

SUPPLEMENTAL MATERIALS

Where is Your Best Friend From? Implications of Intragroup and Intergroup Friendships for Adolescents' Identity and Well-Being

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Sample Characteristics and Cross-Group Comparisons

The total sample of 984 adolescents included 740 ethnic majority Italian adolescents and 244 ethnic minority first- and second-generation youth. Regarding their (or their parents') country of origin, most (67.74%) first-generation adolescents were born in other European countries, among which Eastern European countries (e.g., Romania, Ukraine, Albania) were the most represented. Among the remaining, 17.74% of adolescents were born in Africa, 8.06% in Asia, and 6.46% in North and South America. For what concerns second-generation adolescents, most parents migrated from other European countries (40.56% and 49.45% of fathers and mothers, respectively), while the remaining migrated from Africa (20.56% and 19.23% of fathers and mothers, respectively), Asia (2.78% of fathers and 2.75% of mothers), America (3.89% of fathers and 6.59% of mothers), and the Middle East (1.11% of fathers and 0.55% of mothers). Regarding reasons for migration, participants indicated that most of their fathers (65.65%) and mothers (42.35%) migrated to improve their family's economic situation, for family reunification (14.50% and 33.53% of fathers and mothers, respectively), or other reasons (e.g., escape war, study; 6.87% and 10% of fathers and mothers, respectively). Some participants did not know their parents' reasons for migration (12.98% and 14.12% of fathers and mothers, respectively).

Regarding parents' educational level, within the total sample, half (50.05%) of adolescents' fathers had a medium educational level (i.e., up to high school diploma), followed by those (37.03%) who held less than a high school diploma, and those (12.92%) with a university degree. Similarly, most (49.20%) of the participants' mothers had a high school diploma, followed by those (27.26%) with less than a high school diploma, and those (23.54%) with a university degree. Cross-group comparisons highlighted a significant difference in the educational level of fathers ($\chi^2(2) = 10.42, p = .005$) of ethnic majority and minority youth. Specifically, a higher number (45.66%) of fathers of ethnic minority adolescents held a low, followed by those (41.10%) with a medium, and those (13.24%) with a high educational level. Conversely, about half (52.85%) of ethnic majority youth's fathers held a medium, followed by those (34.33%) with a low and a high (12.32%) educational level. No differences emerged in the educational level of mothers ($\chi^2(2) = 1.53, p = .466$), who mostly (49.30% and 48.90% of ethnic majority and minority mothers, respectively) had a medium, followed by those (26.40% of ethnic majority and 29.96% of ethnic minority mothers) with a low

and those (24.30% and 21.14% of ethnic majority and minority mothers, respectively) with a high educational level.

Table S1
Means (*M*) and Standard deviation (*SD*) of study variables

	Time1		Time2		Time3	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Interpersonal identity						
Commitment	3.90	0.72	3.79	0.71	3.77	0.76
In-depth exploration	3.61	0.73	3.56	0.73	3.56	0.74
Reconsideration	1.79	0.96	1.79	0.94	1.86	0.98
Well-being						
Subjective well-being	3.24	1.04	3.13	1.06	3.05	1.05
Social well-being	2.36	1.15	2.23	1.13	2.28	1.18
Psychological well-being	3.41	0.96	3.28	0.99	3.13	1.04

Table S2
Correlations among study variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1. Ethnic background																					
2. Sex	-.07*																				
3. Age	.19***	-.10**																			
4. Best friendship type T1	.40***	-.01	.15***																		
5. Commitment T1	-.12***	.06	-.04	-.03																	
6. Exploration T1	-.14***	.22***	-.01	-.07	.48***																
7. Reconsideration T1	.05	-.16***	.06	-.04	-.27***	.00															
8. Subjective wb. T1	-.03	-.15***	.02	-.03	.17***	.04	.01														
9. Psychological wb. T1	-.01	-.10**	.04	-.03	.26***	.11**	-.06	.66***													
10. Social wb. T1	.08*	-.23***	.02	.01	.23***	.10**	.10**	.52***	.62***												
11. Commitment T2	-.07*	.06	-.04	-.03	.54***	.31***	-.13***	.20***	.28***	.25***											
12. Exploration T2	-.07*	.22***	-.01	-.04	.29***	.53***	-.01	.03	.09**	.10**	.43***										
13. Reconsideration T2	.10**	-.13***	.02	.04	-.22***	-.09**	.43***	-.06	-.09*	.02	-.27***	.01									
14. Subjective wb. T2	.02	-.17***	.03	.00	.13***	-.01	.05	.46***	.42***	.36***	.21***	.02	-.02								
15. Psychological wb. T2	.05	-.13***	.04	.00	.16***	-.02	.02	.45***	.58***	.45***	.28***	.07*	-.08*	.63***							
16. Social wb. T2	.09**	-.27***	-.01	.01	.11***	.00	.12***	.37***	.43***	.57***	.27***	.10**	.08*	.52***	.64***						
17. Commitment T3	-.07	.04	-.04	-.01	.45***	.21***	-.20***	.20***	.26***	.22***	.54***	.23***	-.22***	.17***	.21***	.21***					
18. Exploration T3	-.09**	.20***	-.04	-.04	.27***	.41***	-.08*	.07	.13***	.05	.28***	.46***	-.11**	.00	.08*	.06	.52***				
19. Reconsideration T3	.05	-.21***	.06	-.10	-.22***	-.12**	.32***	-.05	-.09*	-.01	-.17***	-.06	.37***	-.06	-.07*	.05	-.28***	.00			
20. Subjective wb. T3	-.04	-.16**	-.02	.05	.10**	.04	-.01	.40***	.33***	.26***	.20***	.02	-.02	.43***	.36***	.28***	.17***	.02	-.10**		
21. Psychological wb. T3	-.01	-.07*	-.01	.02	.19***	.03	.01	.38***	.49***	.35***	.29***	.03	-.06	.38***	.50***	.35***	.27***	.10**	-.11**	.60***	
22. Social wb. T3	.02	-.21**	.05	.00	.17***	.05	.06	.34***	.36***	.43***	.24***	.03	.03	.34***	.38***	.48***	.23***	.08*	.06	.50***	.61***

Note. 1. Ethnic background: 0 = Italian, 1 = Ethnic minority background; 2. Sex: 0 = male, 1 = female; 4. Best friendship type T1: 0 = Intragroup, 1 = Intergroup. wb. = well- being; T = Time. * $p < .05$; ** $p < .01$; *** $p < .001$

Longitudinal Measurement Invariance of Study Variables

As a preliminary step, longitudinal measurement invariance was tested for interpersonal identity processes (i.e., commitment, in-depth exploration, reconsideration) and well-being indicators (i.e., subjective, psychological, social) across the three assessments. Reaching longitudinal measurement invariance ensures that each scale measures the same construct with an identical factorial structure across time points (van de Schoot et al., 2012). For the purpose of the current study, configural, metric, and scalar models were tested with the aim of reaching scalar invariance. The configural model examines whether the factorial structure (i.e., a set of items concurring to define the same latent construct over time) of a given scale is identical at each time point. The metric model, in which factor loadings are constrained to be invariant over time, tests whether participants attribute the same meaning to the latent construct at each time point. The scalar model, which includes both factor loadings and intercepts of items constrained to be equal across time points, assesses the extent to which also the levels of the underlying items are consistent over time. Full (i.e., *all* intercepts constrained to equality) or partial (i.e., *at least two* intercepts constrained to equality) scalar invariance is the necessary requirement to reliably compare participants' scores at different time points and examine patterns of change (Byrne et al., 1989; van de Schoot et al., 2012).

In testing measurement invariance, the configural models function as baseline models and should therefore display a good fit, evaluated based on the following criteria. The Comparative Fit Index (CFI) with values higher than .90 and .95 indicative of an acceptable and very good fit, respectively. The Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Residual (SRMR) with values below .08 and .05 indicative of an acceptable and very good fit, respectively (Byrne, 2012). Additionally, the RMSEA's 90% confidence interval's upper bound lower than .10 indicates an acceptable fit of the model (Chen et al., 2008). In order to establish metric and scalar invariance, changes in fit indices between models were evaluated (e.g., Cheung & Rensvold, 2002). Specifically, non-invariance is indicated by at least two of the following criteria: a significant $\Delta\chi_{SB}^2$ (Satorra & Bentler, 2001), and $\Delta CFI \geq -.010$ supplemented by $\Delta RMSEA \geq .015$ (Chen, 2007). If full metric or scalar invariance could not be established (i.e., two or more fit indicators suggesting non-invariance of factor loadings and/or intercepts), partially invariant models were examined by releasing constraints on estimates that emerged as significantly different across time. Results

are reported in Table S3. Full scalar invariance was established for interpersonal identity processes.

Conversely, partial scalar invariance was reached for well-being by removing the equality constraint on the intercepts of item 12 given that they significantly differ across time points (T1 vs. T2 : Wald = 5.81, $p = .016$; T1 vs. T3: Wald = 70.08, $p < .001$; T2 vs. T3: Wald = 38.21, $p < .001$). Therefore, it was possible to proceed with the main analyses.

Table S3
Longitudinal Measurement Invariance

	Model fit					Model comparisons			
	χ^2	df	CFI	SRMR	RMSEA [90% CI]	Models	$\Delta\chi^2$ (df)	Δ CFI	Δ RMSEA
Interpersonal Identity Processes									
Configural (M1)	1477.776	627	.940	.051	.037 [.035, .040]				
Metric (M2)	1495.122	647	.940	.052	.036 [.034, .039]	M2-M1	18.001 (20)	.000	-.001
Scalar (M3)	1631.898	673	.932	.055	.038 [.036, .040]	M3-M2	144.943*** (26)	-.008	.002
Well-Being									
Configural (M1)	1523.465	741	.946	.045	.033 [.030, .035]				
Metric (M2)	1558.190	763	.945	.047	.033 [.030, .035]	M2-M1	33.763 (22)	-.001	.000
Scalar (M3)	1751.557	791	.933	.051	.035 [.033, .037]	M3-M2	207.634*** (28)	-.012	.002
Partial scalar (M3a) ¹	1710.965	789	.936	.050	.034 [.032, .037]	M3a-M2	163.146*** (26)	-.009	.001

Note. M = model; χ^2 = chi-square; df = degree of freedom; CFI = Comparative Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; CI = confidence interval; Δ = change in the parameter.

¹In this model, the intercept of item 12 was unconstrained across time points.

 $p < .001$

Latent Growth Curve Models of Interpersonal Identity Processes

Before examining similarities and differences in adolescents' interpersonal identity processes based on the type of best friendship and ethnic background, latent growth curve (LGC) models were tested separately for each process (i.e., commitment, in-depth exploration, and reconsideration). First, an intercept-only model was tested and its model fit examined based on a combination of the same fit indices reported for measurement invariance (i.e., CFI > .90/.95, SRMR and RMSEA < .08/.05, upper bound of RMSEA confidence interval < .10). Next, a model including a linear slope was tested separately for each process and compared against the intercept-only model based on changes in model fit: a significant $\Delta\chi_{SB}^2$ (Satorra & Bentler, 2001), and $\Delta CFI \geq -.010$ supplemented by $\Delta RMSEA \geq .015$ (Chen, 2007). Having at least two out of these three criteria satisfied would indicate that the linear model fits the data significantly better than the intercept-only model. Given that the current data spanned across three time points, it was not possible to assess more complex of nonlinear patterns of change (Duncan & Duncan, 2009).

Model fit and model comparisons are reported in Table S4. As can be inferred, the linear solution fitted the data better for commitment, in-depth exploration, and reconsideration of commitment. Thus, these models were used in the main analyses.

Table S4
Latent Growth Curve models of interpersonal identity processes

	Model fit					Model comparisons			
	χ^2	df	CFI	SRMR	RMSEA [90% CI]	Models	$\Delta\chi^2$ (df)	Δ CFI	Δ RMSEA
Commitment									
Intercept-only (M1)	31.477	4	.921	.124	.084 [.058, .112]				
Linear (M2)	5.568	1	.987	.018	.068 [.022, .128]	M1-M2	25.450 ^{***} (3)	-.066	.016
In-Depth Exploration									
Intercept-only (M1)	13.929	4	.970	.066	.050 [.023, .080]				
Linear (M2)	1.620	1	.998	.010	.025 [.000, .093]	M1-M2	11.996 ^{**} (3)	-.028	.025
Reconsideration									
Intercept-only (M1)	10.318	4	.965	.045	.040 [.010, .071]				
Linear (M2)	2.149	1	.994	.012	.034 [.000, .099]	M1-M2	8.140 [*] (3)	-.029	.006

Note. M = model; χ^2 = chi-square; df = degree of freedom; CFI = Comparative Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; CI = confidence interval; Δ = change in the parameter.

* $p < .05$; ** $p < .01$; *** $p < .001$

Latent Growth Curve Models of Subjective, Psychological, and Social Well-Being

Before examining the interplay between interpersonal identity processes and well-being, latent growth curve linear models were tested separately for each indicator of well-being (i.e., subjective, psychological, and social). The same procedure detailed for LGC models with interpersonal identity processes was followed. Specifically, first an intercept-only model was tested and its model fit examined based on a combination of fit indices (i.e., CFI > .90/.95, SRMR and RMSEA < .08/.05, upper bound of RMSEA confidence interval < .10). Next, a model including a linear slope was tested and compared against the intercept-only model. The linear model would fit the data significantly better than the intercept-only one if at least two of the following criteria are satisfied: a significant $\Delta\chi_{SB}^2$ (Satorra & Bentler, 2001), and $\Delta\text{CFI} \geq -.010$ supplemented by $\Delta\text{RMSEA} \geq .015$ (Chen, 2007). Model fit and model comparisons are reported in Table S5. As can be inferred, the linear solution fitted the data better for all indicators of well-being, thus it was used in the following analyses.

Table S5
Latent Growth Curve models of well-being indicators

	Model fit					Model comparisons			
	χ^2	df	CFI	SRMR	RMSEA [90% CI]	Models	$\Delta\chi^2$ (df)	Δ CFI	Δ RMSEA
Subjective									
Intercept-only (M1)	25.034	4	.928	.053	.073 [.047, .102]				
Linear (M2)	0.144	1	1.000	.003	.000 [.000, .062]	M1-M2	23.961 ^{***} (3)	-.072	.073
Psychological									
Intercept-only (M1)	60.955	4	.870	.074	.120 [.095, .148]				
Linear (M2)	0.348	1	1.000	.005	.000 [.000, .071]	M1-M2	59.468 ^{***} (3)	-.130	.120
Social									
Intercept-only (M1)	18.904	4	.965	.049	.062 [.035, .091]				
Linear (M2)	6.627	1	.987	.019	.076 [.030, .135]	M1-M2	12.305 ^{**} (3)	-.022	-.014

Note. M = model; χ^2 = chi-square; df = degree of freedom; CFI = Comparative Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; CI = confidence interval; Δ = change in the parameter.

^{**} $p < .01$; ^{***} $p < .001$