Validation of the Greek Acceptance of Modern Myths about Sexual Aggression (AMMSA) Scale: Examining Its Relationships with Sexist and Conservative Political Beliefs

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The Acceptance of Modern Myths about Sexual Aggression scale measures contemporary beliefs about sexual aggression that tend to blame victims and exonerate perpetrators. A Greek version of the thirty-item AMMSA scale was administered to two diverse convenience samples, one in Greece and one in Cyprus. Convergent and discriminant construct validity were assessed via correlations with other constructs that were hypothesized to be strongly related to AMMSA (Illinois Rape Myth Acceptance; hostile sexism) or moderately related (benevolent sexism; social dominance orientation; right-wing authoritarianism). It was found that the Greek AMMSA was unidimensional, highly internally consistent, normally distributed, and showed good construct validity. When sociodemographic data were analyzed, age, gender, and nationality turned out to be significant predictors of AMMSA, with a U-shaped trend for age, higher scores for men than women, and higher scores for Cypriots than Greeks. In sum, the Greek AMMSA scale provides a highly useful instrument for further research on sexual aggression myths, their correlates, and effects on judgment and behavior.

Sexual aggression against women is a persisting global problem (WHO, 2014). Several studies have documented the negative effects suffered by victims of sexual violence (for a review, see Briere and Jordan 2004). Still, sexual violence against women remains one of the most under-reported crimes (Kruttschnitt, Kalsbeek, and House 2014). This also seems to be the case in Greece (Tsigris [Τσιγκρής] 1996), where official statistical data are both scarce and vague (cf. Hellenic Police [Ελληνική Αστυνομία] 2013). It has been suggested that attitudes toward the victims and perpetrators of sexual violence and toward rape in a given culture contribute to the under-reporting of such crimes (Megías et al. 2011). Most importantly, these attitudes also contribute to the perpetuation of sexual violence, causally affecting men's rape proclivity (Bohner et al. 1998; Bohner et al. 2010; Bohner, Siebler, and Schmelcher 2006).

A number of instruments for the assessment of rape-related attitudes have been developed on the basis of the concept of rape myths (Brownmiller 1975), which we will define in the next section. The purpose of the present study was the adaptation and validation of such an instrument, namely the Acceptance of Modern Myths about Sexual Aggression (AMMSA) scale, using two Greek-speaking national samples (Greeks and Greek Cypriots).

1. Rape Myths and Rape Myth Acceptance (RMA)
Burt (1980) provided the first social psychological definition of rape myths as "prejudicial, stereotyped, or false beliefs about rape, rape victims, and rapists" (217). Lonsway and Fitzgerald (1994) argued that Burt's definition was descriptive but rather vague, and they defined rape myths as "attitudes and beliefs that are generally false but are widely and persistently held, and that serve to deny and justify male sexual aggression against women" (134). How-

ever, Gerger, Kley, Bohner, and Siebler (2007) noted that this definition did not address the contents of rape myths; moreover, they argued that being "false" as a defining feature of rape myths is difficult or impossible to determine, and that the prevalence and consistency of rape myths over time should not be included in a definition, but treated instead as issues open to empirical investigation (see also Bohner 1998). Thus, Gerger et al. (2007) adopted a more general definition of rape myths addressing both their content and functions: "rape myths are descriptive or prescriptive beliefs about rape (i.e., about its causes, context, consequences, perpetrators, victims, and their interaction) that serve to deny, downplay or justify sexual violence that men commit against women" (423).

Various scales have been developed and used to assess RMA – that is, the endorsement of rape myths as cognitive schemata that explain sexual violence – including the Rape Myth Acceptance scale (Burt 1980); the Attitudes Toward Rape scale (Feild 1978); the R scale (Costin 1985); the Illinois Rape Myth Acceptance (IRMA) scale (Payne, Lonsway, and Fitzgerald 1999). A Greek scale on attitudes toward rape was developed by Gari, Georgouleas, Giotsa, and Stathopoulou (2009). Despite their satisfactory measurement properties, these scales have proven less successful in more recent research, with extremely low scores producing positively skewed distributions. Gerger et al. (2007) argued that these distributions do not necessarily reflect low endorsement of rape myths, but are rather a manifestation of participants' increasing awareness of "political correctness" (note that traditional RMA scales contain explicitly direct items) or a reflection of the modified content of rape myths themselves. Just like traditional racist (Akrami, Ekehammar, and Araya 2000) and sexist (Glick and Fiske 1996) attitudes have evolved into more subtle and discrete versions (Swim et al. 1995), beliefs about sexual aggression also appear to have changed into more indirect, more "appropriate" ones.

2. The Acceptance of Modern Myths About Sexual Aggression Scale
In order to address the methodological shortcomings of the "traditional" RMA scales and to capture the more subtly and covertly expressed forms of sexism that emerged during recent decades, Gerger et al. (2007) developed the

Acceptance of Modern Myths about Sexual Aggression scale (AMMSA). This thirty-item scale assesses myths about rape and other, less severe, forms of sexual aggression in a more subtle, less overt manner than previous measures of RMA.

The items of the scale were designed to reflect five content categories: (i) denial of the scope of the problem; (ii) antagonism toward victims' demands; (iii) lack of support for policies designed to help alleviate the effects of sexual violence; (iv) beliefs that male coercion forms a natural part of sexual relationships; and (v) beliefs that exonerate male perpetrators by blaming the victim or the circumstances (for a more detailed description see Gerger et al. 2007, 425).

In order to validate and assess the psychometric properties of their scale, which was developed in parallel in German and English versions, Gerger et al. (2007) conducted four studies with student and non-student samples. In these studies, factor analyses suggested a single-factor structure, and Cronbach's alpha ranged from .90 to .95, indicating excellent internal consistency. Moreover, test-retest reliability was satisfactory, yielding retest coefficients (r_{tt}) that ranged from .67 to .88. More importantly, the distributions of participants' scores were found to be symmetrical and close to a normal distribution in all four studies, thus correcting a major deficit of earlier RMA measures.

In recent years a number of studies on perceptions of sexual aggression have employed the AMMSA scale as their basic research instrument. Their findings have confirmed that the scale is highly reliable and valid, that the distribution of participants' scores is very close to normal, and that the scale measures beliefs about sexual aggression in a covert, subtle way (Eyssel and Bohner 2011; Eyssel, Bohner, and Siebler 2006; Temkin and Krahé 2008). A Spanish version of the AMMSA scale developed and validated in two studies with college students (Megías et al. 2011) showed very high levels of internal consistency and construct validity, equivalent to those reported by Gerger et al. (2007). Furthermore, a French short version of the AMMSA scale was successfully used in a study comparing the beliefs of French and German respondents with respect to a highly publicized legal case of sexual aggression (Helmke et al. 2014).

3. Validation of the Greek AMMSA Scale

The main aim of the present survey was to validate the Greek AMMSA scale, testing its reliability, convergent and discriminant validity. Following the work of Gerger and colleagues (2007), we used Greek adaptations of the IRMA scale (a previous, more overt measure of RMA, discussed above; Payne et al. 1999); the Ambivalent Sexism Inventory (ASI; Glick and Fiske 1996); the Right-wing Authoritarianism scale (RWA; Altemeyer 1996, in Funke 2005); and the Social Dominance Orientation scale (SDO; Pratto et al. 1994).

The ASI scale was developed within the context of Ambivalent Sexism theory, to capture two closely related yet distinct aspects of prejudice against women: hostile sexism and benevolent sexism (see Glick et al., 2000). Hostile sexism is characterized by overt hostility toward women, whereas benevolent sexism identifies more subjectively "positive" views of women and their role in society. However, both forms serve to justify and perpetuate male social dominance. Significant associations between AMMSA and both hostile and benevolent sexism have been found in the literature (Gerger et al. 2007; Megías et al. 2011), although AMMSA's relationship with hostile sexism is significantly stronger than that with benevolent sexism. This difference in magnitude speaks to the AMMSA scale's convergent (high positive correlation with hostile sexism) and discriminant validity (moderate positive correlation with benevolent sexism).

RWA is a personality variable identifying submissive, aggressive, and conventional attitudes (see Funke 2005); SDO is also an individual-difference variable, indicating the extent to which a person accepts hierarchical, unequal intergroup relations. Both constructs have been shown to represent generalized dimensions of prejudice against various outgroups (Duckitt and Sibley 2007). RMA has been shown to correlate with both RWA (Walker, Rowe, and Quinsey 1993) and SDO (Pratto et al. 1994). Moderate positive relationships between AMMSA and RWA and SDO have been established among German-speaking (Süssenbach and Bohner 2011) and English-speaking respondents (Gerger et al. 2007, Study 4), further supporting AMMSA's discriminant validity.

4. Research Aims and Hypotheses

In a questionnaire study we set out to validate the Greek AMMSA scale, assessing the scale's reliability, convergent validity, and discriminant validity, using samples of Greeks and Greek Cypriots. Specifically, we expected to find: (a) a one-factor solution and high internal consistency of the AMMSA scale; (b) strong positive correlations between AMMSA and conceptually similar concepts (IRMA and hostile sexism); and (c) moderate positive relationships with constructs representing attitudes that are related to AMMSA, but conceptually more distinct (benevolent sexism, RWA, and SDO).

Among the demographic correlates of rape myth acceptance, gender is not only the most commonly examined (Lonsway and Fitzgerald 1994), but also the strongest (Suarez and Gadalla 2010). In line with previous findings, we hypothesized to find significant gender differences in AMMSA scores, with men scoring higher than women. However, gender differences reported by Gerger et al. (2007) tended to be in the range of small to medium-sized effects (Cohen's d across studies between 0.18 and 0.49; computed based on Gerger et al. 2007, Table III, p. 432). On the other hand, Süssenbach and Bohner (2011), using a representative sample for Germany, found no gender difference at all on a nine-item version of the AMMSA. Thus, it was thought important to explore whether societies such as Greece and the Republic of Cyprus, which rank the lowest in terms of gender equality among EU member states (Plantenga and Remery 2013), would show higher rape myth acceptance overall, as well as larger gender differences.

Other socio-demographic variables were included for exploratory purposes, as previous findings have failed to draw a consistent picture (Lonsway and Fitzgerald 1994). Gerger et al. (2007) highlight this shortcoming, arguing for a more systematic examination. Following this proposition, we also assessed age, educational level, place of residence and place of birth (urban vs. rural), employing two national samples (Greeks and Greek Cypriots) including both students and non-students. It is important to note that respondents' place of origin and residence have not previously been explored in relation to AMMSA. Moreover, the relationship between AMMSA and age has been reported to

have an intriguing U-shaped pattern (Süssennbach and Bohner 2011), which we wished to explore. Samples from both Greece and the Republic of Cyprus were used, in order to strengthen the validation of the Greek-language version of the AMMSA scale, because Greek Cypriots' official (native) language is Greek. We also aimed to explore possible differences in the adoption of modern myths about sexual aggression between the two national samples, which might stem from cultural differences, because despite sharing cultural traits in terms of language and religion the two nations have distinct identities: Greek Cypriots are a smaller community living in a post-conflict society, and the majority identify more as Cypriots than as Greeks (Psaltis 2012). Moreover, the Gender Equity Index, a composite measure based on education, economic activity, and female empowerment (0.72 for Greece ranking fifty-second, compared to 0.68 for Cyprus ranking seventieth among 154 countries) (Social Watch 2012), suggests that differentiation of gender roles will be more pronounced in Cyprus than in Greece, which means that we might expect greater acceptance of modern myths about sexual aggression among Greek Cypriots than among Greeks.

Finally, we attempted to examine the relative contribution of socio-demographic versus personality and ideological variables in predicting the adoption of modern myths about sexual aggression.

5. Method

5.1. Participants

A snowball procedure was used to generate a diverse convenience sample: Questionnaires were distributed to students in Greece and the Republic of Cyprus; the students were asked to complete a questionnaire themselves and to pass on further copies to non-student adults. This resulted in a final sample of 223 native Greeks (88 men and 134 women – one participant did not report his/her gender – aged between 18 and 65 years, $M = 33.54$, $SD = 11.40$) and 132 native Greek Cypriots (73 men and 59 women, aged between 18 and 72 years, $M = 38.09$, $SD = 14.92$), (total $N = $

355, 161 men and 193 women) aged between 18 and 72 years, $M = 35.26$, $SD = 13.02$).

5.2. Measures

For each of the scales described below, participants were asked to indicate their agreement or disagreement with each statement, using a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree), except for SDO, where the endpoints of the seven-point Likert scale were labelled "very negatively" (1) and "very positively" (7).[2] Where necessary, items were recoded. Compound scores were created for each measure, based on the mean of the responses of each participant.

5.2.1. Acceptance of Modern Myths about Sexual Aggression (AMMSA)

Participants were asked to indicate the degree to which they agreed or disagreed with each of the thirty items of the Greek AMMSA scale (originally in German and English; Gerger et al. 2007). Following guidelines for the successful translation of instruments in cross-cultural research (Brislin 1970), the items of the English AMMSA scale were translated into Greek by a bilingual social psychologist, who aimed to provide close equivalents of both the concepts and the form of expression. The Greek items were then translated back into English by another bilingual social psychologist, who was blinded from the original scale. Both versions were then reviewed by an expert in the field of sexual aggression, and discrepancies were discussed and corrected by the research team.[3]

The scale includes items such as: "Interpreting harmless gestures as 'sexual harassment' is a popular weapon in the battle of the sexes"; "It is a biological need for men to release sexual pressure from time to time"; "If a woman invites a man to her home for a cup of coffee after a night out this means that she wants to have sex."

5.2.2. Illinois Rape Myth Acceptance scale (IRMA)

The IRMA scale consists of forty rape myth items (Payne, Lonsway, and Fitzgerald 1999). Examples include: "If a

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2 All instruments used in this study, including the Greek adaptation of the AMMSA scale, are available upon request from the authors.

3 The same procedure was used for translating all other scales used in the present study

woman is raped while she is drunk, she is at least somewhat responsible for letting things get out of control"; "Rape mainly occurs on the 'bad' side of town"; "Men don't usually intend to force sex on a woman, but sometimes they get too sexually carried away". In addition to its forty rape myth items, the IRMA scale also contains five filler items; the latter were excluded from further analyses.

5.2.3. Right Wing Authoritarianism (RWA)
RWA was measured with twelve items, adapted from Funke (2005). Examples include: "What our country really needs instead of more 'civil rights' is a good stiff dose of law and order"; "It is important to protect the rights of radicals and deviants in all ways" (reverse coded). Cronbach's α for the Greek adaptation of the scale was .80.

5.2.4. Social Dominance Orientation (SDO)
For SDO a sixteen-item version of the scale was employed (Pratto et al. 1994). Examples of items from the SDO scale include: "Some groups of people are simply inferior to other groups"; "No one group should dominate in society" (reverse coded). Cronbach's α for the Greek adaptation of the scale was .87.

5.2.5. Ambivalent Sexism Inventory (ASI)
This twenty-two-item measure was used to assess self-reported sexist attitudes (Glick et al. 2000). ASI incorporates two distinct eleven-item subscales, one for hostile sexism (for example, "Many women get a kick out of teasing men by seeming sexually available and then refusing male advances") and one for benevolent sexism (for example, Women should be cherished and protected by men). Cronbach's α for the Greek adaptation of the scale was .90 for hostile sexism and .87 for benevolent sexism.

5.2.6. Demographics
Participants reported their gender, age (in years), occupational status, level of education, place of residence, and place of birth. Nationality (Greek or Cypriot) was established during data collection.

All materials were presented in the following order, which was the same for all participants: RWA, SDO, ASI, AMMSA, IRMA, demographics.

6. Results
6.1. Exploratory Factor Analyses
6.1.1. AMMSA
Although, on the basis of previous research findings, we expected a one-factor solution for the AMMSA scale items, we opted for an exploratory factor analysis because we wanted to examine the factor structure in a different cultural context, represented by Greece and Cyprus. Bartlett's test for sphericity ($\chi^2 (435) = 4002.80$, $p <.001$) and the KMO test for sampling adequacy (KMO = .93) indicated that it was appropriate to perform this analysis. The analysis yielded seven factors, explaining 59.12 percent of the variance. Eigenvalues for the seven factors were: 9.97, 1.68, 1.44, 1.29, 1.21, 1.12, and 1.01. The ratio between the eigenvalues of the first and the second factor was 5.92 (the first factor explained almost six times the variance explained by the second factor) and the scree plot showed no further sharp angle in the slope after the second component; this led us to adopt a one-factor model for the AMMSA scale (as in Gerger, et al. 2007; Megías et al. 2011). Cronbach's α for the Greek adaptation of the AMMSA scale was .93.

6.1.2. IRMA
We followed the same procedure to explore the factor structure of the IRMA scale (Bartlett's test for sphericity: $\chi^2 (990) = 8583.30$, $p <.001$; KMO = .95). The analysis yielded nine factors with eigenvalues above one (17.69, 2.30, 1.77, 1.42, 1.21, 1.20, 1.13, 1.08, 1.04), which cumulatively explained 64.09 percent of the variance. The ratio between the eigenvalues of the first and the second factor was 7.70; this, along with the inspection of the scree plot, led us to adopt a one-factor solution for the IRMA scale, despite the fact that Payne et al. (1999) reported a seven-factor structure for the English IRMA scale.[4] Cronbach's α for the IRMA scale was very high (α = .97).

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4 Note that almost all published research has treated IRMA as a uni-dimensional scale (for example Gerger et al. 2007).

6.2. Distributions

The distributions of AMMSA and IRMA were both close to normal, p = .80 and .40, respectively, Kolmogoroff-Smirnov tests. However, the AMMSA distribution had a slight negative skewness of -0.22 (SE = 0.13) and a kurtosis of -0.25 (SE = 0.27), whereas the IRMA distribution showed a slight positive skewness of .22 (SE = 0.14) and a kurtosis of -0.52 (SE = 0.27). These findings are not in line with previous comparisons between the two scales, which suggested that only AMMSA scores follow a normal distribution, whereas IRMA scores deviate from normality, showing positive skewness (Gerger et al. 2007). Paired t-test analysis revealed a significant difference between AMMSA and IRMA scores, $t(310)$ = 33.96, p < .001, indicating that participants generally scored higher on AMMSA (M = 4.14) than on IRMA (M = 3.04). Thus, replicating previous work, AMMSA scores were closer to the scale midpoint than IRMA scores.

6.3. Convergent and Discriminant Validity

As predicted, AMMSA scores correlated highly with IRMA (r = .83, p < .001) and hostile sexism (r = .76, p < .001), indicating convergent validity (see Table 1). More moderate positive correlations were found between AMMSA and benevolent sexism (r = .50, p < .001) , SDO (r = .43, p < .001), and RWA scores (r = .60, p < .001), supporting the scale's discriminant validity. It should be noted that AMMSA correlated significantly with both subscales of the ASI, but the correlation between AMMSA and hostile sexism was significantly stronger than that between AMMSA and benevolent sexism, z = 6.69. p < .01.

Table 1: Means, standard deviations, and correlations between measures used for testing convergent and discriminant validity

	M	SD	2	3	4	5	6
1. AMMSA	4.17	.90	.83***	.76***	.50***	.43***	.60***
2. IRMA	3.03	1.04		.64***	.43***	.51***	.60***
3. Hostile sexism	4.48	1.15			.43***	.42***	.60***
4. Benevolent sexism	4.38	1.12				.30***	.56***
5. SDO	2.16	.78					.53***
6. RWA	3.62	.98					

Note: N varied between 311 and 338, because of pairwise exclusion of missing values.
**p < .005, ***p < .001.

6.4. Influence of Demographic Characteristics

In order to examine gender differences, a multivariate analysis of variance (MANOVA) was performed with AMMSA, IRMA, hostile sexism, benevolent sexism, RWA, and SDO as dependent variables. This yielded a significant multivariate effect of gender, $F(6, 274)$ = 13.66, p < .001, η^2 = .22. Follow-up univariate analyses showed that men scored significantly higher than women on both AMMSA (M = 4.51, SD = 0.84 vs. M = 3.84, SD = 0.83), $F(1, 279)$ = 30.92, p < .001, η^2 = .14, and IRMA (M = 3.48, SD = 0.96 vs. M = 2.65, SD = 0.89), $F(1, 279)$ = 48.06, p < .001, η^2 = .17. Additionally, men scored significantly higher than women on RWA (M = 3.79, SD = 1.05 vs. M = 3.45, SD = 0.90), $F(1, 279)$ = 8.45, p < .01, η^2 = .03, and hostile sexism (M = 4.92, SD = 1.10 vs. M = 4.10, SD = 1.10), $F(1, 279)$ = 37.10, p < .001, η^2 = .12. Gender differences were not significant for benevolent sexism (a finding consistent with previous research; e.g. Glick et al. 2000) or SDO.

Participants with less education (n = 89, M = 4.55, SD = .85) scored higher on AMMSA than did those with more education (n = 243, M = 4.03, SD = .87), $t(330)$ = 4.91, p < .001, d = 0.54. A significant difference was found between Greek Cypriots (M = 4.72, SD = .77) and Greeks (M = 3.85, SD = .82), with the latter scoring significantly lower on AMMSA, $t(335)$ = 9.55, p < .001, d = - 1.09. No significant differences were found between students and non-students, whereas participants living in rural areas (n = 44, M = 4.77, SD = .67) scored higher than those living in urban areas (n = 293, M = 4.08, SD = .90), $t(335)$ = 4.90, p < .001, d = 0.87. Similarly, participants originating from rural areas (n = 118, M = 4.44, SD = .88) scored higher than those originating from urban areas (n = 216, M = 4.01, SD = .88), $t(332)$ = 4.25, p < .001, d = 0.49.

The correlations of AMMSA with all demographic variables (see Table 2) show that being male, older, Greek Cypriot, being born and/or living in a rural area, as well as having a lower educational level, are all associated with greater acceptance of modern myths about sexual aggression.

Table 2: Zero-order correlations of AMMSA with demographic variables

	AMMSA
Gender[a]	.34***
Age	.33***
Nationality[b]	-.45***
Place of birth[c]	.24***
Place of residence[c]	.27***
Educational level[d]	-.25***
Student status[e]	-.05

Notes: a) female = 0, male = 1; b) Cypriot = 0, Greek = 1; c) urban = 0, rural = 1; d) lower (up to high school) = 0, higher = 1 (university degree or higher); e) non-student = 0, student = 1.
***$p < .001$

Age correlated significantly with AMMSA; this positive correlation indicates that acceptance of modern myths about sexual aggression tends to increase with age. However, this relationship is negative in the younger age group (≤ 30; r (162) = -.20, $p < .01$), while significantly positive in the older age group (> 30, r (170) = .36, $p < .001$).[5] This finding suggests a U-shaped relationship between AMMSA and age, similar to the one observed by Süssenbach and Bohner (2011) among German respondents.

6.5. Predicting AMMSA Scores
As discussed above, our data suggest a curvilinear relationship between age and AMMSA score. Therefore, we conducted two separate hierarchical regression analyses, one for the younger sample (up to thirty years old), and one for the older sample (over thirty years old). Table 3 presents zero-order correlations between AMMSA and demographic and attitudinal measures separately for each sample, while Table 4 shows the results of the separate hierarchical regression analyses conducted for each sample.

Table 3: Zero-order correlations of AMMSA with demographic variables, younger and older samples

	AMMSA	
	Younger Sample (age < = 30, N = 170)	Older Sample (age > 30, N = 178)
Gender[a]	.31***	.33***
Age	-.20**	.36***
Nationality[b]	-.38***	-.54***
Place of birth[c]	.18*	.23**
Place of residence[c]	.27***	.25***
Educational level[d]	-.10	-.27***
Student status[e]	.12	n.a.[f]

Notes: a) female = 0, male = 1; b) Cypriot = 0, Greek = 1; c) urban = 0, rural = 1; d) lower (up to high school) = 0, higher = 1 (university degree or higher); e) Non-student = 0, Student = 1; f) only one student in older sample.
***$p < .001$, **$p < .01$, *$p < .05$

6.5.1. Younger Sample (age < = 30, n = 170)
To examine the relative contribution of sociodemographic vs. personality and ideological variables in predicting acceptance of modern myths about sexual aggression, we conducted a hierarchical regression analysis with AMMSA as the criterion variable and demographics (gender, age, nationality, place of birth, place of residence, educational level, student status) as predictors, adding RWA, SDO, hostile sexism, and benevolent sexism to the list of predictors in a second step. The additional predictors significantly improved the variance explained by the model ($\Delta R^2 = .394$), $F(4, 131) = 39.99$, $p < .001$. The final model explained 67.7 percent of the variance, $R^2 = .677$, $F(11, 131) = 24.99$, $p < .001$.

In the first step, the effects of gender and nationality on AMMSA were significant, while the effect of place of origin was marginally significant. However, the effect of age on AMMSA failed to reach significance – although the bivariate relationship between age and AMMSA was significant –

5 We used thirty as the cut-off between older and younger age groups for comparability with Süssenbach and Bohner's (2011) study.

probably due to the significant relationship between age and place of residence ($r = -.182$, $p < .05$, i.e. participants with rural residence tended to be younger). Additionally, the effect of place of residence on AMMSA failed to reach significance – although the bivariate relationship between place of residence and AMMSA was significant – probably because the sample contained more rural resident Greek Cypriots and more urban resident Greeks than would be expected by chance ($\chi^2 = 46.33$, $df = 1$, $p < .001$; $r = -.522$, $p < .001$, for the correlation between nationality and urban vs. rural residence).

In the second step, hostile sexism emerged as the sole significant predictor of AMMSA, while the effects of gender, nationality, and place of origin on AMMSA failed to reach significance. This could be explained by the significant relationship between hostile sexism and (a) gender – male respondents tended to express more hostile sexism than female respondents ($r = .297$, $p < .001$); (b) nationality – Greek Cypriots tended to express more hostile sexism than Greeks ($r = -.464$, $p < .001$); and (c) place of origin – respondents of rural origin tended to express more hostile sexism than those of urban origin ($r = .224$, $p < .001$), as well as by significant relationships between RWA and (a) nationality – Greek Cypriots had higher RWA scores than Greeks ($r = -.553$, $p < .001$); and (b) place of birth – respondents of rural origin tended to express more RWA than those of urban origin ($r = .265$, $p < .001$).

In conclusion, in the younger sample the effects of all demographic variables disappeared when we controlled for the ideological and personality variables, while hostile sexism was the strongest single predictor of AMMSA, followed by RWA, whose effect was marginally significant.

Table 4. Summary of hierarchical multiple regression for demographic, ideological and personality variables predicting AMMSA, younger and older samples

Variable	Younger Sample (age < = 30, N = 170)		Older Sample (age > 30, N = 178)	
	1st step β	2nd step β	1st step β	2nd step β
Gender	.26***	.08	.30***	.13*
Age	-.15	-.04	.22**	.20***
Nationality	-.33***	.01	-.38***	-.14*
Place of birth	.16+	-.06	-.02	-.08
Place of residence	.00	.05	.02	.08
Educational level	-.03	-.03	-.09	.04
Student status	.03	.07	-	-
RWA		.17++		-.04
SDO		.11		.04
Hostile sexism		.56***		.52***
Benevolent sexism		.08		.19**

Note:. ***$p < .001$, **$p < .01$, *$p < .05$, + $p = .053$, ++ $p = .056$

6.5.2. Older Sample (age > 30, n = 178).

We conducted a hierarchical regression analysis with AMMSA as the criterion variable and demographics as predictors,[6] adding RWA, SDO, hostile sexism, and benevolent sexism, to the list of predictors in a second step. The additional predictors significantly improved the variance explained by the model (ΔR^2 = .259), $F(4, 133)$ = 25.49, $p <$ .001.The final model explained 66.20 percent of the variance, R^2 = .662, $F(10, 133)$ = 26.05, $p < .001$.

In the first step, the effects of gender, age, and nationality on AMMSA were significant, while the effects of place of birth, place of residence, and educational level failed to reach significance, although the bivariate relationships between AMMSA and (a) place of birth, (b) place of residence, (c) educational level were significant. This could probably be explained by significant relationships between age and (a) place of birth – respondents of rural origin tended to be older than those of urban origin (r = .283, $p <$ .001), (b) place of residence – rural residents tended to be older than urban residents (r = .194, $p < .01$), and (c) educational level – respondents of lower educational level tended to be older than those of higher educational level (r = -.310, $p < .001$), and also by differences between Greek and Greek Cypriot respondents in terms of (a) place of birth – the sample contained more Greek Cypriots of rural origin and more Greeks of urban origin than would be expected by chance ($\chi^2(1)$ = 27.26, N = 178, $p < .001$; r = -.395, $p < .001$, for the correlation between nationality and urban vs. rural origin); (b) place of residence – the sample contained more Greek Cypriots in rural residence and more Greeks in urban residence than would be expected by chance ($\chi^2(1)$ = 39.22, N = 178, $p < .001$; r = -.469, $p < .001$, for the correlation between nationality and urban vs. rural residence); and (c) educational level – the sample contained more Greek Cypriots of lower educational level and more Greeks of higher educational level than would be expected by chance ($\chi^2(1)$ = 17.55, N = 178, $p < .001$; r = -.315, $p < .001$, for the correlation between nationality and educational level).

In conclusion, for the older sample the effects of gender, age, and nationality remained significant, even when we controlled for the ideological and personality variables. Hostile sexism was the strongest single predictor of AMMSA, followed by age, benevolent sexism, nationality, and gender.

7. Discussion

The main aim of the present study was to validate the Greek version of the AMMSA scale, an instrument developed by Gerger and colleagues (2007) to capture the acceptance of subtle myths about sexual aggression exerted by men against women. The AMMSA scale was originally developed in German and English (Gerger et al. 2007), and has been successfully adapted and used in Spanish (Megías et al. 2011) and French (Helmke et al. 2014). Our results replicated the findings of these previous studies (see also Süssenbach and Bohner 2011), suggesting that the Greek AMMSA scale is a valid and reliable instrument for measuring modern myths about sexual aggression.

In accordance with our predictions, the thirty-item Greek AMMSA scale exhibited a unidimensional structure, strong internal consistency, and satisfactory convergent and discriminant validity. Correlation analyses showed AMMSA to be strongly associated with closely related concepts (IRMA and hostile sexism), indicating convergent validity. The AMMSA scale's positive but moderate correlations with constructs tapping conservative ideological beliefs (RWA and SDO), and with benevolent sexism (the subscale of ASI that captures subtle sexist attitudes), provide supportive evidence for AMMSA's discriminant validity.

As discussed earlier, one of the main shortcomings of earlier measures of rape myth acceptance was their blatant, direct wording, which most probably contributed to asymmetrical, positively skewed distributions (Payne et al. 1999). The AMMSA scale has been found adequate in addressing this shortcoming, generating scores close to the

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6 Student status was excluded from this analysis, because there was only one student in the older sample.

normal distribution (Gerger et al. 2007; Megías et al. 2011). However, in our study both AMMSA and IRMA scales exhibited distributions that were close to normal, with the IRMA scale showing only slight positive skewness, and the AMMSA scale showing slightly negative skewness. Thus, both distributions were relatively symmetrical, with means somewhat higher than those found in the United States and Germany. This suggests that attitudes toward sexual aggression may still be rather traditional in Greece and the Republic of Cyprus, so that even more old-fashioned RMA scales may produce statistically sound data. Nonetheless, participants' AMMSA scores were significantly higher that their IRMA scores; thus, AMMSA scores were also closer to the logical midpoint of the response scale than IRMA scores.

When it comes to the demographic correlates of AMMSA, our findings suggest that being male, older, Greek Cypriot, originating and/or living in a rural area, and having a lower educational level are associated with stronger endorsement of modern myths about sexual aggression (cf. Gari et al. 2009). Interestingly, age and AMMSA were found to exhibit a U-curve relationship, replicating Süssenbach and Bohner's (2011) finding from their representative survey in Germany. Exploring this further, we found that among younger participants the effects of all demographic variables on AMMSA disappeared when we controlled for ideological and personality variables. We believe that this is mainly due to gender and nationality differences in these ideological and personality variables (men scored higher than women on hostile sexism, and Greek Cypriots scored higher than Greeks on hostile sexism and RWA). On the other hand, in the older sample demographics (gender, age, and nationality) had independent effects on AMMSA, along with the two dimensions of ambivalent sexism. Thus, it seems that gender plays an important role in the adoption of modern myths about sexual aggression in societies with larger status differentials between the sexes (in comparison with other EU member states), such as Greece and the Republic of Cyprus. Moreover, larger gender status differentials in the Republic of Cyprus in comparison with Greece might be responsible for the significant effects of nationality on AMMSA. However, the effects of nationality in the present study should be interpreted with caution:

especially among the older sample, the figures for Greek Cypriots of lower educational level, originating from and living in rural areas were disproportionate, so it seems that we cannot draw firm conclusions about gender or cultural effects, because these could be attributed to other demographic variables.

8. Limitations

Our study is not without limitations. Our data come from convenience samples, and it cannot be argued that they are representative of the populations. Although a closer look at the demographics reveals a relatively diverse sample, future studies should employ representative sampling procedures.

Moreover, our current data are purely correlational. Future research with the Greek AMMSA scale should thus use experimental designs, following up on work conducted in other cultural contexts. This should provide further evidence for the scale's predictive validity regarding judgments and information processing about rape cases (cf. Eyssel and Bohner 2011; Süssenbach, Bohner, and Eyssel 2012; Süssenbach, Eyssel, and Bohner 2013; Süssenbach et al. 2015), as well as for AMMSA's causal role in predicting rape proclivity (cf. Bohner et al. 1998; Bohner, Siebler, and Schmelcher 2006; for a review, see Bohner et al. 2009).

All in all, in this paper we have provided initial support for the Greek AMMSA scale's adequate psychometric properties, reliability, and validity. Nevertheless, the social psychological study of modern myths about sexual aggression requires further attention and exploration, as rape myths seem to contribute to the perpetuation of sexual violence by serving various psychological functions (Bohner et al. 2009): (1) People in general endorse rape myths as a means to maintain their belief in a just world, by blaming rape victims and exonerating perpetrators (Burt 1980); (2) Women in particular use rape myths as an anxiety buffer (endorsing rape myths supports a belief that rape only happens to other women) (Bohner and Lampridis 2004; Bohner, Siebler, and Raaijmakers 1999; Bohner et al. 1993); (3) Men, finally, endorse rape myths in order to rationalize their own tendencies toward sexual aggression (Bohner et al. 1998, 2006, 2010).

Our very promising results with the Greek AMMSA will allow us to conduct additional studies, both correlational and experimental, within Greek-speaking populations.

These studies will help to shed light on the factors that may strengthen or attenuate AMMSA, but also on AMMSA's role in predicting sexual assault.

References

Akrami, Nazar, Bo Ekehammar, and Tadesse Araya. 2000. Classical and Modern Racial Prejudice: A Study of Attitudes toward Immigrants in Sweden. *European Journal of Social Psychology* 30:521–32. doi:10.1002/1099-0992(200007/08)30:4<521::AID-EJSP5>3.0.CO;2-N

Bohner, Gerd. 1998. *Vergewaltigungsmythen: Sozialpsychologische Untersuchungen über täterentlastende und opferfeindliche Überzeugungen im Bereich sexueller Gewalt.* Landau, Germany: Verlag Empirische Pädagogik.

Bohner, Gerd, Friederike Eyssel, Afroditi Pina, Frank Siebler, and Tendayi G. Viki. 2009. Rape Myth Acceptance: Cognitive, Affective, and Behavioural Effects of Beliefs that Blame the Victim and Exonerate the Perpetrator. In *Rape: Challenging Contemporary Thinking,* ed. Miranda A. H. Horvath and Jennifer M. Brown, 17–45. Cullompton, UK: Willam.

Bohner, Gerd, and Efthymios Lampridis. 2004. Expecting to Meet a Rape Victim Affects Women's Self-Esteem: The Moderating Role of Rape Myth Acceptance. *Group Processes and Intergroup Relations* 7:77–88. doi:10.1177/1368430204039974

Bohner, Gerd, Afroditi Pina, Tendayi G. Viki, and Frank Siebler. 2010. Using Social Norms to Reduce Men's Rape Proclivity: Perceived Rape Myth Acceptance of Out-Groups May Be More Influential than that of In-Groups. *Psychology, Crime and Law* 16: 671-693. doi:10.1080/1068316X.2010.492349

Bohner, Gerd, Marc-André Reinhard, Stefanie Rutz, Sabine Sturm, Bernd Kerschbaum, and Dagmar Effler. 1998. Rape Myths as Neutralizing Cognitions: Evidence for a Causal Impact of Anti-Victim Attitudes on Men's Self-Reported Likelihood of Raping. *European Journal of Social Psychology* 28: 257–69. doi:10.1002/(SICI)1099-0992(199803/04)28:2<257::AID-EJSP871>3.0.CO;2-1

Bohner, Gerd, Frank Siebler, and Yvonne Raaijmakers. 1999. Salience of Rape Affects Self-Esteem: Individual versus Collective Self-Aspects. *Group Processes and Intergroup Relations* 2:191–99. doi:10.1177/1368430299002006

Bohner, Gerd, Frank Siebler, and Jürgen Schmelcher. 2006. Social Norms and the Likelihood of Raping: Perceived Rape Myth Acceptance of Others Affects Men's Rape Proclivity. *Personality and Social Psychology Bulletin* 32:286–97. doi:10.1177/0146167205280912

Bohner, Gerd, Christina Weisbrod, Paula Raymond, Alexandra Barzvi, and Norbert Schwarz. 1993. Salience of Rape Affects Self-Esteem: The Moderating Role of Gender and Rape Myth Acceptance. *European Journal of Social Psychology* 23:561–79. doi:10.1002/ejsp.2420230603

Briere, John, and Carol E. Jordan. 2004. Violence against Women: Outcome Complexity and Implications for Assessment and Treatment. *Journal of Interpersonal Violence* 19:1252–76. doi:10.1177/0886260504269682

Brislin, Richard W. 1970. Back-Translation for Cross-Cultural Research. *Journal of Cross-Cultural Psychology* 1:185–216. doi:10.1177/135910457000100301

Brownmiller, Susan. 1975. *Against Our Will: Men, Women and Rape.* New York: Simon & Schuster.

Burt, Martha R. 1980. Cultural Myths and Supports for Rape. *Journal of Personality and Social Psychology* 38:217–30. doi:10.1037/0022-3514.38.2.217

Costin, Frank. 1985. Beliefs about Rape and Women's Social Roles. *Archives of Sexual Behavior* 14:319–25. doi:10.1007/BF01550847

Eyssel, Friederike and Gerd Bohner. 2011. Schema Effects of Rape Myth Acceptance on Judgments of Guilt and Blame in Rape Cases: The Role of Perceived Entitlement to Judge. *Journal of Interpersonal Violence* 26:1579–1605. doi:10.1177/0886260510370593

Eyssel, Friederike, Gerd Bohner, and Frank Siebler. 2006. Perceived Rape Myth Acceptance of Others Predicts Rape Proclivity: Social Norm or Judgmental Anchoring? *Swiss Journal of Psychology* 65:93–99. doi:10.1024/1421-0185.65.2.93

Feild, Hubert S. 1978. Attitudes toward Rape: A Comparative Analysis of Police, Rapists, Crisis Counselors, and Citizens. *Journal of Personality and Social Psychology* 36:166–79. doi:10.1037/0022-3514.36.2.156

Funke, Friedrich. 2005. The Dimensionality of Right-Wing Authoritarianism: Lessons from the Dilemma between Theory and Measurement. *Political Psychology* 26:195–218. doi:10.1111/j.1467-9221.2005.00415.x

Gari, Aikaterini, George Georgouleas, Artemis Giotsa, and Eleni-Anna Stathopoulou. 2009. Greek Students' Attitudes toward Rape. *Psychology* 16:130–45.

Gerger, Heike, Hanna Kley, Gerd Bohner, and Frank Siebler. 2007. The Acceptance of Modern Myths about Sexual Aggression Scale: Development and Validation in German and English. *Aggressive Behavior* 33:422–40. doi:10.1002/ab.20195

Glick, Peter, and Susan T. Fiske. 1996. The Ambivalent Sexism Inventory: Differentiating Hostile and Benevolent Sexism. *Journal of Personality and Social Psychology* 70:491–512. doi:10.1037/0022-3514.70.3.491

Glick, Peter, Susan T. Fiske, Antonio Mladinic, José L.Saiz, Dominic Abrams, Barbara Masser, Bolanle Adetoun, et al. 2000. Beyond Prejudice as Simple Antipathy: Hostile and Benevolent Sexism across Cultures. *Journal of Personality and Social Psychology* 79:763–75. doi:10.1037/0022-3514.79.5.763

HellenicPolice [Ελληνική Αστυνομία]. 2013. 27-09-2013: *Συνεχίζεται με Σταθερούς Ρυθμούς η Μείωση στις Βασικές Κατηγορίες των Αδικημάτων και Ιδίως στις Ανθρωποκτονίες, τις Ληστείες και τις Κλοπές - Διαρρήξεις* [27-09-2013: Steady ongoing reduction of rates in basic categories of crime and especially in homicides, robberies and thefts – burglaries]. http://www.astynomia.gr/index.php?option=ozo_content&performance=view&id=32396&Itemid=1171&lang=

Helmke, Selina, Pia-Renée Kobusch, Jonas H. Rees, Thierry Meyer, and Gerd Bohner. 2014. Beliefs about the Strauss-Kahn Case in France and Germany: Political Orientation and Sexual Aggression Myths as Local versus Global Predictors. *International Journal of Conflict and Violence* 8:171–86. urn:nbn:de:0070-ijcv-2014167.

Kruttschnitt, Candace, William D. Kalsbeek, and Carol C. House. 2014. *Estimating the Incidence of Rape and Sexual Assault.* Washington, D.C.: National Academies Press.

Lerner, Melvin J. 1980. *The Belief in a Just World: A Fundamental Delusion.* New York: Plenum.

Lonsway, Kimberly A., and Louise F. Fitzgerald. 1994. Rape Myths: In Review. *Psychology of Women Quarterly* 18:133–64. doi:10.1111/j.1471-6402.1994.tb00448.x

Megías, Jesús L., Mónica Romero-Sánchez, Mercedes Durán, Miguel Moya, and Gerd Bohner. 2011. Acceptance of Modern Myths about Sexual Aggression: Presentation and Validation of a Spanish Adaptation of the AMMSA Scale. *The Spanish Journal of Psychology* 14: 912–25. doi:10.5209/rev_SJOP.2011.v14.n2.37

Payne, Diana L., Kimberly A. Lonsway, and Louise F. Fitzgerald. 1999. Rape Myth Acceptance: Exploration of Its Structure and its Measurement Using the Illinois Rape Myth Acceptance Scale. *Journal of Research in Personality* 33:27–68. doi:10.1006/jrpe.1998.2238

Plantenga, Janneke, and Chantal Remery. 2013. Measuring Gender Equality within the European Union. In *Gender and the European Labour Market,* ed. Francesca Bettio, Janneke Plantenga, and Mark Smith, 36–50. Oxford: Routledge.

Pratto, Felicia, Jim Sidanius, Lisa M. Stallworth, and Bertram F.Malle. 1994. Social Dominance Orientation: A Personality Variable Predicting Social and Political Attitudes. *Journal of Personality and Social Psychology* 67:741–63. doi:10.1037/0022-3514.67.4.741

Psaltis, Charis. 2012. Intergroup Trust and Contact in Transition: A Social Representations Perspective on the Cyprus Conflict. In *Trust and Conflict: Representation, Culture and Dialogue,* ed. Ivana Markova and Alex Gillespie, 83–104. New York: Routledge.

Schwendinger, Julia R., and Herman Schwendinger. 1974. Rape Myths: In Legal, Theoretical, and Everyday Practice. *Crime and Social Justice* 1:18–26. http://www.jstor.org/stable/29765884.

Sears, David O. 1988. Symbolic Racism. In *Eliminating Racism: Profiles in Controversy,* ed. Phyllis A. Katz, and Dalmas A. Taylor, 53–84. New York: Plenum.

Social Watch. 2012. *The 2012 Gender Equity Index.* http://www.socialwatch.org/node/14367

Suarez, Eliana, and Tahany M. Gadalla. 2010. Stop Blaming the Victim: A Meta-Analysis of Rape Myths. *Journal of Interpersonal Violence* 25:2010–35. doi:10.1177/0886260509354503

Süssenbach, Philipp, and Gerd Bohner. 2011. Acceptance of Sexual Aggression Myths in a Representative Sample of German Residents. *Aggressive Behavior* 37:374–85. doi:10.1002/ab.20390

Süssenbach, Philipp, Gerd Bohner, and Friederike Eyssel. 2012. Schematic Influences of Rape Myth Acceptance on Visual Information Processing: An

Eye-Tracking Approach. *Journal of Experimental Social Psychology* 48:660–68. doi:10.1016/j.jesp.2011.12.005

Süssenbach, Philipp, Friederike Eyssel, and Gerd Bohner. 2013. Metacognitive Aspects of Rape Myths: Subjective Strength of Rape Myth Acceptance Moderates Its Effects on Information Processing and Behavioral Intentions. *Journal of Interpersonal Violence* 28: 2250-2272. doi:10.1177/0886260512475317

Süssenbach, Philipp, Friederike Eyssel, Jonas Rees, and Gerd Bohner. 2015. Looking for Blame: Rape Myth Acceptance and Attention to Victim and Perpetrator. *Journal of Interpersonal Violence.* doi:10.1177/0886260515591975

Swim, Janet K., Kathryn J. Aikin, Wayne S. Hall, and Barbara A. Hunter. 1995. Sexism and Racism: Old-Fashioned and Modern Prejudices. *Journal of Personality and Social Psychology* 68:199–214. doi:10.1037/0022-3514.68.2.199

Temkin, Jennifer, and Barbara Krahé. 2008. *Sexual Assault and the Justice Gap: A Question of Attitude.* Oxford, UK: Hart.

Tsigris, Aggelos [Τσιγκρής, Άγγελος]. 1996. *Βιασμός: ΤοΑθέατο Έγκλημα* [Rape: The Invisible Crime. Athens: Sakkoulas.

Walker, William D., Robert C. Rowe, and Vernon L. Quinsey. 1993. Authoritarianism and Sexual Aggression. *Journal of Personality and Social Psychology* 65:1036–45. doi:10.1037/0022-3514.65.5.1036

World Health Organization. 2014. *Violence Against Women: Intimate Partner and Sexual Violence against Women,* Fact sheet 239. http://www.who.int/mediacentre/factsheets/fs239/en/

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