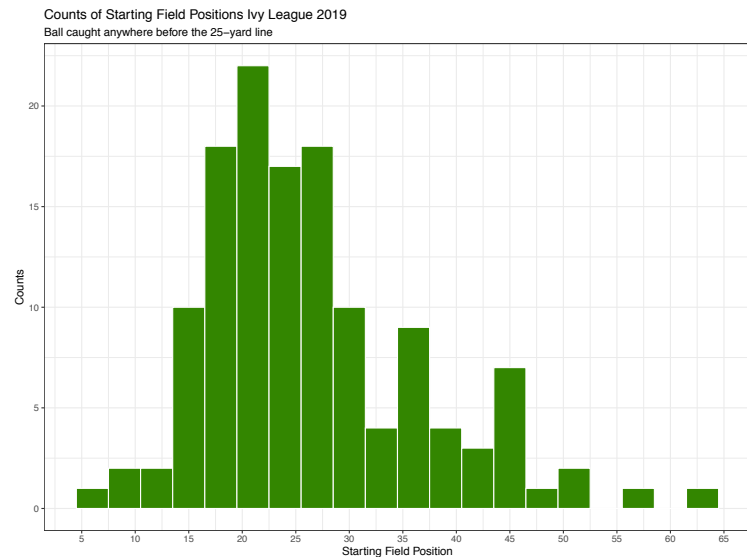
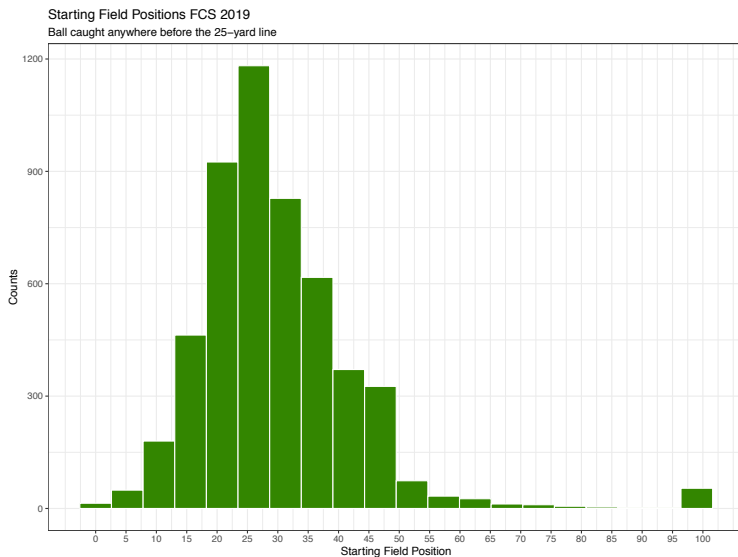


A Brief Analysis on FCS and Ivy League Kickoffs

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To examine the effects of returning kickoffs in the FCS and, more specifically, the Ivy League in the 2019 season, I looked at every single kickoff from the regular season, using ESPN's play-by-play data. I parsed the data out into several different categories, including whether the team elected to return the kickoff, the distance of the kickoff, where the returner caught the ball, how far the returner traveled, and, thus, where the ensuing possession began. In total, I looked at 9,866 kickoffs from the FCS and 346 kickoffs from Ivy League teams. Due to the new NCAA kickoff rules, a player can fair catch the ball anywhere before the 25-yard line, and their team will start their possession at the 25-yard line. Moreover, I focused on kickoffs where the player caught the ball before this 25-yard line threshold and decided to return the kick. Below are tables and plots which summarize the effects of such players who elected to return the kickoffs when catching the ball **anywhere before the 25-yard line**.



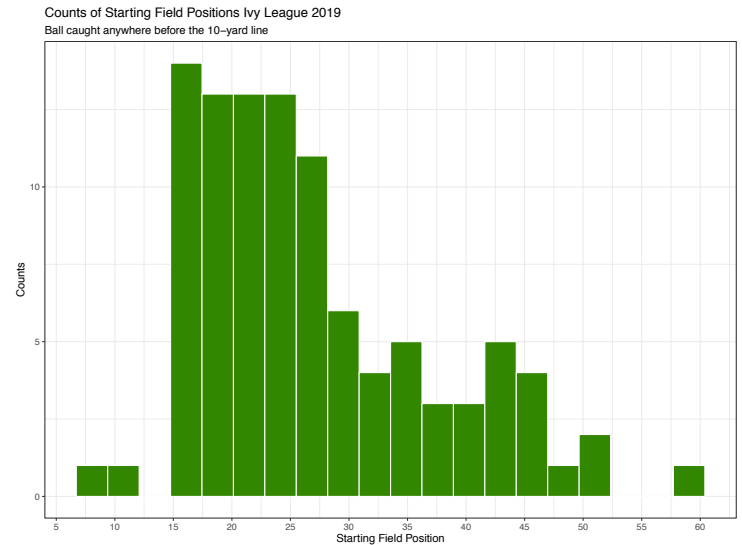
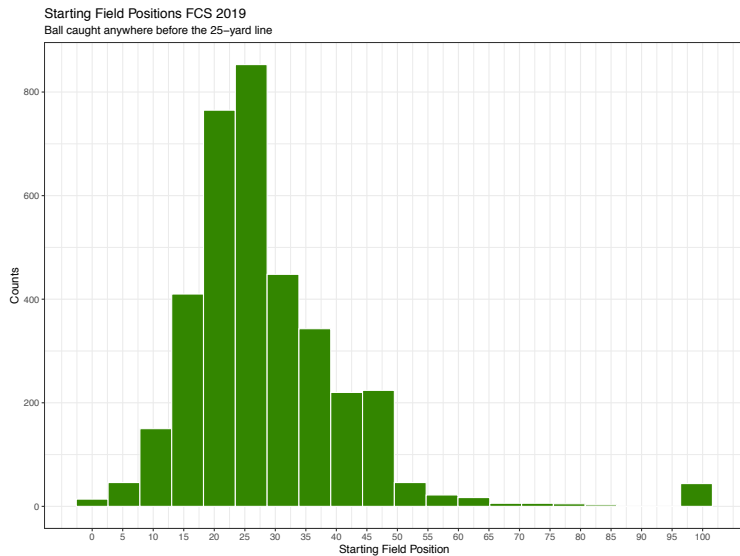
Statistic	Ivy	
	FCS	League
Median Starting Field Position	27	24.5
Mean Starting Field Position	29.1	26.6
Percentage of Returns	57.2%	40.6%
Percentage of Possessions Starting Between 15-20	12.7%	20.1%
Percentage of Possessions Starting Between 20-25	21.2%	25.0%
Percentage of Possessions Starting Between 25-30	20.1%	19.7%
Percentage of Possessions Starting Between 30-35	12.9%	6%
Percentage of Returns for a Touchdown	0.58%	0%
Percentage of Flags Thrown	9.9%	10.6%
Percentage of Fumbles	2.9%	2.3%

One thing to note is the difference in the median and the mean of starting field positions. The median is more suited for this study due to the impact that the outliers have on the data, such as the rare kicks that are returned for a touchdown.

Also look at the distribution of where the returned-kicks ended; the majority for both the FCS and Ivy League is between the 20 and 25 yard-lines.

Above, you can see that the median starting field position in the FCS last season is greater than 25, meaning that teams actually gained two-extra yards, on average, from returning kicks before the 25-yard line. In the Ivy League, however, the contrary is true, as the median is less than 25.

Another question is whether or not there is a difference in where the player catches the ball. Here are the results for players who elected to return the kick when catching the ball **before the 10-yard line**:

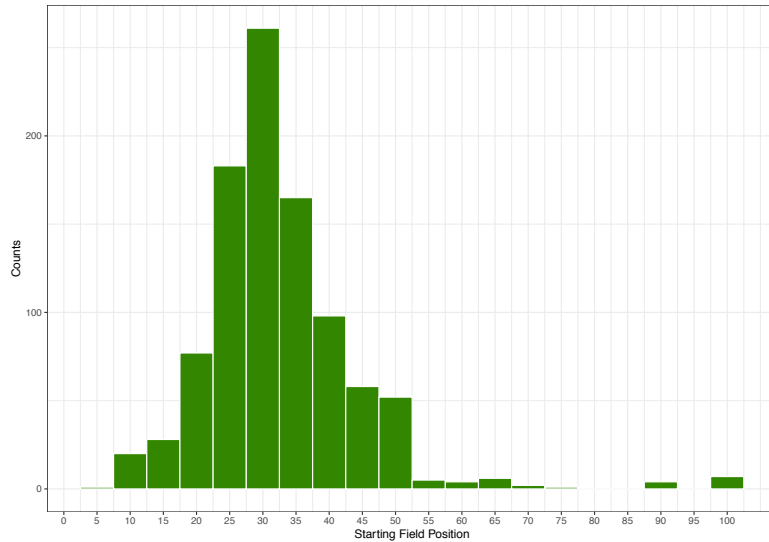


Statistic	FCS	Ivy League
Median Starting Field Position	26	24
Mean Starting Field Position	28.5	26.9
Percentage of Returns	51.8%	38.6%
Percentage of Possessions Starting Between 15-20	16%	20.0%
Percentage of Possessions Starting Between 20-25	24.7%	26.0%
Percentage of Possessions Starting Between 25-30	18.5%	17.0%
Percentage of Possessions Starting Between 30-35	9.8%	6.0%
Percentage of Returns for a Touchdown	1.2%	0%
Percentage of Flags Thrown	10.5%	11%
Percentage of Fumbles	3%	3%

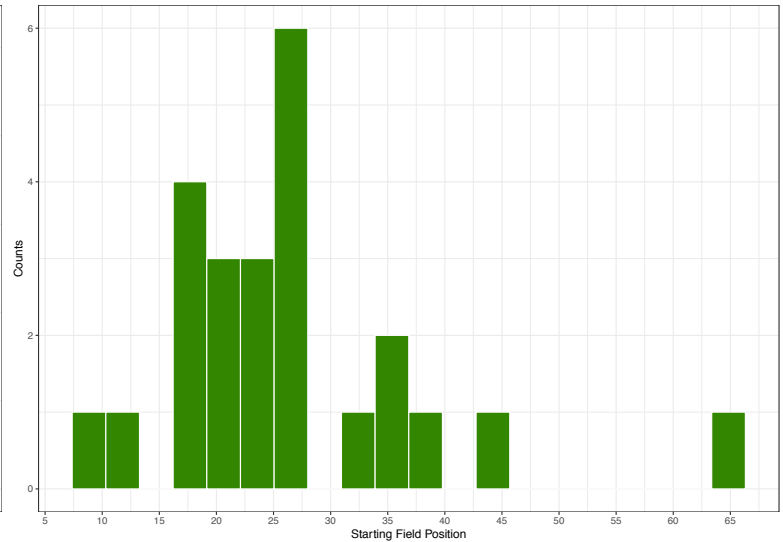
Notice that the median starting field positions for both the FCS and Ivy League decreases when the players elect to return the kick after catching the ball before the 10-yard line. There is also a **rise in percentage of returns that fail to reach the 25-yard line**. This makes sense, as the returners must travel further to reach the goal of the 25-yard line.

Here are the same tables for kicks caught anywhere **between the 10 and 20 yard-lines**:

Starting Field Positions FCS 2019
Ball caught anywhere between the 10 and 20-yard line



Counts of Starting Field Positions Ivy League 2019
Ball caught anywhere before the 10 and 20-yard line



Statistic	FCS	Ivy League
Median Starting Field Position	31	25.5
Mean Starting Field Position	32.6	26.6
Percentage of Returns	75.1%	50%
Percentage of Possessions Starting Between 15-20	16%	20.8%
Percentage of Possessions Starting Between 20-25	24.7%	20.8%
Percentage of Possessions Starting Between 25-30	18.5%	25.0%
Percentage of Possessions Starting Between 30-35	9.8%	8.3%
Percentage of Returns for a Touchdown	1.2%	0%
Percentage of Flags Thrown	8.1%	12.5%
Percentage of Fumbles	2.9%	0%

There are jumps in both the FCS and just the Ivy League in starting field positions when a player catches the ball between the 10 and 20-yard lines. Again, this is logical, as the player must travel fewer yards to progress past the 25-yard line.

However, despite the contrast in average starting field positions, in the FCS, the majority of returns between this threshold actually fail to reach the 25-yard line, while in the Ivy League (albeit fewer percentage of returns) the most common outcome of return progresses past the 25-yard line.

While the average starting field position rises as a player catches the ball closer to the 25-yard line, **the highest proportion of possessions in the FCS last season began before the 25-yard line when catching the ball prior to the 25-yard line.**

In sum, the highest proportion of returned kicks do not reach the 25-yard line. **While small, there is also the possibility of a fumble (which occurred roughly 3 percent of the time in the FCS last season), a penalty (9 percent of the time), or an injury.** while there is no statistical evidence proving the alternative hypothesis that the true mean of kickoff returns is less than 25-yards, it should be noted that the highest proportion of returns fail to reach the 25-yard line, in addition to the risks noted above.

Looking at all kickoff returns, regardless of where the player caught the ball, the median and means for both FCS and Ivy League are shown below, along with proportions of returns that reached the 25-yard line.

Statistic	Ivy	
	FCS	League
Median Starting Field Position	28	25
Mean Starting Field Position	30.5	27.8
Percentage of Returns Failing to Reach the 25-Yard Line	39%	52.1%
Percentage of Returns Past the 25-Yard Line	61%	47.9%

In the entire FCS, 61 percent of returns result in starting field positions past the 25-yard line. In the Ivy League, however, the median starting field position is to the 25-yard line when player elects to return it; 52.1 percent of those returns fail to reach the 25-yard line. **Thus, the majority of returns in the Ivy League do not advance to the 25-yard line, independent of where the returner catches the ball.** It appears that Dartmouth Football and the other members of the Ivy League should think again before electing to return the kickoff.