

Table 1: Intergroup General

	Aggregated [across participants]						Contemporaneous [within participants]					
	Study 1		Study 2		Study 3		Study 1		Study 2		Study 3	
	<i>B</i>	η_p	<i>B</i>	η_p	<i>B</i>	η_p	<i>B</i>	β	<i>B</i>	β	<i>B</i>	β
(Intercept)	70.50**** [66.06, 74.94]		67.62**** [64.16, 71.08]		64.83**** [61.50, 68.16]		67.44**** [61.71, 73.17]		63.72**** [59.42, 68.01]		56.30**** [51.58, 61.02]	
SumContactNL	0.27 [-0.15, 0.69]	0.02	0.81** [0.32, 1.29]	0.08	0.15 [-0.08, 0.38]	0.02						
AvQuality	0.84** [0.36, 1.33]	0.39	0.25 [-0.14, 0.64]	0.01	0.36* [0.04, 0.68]	0.07						
SumContactNL:AvQuality	-0.05** [-0.08, -0.01]	0.34	0.02 [-0.03, 0.08]	0.01	0.01 [-0.02, 0.03]	0.01						
OutgroupInteraction							2.48**** [1.36, 3.59]	1.07 [0.59, 1.54]	2.99*** [1.45, 4.54]	0.11 [0.07, 0.16]	5.63**** [3.97, 7.29]	0.21 [0.15, 0.27]
NonOutgroupInteraction							0.43 [-0.68, 1.54]	0.16 [-0.32, 0.63]	0.01 [-0.76, 0.78]	0.01 [-0.03, 0.05]	0.34 [-0.49, 1.18]	0.02 [-0.02, 0.05]
Random												
σ^2							69.92		77.46		88.1	
τ_{00}							164.13 (PID)		488.38 (PID)		366.51 (PID)	
τ_{11}									48.94 (PID.OutgroupInteraction)		40.53 (PID.OutgroupInteraction)	
									7.23 (PID.NonOutgroupInteraction)		3.43 (PID.NonOutgroupInteraction)	
									-0.72 (PID.OutgroupInteraction)		-0.70 (PID.OutgroupInteraction)	
ρ_{01}									0.12 (PID.NonOutgroupInteraction)		-0.28 (PID.NonOutgroupInteraction)	
ρ_{00}									0.00 (PID.OutgroupInteraction-NonOutgroupInteraction)		0.26 (PID.OutgroupInteraction-NonOutgroupInteraction)	
Fit												
Groups							23		113		71	
N	21		113		71		1225		4965		3907	
F Test	F(3, 17) = 6.66, p = 0.004		F(3, 109) = 3.75, p = 0.013		F(3, 67) = 2.15, p = 0.102							
$R^{2(a)}$	0.540 / 0.459		0.094 / 0.069		0.088 / 0.047		0.006 / 0.703		0.003 / 0.817		0.026 / 0.708	
AIC							8788		36476		29074	
BIC							8814		36542		29137	
ICC							0.7013		0.8167		0.7007	

Note:
PID = Participant ID number (grouping variable)
 σ^2 : residual variance, τ_{au00} : random intercept variance, τ_{au11} : random slope variance(s), ρ_{ho01} : random slope-intercept correlation(s) , ρ_{ho00} : correlation(s) between random slopes
**** $p < .0001$, *** $p < .001$, ** $p < .01$, * $p < .05$
^a For linear regression: $R^2/R^2_{adjusted}$, for multilevel regression: $R^2_{marginal}/R^2_{conditional}$

Table 2: Core Need Fulfillment and Allport's Conditions

	Study 1 - CoreNeed				Study 2 - CoreNeed				Study 3 - CoreNeed				Study 3 - Allport				Study 3 - CoreNeed + Allport									
	Quality		Attitude		Quality		Attitude		Quality		Attitude		Quality		Attitude		Attitude									
	B	β	B	β	B	β	B	β	B	β	B	β	B	β	B	β	B	β								
Fixed																										
(Intercept)	24.29**** [20.20, 28.36]		72.53**** [66.83, 78.24]		72.50**** [66.75, 78.24]		78.84**** [76.06, 80.83]		70.71**** [67.55, 73.87]		70.67**** [67.50, 73.84]		68.32**** [65.10, 71.54]		68.32**** [65.09, 71.54]		81.42**** [78.57, 84.26]		68.34**** [65.12, 71.56]		68.33**** [65.05, 71.61]		0.13**** [0.08, 0.17]		0.12 [0.05, 0.18]	
CoreNeed	0.42**** [0.32, 0.52]	0.40 [0.31, 0.49]	0.17** [0.06, 0.29]	0.30 [0.18, 0.41]	0.04 [-0.08, 0.15]	0.13 [0.00, 0.26]	0.40**** [0.28, 0.52]	0.27 [0.18, 0.37]	0.13** [0.07, 0.19]	0.14 [0.06, 0.22]	0.03 [-0.01, 0.07]	0.07 [-0.01, 0.15]	0.43**** [0.33, 0.54]	0.31 [0.24, 0.38]	0.19**** [0.12, 0.27]	0.18 [0.11, 0.24]	0.11 [0.05, 0.17]	0.17**** [0.12, 0.22]	0.17 [0.12, 0.22]	0.11 [0.05, 0.17]	0.09** [0.03, 0.15]	0.17**** [0.09, 0.24]	0.17 [0.11, 0.23]			
Quality			0.23*** [0.12, 0.33]	0.41 [0.29, 0.54]					0.17**** [0.11, 0.23]	0.24 [0.14, 0.34]																
Allport																										
Random																										
σ ²	261.1		63.1		37.61		275.7		76.47		222.5		91.84		82.15		188.9		83.82		90.78					
τ ₀₀	71.13 (PID)		172.54 (PID)		177.20 (PID)		63.00 (PID)		259.79 (PID)		264.19 (PID)		131.33 (PID)		182.38 (PID)		183.10 (PID)		134.62 (PID)		179.74 (PID)		189.33 (PID)			
τ ₁₁			0.05 (PID.CoreNeed)		0.05 (PID.CoreNeed)		0.12 (PID.CoreNeed)		0.02 (PID.CoreNeed)		0.00 (PID.CoreNeed)		0.09 (PID.CoreNeed)		0.05 (PID.CoreNeed)		0.03 (PID.CoreNeed)		0.11 (PID.Allport)		0.05 (PID.Allport)		0.02 (PID.Allport)		0.00 (PID.CoreNeed)	
			0.04 (PID.Quality)		0.04 (PID.Quality)		0.12 (PID.CoreNeed)		0.02 (PID.CoreNeed)		0.00 (PID.CoreNeed)		0.09 (PID.CoreNeed)		0.05 (PID.CoreNeed)		0.03 (PID.Quality)		0.11 (PID.Allport)		0.05 (PID.Allport)		0.02 (PID.Quality)		0.04 (PID.Allport)	
ρ ₀₁			0.03 (cor.slope.intercept)		0.37 (PID.CoreNeed)		-0.09 (cor.slope.intercept)		-0.16 (cor.slope.intercept)		-0.18 (PID.CoreNeed)		-0.26 (cor.slope.intercept)		-0.26 (cor.slope.intercept)		-0.14 (PID.CoreNeed)		-0.07 (cor.slope.intercept)		-0.19 (cor.slope.intercept)		0.12 (PID.Allport)		-1.80 (PID.CoreNeed)	
ρ ₀₀					-0.22 (PID.Quality)				-0.06 (PID.Quality)		-0.41 (PID.Quality)		-0.06 (PID.Quality)		-0.41 (PID.Quality)		-0.41 (PID.Quality)					0.51 (PID.Quality)		0.11 (PID.Allport-Quality)		0.07 (PID.CoreNeed-Allport)
					-0.47 (PID.CoreNeed-Quality)				0.79 (PID.CoreNeed-Quality)								0.10 (PID.CoreNeed-Quality)									
Fit																										
AIC	3294		2816		2672		8073		7222		7141		14054		12632		12494		13805		12652		12519		12625	
BIC	3309		2839		2712		8102		7251		7190		14087		12638		12548		13838		12684		12573		12679	
N	367		367		367		367		367		367		367		367		367		367		367		367		367	
Groups	21		21		21		21		21		21		21		21		21		21		21		21		21	
ICC	0.2141		0.7447		0.8399		0.2547		0.7471		0.7835		0.3933		0.6738		0.7006		0.4433		0.6679		0.4963		0.6679	
R _{margin} / R ² _{conditional}	0.117 / 0.306		0.030 / 0.752		0.067 / 0.851		0.102 / 0.331		0.012 / 0.750		0.028 / 0.789		0.070 / 0.436		0.019 / 0.680		0.041 / 0.713		0.149 / 0.526		0.024 / 0.676		0.040 / 0.709		0.086 / NA	

sig σ^2 : residual variance, $\tau_{\text{a}00}$: random intercept variance, $\tau_{\text{a}t11}$: random slope variance(s), $\rho_{\text{a}01}$: random slope-intercept correlation(s), $\rho_{\text{a}00}$: correlation(s) between random slopes

Table 3: Robustness Analyses												
	Contact [Full Sample]						Self-Determination Theory [Outgroup Interactions only]					
	Study 1		Study 2		Study 3		Study 1		Study 2		Study 3	
	<i>B</i>	β	<i>B</i>	β	<i>B</i>	β	<i>B</i>	β	<i>B</i>	β	<i>B</i>	β
Fixed												
(Intercept)	68.88**** [63.24, 74.53]		63.90**** [59.56, 68.24]		57.06**** [52.63, 61.48]		72.53**** [66.79, 78.27]		70.69**** [67.53, 73.85]		68.32**** [65.11, 71.53]	
CoreNeed	-0.10* [-0.18, -0.01]	0.15 [0.07, 0.22]	-0.03 [-0.08, 0.02]	0.08 [0.05, 0.12]	-0.14**** [-0.21, -0.08]	0.12 [0.08, 0.16]	0.09* [0.01, 0.18]	0.20 [0.09, 0.31]	0.08** [0.03, 0.13]	0.08 [0.00, 0.16]	0.15*** [0.07, 0.22]	0.13 [0.07, 0.20]
OutgroupInteraction	1.81* [0.25, 3.37]	0.14 [0.03, 0.24]	2.88*** [1.36, 4.40]	0.11 [0.06, 0.15]	5.41**** [3.74, 7.07]	0.21 [0.15, 0.27]						
CoreNeed:OutgroupInteraction	0.13**** [0.07, 0.18]	0.13 [0.07, 0.18]	0.06** [0.02, 0.10]	0.04 [0.01, 0.08]	0.17**** [0.12, 0.21]	0.08 [0.05, 0.11]						
Competence							0.05 [-0.16, 0.25]	-0.05 [-0.21, 0.11]	0.06* [0.01, 0.10]	0.07 [-0.02, 0.17]	0.06* [0.02, 0.10]	0.09 [0.02, 0.15]
Autonomy							0.06 [-0.12, 0.23]	0.20 [0.09, 0.31]	0.03 [-0.02, 0.08]	0.04 [-0.06, 0.14]	0.04 [-0.01, 0.08]	0.06 [-0.01, 0.13]
Relatedness							0.10*** [0.05, 0.14]	0.23 [0.13, 0.34]	0.07*** [0.04, 0.10]	0.17 [0.09, 0.25]	0.06** [0.02, 0.09]	0.11 [0.05, 0.18]
Random												
σ^2	64.7		77.34		84.37		41.11		82.65		83.36	
τ_{00}	174.00 (PID)		523.56 (PID)		339.72 (PID)		176.39 (PID)		262.18 (PID)		181.84 (PID)	
τ_{11}	0.01 (PID.CoreNeed)		0.00 (PID.CoreNeed)		0.01 (PID.CoreNeed)		0.02 (PID.CoreNeed)		0.01 (PID.CoreNeed)		0.05 (PID.CoreNeed)	
	6.05 (PID.OutgroupInteraction)		46.82 (PID.OutgroupInteraction)		40.96 (PID.OutgroupInteraction)		0.20 (PID.Competence)		0.00 (PID.Competence)		0.01 (PID.Competence)	
							0.14 (PID.Autonomy)		0.00 (PID.Autonomy)		0.00 (PID.Autonomy)	
							0.00 (PID.Relatedness)		0.00 (PID.Relatedness)		0.01 (PID.Relatedness)	
ρ_{01}	0.01 (PID.CoreNeed)		0.27 (PID.CoreNeed)		-0.15 (PID.CoreNeed)		0.55 (PID.CoreNeed)		-0.16 (PID.CoreNeed)		-0.25 (PID.CoreNeed)	
	-0.27 (PID.OutgroupInteraction)		-0.68 (PID.OutgroupInteraction)		-0.68 (PID.OutgroupInteraction)		-0.15 (PID.Competence)		-0.05 (PID.Competence)		-0.29 (PID.Competence)	
							-0.09 (PID.Autonomy)		-0.44 (PID.Autonomy)		-0.23 (PID.Autonomy)	
							0.56 (PID.Relatedness)		-0.20 (PID.Relatedness)		0.02 (PID.Relatedness)	
ρ_{00}							0.03 (PID.CoreNeed-Autonomy)		0.60 (PID.CoreNeed-Autonomy)		0.57 (PID.CoreNeed-Autonomy)	
	0.33 (PID.CoreNeed-OutgroupInteraction)		-0.08 (PID.CoreNeed-OutgroupInteraction)		0.01 (PID.CoreNeed-OutgroupInteraction)		-0.93 (PID.Competence-Autonomy)		0.83 (PID.Competence-Autonomy)		-0.68 (PID.Competence-Autonomy)	
							-0.11 (PID.CoreNeed-Competence)		0.20 (PID.CoreNeed-Competence)		0.09 (PID.CoreNeed-Competence)	
							0.17 (PID.CoreNeed-Relatedness)		0.42 (PID.CoreNeed-Relatedness)		-0.27 (PID.CoreNeed-Relatedness)	
							0.16 (PID.Competence-Relatedness)		-0.79 (PID.Competence-Relatedness)		-0.31 (PID.Competence-Relatedness)	
							-0.10 (PID.Autonomy-Relatedness)		-0.35 (PID.Autonomy-Relatedness)		-0.08 (PID.Autonomy-Relatedness)	
Fit												
AIC	8761		36475		28974		2757		7219		12581	
BIC	8817		36546		29043		2840		7321		12695	
N	1225		4965		3909		386		935		1672	
Groups	23		113		71		21		108		70	
ICC	0.722		0.8168		0.7112						0.6997	
$R^2_{marginal}$ / $R^2_{conditional}$	0.017 / 0.727		0.005 / 0.818		0.036 / 0.722		0.249 / NA		0.093 / NA		0.035 / 0.710	

Note:
PID = Participant ID number (grouping variable)
 σ^2 : residual variance, τ_{00} : random intercept variance, τ_{11} : random slope variance(s), ρ_{01} : random slope-intercept correlation(s) , ρ_{00} : correlation(s) between random slopes
**** $p < .0001$, *** $p < .001$, ** $p < .01$, * $p < .05$