



## **CATALYST:** The Next Premier Offensive Statistic in Basketball?

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Conventional NBA passing statistics like assists per game (APG) fail to truly describe a player's true impact when passing (Neuteufel 2014; Goldsberry 2014). I introduce a statistic I call CATALYST should be included within discussions of a player's offensive production.

CATALYST begins with the concept of pass efficiency, borrowed from Phillips (2014). Passing efficiency (PE) is Points Created by Assist per Game (PCAG) divided by Passes per game (PaPG). The point of pass efficiency is to understand and measure how strategically a player's passes work within a team's offense. A player's pass efficiency is then divided by the mean of all NBA players' pass efficiency to calculate a player's PEAR—pass efficiency above replacement. PEAR is useful to see the impact of a player's passing (including their "playmaking" abilities) within the system in which they play. However, PEAR is not useful for inter-team comparison, as it depends on the shooting efficiency of a player's teammates. The novelty of CATALYST is using exclusive True Shooting percentage

(xTS%) to weigh PEAR. xTS% is the true shooting percentage of all players on a team who are not a certain player (Neuteufel 2014).

xTS% is important as it is unlikely an NBA player assists himself (ibid). With xTS%, one can compare a player's teammate group to average NBA players. Thus:

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CATALYST is powerful in ways. It seems to pass the eye test in general

(perhaps not in specifics). It is important to note that the differences within a few slots may not be statistically significant—for example, the difference between Kevin Durant (#4) and Chris Paul (#5). Even with rudimentary, publicly-available data, CATALYST predicts "rainmakers," as identified by Goldsberry using proprietary data (2014). It also identifies some of Walker's MVPs when comparing the RAPM of a starter and his second string teammate (2014). This is remarkable, given Walker's use of both defensive and offensive RAPM. With only a few publicly available numbers, CATALYST illustrates the importance of players "catalyzing" an offense—creating open looks and

importance of players "catalyzing" an offense—creating open looks and driving to draw defenders. It applies well to players of all positions, if one takes a position view (Neuteufel 2014). All-NBA CATALYST teams show that it can distinguish between players within positions well (see below).

CATALYST's strength comes contextually and it seems very promising as a tool for player evaluation and scouting.

Rank	CATALYST	Player		
1	253.75%	Ty Lawson (DEN)		
2	238.84%	Stephen Curry (GSW)		
3	232.76%	Tyreke Evans (NOP)		
4	225.51%	Kevin Durant (OKC)		
5	224.65%	Chris Paul (LAC)		
6	213.75%	Andre Iguodala (GSW)		
7	210.80%	Monta Ellis (DAL)		
8	205.27%	Jameer Nelson (ORL)		
9	204.80%	Eric Gordon (NOP)		
10	201.41%	John Wall (WAS)		
11	197.76%	LeBron James (MIA)		
12	197.44%	Brandon Jennings (DET)		
13	197.41%	Ricky Rubio (MIN)		
14	196.90%	Jeff Teague (ATL)		
15	195.52%	James Harden (HOU)		
16	193.75%	Lance Stephenson (IND)		
17	189.67%	Randy Foye (DEN)		
18	183.82%	Goran Dragic (PHX)		
19	183.40%	Klay Thompson (GSW)		
20	181.76%	DeMar DeRozan (TOR)		
21	180.39%	Kyrie Irving (CLE)		
22	174.82%	Kyle Lowry (TOR)		
23	171.14%	Gordon Hayward (UTA)		
24	170.14%	Michael Carter-Williams (PHI)		
25	169.13%	Isaiah Thomas (SAC)		
26	167.67%	Dion Waiters (CLE)		
27	160.16%	Tony Parker (SAS)		
28	159.06%	Jamal Crawford (LAC)		
29	158.13%	Raymond Felton (NYK)		
30	154.80%	Jeremy Lin (HOU)		

AII-NBA CATALYST	Guard 1	Guard 2	Forward 1	Forward 2	Center
First Team	Ty Lawson (DEN)	Stephen Curry (GSW)	Tyreke Evans (NOP)	Kevin Durant (OKC)	Joakim Noah (CHI)
Second Team	Chris Paul (LAC)	Monta Ellis (DAL)	Andre Iguodala (GSW)	LeBron James (MIA)	DeMarcus Cousins (SAC)
Third Team	Jameer Nelson (ORL)	Eric Gordon (NOP)	Gordon Hayward (UTA)	Jamal Crawford (LAC)	Al Jefferson (CHA)

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