Reviewer’s report

Title: Interplay between heritability of smoking and environmental conditions? A comparison of two birth cohorts

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Reviewer: Nick G Martin

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This is a highly interesting paper that makes use of a policy change towards smoking in the past 20 years to explore genotype-environment interaction. A rich dataset of twin data collected 1993-1995 and in 2009-2010 on 2 large birth cohorts was available (twins received the same questions about smoking in the 2 surveys).

A clear decrease in smoking prevalence was observed. Is this decrease comparable to what is seen in the Dutch population in general?

Also could the authors comment on how representative their samples are? (how were they ascertained)?

The main outcome of the GxE interaction analyses was that the heritability was the same in both cohorts. This is a remarkable finding; are there any comparable results (for other phenotypes that show changes in prevalence over the past 20 or 30 years?)

I recommend immediate publication

Level of interest: An article of outstanding merit and interest in its field

Quality of written English: Acceptable

Statistical review: Yes, and I have assessed the statistics in my report.

Declaration of competing interests:

I declare that I have no competing interests