CONSTRUCT VALIDATION OF A GENERAL SOCIAL ATTITUDES SCALE (SAS_G)

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ABSTRACT

In this article, we describe the construct validation of a General Social Attitudes Scale (SAS_G), designed to measure the basic dimensions of social attitudes in both self-reports and peer-ratings. A large sample of Croatian university students (N= 452) used the SAS_G to describe their own social attitudes, which were also described by 452 of their acquaintances using the same instrument. All SAS_G subscales showed reasonably high reliability estimates as well as appropriate convergent and discriminant validity based on self/peer correlations. Separate Confirmatory Factor Analyses (CFA) of both self-reports and peer ratings yielded five replicable factors and acceptable indices of fit. However, the validation analyses against lexically based Saucier's (2008) ISMS instrument, showed little convergence, indicating that these two approaches to general social attitudes scale construction can lead to the identification of different basic constructs.

Keywords: general social attitudes, construct validation, self-reports, peer-ratings

Introduction

There is now little doubt among psychologists that social attitudes play an important role in predicting human behavior (Kraus, 1995). Since the concept of attitude was introduced to social sciences (George, 1917), it has become one of the central constructs for prediction and explanation of behavior in the domain of social psychology, and has been the focus of extensive research ever since. The research on social attitudes structure pioneered by Ferguson (1939) and Eysenck (1944) showed that such attitudes do not occur in isolation but are linked together in a recognizable pattern to form ideological constructs (Eysenck, 1954). Despite the recognized importance of social attitudes in predicting human behavior, there is still no consensus among psychologists regarding the issues of their dimensionality and structure. This is probably the main reason why there is still no widely accepted instrument for measuring general social attitudes.

Over the years, the structure of social attitudes has been frequently studied with only moderate agreement about the number and the nature of extracted dimensions (Eysenck & Wilson, 1978). Major disagreement among researchers persists concerning the number and the nature of dimensions that are required to capture the ideological deliberation of an ordinary person. There are however two main approaches for studying the structure and basis of social attitudes that should be mentioned here; unidimensional and multidimensional.

The unidimensional approach that divides left (liberal) from right (conservative) ideological attitudes originates from the political tradition. The terms Left and Right were coined during the French Revolution (1789–1799), referring to the seating arrangement in the Estates General: those who sat on the left generally opposed the monarchy and supported the revolution, while those on the right were supportive of the traditional institutions of the Old Regime (Knapp & Wright, 2006).

The first empirically based unidimensional approach, which was proposed by Adorno, Frenkel-Brunswick, Levinson and Sanford (1950) was exceptionally influential and widely accepted for a number of

decades. This approach viewed social or ideological attitudes as structured along a single dimension that was rooted in a personality trait called authoritarianism, characterized by a desire for security, order, power and status as well as by an emphasis on obedience and adherence to socially prescribed rules. More recently, the unidimensional model was proposed and upheld by Jost and colleagues (Jost, Kruglanski & Sulloway, 2003; Jost, Federico & Napier, 2009).

In spite of its popularity and simplicity, unidimensional model predicting social attitudes to be structured along a single left-right dimension has never been supported by empirical findings. New evidence emerged suggesting that social attitudes might be structured along two or more distinct dimensions. The first two-dimensional empirical model was proposed by Eysenck (1954) and became a paradigm for social attitudes research in succeeding decades. The model asserts that related social attitudes constitute two ideological factors: radicalism vs. conservatism and tough-mindedness vs. tender-mindedness (Eysenck, 1954; Eysenck & Wilson, 1978). While the former factor is a well known right-left dimension of political worldviews, the latter is, according to Eysenck, essentially a projection of certain personality traits onto the social attitudes domain. Ferguson (1973) insisted on three oblique dimensions of general social attitudes identified as religiosity, humanitarianism and nationalism. Guilford (1959) added to the cacophony by citing five fundamental social attitudes: liberalism vs. conservatism, religiosity vs. atheism, humanitarianism vs. non-humanitarianism, nationalism vs. internationalism and evolutionism vs. revolutionarism. Wilson (1973) focused mainly on conservatism as a general factor in his studies, to be supplemented with a second factor, idealism vs. realism. Finally, Kerlinger (1972) conceived of liberalism and conservatism as separate factors. A bitter debate on social attitudes structure that occurred in the middle of the last century soon started to lose its momentum and was practically abandoned as a research field for decades. The research on the dimensionality and structure of social attitudes gained new impetus with the renewal of interest in Authoritarianism, namely with the introduction of Right-Wing Authoritarianism (RWA) (Altemeyer, 1981), and the development of a new construct named Social Dominance Orientation (SDO) (Sidanius & Pratto, 1999) both of which demonstrated high predictive power for determining political orientation and prejudice

(Pratto, 1999; Sidanius, Pratto & Bobo, 1994). As research showed that these constructs were largely mutually independent and correlated differently with important other variables (Duckitt & Sibley, 2009), a new Dual-Process Motivational Model of Ideology (DPM) was put forward (Duckitt, 2001; Duckitt, Wagner, du Plessis & Birum, 2002) stating that RWA and SDO are the basic dimensions of ideological attitudes that express different sets of motivational goals and values. It was proposed by the model that RWA expresses the motivation goal of establishing and maintaining societal security and order (Altemeyer, 1998) highly valued by those that perceive world as a dangerous and threatening place (Duckitt & Sibley, 2009). In contrast, SDO expresses the motivational goal of dominance, power and superiority over others that originate from the perception of the world as a competitive jungle. Over the years the empirical evidence in support of the model has accumulated, indicating that RWA and SDO are not only relevant dimensions of ideological attitudes but also have high and differential influence on socio-political and intergroup behavior (Duckitt & Sibley, 2009).

Other researchers from different fields investigating sociopolitical attitudes, values or related constructs also found evidence for existence of at least two relatively independent higher order ideological dimensions (i.e. Ashton et al., 2005; Braithwaite, 1994; Schwartz, 1992; Inglehart & Baker, 2000; Stangor & Leary, 2006).

The issue of social attitudes dimensionality and structure has recently been addressed anew by applying a lexical approach (Saucier, 2000). The lexical approach seems to be a very promising tool for research into social attitudes and ideology structure for much the same reasons that it has proven useful in exploring the sphere of personality - it provides fairly representative and unbiased sampling of the ideology descriptors. With a reasonable assumption that many important facets of life are encoded as single words in language, Saucier analyzed the questionnaire statements based closely on the definitions of attribute nouns ending in –ism. The most replicable structure contained four factors that were provisionally named using Greek letters. Alpha (α) was related to the traditional religiosity, Beta (β) was defined by items containing

egoistic and materialistic attitudes, Gamma (γ) emphasized liberal, humanitarian and enlightenment values while Delta (δ) primarily included spiritual individualism and New Age beliefs (Saucier, 2000, 2008).

The lack of a consensus regarding the structure of social attitudes can be viewed from two perspectives: the first one can be pessimistic, seeing social attitudes as being so diverse that no consensus will ever be possible, while the other one can be viewed as optimistic, seeing the diversity of the social attitudes realm as a challenge, and encouraging a search for important new domains and a possible overarching approach.

In developing the General Social Attitudes Scale we followed the optimistic route and tried to incorporate important general social attitudes from previous studies, as well as to look for new ones, using the catch-phrase approach proposed by Wilson and Patterson (1968) as our overarching vehicle.

We also deemed that the domain of general social attitudes encompasses important domains such as humanitarianism, economic issues and modernization that are not usually considered to be ideological matters. Some of these domains were emphasized by researchers in the past and some of them are recently becoming more and more important. For example, the rapid expansion of technology, mostly through computer science, can be viewed as a prime example of globalization. The last fifteen years brought the global expansion of the Internet, mobile phones, and finally, online social networks. The attitudes towards those technological developments are not important only for one's view on modern technology. Since those technologies bring people closer, they may affect an individual's view on cosmopolitism, traditionalism, humanitarianism and sexual freedoms and eventually can be related to a person's view on change, or conservatism.

Since the ISMS measure is based on the lexical approach and it takes some time for words to sediment and become a part of a lexicon, we also deemed that it is important to compare that approach with the catch-phrase approach that is not dependent on the sedimentation and new objects of attitudes can be incorporated more quickly in a measure.

This study therefore presents the construct validation of a General Social Attitudes Scale (SAS_G), measuring broad social attitudes based on the aforementioned catch-phrase approach. The original idea of Wilson and Patterson (1968) was to obtain the first emotional reaction to the list of brief labels or catch-phrases representing some familiar and controversial social issues. The SAS_G scale was constructed after a content analysis of the existing approaches and by gathering items from various social attitudes scales (e.g. Eysenck, 1951, 1971, 1976; Wilson & Patterson, 1968, Riemann, Grubich, Hempel, Mergl & Richter, 1993), adapting them into the catch-phrase format and forming factors from analytically derived subscales (Milas, 2004; Milas & Žakić Milas, 2003).

Development and previous validation studies of SAS_G

The content and the structure of the SAS_G were developed over several studies (Milas, 2004; Milas & Rihtar, 1998; Milas & Žakić Milas, 2003), The starting point for the construction of the scale was a large sample of 168 items gathered from existing social attitudes instruments (e.g. Eysenck, 1951, 1971, 1976; Wilson & Patterson, 1968; Riemann et al., 1993) supplemented with issues that were considered to be relevant for the contemporary social and political situation in Croatia, but not limited to Croatia. In the next step all items were translated into the catch-phrase format. The items were provisionally classified as belonging to following domains: (1) Religiosity (2) Economic Liberalism vs. Conservatism, (3) Cosmopolitism vs. Ethnocentrism (4) Modernism vs. Traditionalism (5) Sexual Freedoms (6) Humanitarianism and Pacifism. Some of the items were discarded on the basis of redundancy or because they were considered outdated. The initial scale after reduction made by judges consisted of 60 items and each domain was represented with 8-12 items. In the pilot study, the scale was applied to a sample of 219 high school students aged 16 to 19 years in order to identify items that were not easy to understand. After those were modified or discarded, the scale consisting of 50 items was applied to a sample of 929 students in order to determine its dimensionality and factor structure. The results indicated the existence of four to five factors. The scale was then further refined in order to improve its psychometric qualities. Some items

that were psychometrically inadequate were discarded and some new were included in order to better represent the existing factors. The five dimensions of social attitudes included in the final version of SAS_G were labeled Religiosity, Sexual Freedom, Cosmopolitism, Modern technology and Social Justice (Milas & Burušić, 2004).

In order to test predictive validity of the SAS_G a shortened version with tree items per scale was applied to a probability sample of 1248 Croatian citizens over 18 years of age (Milas & Burušić, 2004). Among other variables, respondents were asked about their voting intentions, left-right political identification, and political trust. While some of the results are presented in more detail by Milas and Burušić (2004), it is worth noting that SAS_G showed modest predictive validity for voting intentions (R=.43; p<0.01) with significant contribution of Religiosity (β=.35), Sexual Freedom (β=-.12), and Cosmopolitism (β=-.14) and left-right political identification on a 10 point scale (R=.29; p<0.01) with significant contribution of the same scales, Religiosity (β=.20), Sexual Freedom (β=-.10), and Cosmopolitism (β=-.16). SAS_G also exhibited modest predictive validity for the trust in political subjects (R=.28; p<0.01) with significant contribution of Religiosity (β=.22), Sexual Freedom and Cosmopolitism (β=-.15).

This study presents further test of scale validity, i.e., validation by the means of Confirmatory Factor Analysis. In addition, we examined the relations between the SAS_G and a newly derived version of Saucier's (2008) lexically based social attitudes scale as examining relations with new constructs within the broad domain of social attitudes could provide further information on the comprehensiveness and utility of our scale. Decision to validate our scale against Saucier's ISMS was motivated by the rationale of empirically determining the dimensionality of space defined by social and political attitudes. In our catch phrase approach we tried to decrease the possibility of biased sample by gathering a wide pool of items from various existing scales. However, since the ISMS measure is based on the lexical approach, it is less prone to criticism of arbitrary or biased selection of items.

In this study, we sought to reconcile a theoretically-derived approach to general attitude scale construction with a lexical empirical one. We consider the psychometric validation of the SAS_G a very important step in establishing a common ground for an understanding of general social attitudes and their association with other constructs. Our primary aim was therefore to analyze the psychometric properties of the SAS_G, both in self-reports and peer ratings, and to compare the resulting properties. In particular, we focused on the construct validity of the SAS_G, using CFA in both self-reports and peer-ratings. We used peer-ratings with the same rationale used in personality assessment for two principle reasons; to obtain construct validity indicators (Paunonen & O'Neill, 2010) and to gain reliable information on respondents that is not influenced by common method variance. Over the past few decades, a considerable amount of evidence has suggested that a common method variance could pose a serious threat to providing an unbiased estimate of a relationship between measures of different constructs (Campbell & Fiske, 1959; Podsakoff, MacKenzie, Lee & Podsakoff, 2003). Method variance can both inflate or deflate observed relationships between constructs (Cote & Buckley, 1987; 1988) and a reliance exclusively on self-reports as a data-gathering tool is thus recognized as a problem with potentially serious consequences (Podsakoff et al. 2003). Since the large majority of studies on social and ideological attitudes have to date relied almost exclusively on self-reports (Cohrs, Kämpfe-Hargrave & Riemann, 2012), there is a possibility that many results are biased due to the presence of common method variance. Among potential sources of common method biases that are applicable to attitude research, self-reports are particularly susceptible to social desirability effects, consistency motif and bias resulting from a particular observational perspective (Podsakoff et al., 2003; Cohrs et al., 2012). Social desirability effects reflect the tendency of respondents to present themselves in a favorable light, regardless of their true feelings (Crowne & Marlowe, 1964; Paulhus, 1984). As people are generally motivated to display themselves as conforming to accepted cultural standards (e.g. more humanistic, socially just and less ethnocentric), a number of social attitudes are susceptible to the effects of social desirability. A consistency motif refers to the propensity of respondents to purposely appear consistent and rational in their responses (Johns, 1994; Podsakoff & Organ, 1986). This tendency can inflate

an observed relationship between items pertaining to the same domain and can also inflate correlations between related but distinct constructs. Finally, the particular observational perspective may put a participant in a less favorable position when judging his own behavior compared to an outside observer (Kolar, Funder & Colvin, 1996).

Thus, relying on a single research method such as self-report data could produce a distorted image of the relationship between different constructs in the domain of social attitudes. In order to obtain a more realistic picture of the SAS-G and other measures, we used peer-reports. Previous research has suggested that peer-reports may be used to remedy issues with bias and provide incremental value in measuring the relationship between social and ideological constructs (Cohrs et al., 2012). Whilst the validity of peer-reports in relation to social attitudes could be questioned in light of the fact that attitudes are not always readily observable from behavior, we have compensated for this potential lack of observability by having a longer duration of self-peer acquaintanceship. In fact, more than two-thirds of our peers have been acquainted with the target person for more than three years. Moreover, the recent literature provides a considerable amount of evidence suggesting that peer-reports could prove to be useful as an additional tool in the validation of constructs in the sphere of social, ideological and political attitudes (Cohrs et al., 2012; Kandler, Bleidorn and Riemann, 2012; Kandler, Bleidorn, Riemann, Angleitner and Spinath, 2011) .

An additional aim was to investigate the relations between SAS_G and a Croatian translation of Saucier's ISMS (2008), slightly modified version of his earlier scale (Saucier, 2000) based on the lexical approach.

Materials and Methods

Participants and Procedure

Two samples of participants were recruited in Croatia, one for self-reports and the other for descriptions of these same targets by their close acquaintances. For convenience, we will refer to the latter as peer-ratings. Self-reports were provided by 452 students from the University of Zagreb (227 females and

223 males, two did not report their gender). Their ages ranged from 18 to 28 years, with a mean of 20.0. In addition, a close acquaintance of each participant provided a peer-rating using the same instrument (268 females, 179 males, and 5 who did not report their genders). Their ages ranged from 15 to 75 years, with a mean of 25.4 years. The majority of the acquaintances were described by the participants as their closest friends (46.2%), followed by boyfriends (13.1%), mothers (12.6%), sisters (9.3%), girlfriends (6.3%), brothers (4.8%), and fathers (3.4%). Altogether there were 452 matched pairs of ratings (a self-description paired with a peer-description). Each peer rated only one target person, and the mean period of target-peer acquaintanceship was 10 years.

Students were debriefed and provided with detailed information on the purpose and procedure of the study during regularly scheduled classes with the researchers. All participants gave informed consent. Participants were then given two envelopes containing instruments for self- and peer ratings with differently colored paper. They were instructed to describe themselves as accurately as possible using the inventories in the first envelope. They were then instructed to select the person who "knows them best". These acquaintances were given the other envelope and asked to describe the target person using the same measures used in peer-ratings. All participants were explicitly asked to refrain from discussing the survey with their chosen acquaintances and to return all sealed envelopes containing self- and peer-ratings during next week's class. To encourage participation, students were promised feedback about their scores on attitude measurements using their allocated personal code and sending results via e-mail. The approval of an institutional review board was obtained for all aspects of the study.

Instruments

In this study, we used two social attitudes scales. The first was a General Social Attitudes Scale (SAS_G) which was the focus of the present study. The SAS_G (Milas & Žakić Milas, 2003) is a 25 item social attitudes scale constructed on the basis of the catch-phrase approach proposed by Wilson and Patterson

(1968). The SAS_G consists of five subscales of Religiosity, Sexual Freedom, Cosmopolitism, Modern technology and Social justice, each represented by 5 catch phrases. The items were administered with a 1 to 5 Likert-type scale, ranging from 1= *Strongly against or disbelieve* to 5= *Strongly advocate or believe in*. The other social attitudes scale used in the study was SDI-3 (Saucier, 2008), a 28 item social attitudes inventory targeted to measure Saucier's four factors of lexically based ISMS: Tradition-Oriented Religiousness (Alpha) Unmitigated Self-Interest (Beta), Protection of Civil Institutions (Gamma) and Subjective Spirituality (Delta). An example of an item defining the positive pole of the Alpha factor is a brief statement "Religion should play the most important role in civil affairs", while the example for the negative pole is "There is no God or gods". An example of the positive pole of the Beta factor is the sentence "Worldly possessions are the greatest good and highest value in life", opposed by the statement "People ought to be motivated by something beyond their own self-interest". The statement "I love and am devoted to my country" provides an example for the positive pole of the Gamma factor, while "I dislike my country" describes the negative pole of that factor. Finally, the sentence "Natural objects (and even Nature itself) have conscious life" is an example of the positive pole of Delta factor, whereas the sentence "No objects have magical or spiritual powers" is an example of the negative pole for that factor. The first and the last ISMS scale consisted of 6 items, while the middle two consisted of 8 items. The ISMS items were administered with a 1 to 5 Likert-type scale, ranging from 1 = *Very Inaccurate* to 5 = *Very Accurate*, as in the original instrument. All four versions of the measures used (English and Croatian SAS and ISMS) are available from authors upon request.

Results

The results are ordered in the following way: Firstly, internal psychometric analyses of SAS_G are reported. Secondly, analyses based on both the SAS_G and ISMS are reported.

Internal Analyses of SAS_G

Descriptive statistics and reliability analysis

The descriptive statistics of self-reports and peer-ratings are presented in the Table 1. The means of the peer ratings are fairly similar to self-reports with the greatest discrepancy in the case of Cosmopolitism (t_{paired}=6.90; p<0.01; d=.35) and Social Justice (t_{paired}=4.92; p<0.01; d=.28). Students tend to describe themselves as more cosmopolitan and sensitive to social justice compared to the ratings of their peers. Arguably, peer-ratings may thus provide a more realistic portrait of a target person in relation to social justice as they are less distorted by participant bias towards socially desirable presentation. Our findings can be related to the SOKA (self-other knowledge asymmetry) model in personality psychology by Vazire and colleagues (Vazire, 2010; Vazire & Mehl, 2008) which asserts that "other-ratings" are more accurate for highly evaluative traits such as Intellect while self-ratings are more accurate for traits low in observability such as Neuroticism. An important conclusion of the SOKA model is also that both self and other perspectives are important for an accurate representation of personality which is a finding that can be applied to the issue of self vs. other ratings for knowledge on social attitudes. Finally, significant but less pronounced differences were also found in the self- and peer-ratings for Religiosity and Modern technology.

Table 1 also presents the internal consistency reliability estimates for each of the five SAS_G domains in self-reports and peer-ratings. All 10 alpha coefficients were high, ranging from .76 to .93. The average value of alpha coefficients for self-reports (.86) was nearly identical to that of peer-ratings (.87). Taking into consideration that each scale consisted of only five items, we can conclude that all subscales have reasonably high internal consistency with Religiosity and Modern technology showing exceptional reliability.

Table 1. Descriptive statistics and Cronbach's αs of the SAS_G subscales

Subscales	Self-report			Peer-report			Self-peer differences		
	Mean	SD	α	Mean	SD	α	t_p	p	d
Religiosity	3.08	1.10	.93	3.19	1.06	.93	-3.22	.001	-.10
Sexual Freedom	3.23	0.80	.81	3.16	0.85	.83	1.91	.056	.08
Cosmopolitism	4.04	0.79	.87	3.77	0.72	.86	6.90	.000	.35
Modern technology	4.24	0.80	.93	4.36	0.68	.93	-3.16	.002	-.17
Social Justice	4.01	0.68	.76	3.82	0.68	.81	4.92	.000	.28

Notes: N=452. α= Cronbach's α; t_p= t value for paired samples; p= probability of t_p if H_0 was true; d= effect size. Means and SD for scales are calculated on the basis of averaged item endorsement.

For the comparison, descriptive statistics and basic reliability and validity measures for ISMS subscales can be found in Table 2. The reliabilities of ISMS subscales are acceptable but generally lower than those found for the SAS_G. The validities of ISMS subscales indicated by self-peer correlations are reasonably high, ranging from .32 to .67.

Table 2. Descriptive statistics and Cronbach's αs of the Sauciers Isms subscales

Subscales	Self-report			Peer-report			Self-peer differences			Self-peer correlations
	Mean	SD	α	Mean	SD	α	t_p	p	d	
Alpha	2.94	0.90	.79	2.95	0.82	.75	-0.26	.796	-.009	.67**
Beta	2.12	0.57	.66	2.28	0.59	.70	-5.02	.000	-.280	.32**
Gamma	3.59	0.54	.66	3.59	0.47	.55	0.34	.734	.017	.37**
Delta	3.12	0.77	.72	2.94	0.75	.72	5.28	.000	.231	.55**

Notes: N=452. α= Cronbach's α; t_p= t value for paired samples; p= probability of t_p if H_0 was true; d= effect size. Means and SD for scales are calculated on the basis of averaged item endorsement.

Convergent and discriminant validity of SAS_G

The evaluation of the convergent and discriminant validity of SAS_G is presented in Table 3. We calculated the intercorrelations among the SAS_G scales, separately for self-reports and peer-ratings, as well as the

correlations between the five scales in two ratings. The convergent validity (or monotrait-heteromethod) coefficients (Campbell and Fiske, 1959) are listed in the upper-right diagonal of Table 3. A comparison of these coefficients with the heterotrait-heteromethod coefficients reveals that convergent correlations were consistently and substantially stronger than their discriminant counterparts. The average self/peer convergent validity correlation was .51, substantially higher than the average absolute discriminant validity correlation of .13[1]. It should also be noted that the obtained results do not differ from the self-peer correlations found on various personality measures (Costa & McCrae, 1992; Jackson, 1984), providing compelling evidence that peer report could be useful as a validation tool in attitudinal research as well, at least in the domain of general social attitudes. The results presented in Table 3 also indicate that Religiosity and Sexual Freedom subscales share a relatively large proportion of variance, suggesting their close negative interrelatedness. We also observed a substantial correlation between Social Justice and Cosmopolitism. Since these two pairs of scales and the constructs that stand behind them obviously contain some overlapping content, such correlations are theoretically expected. Therefore, we decided to test the model with correlated factors instead of using a simple structure model.

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[1] In all cases, average correlations were computed using Fisher's r to z transformations.

Table 3. Correlations of the SAS_G subscales

		Self-ratings					Peer-ratings				
		R	SF	C	MT	SJ	R	SF	C	MT	SJ
Self-ratings	R	1.00					.78**	-.40**	-.09*	-.07	.08
	SF	-.53**	1.00				-.46**	.56**	.07	.06	-.03
	C	-.15**	.18**	1.00			-.13**	.05	.42**	-.09	.11*
	M	-.07	.11*	.05	1.00		-.06	.07	-.09*	.34**	-.01
	SJ	.09	.08	.27**	.05	1.00	.07	.01	.10*	-.05	.31**
Peer-ratings	R						1.00				
	SF						-.46**	1.00			
	C						-.10*	.15**	1.00		
	M						-.03	.12*	.11*	1.00	
	SJ						.04	.04	.31**	.13**	1.00

Notes. N=452. R=Religiosity; SF=Sexual Freedom; C=Cosmopolitism; MT= Modern technology; SJ= Social Justice. * =p<.05; **=p<.01.

Confirmatory Factor Analysis

In order to identify the underlying dimensionality of the SAS_G, we used both parallel analysis (Horn, 1965) and Velicer's MAP test (Velicer, 1976; O'Connor, 2000). Afterwards we proceeded with confirmatory factor analysis (CFA). All CFA analyses were conducted using AMOS version 6.0 (Arbuckle, 2005). We analyzed the covariance matrix and computed fit indices using maximum likelihood factor analysis estimates to examine the 5-five factor structure of the SAS_G scale. Considering the sample size and possible range of index values for rejecting misspecified models (Hu & Bentler, 1999; Sivo, Fan, Witta & Willse, 2006), a fit was considered to be good if (1) the goodness of fit index was GFI=.93 or above, (2) the adjusted goodness of fit index (AGFI) was AGFI= .92 or greater, (3) the root mean squared error of

approximation (RMSEA) was RMSEA= .06 or less. Additional fit indices were the normed fit index (NFI), and the comparative fit index (CFI).
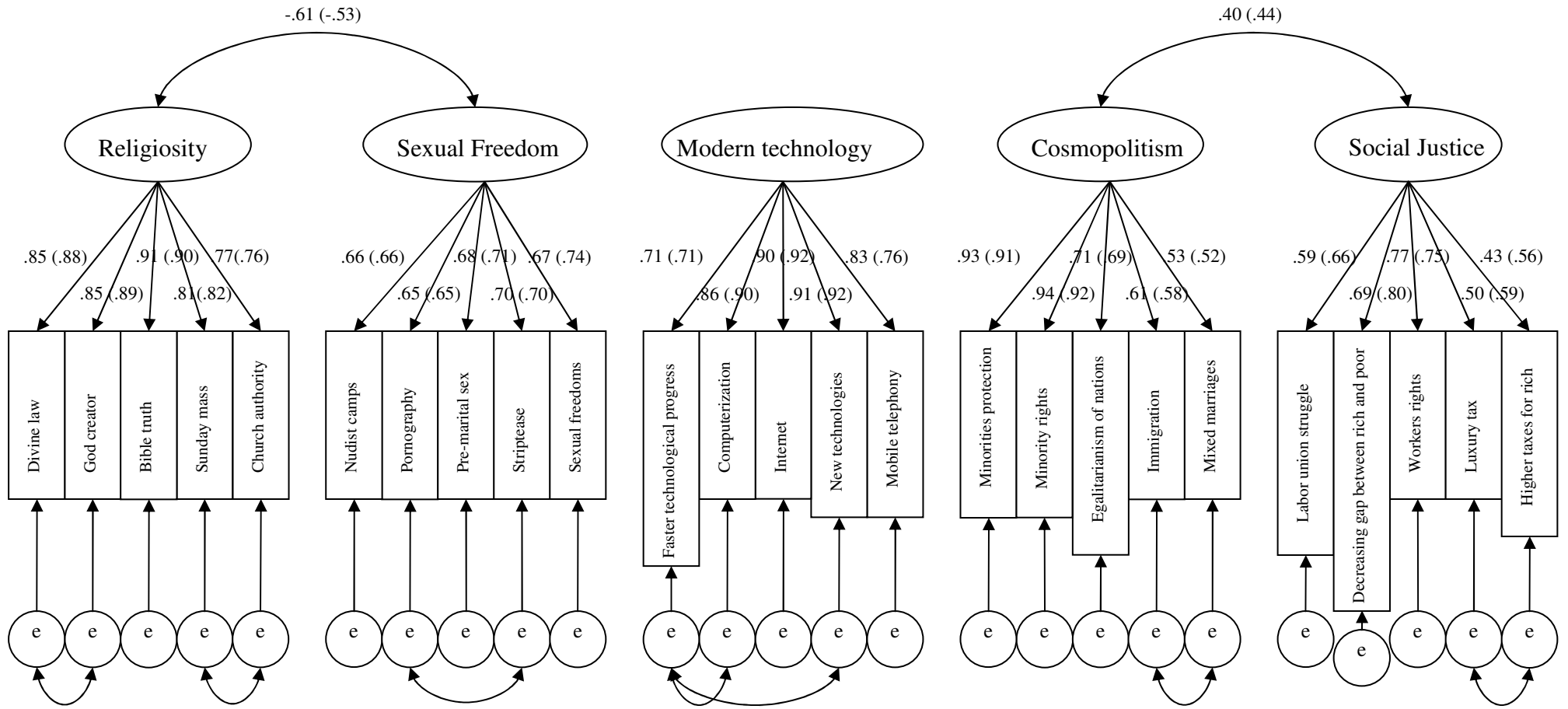
Figure 1. Confirmatory factor analyses of the SAS_G scale.
Notes. The values in parenthesis refer to the peer-ratings.

Both parallel analysis (Horn, 1965) and MAP (Velicer, 1976; O'Connor, 2000) indicated that there were five latent dimensions underlying SAS_G in both self- and peer-ratings. The CFA conducted on both self-reports and peer-ratings, respectively, yielded modest indices of fit that were generally bellow the standard criteria (χ^2=980.02, df=273, p=.000, GFI=.846, AGFI=.817, RMSEA= .076, NFI=.863, CFI=.897 for self-ratings and χ^2=951.49, df=273, p=.000, GFI=.853, AGFI=.825, RMSEA= .074, NFI=.868, CFI=.902 for peer-ratings). Further inspection indicated that the reason for a modest fit may lie in the high interrelatedness of items with similar content within the same factors. When error variances between those items were allowed to correlate freely, the indices of fit had risen substantially. Seven error variances between the following pairs of items remained free: 1 and 2, 4 and 5, 7 and 9, 14 and 15, 16 and 17, 16 and 19 and 21 and 25. CFA (Figure 1) produced better fit indices on both self and peer ratings: (χ^2=613.83, df=266, p=.000, GFI=.901, AGFI=.879, RMSEA= .054, NFI=.914, CFI=.949 for self-ratings and χ^2=662.93, df=266, p=.000, GFI=.900, AGFI=.876, RMSEA= .058, NFI=.911, CFI=.944 for peer-ratings). Although the goodness of fit was acceptable following these interventions, the relatively large number of correlated errors suggests that the scale may need further refinement.

Table 4 reports standardized regression weights and correlations between factors on self- and peer-ratings of the SAS_G scale with or without correlated errors. As can be seen, there is a high agreement between solutions regardless of the method.

General Social Attitudes Scale

Table 4. Confirmatory factor analyses of the SAS_G scale without or with correlated errors

	Factors (Self)										Factors (Peer)									
	R		SF		C		MT		SJ		R		SF		C		MT		SJ	
1. Divine law	.88	.85									.90	.88								
2. God creator	.88	.85									.90	.89								
3. Bible truth	.88	.91									.88	.90								
4. Sunday mass	.82	.81									.83	.82								
5. Church authority	.78	.77									.78	.76								
6. Nudist camps and beaches			.66	.66									.66	.66						
7. Pornography			.72	.65									.74	.65						
8. Pre-marital sex			.65	.68									.68	.71						
9. Striptease			.75	.70									.78	.70						
10. Sexual freedoms			.64	.67									.69	.74						
11. Protection of national minorities					.92	.93									.92	.91				
12. National minority rights					.94	.94									.90	.92				
13. Egalitarianism of nations					.71	.71									.31	.69				
14. Immigration of other nations to our country					.63	.61									.59	.58				
15. Nationally Mixed marriages					.55	.53									.54	.52				
16. Faster technological progress							.79	.71									.77	.71		
17. Computerization							.88	.86									.92	.90		
18. Internet							.88	.90									.90	.92		
19. New technologies							.92	.91									.92	.92		
20. Mobile telephony							.82	.83									.75	.76		
21. Higher taxes for the rich									.56	.43									.61	.56
22. Labor union struggle									.59	.59									.67	.66
23. Decreasing gap between rich and poor									.68	.69									.79	.80
24. Increasing workers rights									.70	.77									.73	.75
25. Luxury tax									.61	.50									.63	.59

Correlations of Factors

	Self		Peer	
R-SF	-.59	-.61	-.50	-.53
C-SJ	.37	.40	.41	.44

Notes. R=Religiosity; SF=Sexual Freedom; C=Cosmopolitism; MT= Modern technology; SJ= Social Justice. All four models are specified with two pairs of correlated factors, R/SF and C/SJ. The standardized regression weights and factor correlations of the model with correlated errors are always given in the second column and printed in italic. Error variances between the following pairs of items remained free: 1 and 2, 4 and 5, 7 and 9, 14 and 15, 16 and 17, 16 and 19 and 21 and 25.

Convergent validity of SAS_G with ISMS

To evaluate the relations between SAS_G and a Croatian translation of Saucier's ISMS (2008), we calculated the correlations between the subscales in two instruments, separately for self-reports and peer ratings. These correlations are summarized in Table 5. The correlations between the subscales from the two instruments measuring general social attitudes were not as high as we have expected. Saucier's (2008) Traditional Religiosity (or Alpha subscale) is, as expected, consistently highly correlated with SAS_G Religiosity. The size of correlation suggests that these subscales are operationalizations of a similar construct. Saucier's Alpha is also consistently but moderately correlated with the SAS_G Sexual Freedom subscale. Beta as the expression of unmitigated self-interest showed modest correlation with the advocacy of sexual freedoms and ethnocentric attitudes which is also consistent with the expectations. Gamma exhibited moderate positive correlation with Religiosity and negative with Sexual Freedom. All the other correlations between the two instruments were low or negligible. The content from the Modern technology and the Social Justice subscales from SAS_G is mostly not represented in ISMS scale, and the same is true for the Saucier's Delta which exhibits negligible correlation with all SAS_G subscales. As we stated in the opening sections of the article, the social attitudes domain is broad and it seems that Saucier's (2008) ISMS and our SAS_G tap somewhat different aspects of the domain. Judging by the size of the correlations, fragments of SAS_G content could be found in ISMS, and vice-versa. However, with the exception of religiosity, other constructs from both scales are not closely related.

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Table 5. Correlations of the SAS_G and Sauciers Isms subscales

		Self-ratings				Peer-ratings			
		Alpha	Beta	Gamma	Delta	Alpha	Beta	Gamma	Delta
Self-ratings	R	.81**	-.10*	.43**	-.05	.69**	-.11*	.35**	.00
	SF	-.44**	.24**	-.31**	.15**	-.37**	.19**	-.23**	.02
	C	.09	.35**	.13**	.20**	.09	.22**	.10*	-.13**
	M	-.05	.13**	.14**	-.09	-.04	.13**	.11*	-.13**
	SJ	.13**	-.19**	.01	.02	.09*	-.06	-.02	-.03
Peer-ratings	R	.67**	-.06	.38**	-.07	.77**	-.13**	.38**	.00
	SF	-.33**	.16**	-.28**	.00	-.37**	.19**	-.23**	.01
	C	.05	.25**	.12**	-.14**	.09*	.34**	-.04	-.18**
	M	-.13**	.11*	.01	-.11*	-.12*	.07	.15**	-.15**
	SJ	.10*	-.14**	-.02	.04	.07	-.22**	.10*	.03

Notes. N=452. R=Religiosity; SF=Sexual Freedom; C=Cosmopolitism; M= Modern technology; SJ= Social

Justice. * =p<.05; **=p<.01.

Discussion

The present study demonstrated satisfactory psychometric properties of the new General Social Attitudes Scale (SAS_G). Our findings confirmed the reliability and to some extent factorial validity of the scale. The reliabilities of subscales can be considered satisfactory. Convergent and discriminant validity based on self-reports and peer ratings are also generally acceptable, but differ somewhat depending on the measured subscale. The Religiosity and Sexual Freedom subscales show the greatest convergent validity, but are highly negatively correlated between themselves. Other subscales showed lesser convergent, but excellent discriminant validity. Confirmatory Factor Analyses produced rather clear 5-factor structures, both in self-reports and peer-ratings with essentially the same regression coefficients. The indices of fit were modest at first, but when errors of similarly worded catch-phrases were allowed to correlate, the goodness of fit rose substantially.

The validation of SAS_G against lexically based Saucier's ISMS indicates that these instruments share only a moderate proportion of variance, and the only construct that could be identified in both measures is Religiosity (Alpha). The content of Sexual Freedom and Cosmopolitism is represented in ISMS, but not within analogous constructs. Sexual Freedom is thus negatively correlated with Alpha and Gamma, and positively with Beta and Delta, while Cosmopolitism shares variance with Beta, Delta and Gamma. Modern technology and Social Justice are mainly independent from ISMS factors. The modest proportion of shared variance is a somewhat unexpected finding, since both instruments are conceived to measure general social attitudes. However, in a recent study, Saucier (2013) utilized multiple ism items in a community sample and identified a new fifth factor that integrates important aspects of the left-right dimension. Judging by the content, this new dimension termed Inequality-Aversion may be related to Social Justice from SAS_G, and also to Cosmopolitism, Sexual Freedoms and Modern technology. Other possible explanation for the modest relations between SAS_G and ISMS may lie in the well-known problem of the comprehensiveness of the lexically based model, namely the extent to which it includes all important social attitude descriptors. Some "outlier" descriptors (e.g. some –ism words that have unique meaning and are not

well represented in factorial model due to the lack of communality) are likely to fit poorly into such a model (Costa & McCrae, 1992; Saucier & Goldberg, 1998). One could also question Saucier's (2000) basic premise that all relevant social attitudes are represented in words ending with –ism. Some words ending with –ism may not be considered social attitudes while at the same time many important social attitudes can be found with different suffixes, and even more importantly, can be better captured by using phrases rather than single words. Moreover, the catch-phrase approach might be faster in capturing the important new objects of social attitudes than the lexical approach where more time is needed for a new word to be recorded in the dictionary. Finally, social attitudes may be differentially relevant to everyday interactions than personality attributes and therefore the rules that apply to the latter may not be as important for the former. We can conclude that two approaches to social attitude scale construction: our, based on constructs derived from existing scales; and Saucier's lexical approach, with the exception of Religiosity, resulted in the identification of different set of basic constructs relevant to field of social attitudes. However, this finding highlights the catch-phrase and the lexical approach as complementary alternatives to the field of social attitudes. Since we did not include measures of other relevant construct from the field of socio-political and ideological attitudes in present research, we can only speculate what their relations with SAS_G would be. Judging from their content and previous research (Saucier, 2000) we can assume that Religiosity and Sexual freedom scales from SAS_G would be highly related to RWA and that Cosmopolitism and Social Justice would correlate with SDO. The moderate to high correlations between Religiosity and Sexual Freedom on one hand, and Cosmopolitism and Social Justice on the other seem to support the hypothesis about at least two relevant higher order ideological dimensions similar to those proposed by the DPM Model of Ideology (Duckitt, 2001; Duckitt et al., 2002; Duckitt & Sibley, 2009). This issue undoubtedly deserves to be addressed in further research. As for the remaining dimension of Modern technology, its inclusion in the social attitudes scale may seem controversial due to its apparent lack of ideological content. However, conservatism is usually defined as a tendency to oppose change in social as well as in technological sphere, and similar dimensions can be found in other social attitudes scales (e.g.

Riemann et al, 1993). We therefore think that this construct has its place among social attitude dimensions and might be relevant in explaining political behavior.

This study has provided evidence that SAS_G is a reliable and factorially valid measure for assessing basic social attitudes as derived from salient attitude scales. Although a few items (e.g. Sunday mass) can be viewed as culturally specific, they can be easily adapted into other cultures (Friday Worship, Observing Sabbath) that capture the same meaning, e.g. adhering to religious practices. As self-peer correlations show a reasonable degree of agreement, both could be used in judging one's ideological position. Although respondents were explicitly asked to not discuss the survey with their peers, we cannot rule out the possibility that any obtained self-peer correlations were not potentially inflated due to communication between target respondents and their acquaintances. Nevertheless, the size of the obtained correlations does not deviate from those in similar streams of research (Cohrs et al, 2012; Kandler et al., 2011). This suggests that the majority of respondents did not disregard the appeal and although the communication between respondents was possible, it did not have a substantial effect on the findings of this study.

Despite the acceptable psychometric properties, the scale has some limitations. Some preliminary work has been conducted on investigating predictive validity of SAS_G, namely its possibility to predict and explain political behavior, prejudice and other relevant attitudes and behavior (Milas & Burušić, 2004) however the predictive validity needs to be further investigated. The present research has another important limitation; namely the convenience sample of college students that participated in the study. Future cross-cultural studies ought to compare the characteristics of our measures in highly educated samples with more representative samples including wider age, educational and status ranges, since these factors could play an important role in evaluating the issues included in the scales. Also, an important further step in validation is establishing a nomological network of SAS_G within a comprehensive correlational study that would investigate relationship with other relevant constructs in the ideological sphere (e.g. RWA, SDO) and with relevant personality dimensions.

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