

Supplemental Materials for
Minimal Group Procedures and Outcomes

Supplemental Results

Single Item Explicit Measures

We examined ingroup biases on the two single item explicit measures in a series of exploratory analyses paralleling those we ran using the composite explicit measures. According to one-sample *t*-tests, participants demonstrated ingroup biases on these measures of evaluation ($M = 0.94$, $SD = 1.45$; $d = 0.64$) and identification ($M = 1.27$, $SD = 1.41$; $d = 0.90$). Within each induction condition, participants likewise demonstrated ingroup biases on both measures ($ps < .001$).

We tested whether the methodological features affected the single item explicit evaluation and identification measures with two 6 (induction) x 2 (meaning) x 2 (procedure) x 2 (dv order) factorial Analyses of Variance (ANOVAs). Analyses included main effects and all two-way interactions. We examined any resulting effects using post-hoc pairwise comparisons with Bonferroni corrections. In the model predicting evaluation ($R^2_{adj} = .024$), we observed only a main effect of induction ($F[1, 1411] = 8.51$, $p < .001$, $\eta_p^2 = .029$). Post hoc tests indicated that explicit evaluations favoring the ingroup were stronger among participants in the choice induction condition than those in the imagined membership induction condition ($p < .001$) or memorization induction condition ($p < .001$). The model predicting identification ($R^2_{adj} = .035$) revealed main effects of induction ($F[1, 1337] = 6.01$, $p < .001$, $\eta_p^2 = .022$), meaning ($F[1, 1337] = 5.34$, $p = .021$, $\eta_p^2 = .004$), NGAT procedure ($F[1, 1337] = 9.03$, $p = .003$, $\eta_p^2 = .006$), and dependent measure order ($F[1, 1337] = 6.35$, $p = .012$, $\eta_p^2 = .005$), and an interaction between meaning and NGAT procedure ($F[1, 1337] = 4.32$, $p = .038$, $\eta_p^2 = .003$). According to post hoc tests, ingroup identification was stronger in response to the choice and random assignment inductions than in response to the memorization or imagined membership inductions ($ps > .04$).

We also found increased identification among participants who either received the meaning information ($M_{diff} = 0.23$, $SE = 0.08$), did not complete the NGAT procedure ($M_{diff} = 0.24$, $SE = 0.08$), or completed the identification measures first ($M_{diff} = 0.21$, $SE = 0.08$). Examining the interaction revealed that the meaning manipulation impacted identification when participants did not complete the NGAT procedure ($p = .002$) but not when they did ($p = .497$). Except for these meaning effects, results for the single item explicit measures were similar to those found with the composites.

Implicit Bias Alternative Models

The ANOVAs predicting implicit biases with a single three-level factor of NGAT procedure and IAT version are reported in the main manuscript. Here, we report 6 (induction) x 2 (meaning) x 2 (procedure) x 2 (IAT type) x 2 (dv order) factorial ANOVAs including all main effects and all possible two-way interactions. The model predicting implicit evaluations ($R^2_{adj} < 0$) revealed no main effects or interactions. In the model predicting implicit identifications ($R^2_{adj} = .019$), we found main effects of induction ($F[1, 919] = 2.53$, $p = .028$, $\eta_p^2 = .014$) and IAT version ($F[1, 919] = 8.30$, $p = .004$, $\eta_p^2 = .009$). Post hoc comparisons suggested that implicit identifications were weaker among participants in the painting rating induction condition than those in the choice induction condition ($p = .016$) and dot estimation induction condition ($p = .045$). Participants who completed the member name IAT version ($M = 0.27$, $SE = 0.03$) demonstrated stronger implicit identifications than participants who completed the group name IAT version ($M = 0.17$, $SE = 0.02$). While induction interacted with NGAT completion in predicting implicit identifications ($F[5, 919] = 2.34$, $p = .040$, $\eta_p^2 = .013$), no pairwise comparisons of condition combinations were reliable.

Supplemental Figures and Tables

Table S1

Ingroup and Outgroup Outcomes as a Function of the Tajfel Matrices

MIP + MD vs. MJP		MJP & MIP + MD		MD vs. MIP + MJP		MIP + MJP & MD		P vs. MIP + MD		MIP + MD & P	
Ingroup	Outgroup	Ingroup	Outgroup	Ingroup	Outgroup	Ingroup	Outgroup	Ingroup	Outgroup	Ingroup	Outgroup
\$.19	\$.01	\$.25	\$.07	\$.19	\$.25	\$.01	\$.07	\$.16	\$.16	\$.04	\$.28
\$.18	\$.03	\$.23	\$.08	\$.18	\$.23	\$.03	\$.08	\$.17	\$.15	\$.05	\$.27
\$.17	\$.05	\$.21	\$.09	\$.17	\$.21	\$.05	\$.09	\$.18	\$.14	\$.06	\$.26
\$.16	\$.07	\$.19	\$.10	\$.16	\$.19	\$.07	\$.10	\$.19	\$.13	\$.07	\$.25
\$.15	\$.09	\$.17	\$.11	\$.15	\$.17	\$.09	\$.11	\$.20	\$.12	\$.08	\$.24
\$.14	\$.11	\$.15	\$.12	\$.14	\$.15	\$.11	\$.12	\$.21	\$.11	\$.09	\$.23
\$.13	\$.13	\$.13	\$.13	\$.13	\$.13	\$.13	\$.13	\$.22	\$.10	\$.10	\$.22
\$.12	\$.15	\$.11	\$.14	\$.12	\$.11	\$.15	\$.14	\$.23	\$.09	\$.11	\$.21
\$.11	\$.17	\$.09	\$.15	\$.11	\$.09	\$.17	\$.15	\$.24	\$.08	\$.12	\$.20
\$.10	\$.19	\$.07	\$.16	\$.10	\$.07	\$.19	\$.16	\$.25	\$.07	\$.13	\$.19
\$.09	\$.21	\$.05	\$.17	\$.09	\$.05	\$.21	\$.17	\$.26	\$.06	\$.14	\$.18
\$.08	\$.23	\$.03	\$.18	\$.08	\$.03	\$.23	\$.18	\$.27	\$.05	\$.15	\$.17
\$.07	\$.25	\$.01	\$.19	\$.07	\$.01	\$.25	\$.19	\$.28	\$.04	\$.16	\$.16

Note. The six allocation decisions in the Tafel Matrices (MAMs) are represented in the columns. The thirteen choices appear in rows. Values and strategies were based on descriptions in Bourhis et al. (1994). Decisions are labeled according to the two allocation strategies from the ingroup perspective. MIP + MD vs. MJP = maximum ingroup profit and maximum differentiation (ingroup favoritism) opposed to maximum joint profit, MJP & MIP + MD = Ingroup favoritism together with maximum joint profit, MD vs. MIP + MJP = maximum differentiation opposed to maximum ingroup profit and maximum joint profit, MIP + MJP & MD = maximum differentiation together with maximum ingroup profit and maximum joint profit, P vs. MIP + MD = Parity opposed to ingroup favoritism, MIP + MD & P = Parity together with ingroup favoritism.

Table S2*Ingroup and Outgroup Outcomes as a Function of the Multiple Alternative Matrices*

Recipient	Max Rel Own	Max Own	Max Joint Own	Min Diff	Max Joint Other	Max Other	Max Rel Other
Ingroup	\$.42	\$.47	\$.44	\$.34	\$.36	\$.30	\$.22
Outgroup	\$.22	\$.30	\$.36	\$.34	\$.44	\$.47	\$.42

Note. The seven choices/items in the Multiple Alternative Matrices (MAMs) are represented in the columns. This table was adapted from Gaertner and Insko (Table 1; 2000). They determined the values according to calculations described in Bornstein et al. (1983). The items are labeled here according to allocation strategy. Max Rel Own = Maximizing ingroup earnings relative to the outgroup. Max Own = Maximizing ingroup's absolute earnings. Max Joint Own = Maximizing joint earnings with ingroup advantage. Min Diff = minimizing group difference. Max Joint Other, Max Other, and Max Rel Other = outgroup favoring versions of the first three.

Table S3*Relationships Among Outcome Measures*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Explicit Identification	-	0.14	.596***	.161*	.271***	-0.037	.174**	0.068	-.171**	.278***	.296***	-.185**	.282***	.341***	.287***	0.002	-.168**	-.166**	-.174**	.264***
2. Implicit Identification	0.14	-	0.101	.296***	0.053	-0.043	0.049	-0.047	0.031	0.023	0.046	-0.008	-0.039	-0.072	-0.055	0.039	-.209**	-.225**	-.170*	-0.053
3. Explicit Evaluation	.596***	0.101	-	0.133	.357***	-0.067	.136*	.304***	-.306***	.440***	.375***	-.358***	.324***	.236***	.151*	-.161**	-.173**	-.149*	-.134*	.119*
4. Implicit Evaluation	.161*	.296***	0.133	-	0.05	0.063	0.093	-0.078	-0.018	0.029	0.074	0.038	0.017	0.011	0.012	-0.06	0.021	-0.017	0.033	0.042
5. MIP + MD on MJP	.271***	0.053	.357***	0.05	-	-.059*	.413***	0.03	-.508***	.632***	.823***	-.648***	.344***	.384***	.299***	-.135*	-0.05	-0.091	-0.089	.488***
6. MJP on MIP + MD	-0.037	-0.043	-0.067	0.063	-.059*	-	.197***	-.070*	-0.043	0.005	.144***	.306***	0.015	0.048	.123*	0.018	0.05	.121*	.208***	0.065
7. MIP + MJP on MD	.174**	0.049	.136*	0.093	.413***	.197***	-	-.065*	-.272***	.387***	.789***	.309***	.313***	.371***	.419***	-.173**	.176**	0.091	0.028	.383***
8. MD on. MIP + MJP	0.068	-0.047	.304***	-0.078	0.03	-.070*	-.065*	-	-.137***	.261***	.144***	-.325***	0.031	-0.049	0.012	-0.025	-0.065	-0.07	-.165**	0.013
9. P on MIP + MD	-.171**	0.031	-.306***	-0.018	-.508***	-0.043	-.272***	-.137***	-	-.564***	-.538***	.400***	-.504***	-.468***	-.363***	.289***	-.163**	-.283***	-.326***	-.351***
10. MIP + MD on P	.278***	0.023	.440***	0.029	.632***	0.005	.387***	.261***	-.564***	-	.787***	-.615***	.286***	.293***	.303***	-0.101	-0.08	-0.101	-0.116	.369***
11. Tajfel Ingroup	.296***	0.046	.375***	0.074	.823***	.144***	.789***	.144***	-.538***	.787***	-	-.323***	.375***	.416***	.416***	-.167**	0.037	-0.021	-0.056	.493***
12. Tajfel Outgroup	-.185**	-0.008	-.358***	0.038	-.648***	.306***	.309***	-.325***	.400***	-.615***	-.323***	-	-.138*	-0.107	-0.011	0.012	.236***	.216***	.193**	-.218***
13. Max Rel Own	.282***	-0.039	.324***	0.017	.344***	0.015	.313***	0.031	-.504***	.286***	.375***	-.138*	-	.804***	.730***	-.253***	.224***	.265***	.312***	.414***
14. Max Own	.341***	-0.072	.236***	0.011	.384***	0.048	.371***	-0.049	-.468***	.293***	.416***	-0.107	.804***	-	.784***	-.246***	.326***	.341***	.290***	.453***
15. Max Joint Own	.287***	-0.055	.151*	0.012	.299***	.123*	.419***	0.012	-.363***	.303***	.416***	-0.011	.730***	.784***	-	-.199***	.396***	.351***	.276***	.433***
16. Min Diff	0.002	0.039	-.161**	-0.06	-.135*	0.018	-.173**	-0.025	.289***	-0.101	-.167**	0.012	-.253***	-.246***	-.199***	-	-0.053	-.065*	-.085**	-.323***
17. Max Joint Other	-.168**	-.209**	-.173**	0.021	-0.05	0.05	.176**	-0.065	-.163**	-0.08	0.037	.236***	.224***	.326***	.396***	-0.053	-	.745***	.613***	.098***
18. Max Other	-.166**	-.225**	-.149*	-0.017	-0.091	.121*	0.091	-0.07	-.283***	-0.101	-0.021	.216***	.265***	.341***	.351***	-.065*	.745***	-	.730***	.066*
19. Max Rel Other	-.174**	-.170*	-.134*	0.033	-0.089	.208***	0.028	-.165**	-.326***	-0.116	-0.056	.193**	.312***	.290***	.276***	-.085**	.613***	.730***	-	0.049
20. MAM Ingroup	.264***	-0.053	.119*	0.042	.488***	0.065	.383***	0.013	-.351***	.369***	.493***	-.218***	.414***	.453***	.433***	-.323***	.098***	.066*	0.049	-
21. MAM Outgroup	-0.012	-0.013	-.120*	0.095	-.352***	0.036	-0.103	-0.004	-0.014	-.144*	-.234***	.248***	-0.036	-0.039	-0.051	0.02	.089**	.148***	.116***	-.418***

Note. $N_s = 167-330$ for between outcome relationships; $N = 1331$ for relationships among Tajfel measures (variables 5-12); $N = 1350$ for relationships among Multiple Alternative Matrix (MAM) measures (variables 13-21). For pull scores (variables 5-10), MIP + MD = maximum ingroup profit and maximum differentiation (ingroup favoritism), MJP = maximum joint profit, MD = maximum differentiation, MIP + MJP = maximum ingroup profit and maximum joint profit, and P = parity. For the MAM (variables 13-19), Max Rel Own = Maximizing ingroup earnings relative to the outgroup. Max Own = Maximizing ingroup's absolute earnings. Max Joint Own = Maximizing joint earnings with ingroup advantage. Min Diff = minimizing group difference. Max Joint Other, Max Other, and Max Rel Other = outgroup favoring versions of the first three. Tajfel Ingroup and Outgroup variables represent total allocations across the matrices, and the MAM Ingroup and Outgroup variables represent the allocations from the choice item.

Figure S1

Study Design

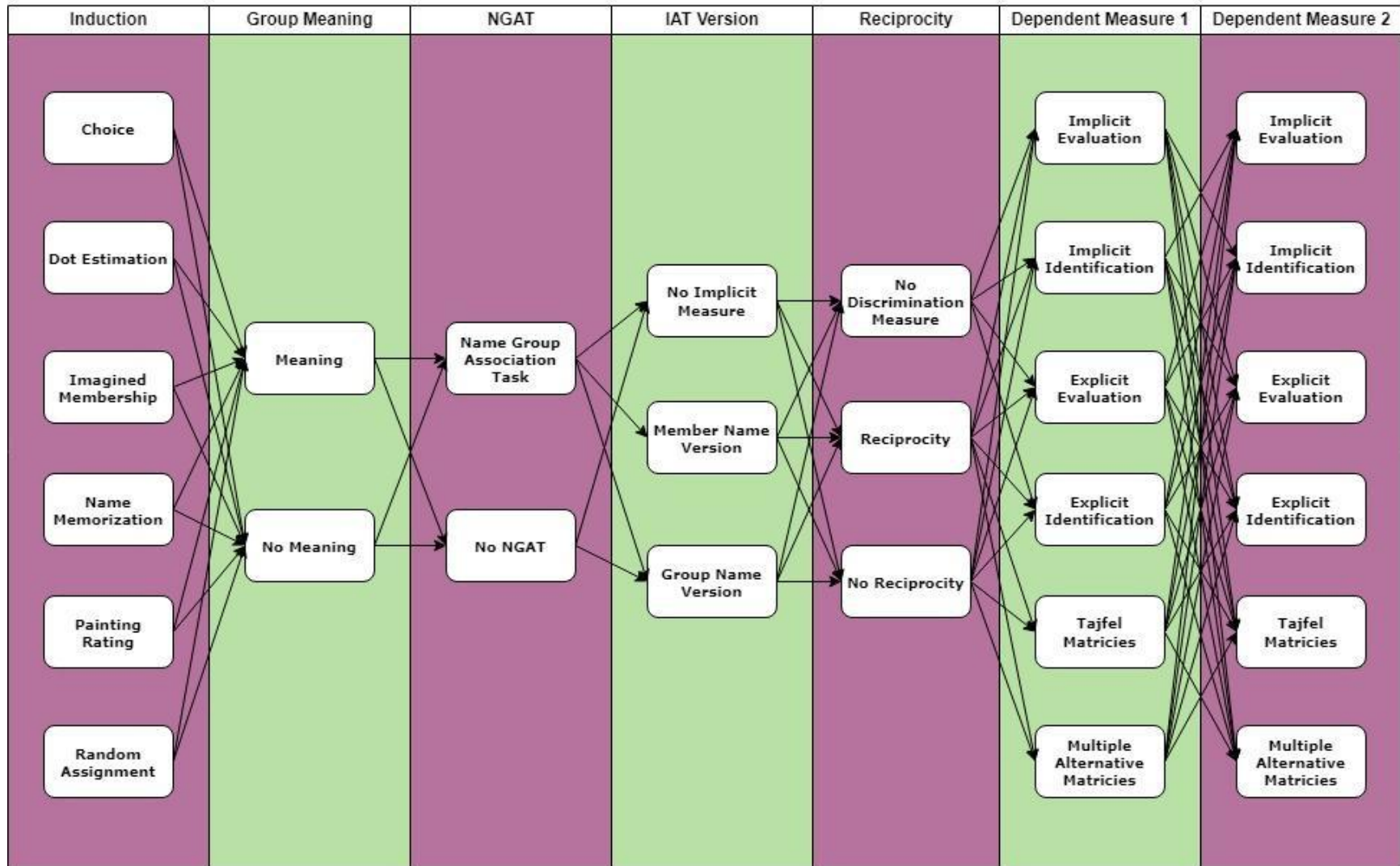
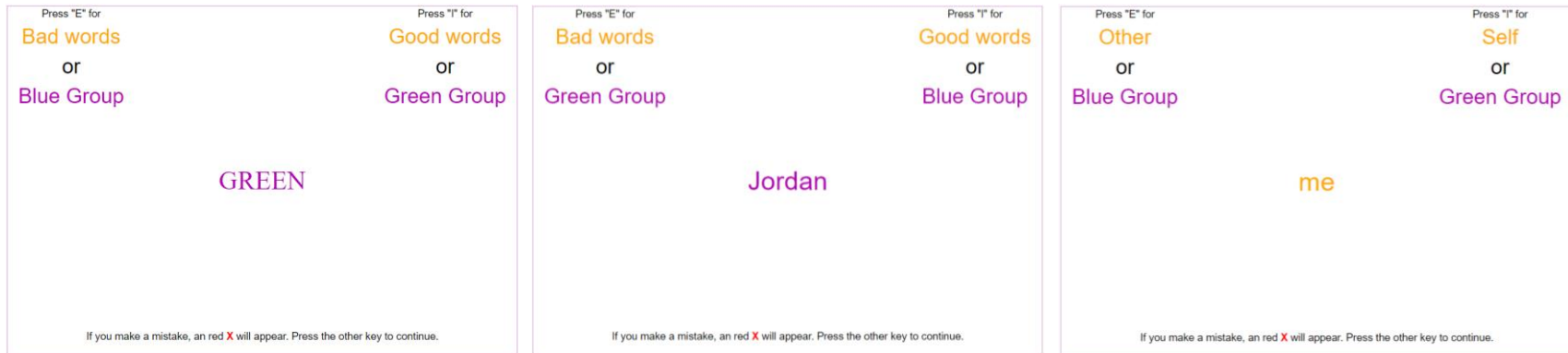


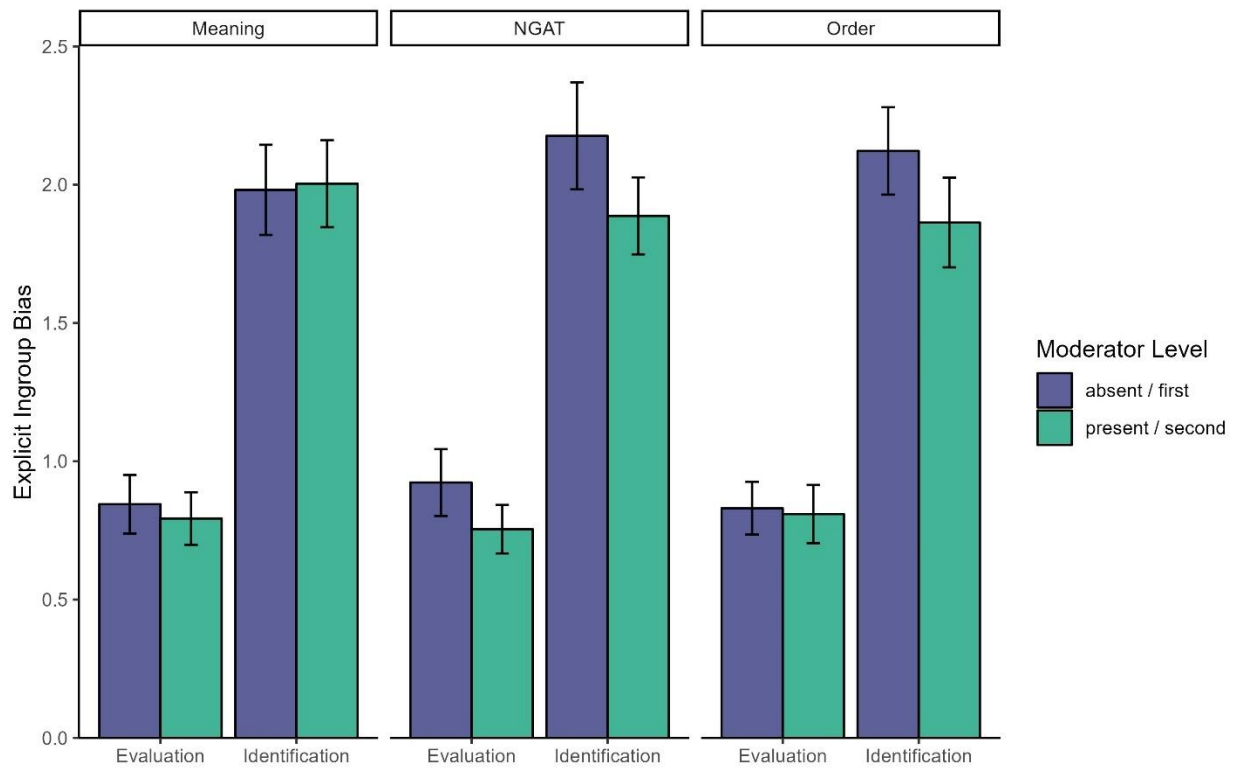
Figure S2***Name Group Association Task Presentation***

Note. These images present example trials of the Name Group Association Task. A trial from the first block is pictured on the left, and a trial from the second block, where names were presented in their group's color with 40% saturation, is pictured on the right. The response keys for the groups switched in the second block. Both the initial response keys for the groups and the group membership of the names were counterbalanced across participants.

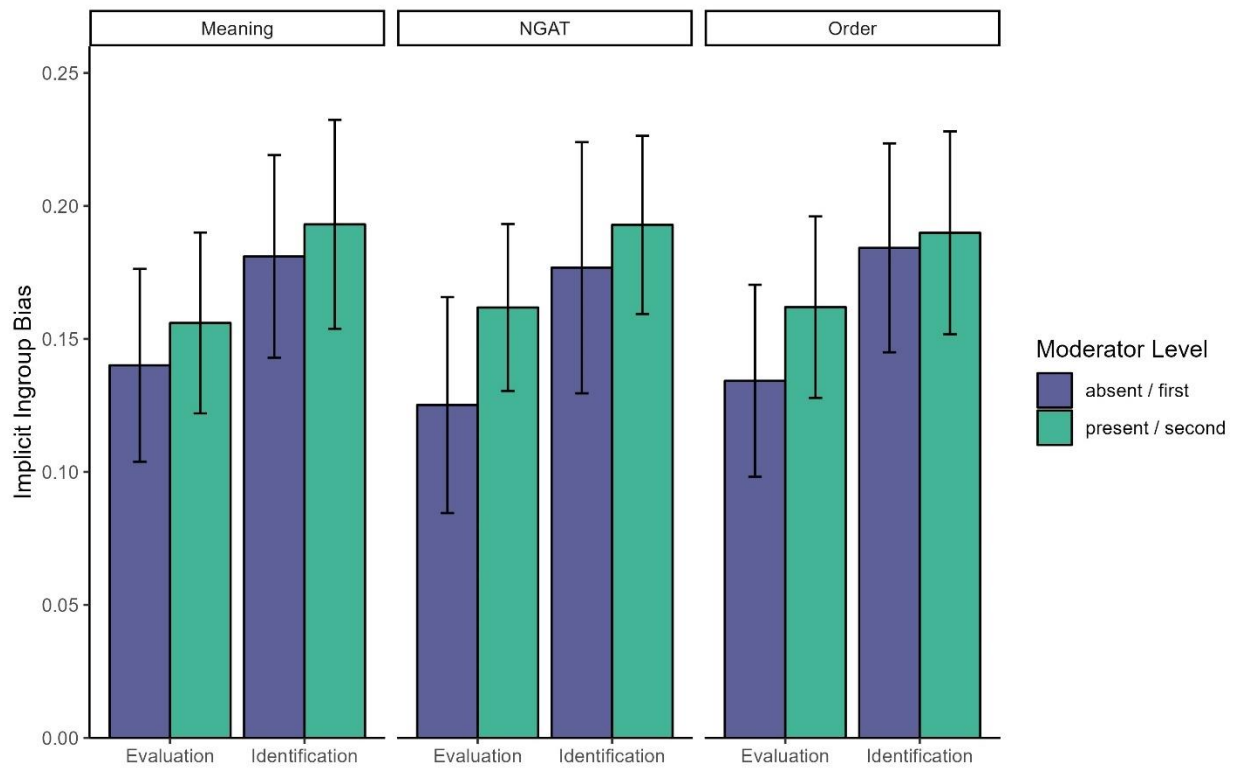
Figure S3

Implicit Association Test Presentation

Note. These images present example trials from critical blocks of the Implicit Association Test (IAT). The group name version of the evaluation IAT is pictured on the left, the member name version of the evaluation IAT is pictured in the middle, and an attribute trial of the identification IAT is pictured on the right. The order of the critical block pairings was counterbalanced across participants.

Figure S4*Explicit Evaluations and Identifications by Procedural Factors*

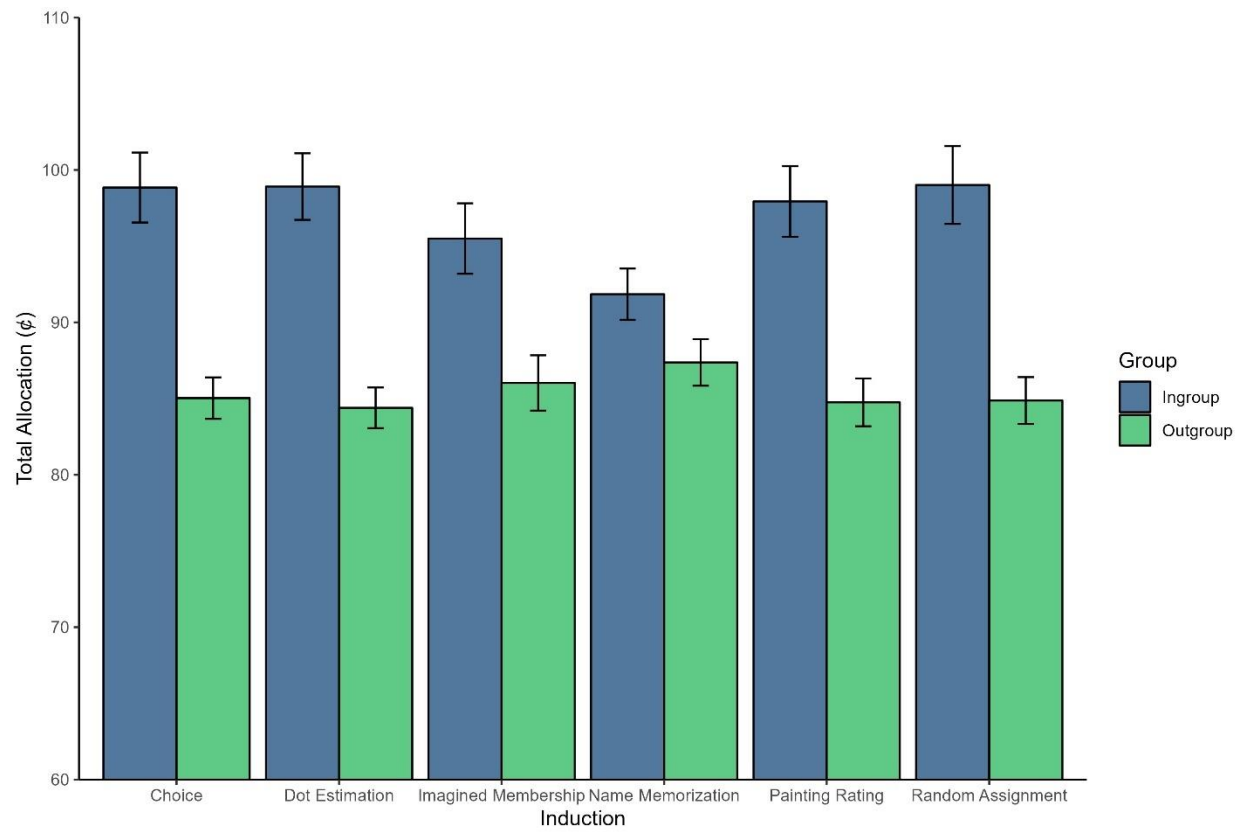
Note. Error bars represent 95% Confidence Intervals.

Figure S5*Implicit Evaluations and Identifications by Procedural Factors*

Note. Error bars represent 95% Confidence Intervals.

Figure S6

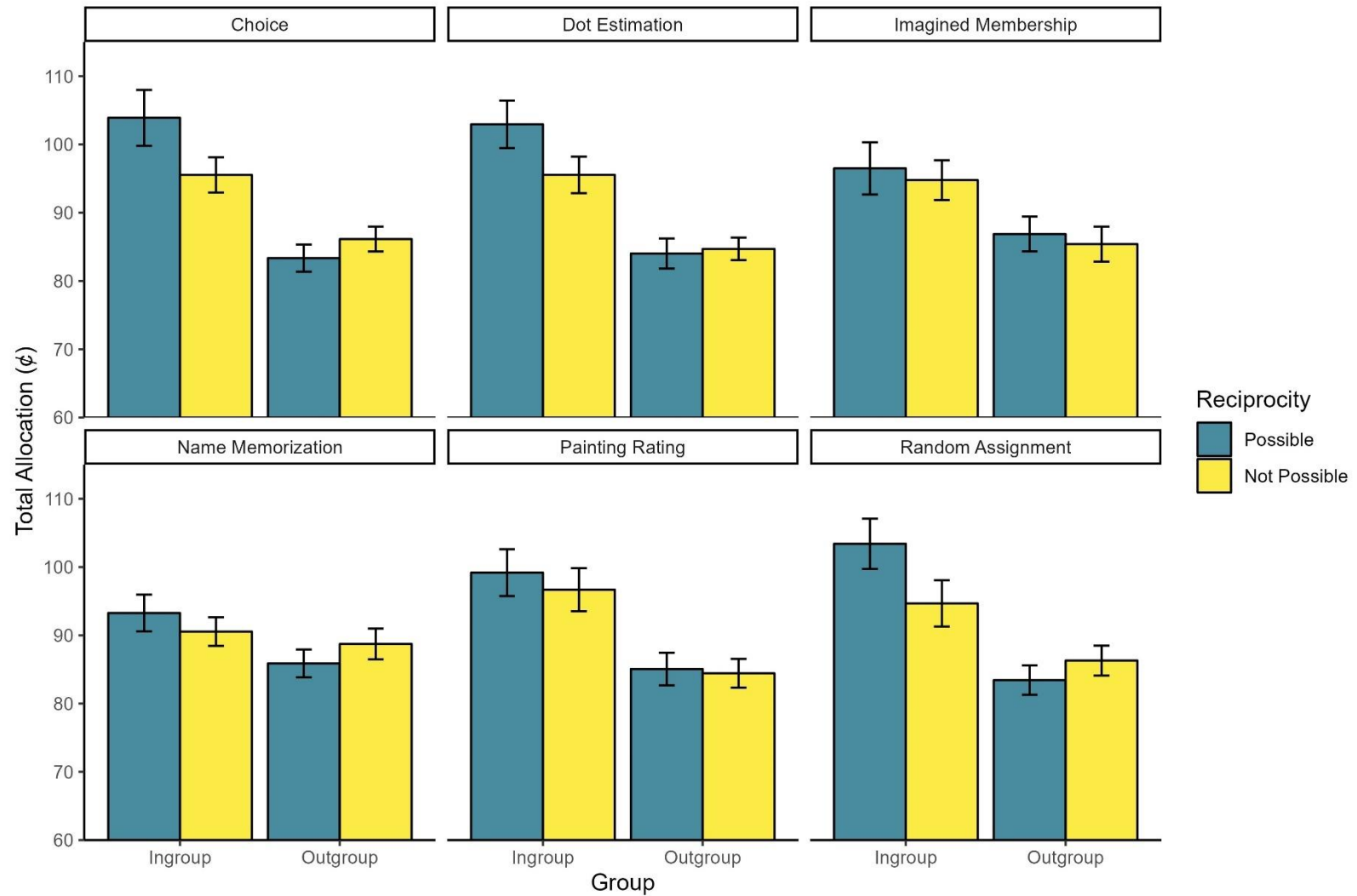
Total Ingroup and Outgroup Allocations Across the Tajfel Matrices by Induction



Note. Error bars represent 95% Confidence Intervals.

Figure S7

Total Ingroup and Outgroup Allocations Across the Tajfel Matrices by Induction and Reciprocity Manipulation



Note. Error bars represent 95% Confidence Intervals.