

Regression analyses for robustness check

An important difference between the analysis in Tables 3 and 4 and the earlier analysis in Table 2, is that in Tables 3 and 4 the feelings are themselves independent variables. In Table 2 when we consider the effect of an experimental condition on Score or Answers, this effect includes both a direct effect (or an effect that does not go through the feelings we elicited), and the indirect effect through the effect of the experimental condition on feelings and their effect on effort. In Tables 3 and 4, on the other hand, because the feelings are included in the regression, the coefficients of the experimental conditions no longer include the indirect effect through the effect of the experimental condition on the feelings.

We see in regressions (1) and (2) in both Tables 3 and 4 that participants solve fewer tasks when each task requires to find two letters rather than one. This is in line with our findings in Table 2 and shows the expected effect of economic incentives. When paid the same payment for a harder task, people choose to complete fewer of these tasks. Regression (3) in both tables shows that in the two conditions that involve a task of finding one letter, the treatment condition (with the irrelevant task describing a harder task) resulted in fewer tasks being solved. This is in line with the direction of the results in column (3) of Table 2, but here with stronger statistical significance. Regression (4) in both Tables 3 and 4 shows that in the two-letters conditions, the treatment versus control condition (whether there was or was not an alternative easier task described) had no effect and the number of tasks solved was similar. This is consistent with what we found in Table 2.

Regressions (5) in both tables are analyzed in order to examine the effect of the feelings, perceptions (the Boring-interesting and Difficult-easy scales) and the demographic variables on the entire data. In both regressions, other than the experimental condition variables, the only variable that is statistically significant is the Angry-calm measure. Participants who are more angry solve fewer tasks than those who are calm. This result is statistically significant with $p=0.018$ in the Score regression and with $p=0.009$ in the Answers regression. The coefficients are also substantial, 0.731 and 0.890, respectively (recall that this variable is measured on a 1–9 scale as opposed to the experimental condition variables, which are dummy variables). It is interesting that none of the other feelings, and even whether the participant finds the task boring or difficult, is not statistically significant, but the Angry-calm scale is. Moreover, the coefficients of the other feelings (or perceptions) variables are always lower than 0.24 in absolute value, far from the values of 0.731 and 0.890 in the case of Angry-calm.

When considering the demographic variables (Female, Age, Years of schooling, Number of economic courses), none of them is statistically significant in regression (5) in both tables. The other regressions also have no demographic variables that are statistically significant, except for Female that is positive and statistically significant in regression (3). It suggests that female participants solved more tasks than males when the payment was more generous (\$0.10 for finding one letter) but not when the payment was less worthwhile (\$0.10 to find two letters). In fact, the coefficient of Female even turns in both Tables 3 and 4 from

positive to negative (although it is not statistically significant) in regression (4), which only considers the conditions where the task was to find two letters. Further analysis of this gender difference using the interaction variable of Female*TwoLetters yields mixed results. When this interaction is added to the regression in Table 3 (of Score) it is statistically significant ($p=0.021$) but when it is added to the regression in Table 4 (of Answers) it is not statistically significant ($p=0.065$). When running more parsimonious regressions with only the variables Female, TwoLetters, and their interaction, the interaction is not statistically significant in both cases ($p=0.148$ with dependent variable Score, and $p=0.308$ with dependent variable Answers). Overall it seems that the gender effect here is not robust.

TABLE 3. Regressions with the dependent variable Score.

	(1) Treatment	(2) Control	(3) One Letter	(4) Two Letters	(5) Overall
Independent variable					
TwoLetters (1 Letter=0, 2 Letters=1)	-2.710* (p=0.045)	-5.408*** (p=0.000)			-5.446*** (p=0.000)
IrrelevantTask (Control=0, Treatment=1)			-3.857** (p=0.004)	0.020 (p=0.987)	-3.202** (p=0.008)
TwoLetters*IrrelevantTask					3.306 (p=0.063)
Disappointed-satisfied	0.221 (p=0.677)	0.402 (p=0.539)	0.154 (p=0.824)	0.321 (p=0.518)	0.218 (p=0.595)
Upset-pleased	-0.863 (p=0.222)	1.166 (p=0.217)	0.292 (p=0.759)	0.084 (p=0.905)	0.178 (p=0.753)
Sad-happy	0.244 (p=0.657)	-0.906 (p=0.280)	-0.401 (p=0.598)	-0.093 (p=0.873)	-0.227 (p=0.628)
Angry-calm	1.046** (p=0.009)	0.533 (p=0.280)	1.413** (p=0.005)	0.297 (p=0.442)	0.731* (p=0.018)
Boring-interesting	-0.265 (p=0.334)	-0.307 (p=0.280)	0.037 (p=0.892)	-0.376 (p=0.181)	-0.211 (p=0.276)
Difficult-easy	0.545 (p=0.054)	-0.376 (p=0.229)	-0.131 (p=0.678)	0.157 (p=0.551)	0.052 (p=0.799)
Female	1.959 (p=0.071)	1.009 (p=0.440)	4.209** (p=0.001)	-0.432 (p=0.692)	1.437 (p=0.085)
Age	0.002 (p=0.967)	-0.057 (p=0.281)	-0.081 (p=0.111)	0.036 (p=0.472)	-0.030 (p=0.407)
Years of schooling	0.253 (p=0.277)	-0.036 (p=0.904)	-0.058 (p=0.824)	0.218 (p=0.387)	0.110 (p=0.543)
Number of economic courses	-0.155 (p=0.533)	-0.258 (p=0.347)	-0.248 (p=0.360)	-0.129 (p=0.603)	-0.205 (p=0.266)
N	168	162	161	169	330
R ²	0.216	0.176	0.197	0.047	0.177

The table reports the coefficients of the independent variables on the left in a regression of the dependent variable Score, and in parentheses the p-values of the coefficients.

*, ** and *** represent $p < 0.05$, $p < 0.01$ and $p < 0.001$ levels of significance, respectively.

TABLE 4. Regressions with the dependent variable Answers.

	(1) Treatment	(2) Control	(3) One Letter	(4) Two Letters	(5) Overall
Independent variable					
TwoLetters (1 Letter=0, 2 Letters=1)	-3.093* (p=0.044)	-5.913*** (p=0.000)			-5.934*** (p=0.000)
IrrelevantTask (Control=0, Treatment=1)			-3.723* (p=0.011)	0.274 (p=0.839)	-3.101* (p=0.019)
TwoLetters*IrrelevantTask					3.250 (p=0.096)
Disappointed-satisfied	0.328 (p=0.586)	0.202 (p=0.774)	0.109 (p=0.887)	0.317 (p=0.562)	0.197 (p=0.663)
Upset-pleased	-1.056 (p=0.187)	1.100 (p=0.280)	0.007 (p=0.994)	0.079 (p=0.919)	0.049 (p=0.937)
Sad-happy	0.132 (p=0.832)	-0.701 (p=0.438)	-0.358 (p=0.670)	-0.098 (p=0.878)	-0.239 (p=0.643)
Angry-calm	1.273** (p=0.005)	0.556 (p=0.296)	1.720** (p=0.002)	0.305 (p=0.474)	0.890** (p=0.009)
Boring-interesting	-0.185 (p=0.553)	-0.292 (p=0.340)	0.049 (p=0.869)	-0.309 (p=0.318)	-0.165 (p=0.439)
Difficult-easy	0.474 (p=0.137)	-0.356 (p=0.290)	-0.228 (p=0.512)	0.177 (p=0.544)	0.025 (p=0.911)
Female	1.620 (p=0.186)	0.778 (p=0.580)	3.702* (p=0.011)	-0.516 (p=0.668)	1.192 (p=0.193)
Age	0.027 (p=0.625)	-0.059 (p=0.302)	-0.084 (p=0.137)	0.062 (p=0.269)	-0.020 (p=0.613)
Years of schooling	0.292 (p=0.267)	0.017 (p=0.957)	0.009 (p=0.975)	0.234 (p=0.399)	0.138 (p=0.489)
Number of economic courses	-0.210 (p=0.454)	-0.297 (p=0.314)	-0.334 (p=0.265)	-0.119 (p=0.663)	-0.245 (p=0.226)
N	168	162	161	169	330
R ²	0.201	0.165	0.169	0.046	0.166

The table reports the coefficients of the independent variables on the left in a regression of the dependent variable Answers, and in parentheses the p-values of the coefficients.

*, ** and *** represent $p < 0.05$, $p < 0.01$ and $p < 0.001$ levels of significance, respectively.