File S1

Supplemental Methods and Results

Simulated agents

Simulated agents behave probabilistically based on the past choices of their partners. Specifically, artificial investors playing the dilemma have to make two decisions: to decide how many units send to the trustee and to evaluate trustee behavior (i.e., they assign reputation to trustees). In the no-reputation treatment, the four artificial investor choices (1, 4, 7, 10 units) are equally likely to occur. In the reputation treatment, artificial investor behavior is based upon probability distributions, trustee reputation and past choices (Tab. S1).

Similarly, when assigning a reputation to a partner, artificial investors look at the three last choices made by the trustee. When choices have been all the same and signaling a specific behavior (i.e., the first two columns of the table, where trustees have repeatedly chosen either to send back nothing or to equalize payoffs), the reputation judgment is deterministic (negative or positive, respectively). When trustee past behavior is less clear, probabilities award cooperative behavior with higher chances of a positive reputation, and vice versa (Tab. S1).

Matlab script

A script (http://precedings.nature.com/documents/6142/version/2) was written in Matlab (The MathWorks, Inc., Natick, MA) to tabulate Talairach coordinates of local maxima of all activation maps and to determine the activated brain regions and Brodmann Areas (BA) according to the Analysis of Functional Neuroimages (AFNI, http://afni.nimh.nih.gov) atlas. The same script was used to compute the lateralization indices L% and R% for each cluster of brain activity, and for anatomical or BA subregions of clusters, according to the following formulae $L = \dfrac{n_{voxL}}{n_{voxL} + n_{voxR}}$; $R = \dfrac{n_{voxR}}{n_{voxL} + n_{voxR}}$

, where nvoxL is the number of active voxels in a cluster in the left cerebral hemisphere, and nvoxR is the number of active voxels in the homologous region of the right hemisphere.

Preliminary fMRI analysis and results

In order to investigate the difference between Positive and Negative evaluation in the Reaction phase, we performed a preliminary GLM analysis using a more complex model than that presented in the Main Text (MT), which also included the two levels (Negative or Positive) of the Reaction phase as regressors. However, the contrast between Negative and Positive reputation did not lead to any significant difference in brain activations. This is consistent with Liu et al. (2011) meta-analysis on reward valence, suggesting that some components of the reward network are commonly activated by both positive and negative rewards across various stages of reward processing (e.g., anticipation, outcome and evaluation).

We were unable to perform a GLM including the three behavioral levels of back transfer (nothing; the same amount sent by A; an amount that equalize payoff between A and B) as regressors, because only 7 out of 16 subjects used all the three possible choices during the game. For the other 9 subjects one level, depending on the subject, was missing. Thus, in order to control the behavior effects in our data, we performed the ANCOVA described in the MT.

Path Analysis with Structural Equation Modeling

We investigated whether gender has a significant direct impact on behavior by means of a path analysis conducted with Structural Equation Modeling (SEM).

In particular, we extracted a dataset composed by trial by trial beta values of activation in 8 brain areas. Selected areas are those that, in the ANOVA analysis have been found significantly covariant either with Gender (Caudato and Insuala) or with the interacted variable between Reputation and

Gender (precuneus, fusiform gyrus, DLPFC and DMPFC) in the Choice phase and with Gender (fusiform gyrus, VLPFC) in the Reaction phase. We also included behavioral choices and information about subjects' gender, treatments and runs of the experiment and we obtained an unbalanced dataset with a total of 690 observations for the 16 subjects.

In SEM we consider four exogenous variables: Gender (Male or Female), Reputation (Reputation or No Reputation), the interacted variable between Gender and Reputation and the variable indicating the run of the experiment. Endogenous variables are activation values in the 8 brain areas introduced above and one behavioral variable that represents the choice made by subjects and it is measured as the rate between the units given back to investors and the total endowment available.

We developed a SEM model starting from the following assumptions:

1) all brain areas have a direct effect on behavior, as suggested by the data analysis presented throughout the paper;

2) brain areas can be correlated and this can be modeled only in terms of covariance of error terms (i.e., in the model there cannot be any directed causal relationship between brain areas);

3) any exogenous variable can directly predict any endogenous variable.

Following these hypotheses, a SEM model is developed by means of an iterative procedure lead by a criterion of model fitness. The procedure starts from a random configuration of relationships between variables, then causal links and covariances among error terms of endogenous variables are removed if not significant ($p > 0.05$) and added if their modification index points out a significant improvement ($p < 0.05$) of the model in terms of reduction in its χ^2.

Following the assumptions above, direct effects between brain areas and the behavioral variable are kept constant throughout the procedure. Both covariances between error terms of endogenous variables and causal links directed from exogenous variables to endogenous ones are introduced and kept in the model only if they significantly improve the capability of the model to fit the data. The procedure stops when modifications improving the model further and significantly are not available.

The resulting SEM model does not significantly fail in reproducing the covariance matrix for the 13 variables considered, in fact its χ^2 is small relative to the degrees of freedom and not significant (p > 0.05). Moreover, the probability of the model to have a root mean squared error of approximation less than or equal to 0.05 is 0.998 and its Comparative Fit Index is 0.984.

The SEM model showed what follows:

1) exogenous variables (Gender - male or female -, Reputation, - Reputation or No-Reputation , the interacted variable between Gender and Reputation and the variable indicating the run of the experiment) do not have any direct effect on the behavioral variable;

2) there is only one direct effect of the variable indicating the experimental run and it is on the Fusiform gyrus, showing, during the reaction phase, a greater activity in the No-Reputation than in the Reputation treatment;

3) Reputation has a direct effect on PCN, Caudato and VLPFC;

4) Gender has a direct effect on DLPFC, Caudato, Insula, Fusiform (reaction phase) and VLPFC;

5) The interacted variable between Gender and Reputation has a direct effect on Fusiform (choice phase), DLPFC, DMPFC and Caudato;

6) All brain areas have a significant (p < 0.05) direct effect on the behavioral variable, except Caudato and Fusiform (reaction phase);

7) The Gender and Reputation variables have a significant indirect effect on the behavioral variable (respectively, p = 0.005 and p = 0.000).

To sum up, the SEM model showed that gender does not have a significant direct effect on behavior. Nevertheless, gender does have a significant indirect effect on behavior, that is to say that gender predicts behavior only if mediated by brain areas.

Also different models were developed and all of them confirmed the results of the model described above. Results are confirmed when the behavioral variable is measured either as the absolute amount of units given back to investors or as its difference with the average individual amount of restitution

in the baseline treatment. Similarly, again, results are also confirmed when relaxing the first assumption described above. In fact, we developed a further model where direct effects spanning from brain areas to behavior are evolved according to model fitness instead of imposing a constant structure. All these models do not contain a direct effect of gender on behavior.

In all models, estimation of parameters has been conducted with a maximum likelihood algorithm considering missing values (the behavioral variable is missing when subjects did not make a choice in time or pushed the wrong button during the experiment). In all models, the variance-covariance matrix of the estimates has been estimated by means of the generalized Huber-White-Sandwich estimator considering each subject as a single group (i.e., cluster-robust standard errors).

Further details about SEM models are available from authors on request.

fMRI and PET Meta-analysis

We generate three meta-analyses of interest using the BrainMap database, the Sleuth 2.0.3 and GingerAle 2.1 software.

BrainMap (http://www.brainmap.org) is a database of published functional neuroimaging studies (mainly PET and fMRI) that contains both metadata descriptions of experimental design and activation locations in the form of stereotactic coordinates (Fox and Lancaster, 2002). BrainMap contains 2298 neuroimaging papers that analyse 10924 experiments using 100 unique paradigm classes, yielding to 87,683 locations or foci (May 11, 2013).

We extracted from the BrainMap database all the studies involving only normal subjects that reported an activation in three Experimental Paradigm Classes of interest described below:

Reward Task a behavioral experimental paradigm in which, in at least one of the conditions, subjects perform a task in which correct performance is associated with reward, often monetary reward;

Delay Discounting Task	a behavioral experimental paradigm that measures subject self-control, i.e. the capacity for resist the temptation of an immediately delivered small reward, in order to obtain a large reward delivered at variable delays;
Theory of Mind Task	a behavioral experimental paradigm in which the subjects should attribute mental states - beliefs, intents, desires, pretending, knowledge, etc. - to himself and others and to understand others beliefs, desires and intentions as different from their own.

We sent queries to the database with the Sleuth 2.0.3 software (Fox et al., 2005). The specific queries were:

[Diagnosis = Normals] AND [Experiment Paradigm Class = Reward Task];

[Diagnosis = Normals] AND [Experiment Paradigm Class = Delayed Discount Task];

[Diagnosis = Normals] AND [Experiment Paradigm Class = Theory of Mind Task].

The results were:

Reward Task	169 papers (159 fMRI, 10 PET), 3378 subjects, 838 experiments, 6274 foci;
Delay Discounting Task	11 papers (11 fMRI), 352 subjects, 50 experiments, 651 foci;
Theory of Mind Task	26 papers (22 fMRI, 4 PET), 530 subjects, 121 experiments, 828 foci.

The Activation Likelihood Estimation (ALE) analysis is a quantitative method that can be used to estimate consistent activation across different imaging studies (Eickhoff *et al*., 2009). ALE maps of coactivations are derived based on patterns of foci of interest, where multiple studies have reported statistically significant peak activation. To limit intersubject and interlaboratory variability, we used an algorithm that estimates the spatial uncertainty of each focus, taking into account the possible

differences among the neuroimaging studies (Eickhoff *et al*., 2009). This algorithm was preferred to a specified FWHM as in the original ALE approach. The advantage of such an algorithm is that it limits the meta-analysis to an anatomically constrained space specified by a gray matter task. Furthermore, it comprises a method to calculate the above-chance clustering between experiments (i.e., random effects analysis) rather than between foci (fixed effects analysis). Regions of convergence were calculated using GingerAle 2.1 software (Eickhoff *et al*., 2009; Eickhoff *et al*., 2012) in the Talairach space (Talairach and Tournoux, 1988) with the more conservative mask size and FWHM values subject-based. The p threshold was False Discovery Rate with positive dependence assumption, FDR pN < 0.01 and minimum clusters extent Ke > 200 mm^3. We used Chris Rorden's MRIcron software (http://www.nitrc.org/projects/mricron) for visualize and save images, overlaying the GingerAle maps onto a Talairach brain template (created by Kochunov *et al*., 2002). See below the list of references included in the three meta-analyses and see results in Tab. S2 and Fig. S2.

Supplemental analysis of behavioral data

Game dynamics

The game dynamic showed a systematic increase of back transfers in the Reputation treatment rounds (Fig. S3). In both runs, the reputation conditions led to similar averages (7.86 ± 0.54 MU vs. 7.81 ± 0.52 MU, V= 44, p = 0.112 one tailed) while the no reputation condition of the second run led to significantly lower back transfers than the no reputation condition of the first run (4.10 ± 0.53 MU vs. 2.29 ± 0.38 MU, V= 19, p = 0.011 one tailed). It is also worth noting that, immediately after the change from the no reputation to the reputation condition, subjects increased their back transfer. On average back transfer in the last no reputation round were 3.23 ± 0.77 MU and became 8.29 ± 1.24 MU in the first reputation round. This difference is highly significant (V= 114.5, p = 0.009). Back transfers further increased when subjects started to receive evaluations for their

choices, rising from 7.77 ± 0.80 MU in the first three rounds of both reputation conditions to 8.78 ± 0.81 MU in the subsequent three rounds. However, this difference is not significant ($V = 83$, $p = 0.101$).

Behavioral effects of the received evaluations

Overall subjects received a total of 288 evaluations, with a majority of positive ones (163 positive vs. 126 negative). During the second reputation condition, the proportion of positive evaluations increased from 53.5% to 59.7%. Subjects strongly reacted to the evaluations received, showing a clearly increasing trend of back transfers following a negative evaluation, while decreasing them after a positive one (see MT, Fig. 2B).

While in the no reputation condition the trend was to decrease back transfers over time (on average, by 0.52 ± 0.46 MU per round), in the reputation condition the increase or decrease of this amount depended on the evaluation received in the previous round. More precisely, in the first three rounds of the reputation condition, when no evaluation was yet communicated, participants on average increased their back transfer by 1.19 ± 0.97 MU per round. Subsequently, they increased average back transfers after a negative evaluation (2.68 ± 0.76 MU) and decreased them after a positive evaluation (-1.98 ± 0.79 MU). The differences with the first three rounds of the reputation condition, where no evaluation took place due to insufficient past data, is significant for both negative and positive evaluations ($V = 30$, $p = 0.025$ one tailed, and $V = 111$, $p = 0.002$ one tailed, respectively). Differences with the baseline are highly significant for negative evaluations ($V = 13$, $p = 0.001$ one tailed) but only significant at the 10% level for positive evaluations ($V = 98$, $p = 0.065$ one tailed). These results are confirmed by a fixed effects model using the first order differences in back transfer as dependent and the evaluations received (in comparison with the no reputation treatment) as independents, controlled by the amount sent by A players. All coefficients are highly significant except the one related to the condition where subjects did not yet receive an evaluation, which is

significant only at the 10% level. Consistent with the analysis above, subjects increased their back transfer following a negative evaluation, but decreased them following a positive one (Tab. S3).

Payoffs

Average payoffs were slightly lower in the reputation rounds (25.4 ± 0.6 MU/round) than in the baseline ones (29.9 ± 0.7 MU/round) due to the fact that B players who transferred back a higher share of their endowment and this was not compensated by the higher amounts sent by the artificial agents playing in the A position. The difference is significant at the 1% level ($V = 18$, $p = 0.004$ one tailed). Gender differences in payoffs are not significant neither in the baseline nor in the reputation rounds (Baseline: females 28.2 ± 1.0 MU/round, males 29.5 ± 1.1 MU/round, $W = 24$, $p = 0.221$ one tailed; Reputation treatment: females 25.2 ± 0.7 MU/round, males 25.5 ± 0.9 MU/round, $W = 33$, $p = 0.489$ one tailed).

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Table S1: Simulated agents' behavior. From top to bottom: **A**) The Investor's choice probabilities in the reputation treatment; **B**) The distribution of the past three actions of the trustee; **C**) The probability of receiving a positive or negative evaluation (depending on B); **D**) The combination of the Investor's and the Trustee's choices.

A		Trustee's reputation	
	Units	Positive	Negative
Investor's choice	1	0.05	0.45
	4	0.15	0.35
	7	0.35	0.15
	10	0.45	0.05

B	Trustee's three past choices									
Send back nothing	0	3	1	0	0	0	1	1	2	2
Send back as received	0	0	1	3	1	2	0	2	0	1
Equalize payoffs	3	0	1	0	2	1	2	0	1	0

C	Probability of receiving an evaluation									
Positive	1	0	0.5	0.5	0.8	0.6	0.7	0.4	0.3	0.2
Negative	0	1	0.5	0.5	0.2	0.4	0.3	0.6	0.7	0.8

D		Trustee's choice					
		Send back nothing		Send back as received		Equalize payoffs	
Investor's choice		Investor	Trustee	Investor	Trustee	Investor	Trustee
Units	1	9	14	10	13	11.5	11.5
	4	6	26	10	22	16	16
	7	3	38	10	31	20.5	20.5
	10	0	50	10	40	25	25

Table S2: fMRI and PET meta-analysis results.

From top to bottom: Theory of Mind ALE; Delay Discounting Task ALE; Reward ALE.

Cluster	Brain Region	Ke	X	y	Z	Max ALE
THEORY OF MIND ALE						
1	L Superior Frontal Gyrus (BA9)	8968	-2	48	30	0.065
	L Medial Frontal Gyrus (BA9)		-4	50	18	0.039
	L Superior Frontal Gyrus (BA9)		-24	46	36	0.036
2	L Posterior Cingulate (BA31)	6272	-8	-54	24	0.050
	R Cingulate Gyrus (BA31)		2	-60	28	0.034
	R Precuneus (BA7)		4	-54	38	0.033
3	R Middle Occipital Gyrus (BA37)	6024	48	-68	6	0.041
	R Middle Temporal Gyrus (BA19)		48	-60	16	0.034
	R Superior Temporal Gyrus (BA22)		52	-50	12	0.029
	R Superior Temporal Gyrus (BA22)		48	-36	2	0.026
4	L Superior Temporal Gyrus (BA22)	3808	-54	-56	18	0.035
	L Middle Temporal Gyrus (BA37)		-42	-64	8	0.027
5	L Middle Temporal Gyrus (BA 22)	2464	-56	-34	-2	0.033
	L Superior Temporal Gyrus (BA22)		-48	-36	2	0.030
6	R Middle Temporal Gyrus (BA21)	1704	56	-10	-12	0.037
DELAY DISCOUNTING TASK ALE						
1	L Inferior Parietal Lobule (BA 40)	4664	-34	-54	42	0.035
	L Supramarginal Gyrus (BA 40)		-54	-52	30	0.033
2	R Middle Frontal Gyrus (BA 10)	3208	40	36	24	0.035
3	R Fusiform Gyrus (BA 37)	2824	48	-54	-10	0.037
	R Inferior Temporal Gyrus (BA 20)		52	-28	-12	0.022
	R Middle Temporal Gyrus (BA 21)		58	-20	-16	0.020
4	R Angular Gyrus (BA 39)	2592	42	-58	36	0.027

	R Superior Parietal Lobule (BA 7)		30	-60	46	0.027
	R Inferior Parietal Lobule (BA 40)		38	-42	42	0.021
5	L Limbic Lobe.Cingulate Gyrus (BA 31)	1808	-2	-34	30	0.031
6	L Caudate Head	1448	-8	4	-2	0.038
	L Medial Globus Pallidus		-14	-6	-4	0.020
7	L Claustrum	1384	-24	16	6	0.024
	L Caudate Body		-14	-2	18	0.023
	L Caudate Body		-18	12	14	0.022
8	L Middle Frontal Gyrus (BA 10)	1304	-38	44	-2	0.023
	L Inferior Frontal Gyrus (BA 45)		-46	36	2	0.018
9	R Middle Frontal Gyrus (BA 8)	1280	38	22	44	0.023
	R Superior Frontal Gyrus (BA 6)		26	12	48	0.023
10	L Middle Temporal Gyrus (BA 21)	1152	-60	-28	-4	0.022
11	L Inferior Occipital Gyrus (BA 17)	1088	-14	-88	-6	0.037
12	R Putamen	1024	24	16	-8	0.031
REWARD ALE						
1	L Lateral Globus Pallidus	117416	-12	8	0	0.450
	R Caudate Head		12	8	0	0.429
	R Insula		32	18	2	0.270
	L Claustrum		-30	18	2	0.247
	R Thalamus		2	-16	10	0.194
	L Anterior Cingulate Cortex (BA32)		0	48	-2	0.181
	R Amygdala		22	-2	-10	0.162
	R Medial Frontal Gyrur (BA6)		2	14	44	0.150
	L Cingulate Gyrus (BA32)		0	24	34	0.149
	L Cingulate Gyrus (BA24)		-2	2	46	0.126

2	L Superior Parietal Lobule (BA7)	2432	-28	-62	42	0.107
	L Superior Parietal Lobule (BA7)		-30	-58	42	0.107
3	L Cingulate Gyrus (BA23)	2384	0	-28	32	0.129
4	R Middle Frontal Gyrus (BA10)	1520	34	48	2	0.082
5	L Middle Frontal Gyrus (BA10)	1096	-32	44	18	0.088
6	R Inferior Parietal Lobule (BA40)	1392	40	-54	48	0.080
	R Inferior Parietal Lobule (BA40)		42	-46	44	0.075
	R Superior Parietal Lobule (BA7)		24	-64	40	0.092

Consistent ALE clusters, p<0.01, FDR corrected for multiple comparisons. Ke = cluster extension > 1000 mm^3. (BA) = Brodmann Area. L = Left. R = Right. x, y, z expressed in mm. Coordinates were reported in Talairach space. Brain regions are classified using Talairach Daemon Tool (http://www.talairach.org/daemon.html).

Table S3: **Fixed effect model on back transfer differences.**

	Estimate	S.E.	t	p
Previous evaluation: Negative	3.124	0.920	3.394	0.001
Previous evaluation: None	1.623	0.924	1.756	0.080
Previous evaluation: Positive	–2.070	0.847	–2.443	0.015
Amount sent	0.911	0.096	9.509	0.000
R^2	0.150			
F(4,660)	29.093			<0.001

Table S4: Single subjects analysis. Percentage of males and females with significantly activation

in peak areas of the Interaction Gender x Reputation during Choice Phase (see Table 1, in MT).

Peak Area (Brodmann Area)	x	y	Z	Males %	Females %
R Medial Frontal Gyrus (BA 8)	11	37	42	0%	54%
L Precuneus (BA 7)	-13	-53	45	13%	88%
L Fusiform Gyrus (BA 37)	-31	-32	-21	13%	63%
L Middle Frontal Gyrus (BA 9, 46)	-37	37	24	100%	30%

Significantly activated clusters, p<0.05, uncorrected. L = Left. R = Right. x, y, z expressed in mm.

Coordinates were reported in Talairach space. Brain regions are classified using AFNI

(http://afni.nimh.nih.gov) atlas.

Table S5: ANCOVA results for the Choice phase. The results of the ANCOVA, with a "Behavior" covariate, is shown in the upper part of the Table for the areas showing a Gender effect and in the lower part for the areas showing an Interaction Gender*Reputation effect (see Table 1 in the MT).

	Degr. of freedom	F	p	Partial eta-squared	Power (alpha=0.05)	Clust.	Brain region
GENDER (MALES > FEMALES)							
Intercept	1	17.55582	0.001059	0.574549	0.971567	1	**R Crb [Crus 1]**
BEHAVIOR	1	3.26304	0.094051	0.200641	0.387307		
GENDER	1	31.28832	0.000087	0.706469	0.999279		
Error	13						
TREATMENT	1	7.96185	0.014419	0.379826	0.741797		
TREATMENT*BEHAVIOR	1	1.90013	0.191324	0.127524	0.248181		
TREATMENT*GENDER	1	1.19116	0.294910	0.083937	0.173112		
Error	13						
Intercept	1	4.31029	0.058280	0.249002	0.484975	**2**	**R Insula**
BEHAVIOR	1	9.87340	0.007788	0.431654	0.827295		
GENDER	1	31.22576	0.000088	0.706054	0.999266		
Error	13						
TREATMENT	1	9.14638	0.009771	0.412997	0.798196		
TREATMENT*BEHAVIOR	1	0.00026	0.987382	0.000020	0.050026		
TREATMENT*GENDER	1	0.36856	0.554247	0.027569	0.087090		
Error	13						
Intercept	1	12.68022	0.003483	0.493774	0.907901	3	**R Midd. Frontal Gyrus**
BEHAVIOR	1	2.23751	0.158575	0.146842	0.283528		
GENDER	1	17.05328	0.001186	0.567435	0.967774		
Error	13						
TREATMENT	1	12.96453	0.003228	0.499317	0.913772		
TREATMENT*BEHAVIOR	1	1.20763	0.291737	0.084999	0.174857		
TREATMENT*GENDER	1	2.80299	0.117964	0.177371	0.341576		
Error	13						
Intercept	1	31.04183	0.000090	0.704826	0.999227	4	**R Cingulate Gyrus**
BEHAVIOR	1	0.01376	0.908410	0.001057	0.051360		
GENDER	1	20.55707	0.000561	0.612600	0.986758		
Error	13						
TREATMENT	1	1.78039	0.205004	0.120456	0.235549		
TREATMENT*BEHAVIOR	1	1.91272	0.189955	0.128261	0.249508		
TREATMENT*GENDER	1	0.00623	0.938299	0.000479	0.050615		
Error	13						
Intercept	1	31.98857	0.000079	0.711038	0.999408	5	**L Caudate**
BEHAVIOR	1	14.90421	0.001968	0.534121	0.945498		
GENDER	1	69.64669	0.000001	0.842704	1.000000		
Error	13						
TREATMENT	1	1.44878	0.250184	0.100270	0.200430		
TREATMENT*BEHAVIOR	1	0.10119	0.755456	0.007724	0.060050		

	Degr. of	F	p	Partial eta-squared	Observed power (alpha=0.05)	Clust.	Brain region
TREATMENT*GENDER	1	0.33128	0.574733	0.024850	0.083282		
Error	13						
Intercept	1	25.33032	0.000229	0.660843	0.996261	6	**L Midd. Frontal Gyrus**
BEHAVIOR	1	0.07135	0.793570	0.005459	0.057074		
GENDER	1	14.30674	0.002282	0.523927	0.937121		
Error	13						
TREATMENT	1	2.52491	0.136076	0.162636	0.313251		
TREATMENT*BEHAVIOR	1	0.33976	0.569939	0.025470	0.084148		
TREATMENT*GENDER	1	4.61455	0.051129	0.261974	0.511456		
Error	13						
INTERACTION GENDER X REPUTATION							
	Degr. of	F	p	Partial eta-squared	Observed power (alpha=0.05)	Clust.	Brain region
Intercept	1	0.02105	0.886869	0.001617	0.052081	1	**L Medial Frontal Gyr.**
BEHAVIOR	1	2.03393	0.177394	0.135289	0.262247		
GENDER	1	0.56703	0.464860	0.041795	0.107538		
Error	13						
TREATMENT	1	0.60281	0.451405	0.044315	0.111251		
TREATMENT*BEHAVIOR	1	0.90754	0.358146	0.065255	0.143143		
TREATMENT*GENDER	1	28.13809	0.000143	0.683991	0.998264		
Error	13						
Intercept	1	2.40268	0.145122	0.155991	0.300660	**2**	**L Precuneus**
BEHAVIOR	1	0.54207	0.474654	0.040028	0.104951		
GENDER	1	0.00179	0.966880	0.000138	0.050177		
Error	13						
TREATMENT	1	7.22662	0.018607	0.357283	0.700603		
TREATMENT*BEHAVIOR	1	0.95715	0.345761	0.068578	0.148371		
TREATMENT*GENDER	1	20.84371	0.000530	0.615881	0.987706		
Error	13						
Intercept	1	3.43361	0.086713	0.208938	0.403858	3	**L Fusiform Gyrus**
BEHAVIOR	1	5.19855	0.040116	0.285658	0.559719		
GENDER	1	10.27461	0.006895	0.441451	0.841730		
Error	13						
TREATMENT	1	0.35733	0.560260	0.026752	0.085943		
TREATMENT*BEHAVIOR	1	0.00076	0.978453	0.000058	0.050075		
TREATMENT*GENDER	1	5.06290	0.042400	0.280293	0.548814		
Error	13						
Intercept	1	34.45283	0.000055	0.726044	0.999706	4	**L Midd. Frontal Gyrus**
BEHAVIOR	1	1.25284	0.283266	0.087901	0.179649		
GENDER	1	4.46508	0.054503	0.255658	0.498559		
Error	13						
TREATMENT	1	11.34862	0.005036	0.466089	0.875258		
TREATMENT*BEHAVIOR	1	1.66467	0.219452	0.113516	0.223312		
TREATMENT*GENDER	1	18.27873	0.000904	0.584382	0.976287		
Error	13						

Table S6: ANCOVA results for the Reaction phase. The results of the ANCOVA, with a "Behavior" covariate, is shown for the areas showing a Gender effect, in the upper part Males>Females; in the lower part Females>Males (see Table 2 in the MT).

	Degr. of freedom	F	p	Partial eta-squared	Power (alpha=0.05)	Clust.	Brain region
GENDER FACTOR – MALES > FEMALES							
Intercept	1	21.69164	0.000448	0.625270	0.990146	1	**L Inf. Front. Gyr.**
BEHAVIOR	1	0.57494	0.461830	0.042353	0.108357		
GENDER	1	16.34822	0.001394	0.557043	0.961640		
Error	13						
TREATMENT	1	0.19371	0.667072	0.014682	0.069332		
TREATMENT*BEHAVIOR	1	0.07655	0.786384	0.005854	0.057592		
TREATMENT*GENDER	1	0.81696	0.382513	0.059128	0.133621		
Error	13						
GENDER FACTOR - FEMALES > MALES							
	Degr. of freedom	F	p	Partial eta-squared	Power (alpha=0.05)	Cluster	Brain region
Intercept	1	73.74539	0.000001	0.850136	1.000000	1	**R Fusiform Gyrus**
BEHAVIOR	1	0.36636	0.555415	0.027409	0.086865		
GENDER	1	20.53487	0.000564	0.612344	0.986681		
Error	13						
TREATMENT	1	3.62227	0.079388	0.217917	0.421887		
TREATMENT*BEHAVIOR	1	0.14196	0.712419	0.010802	0.064129		
TREATMENT*GENDER	1	0.81804	0.382209	0.059201	0.133734		
Error	13						
Intercept	1	64.14865	0.000002	0.831494	1.000000	2	**L Sup. Par. Gyr.**
BEHAVIOR	1	13.22499	0.003013	0.504290	0.918847		
GENDER	1	45.18248	0.000014	0.776565	0.999987		
Error	13						
TREATMENT	1	4.65937	0.050166	0.263847	0.515281		
TREATMENT*BEHAVIOR	1	0.00023	0.988174	0.000018	0.050023		
TREATMENT*GENDER	1	0.01522	0.903716	0.001169	0.051504		
Error	13						

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