

# The Impact of Sexual Victimization on Personality: A Longitudinal Study of Gendered Attributes

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**Abstract** Little is known about how sexual victimization may affect a woman's self-reported personality ratings. In the present study endorsement ratings of gendered attributes, as measured by the Extended Personal Attributes Questionnaire, were examined over a 3-year span using multiple group latent growth modeling. Differences in the endorsement of gendered attributes between college female non-victims ( $N=158$ ) and victims ( $N=158$ ) of sexual aggression were tested. Whereas endorsement of communal and positive agentic attributes were stable across time, victims remained consistently less traditionally feminine (i.e., positively communal and nurturing) than non-victims. Victims also appeared to become relatively more self-focused (i.e., negative masculinity) across time than non-victims. This pattern suggests that sexual victimization may have lasting effects on victims' ability to focus on the nurturing, trusting aspects of relationships; rather they have a preoccupation with their own needs and goals that appears to strengthen with time. Such a pattern sheds insight into how self-processes may contribute to the relationship difficulties often observed in sexual assault victims. Implications of these results for both personality and sexual aggression researchers are discussed.

**Keywords** Sexual victimization · Personality traits · Gendered attributes · EPAQ · Latent growth modeling

Individual attributes such as agency (i.e., independence) and communion (i.e., emotional expressiveness) have commonly been assumed to be stable over time (Spence and Helmreich 1980; Spence et al. 1979). For individuals high on these traits, this can be very beneficial. Agency and communion have both been found to be significant predictors of positive family roles, and Abele (2003) has shown a positive, reciprocal relationship between agency and career success. Even more important are the potential health benefits of higher agency and communion. Both of these attributes are believed to be essential for optimal psychological well-being (Bakan 1966; Helgeson 1994). In fact, agency and communion influence many aspects of an individual's well-being. Agency is related to mental health, whereas communion is related to relationship satisfaction (Helgeson 1994). Clearly much research has focused on the individual attributes of agency and communion. However, previous researchers in this area, although their work is very valuable, have continued to ignore the assumption that these traits or attributes are stable over time (for exception see, Twenge 1997; Yanico 1985; Yoder et al. 1982). Furthermore, life events, such as sexual victimization, have been posited to affect these attributes (e.g., Muehlenhard and Linton 1987); yet, the effect these events have on the stable trajectory of gendered attributes has not been studied.

Therefore, the goal of the present study was to gain a better understanding of gendered attributes. To reach this understanding we examined the stability of gendered attributes, specifically agency and communion, as well as the impact that sexual victimization has on the expression of these attributes.

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## Gendered Attributes

Gendered attributes are conceptualized as attributes that represent masculine or agentic (i.e., characteristics that correspond to self-dependence and assertiveness) and feminine or communal (i.e., characteristics that correspond to selflessness) qualities. These attributes were previously viewed as opposite ends of a continuum where the presence of one meant the absence of the other. However, in the early 1970s researchers theorized that individuals could possess both agentic and communal attributes. Although measures were developed to be consistent with this theoretical framework, many of these measures assessed only socially desirable attributes (Bem Sex Role Inventory, Bem 1974; Personal Attributes Questionnaire, Spence et al. 1974). It was not until a few years later that researchers recognized that non-socially desirable traits may also be gendered, and therefore developed a measure that incorporated both socially desirable and undesirable attributes (i.e., the Extended Personal Attributes Questionnaire, Spence et al. 1979).

It is assumed that individuals behave in ways that are consistent with their gendered attributes (Burke and Hoelter 1989; Stryker 1980). In fact, gendered attribute measures often consist of attributes that are commonly referred to as personality traits (Spence and Helmreich 1980; Spence et al. 1979). Although personality traits are thought to remain fairly stable over time (Costa and McCrae 1980) and gendered attributes have been reported to be stable, few researchers have empirically examined the stability of gendered attributes over time. When this assumption has been tested, the tests have typically consisted of cross-sectional (Twenge 1997) or test-retest reliability assessments (Yanico 1985; Yoder et al. 1982). In the present study we specifically tested individual change or stability in gendered attributes over time and also whether a major life event (i.e., sexual victimization) is associated with differential endorsement patterns of gendered attributes over time and between individuals.

### Consequences of sexual victimization

Sexual victimization, which has been studied in relation to gendered attributes (Burke et al. 1989; Himelein 1995; Spence et al. 1991), is a widespread problem, especially for adolescent girls and college-aged women. Findings of the National Crime Victimization Survey have suggested that one-half of all sexual assault victims are between the ages of 12 and 24 years (US Department of Justice 1995). In a national survey of college and university women, Koss et al. (1987) found that 27.5% of women surveyed reported having been a victim of rape or attempted rape, 11.9% reported having been verbally coerced into sexual inter-

course, and 14.4% reported having been verbally intimidated into other forms of sexual contact. In a longitudinal study of college women, Humphrey and White (2000) found that 36% reported some type of childhood sexual victimization and nearly 50% reported at least one victimization experience in high school. Yearly prevalence estimates of victimization for the 4 years of college ranged from 24 to 31%. Similarly, 17.6% of women surveyed as part of the National Violence Against Women Survey reported having been a victim of completed or attempted rape (US Department of Justice 1998).

Given these numbers it is easy to understand why a great deal of research has focused on the effects of sexual victimization on children and young adults. The impact of childhood sexual abuse has been widely studied, and many effects from this type of abuse have been suggested, including depression, anxiety, fear, behavioral problems, poor self-esteem, and sexualized behaviors (Browne and Finkelhor 1986; Kendall-Tackett et al. 1993). Likewise, a number of researchers have examined the effects of victimization (sexual or physical) among adolescent girls and young women and found similar results (e.g., Gleason 1993; Kilpatrick et al. 2000; McCauley et al. 1995; Plitcha 1996; Smith et al. 1998). Clearly, being a victim of coerced or forced sexual relations can have many immediate and long-lasting psychological and physical health consequences; however, little is known about how victimization may influence one's personality and attitudes.

### Attitudinal and personality correlates of sexual victimization

Researchers have focused primarily on variables that are predictive of sexual victimization. For instance, in a longitudinal study of college women, Himelein (1995) found that sexual conservatism was the only attitudinal measure that prospectively predicted sexual victimization in college, such that greater conservatism was associated with less victimization. Similarly, positive instrumentality among women college students has been found to be negatively correlated with reported sexual victimization, whereas anger, impulsivity, traditional gender-role preferences, and adversarial sexual beliefs were positively correlated with reported victimization (Spence et al. 1991). College women who held hyperfeminine attitudes have also been found to be more likely than women who held nontraditional attitudes to report experiences of victimization (Murnen and Byrne 1991). Therefore, to summarize the literature to date, aspects of masculinity and femininity have been associated with sexual victimization, such that victims are more likely to report traditional gender roles and non-victims report higher levels of

instrumentality, or traditionally “masculine” characteristics. However, noted exceptions have been found. For example, Koss and Dinero (1989) found no relationship between sexual assault and traditional gender roles, as assessed by Burt’s (1980) Sexual Conservatism scale.

The impact sexual victimization has on one’s view of self, specifically regarding agency and communion, is still unknown. Early studies suggest that more traditional attitudes may be a consequence of victimization among women (e.g., Muehlenhard and Linton 1987). Consistent with this finding, Burke et al. (1989) reported that, among both men and women, sustaining and inflicting sexual abuse is associated with a “more feminine identity.” Similarly, Myers et al. (1984) concluded that the typical rape victim in their study was a woman who does not stand up for herself and is unlikely to be dominant in interpersonal relationships. In other words, they found victims of rape to possess traditionally feminine attributes, but they could not establish a time-ordered relationship.

### Present study

Previous researchers have addressed the impact of self-views on one’s vulnerability to sexual assault as well as the predictive ability of attitudinal and personality variables in accounting for the variance in sexual victimization. However, previous researchers have failed to address the longitudinal effects sexual victimization may have on views about one’s self. Given the clinical literature’s assertion of the short-term and long-lasting consequences of victimization, it is relevant to extend this examination to self-relevant concepts.

Therefore, the purpose of the present study was to examine differences between non-victims and victims of sexual aggression regarding the impact of sexual victimization on their endorsement of gendered attributes. This relationship was examined across three assessments using multiple group latent growth modeling. The present study differs from the majority of the sexual victimization research in that we utilized an advanced longitudinal methodology to examine changes in beliefs about one’s self over time.

Given the design of the present study, the aim was twofold. First, we examined the role sexual victimization plays in the endorsement of gendered attributes over time. Second, we examined the stability of the endorsement of gendered attributes over a period of 3 years. Although some researchers have stated that the endorsement of gendered attributes is stable over time (Spence and Helmreich 1980; Spence et al. 1979), others have postulated a relationship between traditional attributes and sexual victimization (Himelein 1995; Murnen and Byrne 1991). However, little empirical research has tested these hypotheses. Therefore,

the present study had a longitudinal design to better examine these issues.

## Method

### Participants

A subset of individuals from a larger 5-year longitudinal study was selected for participation (see Humphrey and White 2000; Smith et al. 2003; White and Humphrey 1997). Data from one incoming class of freshman women at a mid-sized, state-supported, southeastern university made up the sample. The university is located in a semi-urban environment within the 80th largest city in the U.S. Approximately 83% ( $n=825$ ) of freshman women completed the survey. Because we were interested in the impact of sexual victimization on the future endorsement of gendered attributes, women who reported sexual victimization during the time frame of the study were excluded. Therefore, only women who reported prior victimization (i.e., childhood or high school victimization) were included to examine the effects of sexual victimization on the endorsement of gendered attributes across time.<sup>1</sup>

One hundred fifty-eight participants had complete responses on at least one subscale for the three assessments and reported no sexual victimization prior to or during the study’s time frame. Coincidentally, an additional 158 participants had complete responses on at least one subscale for the three assessments and reported having been a victim of sexual assault prior to the study (63 as a child, 53 during high school, and 42 both as a child and in high school), but reported no further victimization during the study’s time frame. Across both childhood and high school, 19% of participants reported their most severe form of sexual victimization as rape, 13.3% reported coerced sexual intercourse, 15.8% reported attempted rape, and 51.9% reported unwanted sexual contact.

Participation was limited to women who graduated from high school during the spring prior to entering college; therefore, the mean age of participants was 18.24 years ( $SD=.61$ ) at the first assessment. Seventy-two percent of the sample was White, 24% was Black,

<sup>1</sup> It would be very interesting to examine the effect of sexual victimization on the endorsement of gendered attributes for those women who were first victimized in college (i.e. during the time frame of this study). However, only 24 women were victimized for the first time during their first year of college, and only 18 were first victimized during their second year of college. Although the authors understand the importance of these groups, we are not confident that longitudinal analyses on such a small sample would be reliable.

and 4% was of another racial group. The racial distribution did not differ significantly between non-victims and victims,  $\chi^2(2)=2.18, p=.34$ . Retention rates for the 2 years following the initial assessment of which the present study is concerned were 88.2 and 83.2%, respectively. Therefore, by the third assessment, 158 participants had not reported any sexual victimization, 158 reported sexual victimization only prior to the first assessment, 328 women reported a sexual victimization experience at some point prior to and during college, and 42 women reported a victimization experience only during college.

### Procedure

At the first assessment during freshman orientation, participants completed an informed consent form, questionnaire packet, and contact sheets that requested the name, address, and telephone number of a person who would be likely to know their whereabouts the following year. Anyone who did not attend the freshman orientation session was contacted by phone and invited to participate in the study. Questionnaires were labeled only by a participant's randomly assigned ID. Toward the end of each spring semester, participants were contacted and asked to complete a follow-up survey for which they received \$15. Responses from multiple assessments were linked by research staff by a participant ID associated with their names on the consent forms. However, only the data manager had access to the list of names and identifying IDs. A Certificate of Confidentiality was obtained, and its purpose was described to participants. This certificate is issued by the National Institutes of Health to protect the privacy of research participants by protecting researchers from being compelled to release identifying information about a participant.

### Measures

Participants completed a variety of measures including the EPAQ (Spence et al. 1979) and the Sexual Experiences Survey (SES, Koss et al. 1987). The EPAQ was administered for only the first three assessment periods: freshman orientation, the end of freshman year, and the end of sophomore year.

The EPAQ consists of 40 statements that are rated on a 5-point scale ranging from 1=*not at all like me* to 5=*very much like me*. Scores are determined by summing across items. The EPAQ is divided into six subscales. The  $M^+$  subscale consists of eight statements that are positively valued agentic (or traditionally masculine) traits (e.g., "I feel sure I can do most of the things I try"), and the  $M^-$  subscale consists of eight statements that are negatively valued agentic traits (e.g., "I brag a lot about myself and

what I do"). The  $F^+$  subscale consists of eight statements that are positively valued communal (or traditionally feminine) traits (e.g., "I really like to do things for other people"). The  $F_{VA}^-$  and  $F_C^-$  subscales each consist of four statements that represent negatively valued communal traits, specifically verbal aggression (e.g., "When things go wrong, I get upset and whiny") and unmitigated communion (e.g., "I stay in the background and let other people tell me what to do"). Helmreich, Spence, and Wilhelm (1981) reported reliabilities for the subscales that range from .41 ( $F_C^-$ ) to .75 ( $F^+$ ). Similar reliabilities were found in the present study; alphas ranged from .59 ( $M^+$ ) to .76 ( $F_C^-$ ). Although the subscale names have traditionally been masculinity and femininity, Spence (1984) suggested that the scales be referred to as agency and communion. However, for ease of reference, the subscales will be referred to as  $M^+$ ,  $F^+$ , etc.

The EPAQ contains one additional scale. The  $M-F$  subscale is thought to represent a bipolar scale of masculinity and femininity (e.g., "I give in to other people easily and let them tell me what to do"). Due to the bipolar nature of the scale it has received very little attention or use (see, for example, Bartz and Lydon 2004; and Woodhill and Samuels 2003). Thus, this scale was not included in the present study.

The SES assesses a continuum of sexual experiences ranging from consensual sexual experiences to rape. The measure consists of 11 questions that are rated on a 5-point scale ranging from 1=*never* to 5=*more than five times*. The SES has a reported alpha of .72 based on responses from 5,411 women workers (Koss et al. 1996). Moreover, Koss and Gidycz (1989) reported a correlation of .73 between level of victimization as assessed by the SES and level of victimization reported to an interviewer. In the present study, during the first assessment (freshman orientation) participants received instructions to rate the items on the SES as to their occurrence from the age of 14 to the present. For all subsequent surveys, participants rated the occurrence of the experiences listed on the SES only for the prior year.

During the initial assessment, four questions were used to assess sexual victimization as a child (taken from Koss et al. 1987). These questions asked the frequency of which the following experiences occurred prior to the age of 14: "a person showed you his/her sex organs or asked you to show yours," "a person fondled you in a sexual way or asked you to touch their sex organs," "a male attempted sexual intercourse with you (but penetration did not occur)," and "a male had intercourse with you (penetration occurred)." For purposes of the current analyses, participants who reported any kind of non-consensual sexual experience in childhood or high school were categorized as victims of sexual assault.

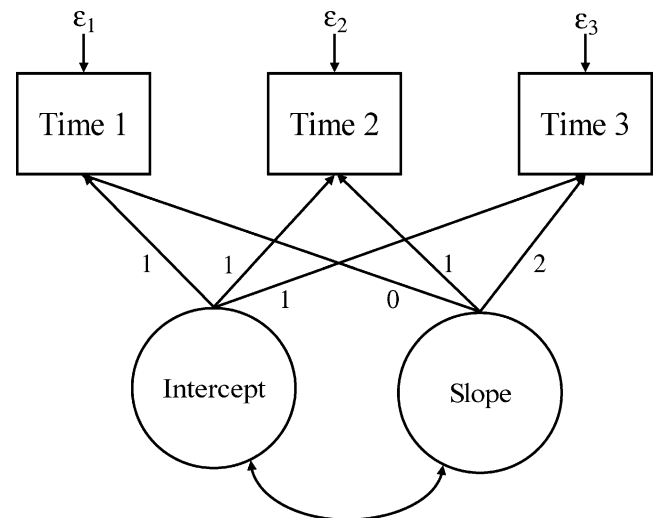
## Overview of LGM analysis

Latent growth modeling (LGM; Meredith & Tisak 1984, 1990) is a flexible statistical methodology that allows for the modeling of linear and non-linear change in both mean and covariance structure over time. Unlike traditional regression techniques (e.g., multiple OLS regression, ANOVA) that assume that a single intercept (i.e.,  $\alpha$ ) and slope(s) (i.e.,  $\beta$ ) adequately describe the structure of the data, LGM allows each individual to have her own intercept and slope(s). That is, LGM is a random effects modeling technique. Therefore, by using LGM one can estimate the mean intercept and mean slope for a particular group as well as individual variability around the mean intercept and slope, the covariance between the intercept and slope, and the time-specific residual variances. This modeling technique allows for a more comprehensive representation of the observed data, thereby allowing for a more complete understanding of the construct under investigation (see Fan, 2003, for a discussion of the advantages of LGM over ANOVA). Furthermore, most LGM models can be easily represented as a path diagram. Refer to Fig. 1 for a path diagram of the general model tested in the present study.<sup>2</sup>

Multiple group analysis allows for differences in structure between two or more groups to be tested within the LGM framework. These differences include, but are not limited to, mean, variance, covariance, and residual structural differences (for an overview of multiple group SEM refer to Bollen 1989a). Combining multiple group and LGM procedures allowed us to examine the average trajectories of responses as well as individual variability in responses over time. We were able to assess whether or not individual endorsement of the attributes remained unchanged, increased, or decreased as a function of time, as well as to examine the adequacy of a single trajectory for describing both non-victims' and victims' data (i.e., test for group differences over time).

## Data analysis

Data management and descriptive statistics were performed using SAS (version 8.01 for Windows). Exploratory data analysis (e.g., outlier analysis, checking distributional assumptions) was performed using the *OLStraj* macro (Carrig et al. 2004). All latent growth models were



**Fig. 1** A path diagram of the general model tested. Note: The fixed loading values of  $\lambda_r=0, 1, 2$  reflect the passage of time between assessments; setting the first loading to zero allows for the intercept to be directly interpreted as the mean value at Time 1.

estimated using maximum likelihood estimation in AMOS (version 4.01; Arbuckle 1999).

The fit of the models to the data was assessed with multiple statistics. The chi-square statistic was used as a test of omnibus fit where a non-significant value ( $p > .05$ ) suggests a good fit of the model to the data. However, because this test is a measure of exact fit, measures of approximate fit were also examined to determine the appropriateness of the model. Two indices of approximate fit used in the present study were the Tucker Lewis fit Index (TLI; Tucker and Lewis 1979) and the Incremental Fit Index (IFI; Bollen 1989b). A typical rule of thumb is that fit index values greater than .90 denote an adequate fit to the data, whereas fit index values greater than .95 suggest a good fit to the data. The final measure of approximate fit employed in the present study was the Root Mean Square Error of Approximation (RMSEA; Steiger and Lind 1980), whereby a good fit to the data is denoted by an RMSEA of .05 or less.

Differences in parameter estimates between groups were tested within the multiple group LGM framework with nested  $\chi^2$  tests. The full model or Model 1 (see below) was estimated simultaneously to allow for parameter estimates to differ between groups. Model 1 was then reestimated with constraints imposed on the model. The constrained model is thus nested within the full model, and the resulting  $\chi^2$  difference statistic is equal to the  $\chi^2$  of the constrained model minus the  $\chi^2$  of the full model with degrees of freedom equal to the degrees of freedom of the constrained model minus the degrees of freedom of the full model. A significant  $\chi^2$  difference suggests that the parameters constrained to be equal are in fact statistically different from one another.

<sup>2</sup> Individuals familiar with confirmatory factor analysis (CFA) may notice the resemblance between the model represented in Fig. 1 and a standard CFA model. In fact, the LGM described above is a special parameterization of the standard CFA model (Meredith & Tisak 1990). Given that LGMs, like CFAs, can be tested within the SEM framework, all extensions of general SEM can be made to LGM. This includes multiple group analysis.

Given the number of tests performed, Type 1 error rate  $\alpha$  was adjusted per model tested.

#### Models tested

All models used subscale sum scores and were tested separately for each of the five subscales of the EPAQ. Because each subscale purportedly measures different constructs, we found it necessary to view them each as a dependent variable. This decision was further supported with correlations among the subscales all less than |.5|, which suggests that each subscale captures unique variability in gendered attributes.

*Functional form model* Models for each subscale were estimated separately for non-victims and victims in order to determine the appropriate form (stable vs. linear change) for a given subscale. This process allowed us to determine the appropriateness of an intercept only model (i.e., responses remain stable over time) or a linear model with an additional slope parameter (which allows responses to change linearly over time). Thus, two models were estimated for each subscale for both non-victims and victims.

*Model 1* Model 1 allowed for the mean and variance of the intercept and slope (where applicable) as well as the covariance and time-specific residual variances to be freely estimated within each group in the multiple-group framework. This provided a single  $\chi^2$  value per subscale to be used to test the constrained models described below. The  $\chi^2$  value obtained from Model 1 was compared against subsequent  $\chi^2$  values to determine if the parameters constrained to be equal between groups caused a significant decrement in the fit of the model. The following models were estimated to determine if non-victims and victims differed in their responses.

*Mean and variance of the intercept (Model 2)* This model tested for differences in the mean level and variance of the intercepts. Model 2 constrained both the means and variances of the intercepts to be equal across groups within each subscale of the EPAQ. If the fit of this model was poor, the mean and the variance of the intercepts were constrained individually.

*Mean and variance of the slope (Model 3)* This model tested for differences in the mean level of change and variance of change over time for responses on each subscale. Model 3 constrained both the means and variances of the slopes to be equal across groups within each subscale of the EPAQ. If the fit of this model was

poor, the means and variances of the slopes were constrained individually. These models were only estimated if both non-victims' and victims' data on any particular subscale were best described with a linear change component (refer to functional form model). If neither group's data were best described by a linear change model, the implied slopes are by definition equal to zero, and thus are equal across groups.

*Final model (Model 4)* Model 4 provides an overall assessment of the results obtained from Models 2 and 3. More specifically, Model 4 retained the constraints across groups where applicable.<sup>3</sup>

## Results

Table 1 provides the means and standard deviations for each subscale, group, and time point. Examination of the means lends credence to the stability of the gender role attributes. Furthermore, there seems to be little difference between non-victims and victims.

### Feminine subscales

Table 2 shows the functional form of each feminine subscale for each group. For responses on the  $F^+$  subscale, an intercept only model appropriately described the data for both non-victims,  $\chi^2(4)=5.31$ ,  $p=.26$ , and victims,  $\chi^2(4)=5.08$ ,  $p=.28$ . The addition of a linear change component did not significantly improve the fit of the model for either group.

Similar results were found for responses on the two negative feminine subscales ( $F_{VA}^-$  and  $F_C^-$ ). An intercept only model appropriately described the data for both non-victims,  $\chi^2(4)=6.75$ ,  $p=.15$ , and victims,  $\chi^2(4)=6.10$ ,  $p=.19$  on the  $F_{VA}^-$  subscale, as well as for both non-victims,  $\chi^2(4)=2.96$ ,  $p=.56$ , and victims,  $\chi^2(4)=8.10$ ,  $p=.09$  on the  $F_C^-$  subscale. The fits of these models were not significantly improved by the addition of linear change components.

Results of our analyses of the functional form of each feminine subscale suggest that an intercept only model (i.e., no consistent increase or decrease over time) appropriately fits the data for both non-victims and victims on all three feminine subscales ( $F^+$ ,  $F_{VA}^-$ , and  $F_C^-$ ). Because models adequately described the data for both groups on these subscales, multiple group analyses could be performed to examine differences between the two groups.

<sup>3</sup> It is important to note that the omnibus test of Model 4 may fail even though the model passes all previous individual tests. This is due to the restrictive nature of the omnibus test compared to the series of individual tests. Any discrepancies found between Model 4 and previous models are discussed.

**Table 1** Means and standard deviations for non-victims and victims on each subscale.

Subscale	<i>N</i>	Time 1		Time 2		Time 3	
		<i>X</i>	SD	<i>X</i>	SD	<i>X</i>	SD
$F^+$ non-victim	155	34.432	3.205	34.187	3.390	34.168	3.876
$F^+$ victim	156	33.404	4.153	33.128	4.141	32.872	4.662
$F_{VA}^-$ non-victim	156	7.840	2.416	8.019	2.756	8.058	2.834
$F_{VA}^-$ victim	158	8.171	2.937	8.342	2.828	7.975	2.741
$F_C^-$ non-victim	158	7.468	2.925	7.627	2.991	7.785	3.081
$F_C^-$ victim	157	7.490	3.073	7.478	3.035	7.076	2.954
$M^+$ non-victim	156	26.705	4.445	27.353	4.573	26.340	4.666
$M^+$ victim	158	26.905	4.670	27.563	4.670	27.139	4.781
$M^-$ non-victim	153	12.850	2.958	13.170	3.609	13.268	3.449
$M^-$ victim	157	13.873	4.174	14.127	4.184	14.261	4.566

**Table 2** Functional forms for each group on each subscale.

	$F^+$		$F_{VA}^-$		$F_C^-$	
	Non-victim	Victim	Non-victim	Victim	Non-victim	Victim
<i>N</i>	155	156	156	158	158	157
Mean $\alpha$ (SE)	34.27 (.23)	33.15 (.29)	7.95 (.18)	8.17 (.20)	7.61 (.21)	7.37 (.21)
Var $\alpha$ (SE)	6.15 (.93)	9.80 (1.46)	4.28 (.59)	5.18 (.70)	6.33 (.82)	5.87 (.80)
Var $\varepsilon_1$ (SE)	5.18 (.84)	9.12 (1.39)	2.08 (.38)	3.36 (.51)	2.20 (.40)	3.22 (.53)
Var $\varepsilon_2$ (SE)	4.77 (.80)	6.64 (1.16)	2.64 (.43)	2.45 (.42)	2.58 (.43)	2.93 (.50)
Var $\varepsilon_3$ (SE)	8.24 (1.15)	11.24 (1.6)	3.80 (.54)	2.92 (.47)	3.33 (.50)	3.99 (.60)
$\chi^2$ (df)	5.31 (4)	5.08 (4)	6.75 (4)	6.10 (4)	2.96 (4)	8.10 (4)
<i>p</i>	.26	.28	.15	.19	.56	.09
IFI	.999	.999	.998	.998	1.001	.996
TLI	.999	.999	.997	.997	1.001	.994
RMSEA	.046	.042	.067	.058	.000	.081
	$M^+$		$M^-$			
	Non-victim	Victim	Non-victim	Victim		
<i>N</i>	156	158	153	157		
Mean $\alpha$ (SE)	26.87 (.32)	27.30 (.33)	12.85 (.24)	14.07 (.31)		
Var $\alpha$ (SE)	13.68 (1.84)	15.45 (1.98)	8.65 (1.55)	13.21 (1.70)		
Mean $\beta$ (SE)	–	–	.22 (.13)*	–		
Var $\beta$ (SE)	–	–	1.95 (.62)	–		
$\Psi_{\alpha\beta}$ (SE)	–	–	–1.60 (.75)	–		
Var $\varepsilon_1$ (SE)	5.87 (1.06)	8.33 (1.22)	.10 (1.19)	4.52 (.81)		
Var $\varepsilon_2$ (SE)	6.22 (1.09)	3.83 (.84)	5.64 (.86)	5.31 (.87)		
Var $\varepsilon_3$ (SE)	11.05 (1.55)	7.93 (1.18)	1.85 (1.39)	6.15 (.95)		
$\chi^2$ (df)	14.89 (4)	10.01 (4)	.31 (1)	4.83 (4)		
<i>p</i>	.005	.04	.58	.31		
IFI	.994	.997	1.000	.999		
TLI	.991	.995	1.003	.999		
RMSEA	.133	.098	.000	.036		

\*  $p < .05$

**Table 3** Final models for each group on each subscale after multiple group analyses.

	$F^+$		$F_{VA}^-$		$F_C^-$	
	Non-victim	Victim	Non-victim	Victim	Non-victim	Victim
<i>N</i>	155	156	156	158	158	157
Mean $\alpha$ (SE)	34.27 (.25)	33.15 (.26)	8.07 (.14)	8.07 (.14)	7.49 (.15)	7.49 (0.15)
Var $\alpha$ (.83)	7.77 (.83)	4.74 (.46)	6.12 (.57)	6.12 (.57)		
Var $\epsilon_1$ (SE)	5.23 (.86)	9.12 (1.37)	2.10 (.38)	3.38 (.51)	2.20 (.40)	3.20 (.53)
Var $\epsilon_2$ (SE)	4.56 (.80)	7.04 (1.17)	2.59 (.43)	2.50 (.43)	2.59 (.43)	2.90 (.50)
Var $\epsilon_3$ (SE)	8.09 (1.14)	11.52 (1.62)	3.78 (.54)	2.90 (.46)	3.35 (.50)	4.02 (.60)
$\chi^2$ (df), <i>p</i>	15.09 (9), .09		14.49 (10), .15		11.83 (10), .30	
IFI	.999		.998		.999	
TLI	.998		.998		.999	
RMSEA	.047		.038		.024	
		$M^+$		$M^-$		
		Non-victim	Victim	Non-victim	Victim	
<i>N</i>		156	158	153	157	
Mean $\alpha$ (SE)		27.09 (.23)	27.09 (.23)	12.84 (0.26)	14.07 (0.29)	
Var $\alpha$ (SE)		14.63 (1.35)	14.63 (1.35)	11.37 (1.16)	11.37 (1.16)	
Mean $\beta$ (SE)		–	–	0.22 (0.13)*	–	
Var $\beta$ (SE)		–	–	2.62 (0.55)	–	
Cov $\alpha\beta$ (SE)		–	–	–2.64 (0.64)	–	
Var $\epsilon_1$ (SE)		5.86 (1.06)	8.26 (1.21)	–1.40 (1.02)	4.57 (0.80)	
Var $\epsilon_2$ (SE)		6.09 (1.08)	3.95 (.85)	6.34 (0.87)	5.31 (0.87)	
Var $\epsilon_3$ (SE)		11.14 (1.56)	7.91 (1.18)	.95 (1.34)	6.25 (0.95)	
$\chi^2$ (df), <i>p</i>		26.15 (10), .004		9.00 (6), .17		
IFI		.996		.999		
TLI		.995		.998		
RMSEA		.072		.040		

\*  $p < .05$

The final models that resulted from the multiple group analyses performed on the  $F^+$ ,  $F_{VA}^-$ , and  $F_C^-$  subscales are shown in Table 3.<sup>4</sup> For responses on the  $F^+$  subscale, non-victims and victims differed in their mean level of endorsement ( $M=34.27$ ,  $SE=.25$  for non-victims and  $M=33.15$ ,  $SE=.26$  for victims); however, the variance around the mean was the same for both groups ( $var=7.77$ ,  $SE=.83$ ). Therefore, non-victims endorsed items on the  $F^+$  subscale significantly more than did victims, yet the variability in endorsement was the same for both groups.

Responses on the  $F_{VA}^-$  and  $F_C^-$  subscales were the same for both non-victims and victims. The mean level of endorsement aggregated across groups was 8.07 ( $SE=.14$ ) for responses on the  $F_{VA}^-$  and 7.49 ( $SE=.15$ ) on the  $F_C^-$  subscale. Similarly, the variance around the mean was the same for both groups,  $var=4.74$ ,  $SE=.46$ , and  $var=6.12$ ,

$SE=.57$  for the  $F_{VA}^-$  and  $F_C^-$  subscales, respectively. These results suggest that non-victims' and victims' responses did not differ on the  $F_{VA}^-$  or  $F_C^-$  subscales in any meaningful way. Furthermore, their responses can be characterized as a low endorsement of the items (possible responses on both subscales ranged from 4 to 20) that is stable across the three assessment periods.

Masculine subscales

Table 2 shows that responses on the  $M^+$  subscale for non-victims were not adequately described by an intercept only model,  $\chi^2(4)=14.89$ ,  $p=.005$ . The TLI and IFI suggest a close fit to the data as both values reached .99. However, the RMSEA provides weaker support for this model with a value of .13 and a 90% confidence interval of (.07, .21). The addition of a slope parameter failed to make a significant improvement in the fit of the model,  $\chi^2_{\text{difference}}(3)=3.82$ ,  $p=.28$ .

Similarly, an intercept only model did not adequately describe victims' responses on the  $M^+$  subscale,  $\chi^2(4)=10.01$ ,  $p=.04$ . The TLI and IFI for the intercept only model suggest

<sup>4</sup> A 2 (victimization) × 3 (time) ANOVA was also performed on the data. The results obtained with the LGM analysis were supported with the results of the ANOVAs. In addition, results of the ANOVAs showed that assumptions of the ANOVA were violated (equal variances), which supports our decision not to utilize this analysis.



a close fit to the data as both values reached 1.0. However, the RMSEA for victims' intercept only model lends little support for a good fit of the model with a value of .10 and a 90% confidence interval (.02, .18). The addition of a slope parameter failed to make a significant improvement in the fit of the model,  $\chi^2_{\text{difference}}(3)=3.59, p=.31$ .

Non-victims' responses on the  $M^-$  subscale were best described by an intercept and slope model,  $\chi^2(1)=.31, p=.58$ , which suggests that non-victims' responses change over time (Table 2). There also appeared to be a significant covariance observed between the intercept and slope of the non-victims responses ( $\text{COV}=-1.60, \text{SE}=.75$ ), whereby the higher a non-victim's initial score, the slower her report of negative masculine attributes increased over the 3-year span. Conversely, victims' responses were best described by an intercept only model,  $\chi^2(4)=4.83, p=.31$ .

The functional form models for responses on the masculine subscales suggest that an intercept only model adequately fit the data for victims on the  $M^-$  subscale, and an intercept and slope model appropriately described non-victims' data on the  $M^-$  subscale. From this analysis alone we can see that non-victims' and victims' responses differed on the  $M^-$  subscale, such that non-victims' responses increased over time and victims' responses were stable over time. Because adequate models could be fit for both groups, multiple group analyses could be performed to examine other possible differences.

Models for responses on the  $M^+$  subscales were not as clear. Although the various fit indices were not consistent, there was some support for non-victims' and victims' responses on the  $M^+$  subscale; thus, multiple group analyses were performed to explore possible differences. However, caution should be used when generalizing these results.

As illustrated in Table 3, results of the multiple group analyses showed that responses on the  $M^+$  subscale were the same for both non-victims and victims. The aggregated mean level of endorsement was 27.09 ( $\text{SE}=.23$ ), and the variance around this mean was the same for both groups ( $\text{var}=14.62, \text{SE}=1.35$ ). These results suggest that non-victims' and victims' responses did not differ on the  $M^+$  subscale in any meaningful way.

The functional form analyses show that non-victims and victims differed with regard to stability over time on the  $M^-$  subscale, such that non-victims' data were best represented by a linear change model, whereas victims' data were best described by an intercept only model (i.e., no consistent change over time). Multiple group analyses were conducted to examine other possible differences between the two groups regarding the mean intercept and the variance around the intercept. As shown in Table 3, the mean level of endorsement at Time 1 was higher for victims ( $M=14.07, \text{SE}=.29$ ) than for non-victims ( $M=12.84, \text{SE}=.26$ ). However, the variability around this mean level of

endorsement was equal across groups ( $\text{var}=11.37, \text{SE}=1.16$ ). These results suggest that, although non-victims initially reported lower levels of negative agentic attributes, on average they increased their reporting of this construct over time. This change was only marginally significant. Conversely, victims initially scored higher than non-victims and remained stable in their level of responding over time.

## Discussion

In the present study we applied a relatively novel methodology in personality and sexual victimization research to examine possible differences between non-victims and victims of sexual aggression with specific attention paid to the stability of gendered attributes over a 3-year period. The many benefits of this approach can be seen when it is compared to traditional personality and social research methods. For example, the longitudinal design of our study and the implementation of latent growth models enabled us to examine individual variability in responses over time, which cannot be done in traditional cross-sectional analyses, which are restricted to the examination of between individual variability. Our approach allows for greater confidence in the differences or lack of differences found between the groups under study. Furthermore, the use of multiple groups LGMs enabled us to gain more information on the effects of sexual victimization. More specifically, this method allowed for the comparison of initial endorsement rates, differences in the change in endorsement rates, and differences in the type of change, if any, between the two groups on each of the subscales.

Results that show stability over time on all the communal subscales for both non-victims and victims lend support to the notion of gendered attributes as personality traits. Furthermore, the results of our study show that no significant differences exist between the two groups on the two negative communal subscales; both groups had low endorsement scores. This suggests that neither group would describe their personality in terms of negatively valued, feminine attributes, such as whiny and naïve. Unlike the two negative subscales, non-victims and victims differed across time in their endorsement of the attributes on the  $F^+$  subscale, in which non-victims described themselves in more communal terms than victims. This is contrary to Muehlenhard and Linton's (1987) suggestion that sexual victimization may lead to more traditional attitudes. Results suggest that a sexual victimization experience may result in a woman being less traditional, that is, reducing how she views herself in traditionally feminine terms.

Conclusions regarding the agentic subscales were less clear. The results of the analyses performed on the  $M^+$  subscale suggest that a linear model does not fully capture

the across time relationships present in the data. However, given the moderate support of close fit, we can draw some conclusions from the multiple group analyses, such that non-victims and victims did not differ in their endorsement of the positive agentic items. In fact, it appears that both victims and non-victims of sexual aggression consider themselves generally agentic and confident in their abilities. It is important to note, however, that there was considerable variability around the mean level of endorsement for both groups, which suggests that women are heterogeneous in their endorsement of positively viewed masculine items.

Results on the  $M^-$  subscale suggest that the two groups differ in their trajectory over the three assessments. Victims' responses remained stable over time regardless of their initial score. In contrast, non-victims showed a linear increase in their endorsement of  $M^-$  characteristics (i.e., "self-centered" attributes) over the span of the study. Non-victims who endorsed lower levels of  $M^-$  characteristics at Time 1 increased in their endorsement rates more quickly over time than did non-victims who reported higher levels of  $M^-$  characteristics at Time 1. Furthermore, victims' responses were higher than non-victims', which suggests that a sexually victimized woman may be more likely to focus on herself and her needs. This may be done in order to protect herself from experiencing victimization again in the future. Similarly, non-victims' focus on the self may increase over time due to their exposure to new environments, opportunities, and threats.

It is interesting that this higher endorsement rate was still low when compared to the possible range of endorsement, which suggests that, although victimized women may see themselves as more self-centered, they do not see themselves in this way to an extreme. This finding is consistent with the results of previous research, which shows that people are more likely to express positive attributes than negative attributes (see E. Diener & C. Diener 1996). If we combine these results, we can see that women who were sexually victimized tend to describe themselves more in terms of negative agentic attributes, although not excessively so, than non-victims do.

### Implications

Personality characteristics are defined by stability, at least over relative lengths of time. Moreover, gendered attributes are often cited as stable personality traits (see Spence and Helmreich 1980; Spence et al. 1979). This claim was supported for many of the subscales of the EPAQ. In fact, examination of the results suggests that responses on the  $F^+$ ,  $F_{VA}^-$ ,  $F_C^-$ , and  $M^+$  subscales remained stable over a 3-year period for both victims and non-victims of sexual aggression. Thus, these findings lend support to the notion of gendered attributes as personality traits.

Although endorsement rates of gendered attributes remained stable over the 3-year period on many of the subscales of the EPAQ, stability was not found on all subscales. Cases of linear and non-linear change in personality characteristics over time can be found in the literature for other variables. For example, Helson, Jones, and Kwan (2002) found that the endorsement rate on the Dominance subscale of the California Personality Inventory (Gough and Bradley 1996) increased over most of the life-course followed by a sharper decrease later in life, but their study involved a 40-year span. One may not expect to see such changes over only 3 years of time. Thus, depending on the time span examined, some gendered attributes may fail to meet one of the more basic qualities of a personality trait (i.e., stability). Conversely, problems associated with the measurement of the gendered attributes may have given rise to the observed non-stability. More specifically, the underlying constructs may indeed be stable traits, but the measurement of these traits with the EPAQ may be inaccurate or fail to maintain measurement invariance over time (Meredith 1993). These issues should be kept in mind during future personality research.

The findings of the present study also have implications for sexual victimization researchers. Results suggest that non-victims and victims differ in their endorsement on some of the gendered attributes. For instance, non-victims were more traditional than victims regarding positive communal attributes. In addition, non-victims' responses on the negative agentic subscale were not stable over time, whereas victims' responses were stable and considerably higher across time.

Findings of the present study contradict those of previous research. For instance, Spence et al. (1991) found that positive instrumentality (masculinity) was negatively correlated with sexual victimization. However, the present findings do not suggest any differences between the groups regarding positive instrumentality. Similarly, Muehlenhard and Linton (1987) hypothesized that sexual victimization may lead to more traditional attitudes; however, we found that traditional attitudes were more often endorsed by non-victims (on the  $F^+$  subscale). Given these results it is apparent that sexual victimization does indeed have an influence on these personality variables. However, future research in this area is necessary to understand this influence more precisely.

### Limitations and future research

The present study provides insight into how sexual victimization may affect the endorsement of gendered attributes. However, the extent to which one preceded the other (the difference in the level of endorsement of the attributes among non-victims and victims or the victimiza-

tion experience) is still unknown. Moreover, in order to have a sufficient  $N$  for analyses, our victimized group is heterogeneous with respect to the type of victimization experienced. These experiences ranged from giving in to kissing or fondling due to verbal pressure to experiences that meet the legal definition of rape. The timing of the victimization experience also varied across individuals; it could have occurred during childhood (prior to age 14), in high school (14–18), or both. Thus, the number of victimizations also varied. The variability within the victimization group did not appear to affect the results (the variability in the victims group was generally equal to that in the non-victims group). However, it would be desirable to have a group of women who had experienced the same type of victimization, at the same age, and the same number of times. Unfortunately, given the nature of sexual victimization this would be extremely difficult for any researcher to achieve.

An avenue for future research is to examine the stability of other personality variables (e.g., dominance, agreeableness) as they relate to sexual victimization status across time. There is a large body of literature regarding personality and attitudinal correlates of sexual aggression in men, but little is known about these variables among victimized women. Moreover, research concerning changes in the self-concept, including attitudes and personality variables, as a function of sexual victimization is virtually non-existent.

## Conclusions

We used multiple group latent growth modeling, a rarely utilized methodology in the personality and social literature, to explore the stability and effects of sexual victimization on gendered attributes. Although many questions remain unanswered, the present study has shed light onto gendered attributes as personality traits and subsequently provides support for such a relationship. Furthermore, the results clearly suggest that women's views of self during the early years of college may be significantly influenced by prior sexual victimization. Whereas endorsement of communal and positive agentic attributes was stable across time, victims remained consistently less traditionally feminine (i.e., positively communal and nurturing) than non-victims. Victims also appeared to become relatively more self-focused (i.e., negative masculinity) across time than non-victims did. This pattern suggests that sexual victimization may have lasting effects on victims' ability to focus on the nurturing, trusting aspects of relationships; rather they have a preoccupation with their own needs and goals that appears to strengthen with time. Such a pattern sheds insight into how self-processes may contribute to relationship difficulties often observed in sexual assault victims (N. N. Sarkar and R.

Sarkar 2005). Taken together, gendered attributes appear to be a viable topic for future research by both personality and social researchers alike.

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