In order to establish the result we want, we need two preliminary results. First consider what happens if we score a TD to narrow the deficit to 9 points (before trying the extra point), with time for one more score. If we choose to kick the extra point, our only winning scenario is that the kick succeeds, and we make a 2-point conversion following our next TD, and then we win in OT. The probability of this scenario (conditional on scoring the TD) is $p_1 p_2 p_{\mathrm{OT}}$. If instead we go for two and make it, we will be down by 7, and following our next TD we know it will be optimal to kick the extra point. So, if we decide to go for two, we will win only if the 2-point conversion succeeds, and the extra point is good following our next TD, and we win in OT. The (conditional) probability of this scenario is $p_2 p_1 p_{\mathrm{OT}}$, which is exactly the same as if we choose to kick. In short, if you score a TD to narrow the gap to 9 points (prior to the extra-point attempt), with time for just one more score, it doesn't matter if you go for one or two. This result holds as long as $p_2 < p_1 p_{\mathrm{OT}}$.

Next, suppose we score a TD to narrow the deficit to 7 points (before trying the extra point), with time for one more score. We will elect to kick the extra point. We will win the game if this kick is good as well as the kick following our next TD; or if this kick misses but the next one is good, and we win in OT; or if this kick is good but the next one misses, and we win in OT. So, our conditional probability of winning the game at this point, conditional on scoring another TD, is

$$p_1 p_1 + (1 - p_1) p_1 p_{\mathrm{OT}} + p_1 (1 - p_1) p_{\mathrm{OT}}.$$

Finally, suppose we have just scored to close the deficit to 15 points, prior to the extra-point attempt. There is time for two more scores. If we decide to kick the extra point and make it, then following our next TD we will be down by 8 points. We showed in the article that it will then be optimal for us to go for a two-point conversion, and our probability of winning the game (conditional on scoring yet another TD) will be

$$p_2 p_1 + (1 - p_2) p_2 p_{\mathrm{OT}} + p_2 (1 - p_1) p_{\mathrm{OT}}.$$

If instead the kick misses, then following our next TD we will be down by 9, and we showed in the last paragraph that our (conditional) probability of winning the game will be

$$p_1 p_2 p_{\mathrm{OT}}.$$

It follows that if we elect to kick the extra point when down by 15 points, our probability of winning the game (conditional on scoring two more touchdowns) is

$$p_1[\, p_2 p_1 + (1 - p_2) p_2 p_{\mathrm{OT}} + p_2(1 - p_1) p_{\mathrm{OT}} \,] + (1 - p_1)[p_1 p_2 p_{\mathrm{OT}}].$$

Alternatively suppose that, down 15 points, we elect to go for two. If it succeeds, then following our next TD we will be down by 7, and we showed earlier that our conditional probability of winning will be

$$p_1 p_1 + (1 - p_1) p_1 p_{\mathrm{OT}} + p_1(1 - p_1) p_{\mathrm{OT}}.$$

If it fails, we will be down 9 following our next TD, and we showed earlier that our conditional probability of winning will be

$$p_1 p_2 p_{\mathrm{OT}}.$$

It follows that if we decide to go for two, our probability of winning the game (conditional on scoring two more touchdowns) is

$$p_2[\, p_1 p_1 + (1 - p_1) p_1 p_{\mathrm{OT}} + p_1(1 - p_1) p_{\mathrm{OT}} \,] + (1 - p_2)[p_1 p_2 p_{\mathrm{OT}}],$$

which is exactly the same is the conditional probability if we elect to kick. In short, if we score a TD to close the deficit to 15 points (before attempting the extra point), and there is time for just two more scores, it doesn't matter whether we kick or go for two.