

GENETICS

THE WINNER'S CURSE

2.04.2007

is another attempt to explain why replication fails frequently in genetic epidemiology. Zöllner and Pritchard write in the [AJHG](#) (their server is currently down)

For a variant that is genuinely but weakly associated with disease, there may be only low or moderate power to detect association. Hence, when there is a significant result, it may imply that the genotype counts of cases and controls are more different from each other than expected. Consequently, the estimates of effect size are biased upward. This effect, which is an example of the “winner’s curse” from economics depends strongly on the power of the initial test for association. If the power is high, most random draws from the distribution of genotype counts will result in a significant test for association; thus, the ascertainment effect is small. On the other hand, if the power is low, conditioning on a successful association scan will result in a big ascertainment effect.

I haven’t fully understood the following argumentation, but promise to revisit it some times later, yea, yea.