

# Influence of $n$ and $x$ on $p$ -value

## Three things:

1. Sample size ( $n$ )
2. Observed deviation from  $H_0$  ( $x$ )  
(distance of  $x$  from peak:  
- equivalently, sample proportion  $x/n$ )
3.  $p$ -value

Any 2 will tell you about the third:

e.g. hypothesis test involves knowing  $n$  and  $x$  and calculating  $p$ -value.

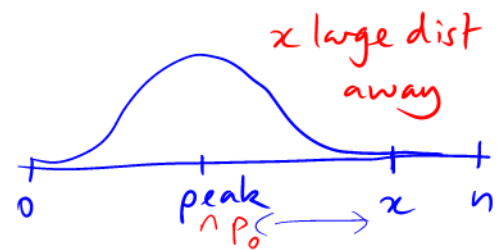
If I only know one, I can't get info about either of the others:

e.g.  $p\text{-val} = 0.01$

$$H_0: P = P_0$$

Could be:

{  $n$  is small  
 $x$  is a very large distance from peak



or {  $n$  is large  
 $x$  is a fairly small distance from peak (but still unusual)

