.357	12.0	13.3	44.44%	42.39%

[View table](#)

More Stats

NUM	Rel Event %		TOA %		Rel TOA %		ZT%		Rel ZT%		WZER	
	FOR	AGA	FOR	AGA	FOR	AGA	FOR	AGA	FOR	AGA	FOR	AGA
2	-1.06%	1.06%	51.25%	48.75%	1.15%	-1.15%	50.26%	49.74%	1.22%	-1.22%	53.81%	46.19%
4	-1.02%	1.02%	50.15%	49.85%	-1.57%	1.57%	49.44%	50.56%	-0.15%	0.15%	50.83%	49.17%
5	-4.11%	4.11%	49.71%	50.29%	-1.94%	1.94%	50.01%	49.99%	0.64%	-0.64%	48.43%	51.57%
6	-4.12%	4.12%	49.32%	50.68%	-2.11%	2.11%	47.38%	52.62%	-2.90%	2.90%	48.72%	51.28%
7	0.30%	-0.30%	51.11%	48.89%	0.58%	-0.58%	48.54%	51.46%	-1.13%	1.13%	52.56%	47.44%
9	1.81%	-1.81%	52.83%	47.17%	2.50%	-2.50%	50.64%	49.36%	1.75%	-1.75%	53.43%	46.57%
14	1.62%	-1.62%	53.30%	46.70%	2.70%	-2.70%	52.62%	47.38%	4.28%	-4.28%	51.31%	48.69%
15	3.47%	-3.47%	53.16%	46.84%	2.78%	-2.78%	50.15%	49.85%	0.84%	-0.84%	50.70%	49.30%
16	0.48%	-0.48%	50.81%	49.19%	0.42%	-0.42%	48.52%	51.48%	-0.87%	0.87%	52.80%	47.20%
17	-3.94%	3.94%	51.17%	48.83%	0.82%	-0.82%	48.98%	51.02%	-0.34%	0.34%	47.11%	52.89%
22	-0.94%	0.94%	52.00%	48.00%	-2.02%	2.02%	50.81%	49.19%	-2.04%	2.04%	50.30%	49.70%
25	-4.55%	4.55%	49.75%	50.25%	-1.24%	1.24%	48.39%	51.61%	-1.10%	1.10%	44.93%	55.07%
27	2.47%	-2.47%	50.44%	49.56%	-1.23%	1.23%	49.49%	50.51%	0.23%	-0.23%	51.75%	48.25%
46	0.81%	-0.81%	48.97%	51.03%	-2.98%	2.98%	48.94%	51.06%	-1.25%	1.25%	50.29%	49.71%
61	6.80%	-6.80%	52.55%	47.45%	1.15%	-1.15%	50.63%	49.37%	1.24%	-1.24%	58.97%	41.03%
62	-0.28%	0.28%	49.78%	50.22%	-1.52%	1.52%	48.33%	51.67%	-1.29%	1.29%	50.58%	49.42%
65	2.99%	-2.99%	52.27%	47.73%	2.35%	-2.35%	49.37%	50.63%	-0.27%	0.27%	53.82%	46.18%
68	2.20%	-2.20%	49.55%	50.45%	1.06%	-1.06%	49.18%	50.82%	1.88%	-1.88%	52.36%	47.64%
74	-0.19%	0.19%	52.43%	47.57%	2.41%	-2.41%	48.39%	51.61%	-0.22%	0.22%	51.87%	48.13%
90	-3.96%	3.96%	47.71%	52.29%	-3.80%	3.80%	48.55%	51.45%	-0.74%	0.74%	50.23%	49.77%
93	1.20%	-1.20%	50.67%	49.33%	-0.50%	0.50%	50.05%	49.95%	0.99%	-0.99%	53.45%	46.55%



Examples

- The Curious Case of Cody Ceci:
 - Stats and observations often disagree!
 - Second-worst 5v5 CF% among D (50.9%).
 - Zone entries project 50.5% (WZER).
 - Team-worst at allowing controlled entries against.
- The Energy Line
 - Out-possessed, out-chanced, out-scored while on the ice.
 - Only regular forwards with higher control rate on entries against than entries for while on the ice.
 - Complete inability to generate controlled zone entries.



But Wait, There's More!

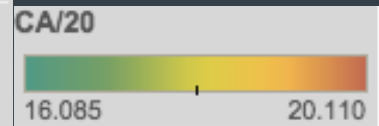
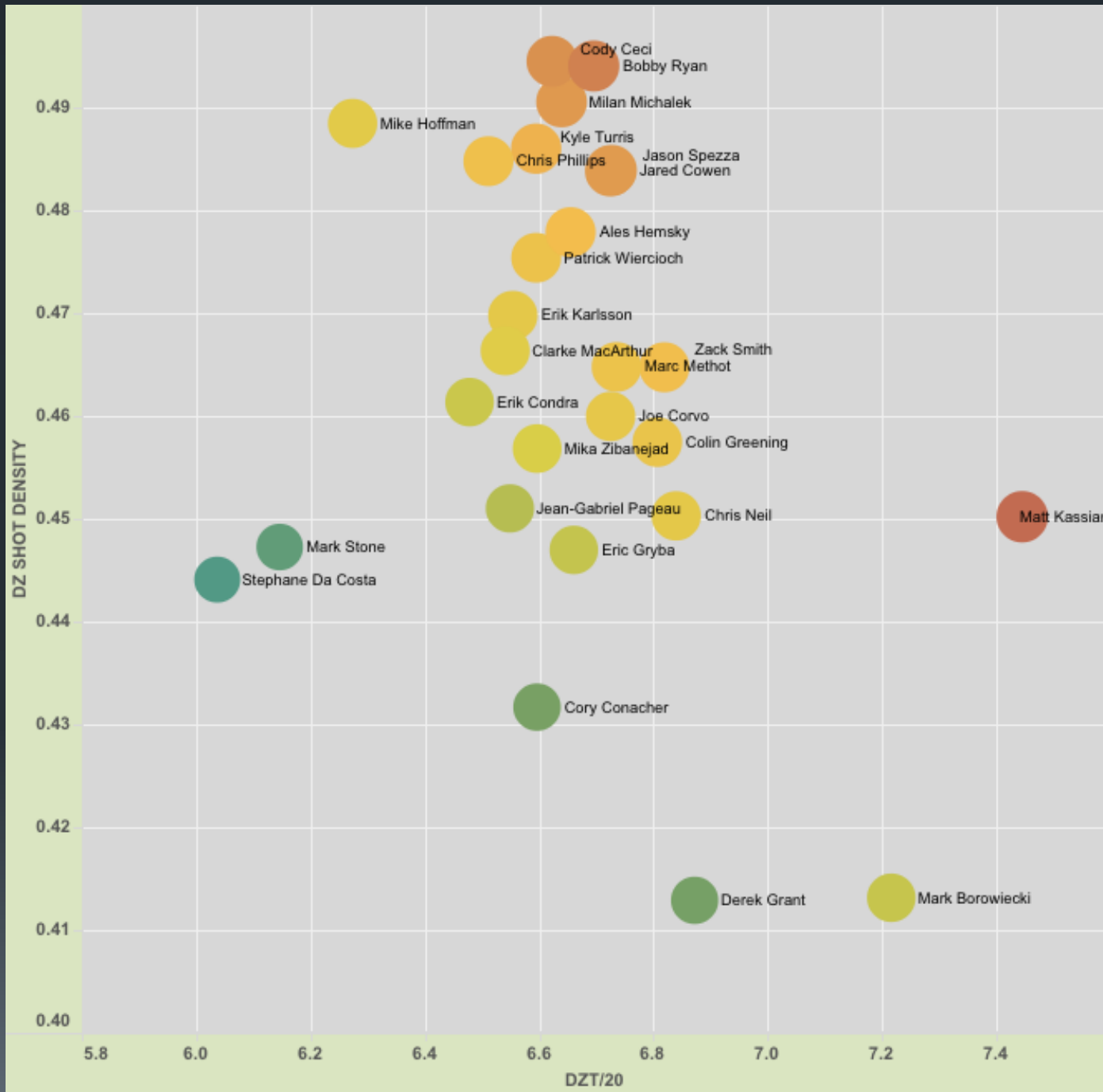
- Applications of blue line data go beyond zone time.
- Shot density: rate of shot attempts per unit of zone time.
- We can exclude “empty” zone time.
- Consider shot suppression...

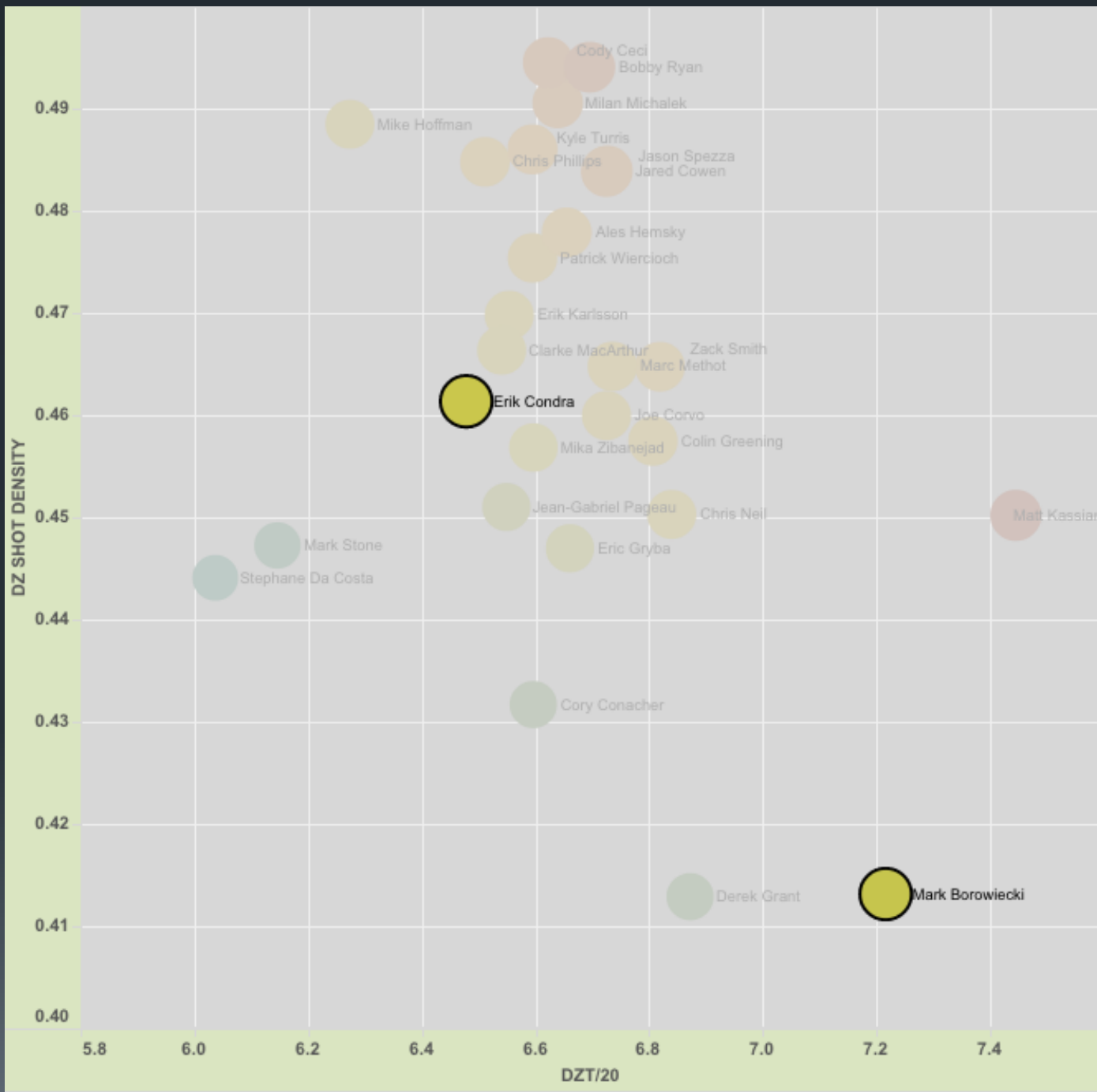
Jen's Breakdown

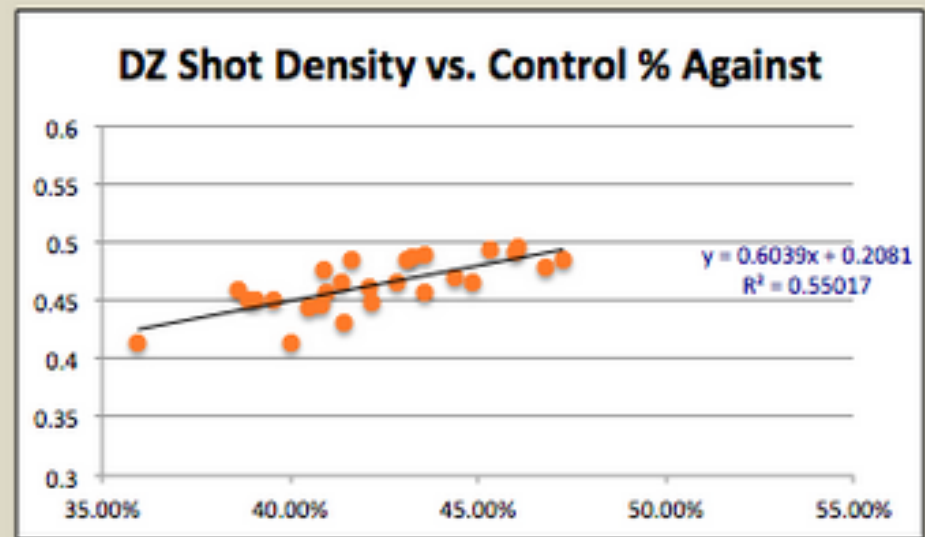
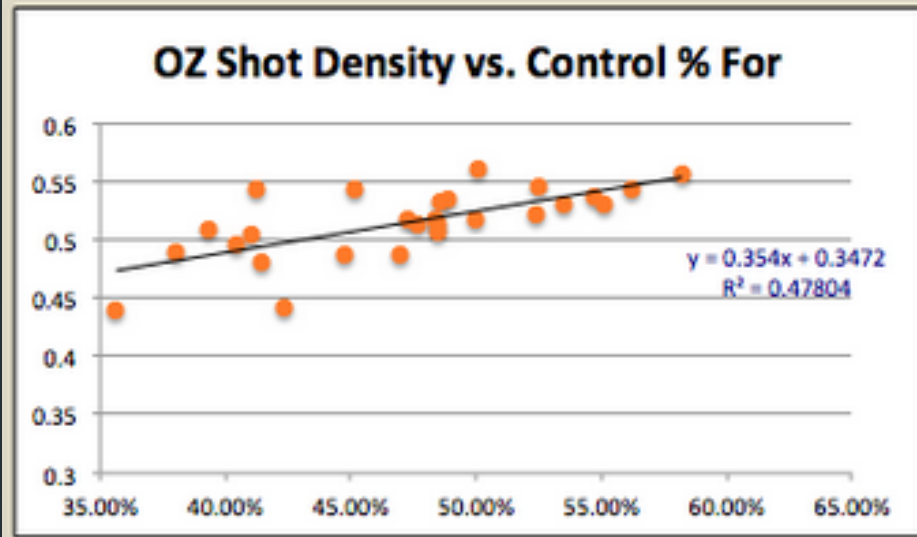
- Shot suppression is *multi-faceted*.
- We can use blue line data to break up shot suppression into categories.
- Shot density & ZT/20.



Source: Jen Lute Costella (@RegressedPDO)







- Roughly half of the variation in players' in-zone shot densities can be explained by variation in their control rates!
- This is an unintuitive finding. How much can events occurring outside of the zone inform what happens inside the zone?



Other Applications

- Zone Transition Times.
- A better definition for rush shots, scoring chances.
- Investigating special teams.
- Storytelling potential – Bridge the gap between nerds and game-watchers.



Between The Lines

- Proposition: A collaborative league-wide tracking project for the 2015-2016 season.
- First step: Volunteers!
- Interested? Contact me:
 - emmanuel.perry@hotmail.com
 - @MannyElk