

# Proposition - Football is a Random Kicking Match

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***“Football's not a matter of life and death ... it's more important than that”***

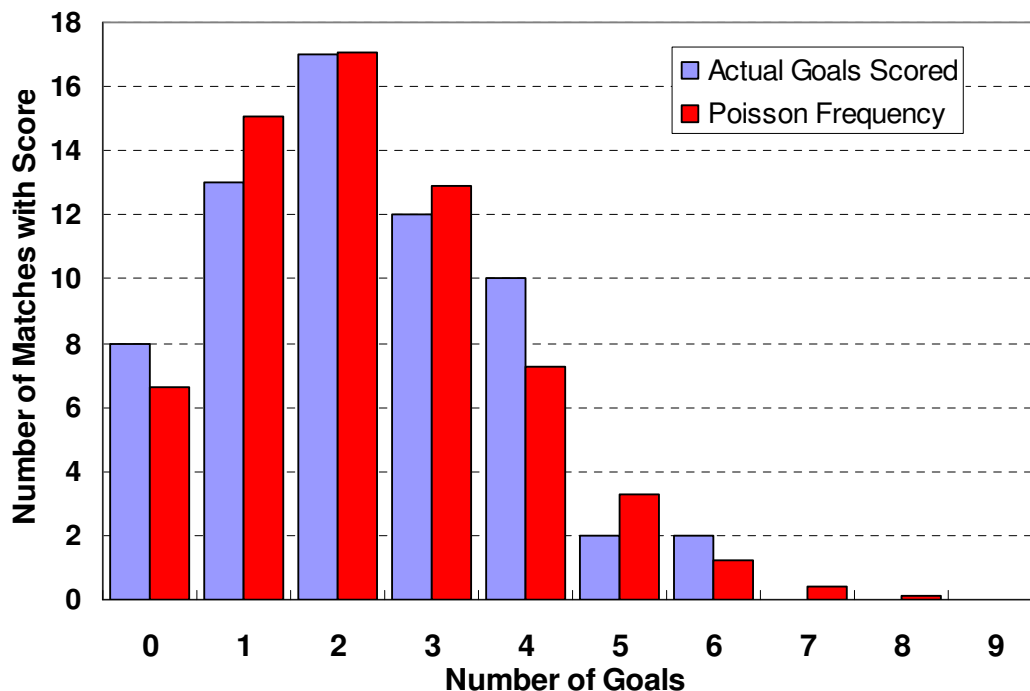
*Bill Shankly (1913 - 1981) - Scottish Football Manager of Liverpool.*

To me, football is utterly boring but to many people it is obviously extremely important. Following a football team is a form of tribalism. It can be obsessively territorial even though players in Premium League teams are frequently no more than highly paid foreign employees.

I hold the view that the outcome of matches between moderately well matched teams is completely random - the same outcome would be obtained if twenty-two incompetent, seriously myopic, one-legged players were to move the ball in random directions for 90 minutes such that, entirely by chance, the ball would go into the goals.

If this were the case the number of goals scored in a large number of matches should follow the well-known Poisson Distribution. This states that the number of times that a combined score of  $C$  would be observed in a set of matches played by incompetents would be  $N(C) = \frac{M \exp(-A) A^C}{C!}$  where  $A$  is the average combined score for all matches and  $M$  is the number of matches played.

My only interest in the tedious 2006 Football World Cup contest was to record the scores and see how well the above formula predicted the observed results. For this contest  $M = 64$  matches and the average score was 2.27 goals per match.



The above graph shows the result of my study. Bearing in mind the fairly small number of matches played the graph shows that the distribution of goals scored is indeed indistinguishable from a game played by incompetents and that the outcome of any given match has no meaningful bearing on the relative skills of the teams and their players.

During the England - Portugal match, I spent the time counting how many passes went to an opposing player by mistake. The figure was 54% which, within statistical uncertainty, is what you expect from a random kicking game.

Also, 53% of passes were towards the target goal with the rest backwards - again very much as expected from a game of random passing.

Thus, every statistical test I have performed is consistent with football being a **'game of two random halves'**!