

Supporting Information:

Real-world unexpected outcomes predict city-level mood states and risk-taking behavior

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Regression Equations

The model formulae as entered into the `lmer()` function in the `lme4` package for R were as follows for estimating the effects of sports and sunshine based prediction errors, respectively, upon mood:

```
mood ~ sunshine_pe + TUE + WED + THU + FRI + SAT + SUN + FEB + MAR + APR + MAY + JUN + JUL + AUG + SEP + OCT + NOV + INDEPENDENCEDAY + THANKSGIVING + DAYAFTERCHRISTMAS + NEWYEARESEVE + EASTER + MEMORIALDAY + VALENTINESDAY + (1 + sunshine_pe + TUE + WED + THU + FRI + SAT + SUN + FEB + MAR + APR + MAY + JUN + JUL + AUG + SEP + OCT + NOV + INDEPENDENCEDAY + THANKSGIVING + DAYAFTERCHRISTMAS + NEWYEARESEVE + EASTER + MEMORIALDAY + VALENTINESDAY | msa/county )
```

```
mood ~ sports_pe + TUE + WED + THU + FRI + SAT + SUN + FEB + MAR + APR + MAY + JUN + JUL + AUG + SEP + OCT + NOV + INDEPENDENCEDAY + THANKSGIVING + DAYAFTERCHRISTMAS + NEWYEARESEVE + EASTER + MEMORIALDAY + VALENTINESDAY + (1 + sports_pe + TUE + WED + THU + FRI + SAT + SUN + FEB + MAR + APR + MAY + JUN + JUL + AUG + SEP + OCT + NOV + INDEPENDENCEDAY + THANKSGIVING + DAYAFTERCHRISTMAS + NEWYEARESEVE + EASTER + MEMORIALDAY + VALENTINESDAY | msa/county )
```

and for estimating the effect of mood upon per capita lottery purchases:

```
log_purchase ~ mood + TUE + WED + THU + FRI + SAT + SUN + FEB + MAR + APR + MAY + JUN + JUL + AUG + SEP + OCT + NOV + DEC + FIRST_OF_MONTH + FIFTEENTH_OF_MONTH + STORM + INDEPENDENCEDAY + THANKSGIVING + CHRISTMASDAY + DAYAFTERCHRISTMAS + LABORDAY + EASTER + NEWYEARSDAY + COLUMBUSDAY + MEMORIALDAY + BIRTHDAYOFMARTINLUTHERKINGJR + VETERANSDAY + WASHINGTONSBIRTHDAY + VALENTINESDAY + (1 + mood + TUE + WED + THU + FRI + SAT + SUN + FEB + MAR + APR + MAY + JUN + JUL + AUG + SEP + OCT + NOV + DEC + FIRST_OF_MONTH + FIFTEENTH_OF_MONTH + STORM + INDEPENDENCEDAY + THANKSGIVING + CHRISTMASDAY + DAYAFTERCHRISTMAS + LABORDAY + EASTER + NEWYEARSDAY + COLUMBUSDAY + MEMORIALDAY + BIRTHDAYOFMARTINLUTHERKINGJR + VETERANSDAY + WASHINGTONSBIRTHDAY + VALENTINESDAY | ZIP )
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