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Measuring Care and Justice Moral Orientation: Italian Adaptation and Revision of the MMO-2 Scale

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This study presents the Italian adaptation of the Measure of Moral Orientation, second revision (MMO-2). Based on Carol Gilligan's theory of the Ethics of Care, the MMO-2 was designed to measure two complementary moral stances, namely, Care and Justice. For this study, questionnaire responses from 683 university students were assessed against an Italian-adapted MMO-2 scale. Data were analyzed through exploratory structural equation modeling first as separate scenarios and then as a single model. The final model comprises 4 intercorrelated pairs of latent variables and shows highly satisfactory goodness of fit indices with moderate construct validity and reliability. Strengths, limitations, and directions for the future developments of the MMO-2 are discussed.

Keywords: Measure of Moral Orientation, ethics of care, ethics of justice, exploratory structural equation modeling, composite reliability

In her seminal work *In a Different Voice* published in 1982, Carol Gilligan theorized for the first time an alternative form of ethics, namely, the Ethics of Care. Gilligan made the case that human beings are not always motivated to act fairly, as Kohlberg (1981) argued in his model of moral development. Instead, they sometimes feel an intrinsic need to help, safeguard, and protect connections with others. This started a heated debate within the philosophical and psychological literature between those who strongly contested the existence of an ethics of care (Allmark, 1995) and those who proposed it as an alternative to the ethics of justice (Bradshaw, 1996; Noddings, 1984). Today the legitimacy of the Ethics of Care has been widely accepted (for a review, see Sherblom, 2008), and the latest developments in this field of study have successfully attempted to integrate both justice and care as two complementary sides of ethical reasoning (Barnes, 2012; Held, 1995, 2006). Indeed, individuals have the potential to apply either care or justice ethical principles—or a combination of both—depending on cultural background, life choices, and contextual circumstances (see French & Weis, 2000).

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However, the Ethics of Care has not been spared from criticism (see Card, 1990; Puka, 1990; Rachels & Rachels, 2012). Among its detractors, some have highlighted methodological issues with Gilligan's work. Luria (1986) highlighted at least three shortcomings: (a) relatively small and ill-specified sample size; (b) absence of a reliable objective scoring system; and (c) juxtapositions of disparate samples, which poses problems about combination rules. Similarly, Brabeck (1983) stressed the importance for future research of collecting quantitative data with larger samples than those used by Gilligan.

Over the years, a small number of quantitative studies have shed more light on the relationship between the Ethics of Justice and the Ethics of Care. Among them, functional magnetic resonance imaging tests have been employed to investigate people's neuronal sensitivity to either justice or care issues (Harenski, Antonenko, Shane, & Kiehl, 2008; Robertson et al., 2007). In addition, computerized response latency measures with stimulus words have explored people's tendency toward either justice or care principles (Agerström, Björklund, & Carlsson, 2011).

In addition to the aforementioned studies, the bulk of quantitative investigations conducted in the Ethics of Justice and Ethics of Care domain have relied primarily on self-report instruments. Among these, the following figure prominently: (a) the Moral Justification Scale (Gump, Baker, & Roll, 2000), (b) the Moral Orientation Scale using Childhood Dilemmas (Yacker & Weinberg, 1990), (c) the Assessment of Moral Orientation (AMO; Giammarco, 2016), and (d) the Measure of Moral Orientation (MMO; Liddell & Davis, 1996), soon available in its second revision, MMO-2 (Cooper, Liddell, Davis, & Pasquesi, 2012; Liddell, 2006). All these tools vary in terms of validation procedures, sample sizes, targeted populations, structures, and measurement scales.

Despite having a well-established Ethics of Care scholarship (Saraceno, 2009; Viafora, Zanotti, & Furlan, 2007), Italy surprisingly lacks any adapted version of the preceding quantitative tools. This study bridges this gap by introducing one of those instruments to the Italian context. Following extensive evaluation, we chose the MMO-2, as the other instruments considered show several limitations. The Moral Orientation Scale using Childhood Dilemmas was designed for adults who are asked to imagine that they are parenting an 8- to 10-year-old child who is faced with a series of moral dilemmas. Apart from the exclusivity of the task, this instrument has been validated only on a sample of 99 graduate students, with responses coded by an expert with experience in Lyons's (1983) coding scheme. Likewise, a group of experts judged the MJS construct validity and the sample collected for validation comprised only 100 participants. Last, the AMO seemed to be a more robust instrument in terms of validation procedures and sample size. However, this tool needed further revisions, as stated by the author in the conclusion of the study (Giammarco, 2016); yet to date no updated version has been released.

Against this background, the MMO-2 stands out as the only currently available scale for the assessment of Justice and Care moral orientation that has undergone a rigorous series of revisions to improve its psychometric validity (Liddell & Davis, 1996; Liddell, Halpin, & Halpin, 1993). In addition, each scenario composing the MMO-2 has been specifically designed to be close to the experience of college and university students (Liddell, 1991), making this tool a suitable choice for exploring the Ethics of Justice and the Ethics of Care at the higher education (HE) level.

DATA, METHODS, AND PROCEDURES

Instruments

The MMO-2 is a tool for the assessment of a person's moral inclination. Originally developed as MMO, it was designed by Debora Liddell (1991) and validated by Liddell, Halpin, and Halpin (1992). The MMO reached its latest version in a study conducted by Liddell and Davis (1996), which aimed to collect further reliability and validity evidence. The final scale was composed of 10 moral dilemmas using 79 items.

This tool comprises a series of vignettes, which are each designed to portray a situation of ethical conflict. Respondents are asked to identify themselves with each protagonist and make a moral decision, which can be driven by either justice or care principles. The following is an example of an MMO dilemma, previously proposed by Liddell and Davis (1996, p. 487):

> My parents, after 30 years of a somewhat rocky marriage, are going through a divorce. My mother has been involved with another man for several years and has decided to leave the marriage. She seems very happy with her decision. Each of my parents wants me to spend semester break at his or her particular home, but my father will be very upset if I go to my mother's house because her "friend" will be there.

- strongly agree
- somewhat agree
- somewhat disagree
- strongly disagree

1. I have the right to spend time with whomever I want.
2. What I wish more than anything is to make everyone happy and not hurt them.
3. What I did would depend on how I thought each parent needed me.
4. Everyone has the right to happiness, even if the consequences are sometimes hurtful to others.

All the items composing the MMO are measured on a 4-point Likert scale ranging from *strongly disagree* to *strongly agree*. Complementary to the scale, the authors designed a 14-item self-description inventory to tap into the respondents' perceptions of themselves as just and/or caring people (i.e., seven items for self-justice and seven items for self-care, respectively).

As previously mentioned, the MMO-2 represents a newly revised version of the MMO. Following extensive item analysis, Liddell (2006) decided to reduce the range of dilemmas from 10 to seven and drop the self-description items. Compared to its previous version, the MMO-2 includes 52 items (26 for care orientation and 26 for justice orientation). All the remaining vignettes and items are still worded as in the previous version.

The MMO-2 scale has already been piloted on a sample of 169 university students, showing good internal reliability for Justice ($\alpha = .886$) and for Care ($\alpha = .896$; Liddell, 2006). Giammarco (2016) also provided evidence of its structural validity and convergent validity through correlations between AMO and MMO-2.

Despite this positive evidence, the MMO-2 has not been tested yet for full validation. Therefore, our study represents a good opportunity to introduce this instrument to the Italian

context while testing its psychometric proprieties. This, in turn, will offer some useful feedback for the future development of the scale.

Translation

The MMO-2 has undergone a rigorous process of translation and back-translation to ensure its applicability to the Italian context (Brislin, 1970). Three versions of the scale—namely, the original English version, its Italian rendering, and the English version translated from Italian—were compared to test for equivalence between the original language (i.e., American English) and the target language (i.e., Italian). Two independent researchers carried out the translations, and the first author of this study oversaw the process. All the researchers involved in this process are proficient in both English and Italian. The back-translation generated a high general agreement on the majority of the items composing the MMO-2. Only minor disagreements were found, and their reconciliation proved useful in enhancing the overall quality of the translation. The disagreements pertained mainly to cultural differences between the Italian and the American university systems. This led to rephrasing some of the MMO-2 items and scenarios. For example, proper names were rendered in Italian, and given the syntax of this language, the authors provided female and male alternatives for nouns, adjectives, and articles to ensure gender neutrality.[1] For example, the original American names were replaced by more common Italian equivalents to facilitate the respondents' identification with the protagonists of the scenarios (e.g., Karen/Katia; Richard/Riccardo).

In some rare cases, we had to adapt the content of the scenarios to the Italian context. For instance, in the Karen/Katia scenario, the "first test" was best rendered with "prova precorso," which is a midterm, often nonmandatory, test. In addition, the two results of the tests (i.e., A and B) were replaced with "highest score" and "lower score," given the difficulty of translating them into the Italian 30-point scale grading system. Last, in the case of the Morgan/Andrea scenario, a section relating to medical insurance coverage was deleted because the Italian national health system covers cancer treatment.

Participants

The sample was 683 university students from the University of Naples Federico II in the south of Italy. The respondents had an average age of 22.63 (SD = 2.827), with 62% identifying themselves as female and 38.8% as male. Participants were recruited through convenience cluster sampling, with a balanced distribution of subjects from across the following faculties: psychology (18.4%), law (15.4), biology (14.3%), politics (15.2%), engineering (15.7%), medicine (14.8), and other (6.1%). Of the total sample, 73.6% were enrolled for a bachelor's degree and 26% for a master's degree.

Procedures

Participants were recruited across the university campus, particularly in areas regularly frequented by university students, such as study rooms and university halls and hubs. Two

[1] Male and female Italian nouns and adjectives require different final vowels and definite/indefinite articles.

researchers and a trained supervised undergraduate student invited the participants to fill out a paper-and-pencil questionnaire and return it with signed authorization for use of all the data provided, including sensitive information. Only an overview of the research scope was provided, in order not to influence the respondents' answers.

Participants were not offered any remuneration for returning the questionnaire. However, they were promised feedback and research results following completion of the analyses as a means to increase their compliance with the study.

Analytical Instruments

All the statistical analyses were conducted using Mplus 7.0, except for descriptive statistics, which were carried out by means of IBM SPSS v. 22.

DATA ANALYSES AND RESULTS

The researchers took a number of statistical steps to assess the structural validity and reliability of the MMO-2. The first phase followed the approach used by Giammarco (2016), who ran a series of exploratory factor analyses using principal axis factoring with oblique rotation. Giammarco's results suggest analyzing the MMO-2 structure first at the scenario level. This means extracting a factor for Justice and a factor for Care from each scenario and conceptualizing them as parallel forms. Based on these findings, we first used exploratory structural equation modeling (ESEM) to extract a Care and Justice latent variable from each scenario (Model 1). Subsequently, we put together the manifest and latent variables retained from Model 1 and analyzed them through a second ESEM (Model 2).

Given the categorical nature of the item responses to the MMO-2, all the analyses conducted in this study are based on a robust version of weighted least square estimator. Given that fewer than 5% of the data were missing, the pairwise deletion approach was implemented with the weighted least square estimation in Mplus (Asparouhov & Muthén, 2010).

With regard to the goodness of fit indices, we referred to the chi-square test, root mean square error of approximation (RMSEA), Tucker–Lewis index (TLI), and Bentler's comparative fit index (CFI; for a general review, see Hooper, Coughlan, & Mullen, 2008). According to Hu and Bentler (1999), a cutoff value of .06 or below is suggested for RMSEA, with confidence interval values close to 0 for the lower limit and less than .08 for the upper limit. Regarding CFI and TLI, values above .95 are generally recognized as indicative of a good fit.

In terms of construct validity, all previous versions of the MMO have been tested through Campbell and Fiske's (1959) multitrait–multimethod matrix (see Liddell & Davis, 1996; Liddell et al., 1993). However, this method has received criticism for lacking clear cutoff points to assess the magnitude of the correlations within the multitrait–multimethod matrix (Ferketich, Figueredo, & Knapp, 1991). Therefore, we relied on Fornell and Larcker's (1981) method, which is another widely used set of criteria for assessing psychometric validity. According to this method, convergent validity can be established when average variance extracted (AVE) reaches a value higher than .5. To assess discriminant validity, AVE should also be higher than both maximum shared variance and average shared variance (Fornell & Larcker, 1981; Hair, Anderson, & Black, 2016).

With regard to the MMO-2 reliability, we decided not to use Cronbach's alpha—which is often used for assessing the reliability of psychometric instruments—due to its tendency to overestimate reliability in cases like the Italian MMO-2, where the condition of tau-equivalence (i.e., equal factor loading) cannot be met (Raykov, 1997). Therefore, we relied on Fornell and Larcker's (1981) composite reliability (CR) to get a more accurate estimate of the reliability of the Italian MMO-2. Similar to Cronbach's alpha, a good level of reliability is established when CR reaches levels above .7.

Model 1: Single-Model ESEM Construct Validity

ESEM is a recently developed statistical technique that combines the features of exploratory factor analysis with those of confirmatory factor analysis (CFA; Asparouhov & Muthen, 2009). One of the advantages of ESEM is that the researcher can specify the factors as in CFA but also allow all the cross-loadings as in exploratory factor analysis, with the restriction that those cross-loadings should be small. Therefore, this technique allows more modeling flexibility compared to the strict requirement of zero cross-loadings in CFA, which often leads to extensive model modification to find a well-fitting model (Asparouhov & Muthen, 2009, p. 2). However, even in ESEM, cross-loadings are still expected to be as close to zero as possible.

Based on these premises, we decided to use ESEM with geomin rotation, as implemented in Mplus 7.0, to test the construct validity of the Italian MMO-2.

As touched upon, the following sections showcase the results of the single-models ESEM, through which we extracted a Care and Justice factor from each scenario (Model 1). As we can see in Table 1, all the models had to be respecified to achieve satisfactory model fit. The next section shows in detail the necessary changes we had to make. In particular, a consistent number of items and two entire scenarios had to be deleted, and several cross-loadings had to be acknowledged.

Deleted Manifest Variables

Based on the results of ESEM, in Model 1 the following manifest variables were deleted due to a low R^2: item1 (.267), item3 (.274), item5 (.150), item6 (.176), item13 (.290), item15 (.287), item16 (.104), item21 (.084), item25 (.263), item28 (.122), item29 (.045), item33 (.025), item37 (.200), item48 (.206), and item49 (.034; see also the appendix). This choice was driven not only by a statistical rationale. With regard to the instrument's face validity, many of the preceding items proved of difficult interpretation. Indeed, the participants' oral feedback showed difficulty in answering item16 "This is a matter of conflicting rights: Morgan's parents have a right to know, but Morgan also has a right not to tell them"; item28 "Karen's reputation with her classmates and faculty is in jeopardy here"; and item29 "This is really about conflicting rights: Karen and the professor's right to do what they want, and the rights of the other students in the class to not be disadvantaged." In fact, all of them similarly describe a matter-of-fact situation with respect to which participants are not sufficiently prompted to take a given moral position.

Deleted Latent Variables

The results obtained in Model 1 also suggested the deletion of two pairs of related factors, namely, Care1/Justice1 and Care4/Justice4. The former refers to the Student Club vignette, and the latter to the Karen vignette. Regarding the Student Club scenario, the deletion of four items due to a low R^2 left only item2 to load on the Justice1 Factor. Because there can be no latent variable with only one manifest variable, it was necessary to delete the whole scenario. The deletion of this vignette can also be justified on cultural grounds: University student clubs are not as popular in Italy as they are in the United States, and therefore Italian respondents might not relate well to the proposed scenario.

A different condition was found for Care4/Justice4. In this case, after deleting the manifest variables with low interitem reliability there were still sufficient parameter estimates to load onto the two factors extracted. However, the resulting model fit was inadequate to hold the null hypothesis that the sample covariance matrix would equal the population covariance matrix. In particular, the chi-square test of model fit was too high and significant, and the RMSEA was well above most accepted values for accepting the model (see Table 1).

Cross-Loadings

As a form of exploratory factor analysis, ESEM is designed to allow manifest variables to load onto every latent variable. Therefore, it is not uncommon in ESEM to acknowledge the presence of nonzero cross-loadings (Morin, Marsh, & Nagergast, 2013).

In Model 1, item8 was originally intended to load only on the Justice2 Factor; however, this item also loads negatively on the Care Factor ($\lambda = -.396$). We believe this cross-loading relates to the inherent conflictual nature between claiming the right to get the work published (Justice) and the lack of concern for the consequence that the roommate faces (Care). In this light, the two options are negatively related.

Similarly, item18 was designed to load only on the Care3 Factor. However, ESEM shows that this item also loads negatively on Justice3 ($\lambda = -.396$). The reason for this is that item18 describes a condition in which respecting Morgan/Andrea's decisions (Care) is at issue with the right of the parents to know the truth (Justice). However, these two manifest variables could not be deleted without undermining the factor structure of their corresponding latent variable; therefore they were retained while being aware of the cross-loading.

Despite showing a satisfactory R^2 value (.39), item51 cross-loads with the Care7 Factor ($\lambda = .289$). It might be noted that item8 and item18 likewise presented a similar condition. Despite this being true, their deletion would have entailed deleting the whole scenario due to the absence of at least one other congeneric variable for their corresponding factor. This is not the case for item51, which can be replaced by item46, item47, and item52. Therefore, this variable was excluded from future analyses.

Model 2: Multiple-Model with all Items Included

Based on the results of the single-model ESEM at the scenario level (Model 1), we put together all the retained manifest variables of the MMO-2 into a multiple ESEM model. The overall model shows very close model fit, $\chi^2(143) = 155.05$, $p = .231$, RMSEA = .011 (.000, .022),

TABLE 1
Indices of Goodness of Fit for Single-Model Exploratory Structural Equation Modeling with Geomin Rotation (Model 1)

Scenario	*Latent Variables*	*Variables*	*Chi-Square Test of Model Fit*	*RMSEA*	*CFI/TLI*
The Student Club	Care1 and Justice1	Item1 Item2 Item3 Item4	Standard error of the model parameter estimates could not be computed. Model not identified		
Plagiarism	Care2 and Justice2	Item7 Item8 Item10 Item11 Item12 Item14	Value = 8.023 *df* = 4 *p* = .0907	Estimate = .038 90% CI [.000, .007] Prob. $p \leq .05$ = .634	.996/.984
Morgan/ Andrea	Care3 and Justice3	Item17 Item18 Item19 Item20 Item22	Value = .478 *df* = 1 *p* = .4895	Estimate = .000 90% CI [.000, .089] Prob. $p \leq .05$ = .754	1.000/1.005
Karen/ Katia	Care4 and Justice4	Item23 Item24 Item26 Item27 Item30	Value = 8.078 *df* = 1 *p* = .0045	Estimate = .102 90% CI [.046, .172] Prob. $p \leq .05$ = .062	.996/.955
Administrator	Care5 and Justice6	Item31 Item32 Item34 Item35 Item36	Value = 1.390 *df* = 1 *p* = .2384	Estimate = .024 90% CI [.000, .108] Prob. $p \leq .05$ = .557	1.000/.997
Richard/ Riccardo	Care6 and Justice6	Item38-item44	Value = 7.202 *df* = 8 *p* = .5150	Estimate = .000 90% CI [.000, .042] Prob. $p \leq .05$ = .984	1.000/1.000
Parents	Care7 and Justice7	Item45 Item46 Item47 Item50 Item51 Item52	Value = 2.847 *df* = 4 *p* = .5838	Estimate = .000 90% CI [.000, .05] Prob. $p \leq .05$ = .952	1.000/1.003

Note. Deleted pairs of latent variables are in gray. RMSEA = root mean square error of approximation; CFI = comparative fit index; TLI = Tucker–Lewis index.

$p < .05 = 1.000$, CFI = .998, TLI = .996, suggesting no rejection of the null hypothesis that the model's implied variance-covariance matrix [$\Sigma(\theta)$] and the model's covariance matrix [Σ] are not statistically different. However, on closer inspection of the parameter estimates, it emerged that Care6 and Justice6 were not consistent with a two-factor structure, having all their manifest variables from item38 to item44 loading on one factor instead of two. This instance seems to stand in contrast with the results found in Model 1, in which a Justice/Care solution could well explain variations in the Richard/Riccardo scenario. This anomaly can perhaps be explained by

the fact that when this scenario is included in Model 2, it comes into conflict with the level of Care measured by all the other scenarios. In fact, consistent with Gilligan's (1982) theory, the items composing the Richard/Riccardo vignette pertain more to the preconventional stage, whereas the other scenarios measure Care between the conventional and post-conventional stage. A good example is represented by item38 "I do not want to be the one to cause harm to Richard's relationship with Amy." In this instance, a high score on this item shows self-concern for being involved in Richard and Amy's situation rather than unselfish care for the future of their relationship.

Given these results, it was necessary to respecify the model by deleting the Richard/Riccardo scenario. The final model so obtained showed highly acceptable indices for goodness of fit, χ^2 (70) = 88.944, p = .062, RMSEA = .02 (.000, .031), $p < .05$ = 1.000, CFI = .995, TLI = .986, suggesting again an acceptance of the null hypothesis that the model's implied variance–covariance matrix [$\Sigma(\theta)$] and the model's covariance matrix [Σ] are not statistically dissimilar. Therefore, the MMO-2 final model could be considered one of the possible models that were consistent with the data analyzed.

In the final model (Mode 2), all factor loadings are higher than .3, which is the cutoff point suggested by Tabachnick and Fidell (2007) for retaining items in exploratory factor analysis. As we can see in Table 2, the values for average variance extracted and composite reliability are higher than their corresponding cutoff values only in three instances (i.e., Justice3, Justice5, and Care6). In all other cases, the value of CR and AVE indicate moderate/poor reliability and convergent validity. On the other hand, AVE is always higher than both maximum shared variance and average shared variance, showing satisfactory discriminant validity (see Table 3).

Table 3 also shows that interfactor correlations range from a minimum of ψ = .192 (Care5 with Care6) and ψ = .121 (Justice3 with Justice5) to a maximum of ψ = .338 (Care3 with Care6) and ψ = .269 (Justice5 with Justice6). The highest intrafactor correlation was found between Justice2 and Care3 (ψ = .39), although few other lower correlations between Justice and Care Factors were significant at the 5% level.

These findings suggest that Justice and Care are best measured as two distinct and yet related constructs. To confirm this hypothesis, we tested our final four-factor model against a series of alternative models. The first is a two-factor unidimensional model, which ignores the items pertaining to specific vignettes and uses only two general latent variables, one for Care and one for Justice. The second model is a multitrait model, which in addition to the multidimensional four-factor model, includes a general Care and Justice factor, which ignores the vignettes. The last model tests a similar multitrait model differentiated by specifying a general Care and Justice factor for each vignette examined.

However, all of the proposed alternative models failed to describe the data better than the multidimensional four-factor model. Therefore, we conclude that the latter is the most suitable model to use for the Italian adapted MMO-2 scale.

DISCUSSION

As a result of the analyses conducted in this study, we suggest that the Italian-adapted version of the MMO-2 is best interpreted as a multidimensional instrument comprising four scenarios: Plagiarism, Morgan/Andrea, Administrator, and Parents. Each scenario comprises two latent

TABLE 2
Parameter Estimates, Interitem Reliability, Composite Reliability (CR), and Average Variance Extracted (AVE) for Exploratory Structural Equation Modeling with Geomin Rotation (Model 2)

	Plagiarism		*Morgan/ Andrea*		*Administrator*		*Parents*		
Manifest Variable	*Care2*	*Justice2*	*Care3*	*Justice3*	*Care5*	*Justice5*	*Care6*	*Justice6*	R^2
Item7	**.485****	−.194**	.216*	−.052	.032	.033	.01	.029	.375**
Item10	**.661****	−.042	.038	−.067	−.007	−.065	.022	.035	.476**
Item11	**.764****	.024	−.054	.081	.023	.039	−.003	−.069	.591**
Item8	−.303	**.548****	−.018	−.015	.097	.039	−.017	.005	.467**
Item12	.009	**.75****	.031	.012	−.046	−.065	−.012	−.035	.563**
Item14	−.175*	**.545****	.124	−.032	.008	.082	.028	.082	.471**
Item18	.076	.025	**.411****	**−.537****	.042	.023	.008	−.003	.522*
Item20	.068	.052	**.393****	−.193**	.045	−.031	.019	.05	.264**
Item22	−.067	.036	**.714****	.038	−.102	−.023	.018	−.039	.491**
Item17	.057	.181**	−.037	**.75****	.004	.037	.046	−.016	.612**
Item19	.002	−.021	.159	**.845****	.043	−.015	−.024	.061	.739**
Item32	−.023	.015	−.051	−.019	**.754****	−.083	.035	−.003	.601**
Item34	.133*	.219**	.04	.038	**.322****	**−.41****	−.011	.006	.451**
Item35	.045	−.028	.141	.03	**.332****	−.55**	.027	−.021	.611**
Item31	.142*	.06	.058	.052	.007	**.753****	−.014	.024	.592**
Item36	.027	−.023	.004	.016	−.027	**.801****	.042	−.01	.646**
Item46	−.013	−.087	.04	.049	.094	.089	**.719****	−.105	.586**
Item47	.054	.043	−.015	−.042	−.042	−.069	**.901****	.007	.820**
Item52	−.108	.004	.013	−.024	.028	.008	**.609****	.128	.380**
Item45	−.036	−.014	.015	−.008	.232*	.157	−.049	**.509****	.367**
Item50	.029	.017	−.016	.063	−.042	−.014	**.315****	**.601****	.445**
AVE	.419	.387	.278	.638	.261	.604	.597	.310	
CR	.677	.649	.515	.779	.472	.753	.793	.472	

Note. Congeneric manifest variables in boldface.
**p* value significant at 5% level.
***p* value significant at 1% level.

variables, one for Justice and one for Care, explaining 21 manifest variables (see Figure 1). As mentioned in the introduction, the literature has acknowledged that context plays a strong role in determining ethical choices. In that regard, the MMO-2 multidimensional structure can be used to explain different aspects of the justice and care ethics in different contexts/scenarios that are relevant to people's lives, namely, care/justice in peer relationships (Plagiarism), care/justice in intimate relationships (Morgan/Andrea), care/justice in the workplace (Administrator), and care/justice in family relationships (Parents). In using the Italian MMO-2, we advise that researchers and practitioners use one or a combination of scenarios that best align with their scopes and that best describe the context under investigation.

However, it is important to highlight that to achieve this final version, we had to make significant changes to the structure of the Italian MMO-2 scale. In fact, it was necessary to delete

TABLE 3
Estimated Correlation Matrix for the Latent Variables, Maximum Shared Variance, and Average Shared Variance

LATENT VARIABLE	*CARE 2*	*JUSTICE 2*	*CARE 3*	*JUSTICE 3*	*CARE 5*	*JUSTICE 5*	*CARE 6*	*JUSTICE 6*	*Maximum Squared Variance (MSV)*	*Average Squared Variance (ASV)*
CARE 2	1								.051	.041
JUSTICE 2	-.19**	1							.152	.070
CARE 3	.227	.39**	1						.057	.079
JUSTICE 3	.072	.007	-.087	1					.015	.015
CARE 5	.196	.087	.239**	.093	1				.096	.057
JUSTICE 5	-.132	.097	-.088	.121	-.31**	1			.072	.061
CARE 6	.201	.006	.338**	.022	.192	-.045	1		.114	.063
JUSTICE 6	-.106	.149*	.148	.124	.025	.269**	-.047	1	.072	.038

*p value significant at 5% level.
**p value significant at 1% level.

a consistent number of manifest variables and, in some cases, entire scenarios to achieve satisfactory model fit (see Table 1). With the exception of the Student Club scenario, we cannot attribute these results to cultural causes that might have interfered with the adaptation of the instrument. Therefore, we must acknowledge that adjustments to the MMO-2 are necessary.

Despite appearing to be a drastic change to the proposed structure of the MMO-2, we would see the scale as a newly revised prototype of the MMO. In fact, the MMO-2 was originally conceived to be shorter than its previous version. Our study contributes to informing the developers of the MMO-2 to streamline the scale even further; this, rather than undermining its validity, will contribute to strengthening it.

Despite these changes, we must still be conscious that the final version of the Italian MMO-2 has further room for improvement. We recommend that future studies address issues such as the poor/moderate level of factor reliability and convergent validity of some Justice and Care factors (Table 2) as well the few significant low interfactor correlations between latent variables pertaining to the same construct (Table 3). Although discriminant validity reached satisfactory levels, our findings suggest strengthening the general structure of the MMO-2. Moreover, it would be advisable to add at least one or more manifest variable to the factors that currently explain only two congeneric variables, namely, Justice3 and Justice6. In addition, rephrasing or substituting item18, item20, item34, and item35 would rid the instrument of cross-loadings and further increase both reliability and convergent validity.

As one last note of caution, given the nature of our convenience sample, we recommend that future studies employ random sampling strategies to ensure a better generalizability of the results. In addition, we advise the use of cross-validation samples to confirm the high number of post hoc adjustments we had to make to the initial proposed model.

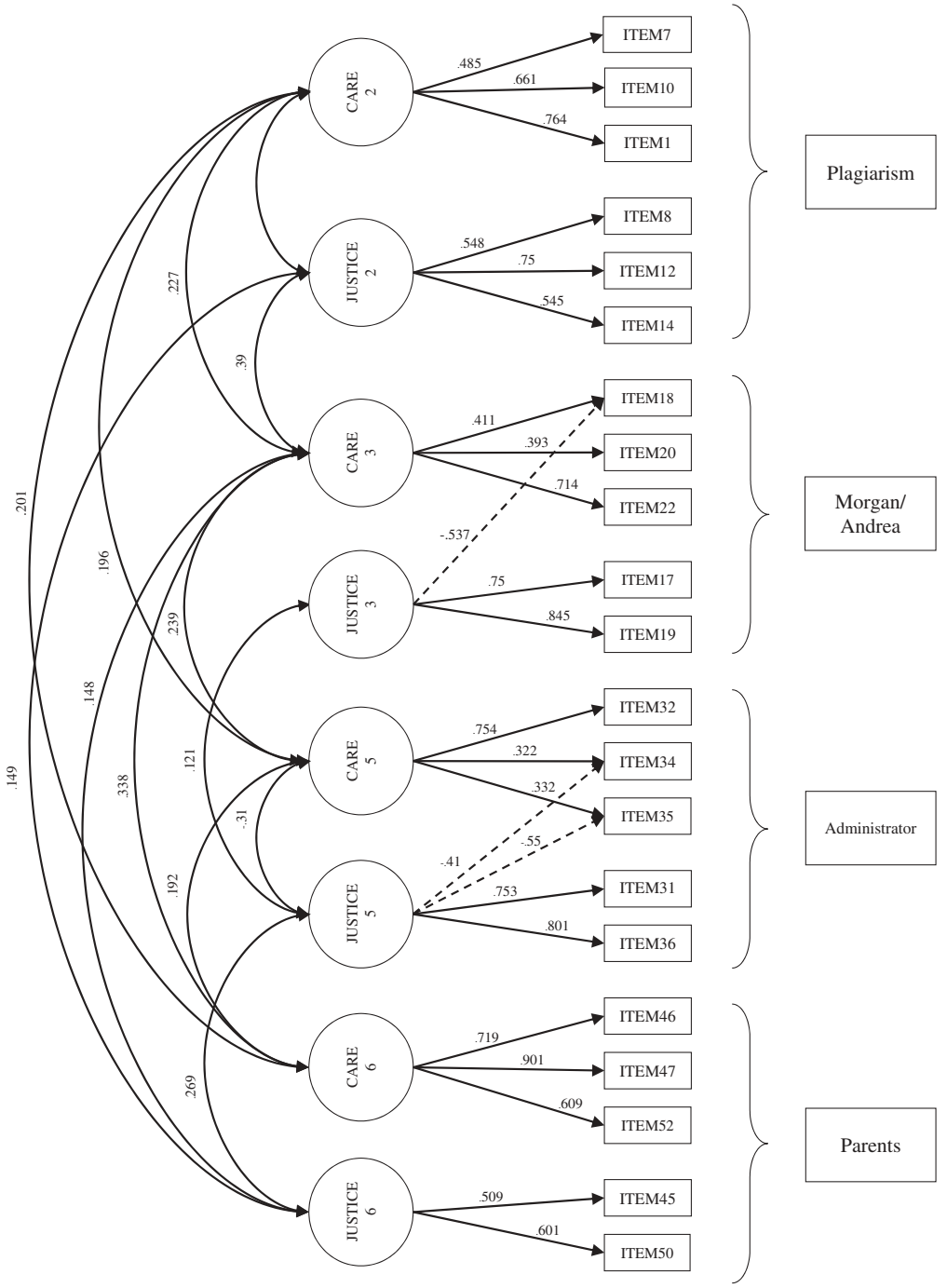

FIGURE 1 Measure of Moral Orientation, second revision, exploratory structural equation modeling final solution diagram. *Note*. Only relevant cross-loadings were displayed (dotted arrows) to avoid cluttering.

CONCLUSIONS

This work constituted a good opportunity for testing the psychometric validity of the newly developed MMO-2 while introducing it to the Italian context. Because there is no similar instrument available in this country, the study presented here can be of great use to Italian researchers and practitioners committed to understanding the relationship between the Ethics of Care and Justice.

At the same time, the results of our study provide some valuable suggestions for the future development of the MMO-2 to reach satisfactory levels of psychometric validity and reliability. We believe that with appropriate amendments and improvements, the MMO-2 can become a valuable instrument for the measurement of Justice and Care moral judgment at the HE level.

Beyond the psychometric findings presented here, this study aimed to stimulate more quantitative exploration into differences in moral orientation at the HE level from the perspective of the students as moral judges. In fact, research in moral issues has focused mainly on the general population, with very little understanding of how specific realms of HE experience Care and Justice. This is unfortunate, as the exploration of morals in HE is of great topicality in today's contemporary global societies (Collier, 1993).

In support of this necessity, a study by Mumford et al. (2006) suggested that HE training should educate students on how to face moral issues, hence raising awareness about the consequences of their actions toward others. In that regard, the Italian scholarship has placed —at least theoretically—strong emphasis on the link between the ethics of care and the realm of pedagogy and education (Viafora et al., 2007).

However, given the dearth of research in this field, we believe it is necessary to investigate further how Justice and Care are experienced and practiced by college and university students over and above educators and teaching staff. The few inquiries into the Ethics of Justice and Care in HE have mainly focused on the experience of either teachers or researchers/practitioners as caregivers (Costley & Gibbs, 2006; Warin & Gannerud, 2014). Extremely little evidence is available on the experience of students as both caregivers and care-receivers and even less quantitative data have been collected to shed light on these issues. In light of this, we have attempted to provide new information on the use of quantitative instruments for measuring moral orientation at the HE level.

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APPENDIX A

TABLE A1
Parameter Estimates (λ^0) and Interitem Reliability (R^2) for Single-Model ESEM with Geomin Rotation

Scenario	*Manifest Variable*	*Translated Manifest Variable*	*Care (λ0)*	*Justice (λ0)*	R^2
The Student Club	Item1	Non voglio far nulla che possa mettere a rischio la mia amicizia con il/la mio/a coinquilino/a.	**.476***	.245*	.267
	Item2	I membri del club hanno il diritto di pensarla come vogliono riguardo ai potenziali nuovi iscritti.	.016	**.571***	.325
	Item3	Non voglio far nulla che possa influenzare il processo di selezione dei nuovi membri.	−.104	**.505***	.274
	Item4	La cosa fondamentale è che il/la mio/a coinquilino/a non ci resti male a causa dell'accaduto.	**.699***	−.013	.490
	Item5	Dovrei provare ad essere oggettivo/a riguardo a questa situazione.	−.151*	**.344***	.150
	Item6	Mi sento combattuto/a, perché ci tengo ai/alle miei/mie amici/che di club, però voglio bene anche al/la mio/a coinquilino/a.	**.412***	.116	.176
Plagiarism	Item7	Ci sono rimasto male per ciò che il/la mio/a coinquilino/a ha fatto, però non voglio che finisca nei guai.	**.620***	.000	.385
	Item8	Al di là delle conseguenze per il/la mio/a coinquilino/a, l'articolo è mio e ho il diritto di farmelo pubblicare.	−.325*	**.534***	.472
	Item9	Dovrei essere oggettivo/a e razionale rispetto a questa situazione e non	−.232*	**.255***	.147
	Item10	So bene quanto la laurea sia importante, per cui non voglio fare qualcosa che possa poi impedire al/la mio/a coinquilino/a di laurearsi.	**.632***	−.009	.403
	Item11	Non voglio far nulla che possa compromettere la mia amicizia con il/la mio/a coinquilino/a.	**.712***	−.008	.509
	Item12	Il/La mio/a coinquilino/a ha il dovere di risolvere la faccenda.	.021	**.771***	.588
	Item13	Vorrei trovare una soluzione che danneggi il meno possibile sia me, sia il/la mio/a coinquilino/a.	**.591***	.200*	.334[a]
	Item14	A prescindere dalle ragioni che lo/la hanno spinto/a a fare ciò che ha fatto, il/la mio/a coinquilino/a ha infranto le regole.	−.142*	**.592***	.411
	Item15	Ho timore di danneggiare la mia amicizia con il/la mio/a coinquilino/a.	**.548***	.074	.287
Morgan/ Andrea	Item16	Questa è una situazione di diritti contrastanti: i genitori di Andrea hanno il diritto di sapere e allo stesso tempo Andrea ha il diritto di non dirglielo.	**.279***	.219*	.104
	Item17	Ho fatto una promessa e, accada quel che accada, non posso romperla.	−.007	**.798***	.639
	Item18	Non vorrei ferire i sentimenti di Andrea, però non possiamo nemmeno continuare ad ignorare quelli dei suoi genitori, anche loro ne stanno risentendo di questa situazione.	**.517***	−.396*	.495
	Item19	Ciò che Andrea vuole è quello che conta di più ed io ho il dovere di rispettare la sua decisione.	.008	**.813***	.659
	Item20	La questione centrale sta nel trovare un compromesso che non faccia soffrire né Andrea né i suoi genitori.	**.648***	−.002	.420
	Item21	Mi preme mantenere buoni rapporti con i genitori di Andrea.	**.282***	.033	.084
	Item22	Ora come ora, abbiamo bisogno l'uno dell'altro; nessuno di noi dovrebbe affrontare questa cosa da solo/a.	**.542***	.112*	.285[b]
Karen/Katia	Item23	Ho il dovere di fare ciò che è giusto.	−.008	**.643***	.415
	Item24	La mia preoccupazione principale è lo stato d'animo di Katia.	**.727***	.054	.519
	Item25	Katia ha il diritto di fare quello che le pare.	.221*	**−.430***	.263
	Item26	La cosa fondamentale è che Katia non soffra.	**.975***	−.002*	.952

(*Continued*)

TABLE A1 (*Continued*)

Scenario	*Manifest Variable*	*Translated Manifest Variable*	*Care (λ0)*	*Justice (λ0)*	R^2
	Item27	Questo è un caso evidente di violazione della condotta e bisogna fare qualcosa.	.014	**.818***	.666
	Item28	Stando le cose, la reputazione di Katia rispetto ai suoi/sue compagni/e di corso e con i/le docenti è fortemente a rischio.	−.043	**.340***	.122
	Item29	Questa è una faccenda di diritti contrastanti: da una parte il diritto di Katia e del professore di fare quello che vogliono, e dall'altra il diritto degli studenti del corso di non subire discriminazioni.	**.199***	−.049	.045
	Item30	Non voglio far nulla che possa compromettere la mia amicizia con Katia.	**.537***	−.197*	.360
Administrator	Item31	Dovrei fare ciò che è giusto, a prescindere dalle conseguenze.	.007	**.752***	.560
	Item32	Anche se ha sbagliato, probabilmente l'ha fatto nell'interesse di suo figlio.	**.694***	.147*	.379
	Item33	Al di là delle possibili conseguenze, sono preoccupato/a per i princìpi in gioco in questa faccenda.	.177*	**.178***	.025
	Item34	Nonostante ciò che abbiamo scoperto, non voglio sentirmi responsabile per aver arrecato danno a lui e alle sua famiglia.	**.668***	−.010	.455
	Item35	Dovrei evitare di pubblicare il pezzo, parlare con il responsabile e chiedergli di sistemare la faccenda in maniera discreta, così da non far torto a nessuno.	**.637***	−.217*	.621
	Item36	Dovrei trattare il responsabile come tutti gli altri, senza considerare le sue circostanze personali.	−.133	**.747***	.673
Richard/ Riccardo	Item37	La cosa fondamentale per me è che mio fratello Riccardo non soffra.	.514*	**.673***	.200
	Item38	Non voglio essere quello/a che compromette la relazione tra Riccardo e Amanda.	**.758***	−.109	.710
	Item39	Dovrei dirlo a Riccardo, perché se mi trovassi nella stessa situazione vorrei che lui me lo dicesse.	−.144	**.703***	.666
	Item40	La mia decisione dipende da cosa veramente Riccardo prova nei confronti di Amanda.	**.501***	−.087	.324
	Item41	Amanda ha mancato nei confronti della relazione con Riccardo, e lui dovrebbe saperlo.	−.008	**.863***	.755
	Item42	Non voglio essere quello/a che darà a Riccardo una notizia che lo farà soffrire.	**.750***	−.001	.561
	Item43	Devo fare quello che è giusto fare, a prescindere dalle conseguenze.	−.177*	**.650***	.627
	Item44	Riccardo ha il diritto di sapere che Amanda lo sta tradendo.	.007	**.875***	.757
Parents	Item45	Ho il diritto di passare il mio tempo con chi mi pare.	−.179*	**.468***	.200[c]
	Item46	Date le circostanze, mi sento in obbligo nei confronti di entrambi i miei genitori.	**.733***	−.017	.530
	Item47	Ciò che vorrei di più è di accontentare tutti e non farli soffrire.	**.919***	−.001	.844
	Item48	Non voglio che nulla si intrometta tra me e i miei genitori.	**.427***	.073	.206
	Item49	La mia decisione dipende da quanto ognuno dei miei genitori ha bisogno di me in questo momento.	.107*	**.120***	.034
	Item50	Ognuno ha il diritto ad essere felice, anche se a volte le conseguenze delle nostre azioni possono ferire gli altri.	.003	**.792***	.630
	Item51	Nonostante ciò che mia madre ha fatto, non farei nulla per farla soffrire.	**.473***	.289*	.390
	Item52	Mi comporterò in maniera oggettiva, dividendo a metà il mio tempo tra entrambi i miei genitori.	**.544***	.164*	.377

Note. Congeneric variables are in boldface.
[a]R^2 reduced to .290 after deleting item9 and item15.
[b]R^2 increased to .398 after deleting item16 and item21.
[c]R^2 increased to .275 after deleting item48 and item49.
*p value significant at 5% level.
**p value significant at 1% level.