

1116-L5-1880

**Andrew B Perry\*** (aperry@springfieldcollege.edu). *Win Expectation Values and Pete Carroll's Decision to Pass in Super Bowl 49.*

Seattle Seahawks coach Pete Carroll's decision to pass the ball on 2nd and goal from the 1-yard line in Super Bowl 49 was controversial to say the least. The ball was intercepted and the Seahawks lost the game. Most football fans ridiculed the decision. Sports analytics experts disagreed; an unscientific study showed that a strong majority of speakers and attendees at the 2015 MIT/Sloan Sports Analytics Conference viewed the decision to pass as either a smart move that happened to backfire, or as a slight miscalculation. Many casual fans looked only at the probability of scoring on second down itself, which would certainly have been higher on a running play. On the other hand, intelligent football analysts computed the probability of the Seahawks winning the actual game after a second down pass, considering all possible contingencies. For example, the probability of an interception on a short second down pass can be taken as about 1%, considering many factors such as Russell Wilson's 1.5% interception rate on the season. We will present some estimates for particular play outcomes, and then crunch the numbers and "prove" that Carroll's decision, right or wrong, was much smarter than the average fan realized. (Received September 21, 2015)