

Risky Business Week 17(2)

The Risk of Fumbling GWC

It doesn't require a sophisticated analytics model to know that turnovers are bad. Surrendering possession near the line of scrimmage is almost always very costly to a team's winning prospects. A second consideration is the advancement of the ball after the turnover. It is instinctual for players to try and score after an interception or a recovered fumble, but it often comes with risk. Defensive players, particularly those who are not accustomed to carrying the ball, are taught to fall on a fumble recovery rather than scoop it up and keep running. There are exceptions of course, but we often see valuable turnovers squandered because a player tried to do too much. The trade-off between the value of securing the loose ball and the value of advancing it, is worthy of some deeper analysis.

In the fourth quarter of last night's game between Philadelphia and Washington each team fumbled at a crucial moment when a considerable amount of GWC was at stake. We will look one of those impactful plays and examine the comparative game states from the defensive teams' perspective. The GWCs were generated by the EdjSports' simulation model based upon what would be the resulting game state.

At 9:42 of the 4th quarter, the Eagles faced 2nd and 5 on their own 46-yard line trailing 17-14. After a botched snap, Nate Sudfeld was unable to pick up the ball and it was deflected to the Eagles' 36-yard line where Washington's Chase Young scooped it up and attempted to score. He was pushed out of bounds at the Eagles' 25-yard line.

Comparative Scenarios:

Game State After:	Washington GWC
Chase Young scores a touchdown	92.3%
Chase Young falls on ball at 36-yard line	80.2%
Chase Young runs ball to 25-yard line (actual)	83.2%
Eagles recover ball at 36-yard line	66.9%

To assess the risk and reward of Chase Young's attempt to score we will treat a fumble recovery by Washington at the 36- yard line as the baseline (assuming Young could have simply fallen on the ball).

With the generous assumption that he would score a touchdown:

Risk: $(80.2 - 66.9) = 13.3\%$

Reward: $(92.3 - 80.2) = 12.1\%$

Ratio: $13.3/12.1 = 1.1$

The more realistic (actual) scenario:

Risk: $(80.2 - 66.9) = 13.3\%$

Reward: $(83.2 - 80.2) = 3.0\%$

Ratio: $13.3/3.0 = 4.4$

To put this in perspective, Chase Young needed to be 1.1X more likely to score a touchdown than to botch the fumble recovery to justify his effort, and he needed to be 4.4X more likely to advance the ball 11 yards than to botch the recovery. Watching the video, it is difficult to fault him for picking up the ball and running, but this analysis illustrates how the risk/reward of such heroic efforts can often be misguided in the context of winning the game.