

The relationship between psychosocial development and political orientation:
Conservatism or Extremism?

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Abstract

In three samples of college students, psychosocial development was positively related to economic conservatism. We tested the generality of this relationship with a national sample of adult respondents from the United States. The result was instead consistent with an alternative hypothesis that psychosocial development is related to political extremism. Higher levels of psychosocial development were associated with lower levels of political extremism, liberal or conservative. To our knowledge, this is the first report of an association between psychosocial development and political orientation.

Psychosocial development is negatively correlated with political extremism

Recently we began studying college students through a developmental lens to try to understand what we and others perceived to be a fundamental shift in attitudes and behavior on college campuses (Martin et al., in preparation). Because this work had a political element to it, but outside the scope of that research, we collected political orientation scales for the purpose of exploratory analyses. Unexpectedly, we found a positive correlation between economic conservatism and psychosocial development, detailed in Study 1 below. That is to say, students who scored higher on a measure of psychosocial development from an Eriksonian perspective also reported being more conservative on economic issues. In two subsequent studies, including one pre-registered confirmatory survey, we replicated this finding. Finally, a more representative sample was obtained through a commercial sampling service to evaluate the generality of this finding. We found that in a sample with greater ranges of age, education, and income, the linear relationship between psychosocial development and political orientation did not obtain, but rather a non-linear relationship obtained. This relationship, while not predicted, is explainable by existing theory, as detailed in this report.

Study 1

Political Orientation

The project of political psychology is to describe, and to the extent possible explain, the psychological correlates and determinants of political thought and behavior (Stone et al., 1988). A vast literature since the mid-twentieth century has pursued this goal, with some enduring successes and plenty of garden paths. Political orientation, sometimes referred to as political ideology, is often thought of as a single dimension, with one pole variously labeled “left”, “liberal”, “progressive”, or more rarely “radical”, and the other labeled “right”, “conservative”,

or “reactionary” (Jost, 2006; Jost, Federico, & Napier, 2009; Jost, Nosek, & Gosling, 2008; Tetlock, 1983). When conceived in this way, the “left” side of the spectrum is typically associated with an emphasis on challenging traditions in order to bring about a political order perceived as better than the status quo. The “right”, on the other hand, is associated with an emphasis on defending tradition and maintaining the status quo, on the belief that traditions survive because they have some (perhaps unknown) value and change often brings unforeseen and unintended consequences that are worse than the problems of the status quo.

Several correlates of political orientation, conceived as a single dimension, have been reported. Conservatism is negatively correlated with the Big Five personality trait of openness to experience and positively correlated with conscientiousness (Caprara, Barbaranelli, & Zimbardo, 1999; Carney, Jost, Josling, & Potter, 2008). Correlations with other Big Five traits are less consistent (Gerber, Huber, Doherty, & Dowling, 2011), but include positive correlations between neuroticism and liberalism (Burton et al., 2015; Gerber et al., 2010) and between agreeableness and economic liberalism but social conservatism (Gerber et al., 2010). Conservatives and liberals reason differently about morals, with conservatives using five principles of moral reasoning more or less evenly while liberals concentrate on just a couple of moral principles (Graham, Haidt, & Nosek, 2009). Conservatism has been reported to be positively correlated with motivated cognition (Eidelman et al., 2004; Jost, Glaser, Kruglanski, & Sulloway, 2003), disgust sensitivity (Inbar, Pizarro, & Bloom, 2009) and avoidance of novelty (Shook & Fazio, 2009), and intolerance of ambiguity (Sidanius, 1978). Jost and colleagues (Jost, Glaser, Kruglanski, & Sulloway, 2003; Jost, Napier, Thorisdottir, Gosling, Palfai, & Ostafin, 2007) have proposed that conservatism is a mechanism for dealing with fear of death. In contrast Helminen et al. (2022) found that anxiety was better predicted by concerns about economic inequality and the

environment, attitudes more associated with the political left, and Gimbrone et al. (2022) found that psychological internalizing was associated with liberal ideology among American adolescents. Perhaps of greatest relevance to the current report, age has long been known to be positively correlated with conservatism (Cornelis, van Hiel, Roets, & Kossowska, 2009; Feather, 1977; Glenn, 1974; Pollak, 1943; Ray, 1985).

Some social scientists have argued in favor of a two-dimensional model, although there is disagreement about whether these represent the same left-right dimension in two domains of social and economic thinking or a more fundamentally different dimension of libertarian-authoritarian orthogonal to the left-right continuum (Fleishman, 1988; Heath, Evans, & Martin, 1994; Treier & Hillygus, 2009). Other suggested dimensions have either been less influential or fallen out of favor, such as tender-tough mindedness (Eysenck, 1976). In any case, conservatism tends to favor either the status quo or some past idealization of society. The terms “liberal” and “liberalism” have different meanings in different contexts (i.e., “economic liberals” in past decades were those calling for free market capitalism, a conservative ideal in most political contexts in more recent decades), but here we will be referring to attitudes favoring egalitarian ideals and change in traditions and institutions.

Given these definitions of conservatism and liberalism, a model of political orientation or ideology that posits two dimensions of liberalism-conservatism in economic and social domains is distinct from one that posits a single liberalism-conservatism dimension and a libertarian-authoritarian dimension. For convenience in the following discussion, let us refer to the former model as the social-economic model and the latter as the direction-coercion model (direction referring to left or right).

The relationship between these two models can be thought of as being like the relationship between a factor analysis in two different angles of rotation: both explain the same data to the same degree, but the interpretations of the dimensions are different. Altemeyer (1981) famously described right-wing authoritarianism as consisting of three positively correlated factors: authoritarian aggression, authoritarian submission, and conventionalism, and in recent years this personality structure has also been observed in people with left-wing views (Conway et al. 2017; Costello et al., 2022). Because the latter two dimensions, submission and conventionalism, regard personal conduct, libertarianism (as that term is applied in the United States to refer to the philosophy of maximal personal freedom and minimal government interference) has little to say about authoritarian submission or conventionalism. As a counterweight to libertarianism, therefore, the most relevant factor is authoritarian aggression, the tendency to support state coercion and engage in aggression against targets perceived as sanctioned by legitimate authority. The key difference between authoritarianism and libertarianism can be thought of as a difference in tolerance for state coercion. Authoritarians believe that state coercion should be used to enforce good behavior, while libertarians believe that state coercion is justified only in very limited circumstances such as interpersonal violence and enforcement of contracts (Zwolinsky, 2016).

The developmental lens: Erikson's stage theory of psychosocial development

Psychosocial development refers to the development of a self-concept, attitudes, and behavioral coping mechanisms for dealing with the social milieu, including immediate family, friends, and the wider culture in which a person is embedded. Erikson (1950) proposed an elaborate theory of psychosocial development that proceeded in eight distinct stages. At each

stage, according to Erikson (1950), there was a critical conflict or crisis to be overcome to develop the sense of self necessary for healthy psychological functioning. For example, in the first stage, called trust vs. mistrust, infants and young toddlers learn either that their basic survival needs will be provided through social engagement or that socially interacting with their environment is an unreliable method to satisfy basic needs. Resolution of this conflict in favor of trust sets the stage for developing a sense of independence in the next stage of autonomy vs. shame. Failure to resolve this conflict results in feelings of futility toward or fear of independent action in future development. Failure at any stage lays the foundation for the development of psychopathology, particularly if stressors overwhelm the maladaptive coping mechanisms that emerge on the negative pole of each crisis. Although Erikson (1950) did not delineate precise age ranges for the stages, he did assert that they developed in a predictable order which was more or less the same for everyone.

Erikson's theory is explicitly a cross-cultural theory. Although many of the concepts he used, such as productivity, have a particular meaning in a Western industrialized context, Erikson (1950) was adamant that the development of such personal characteristics as productivity were relative to what productivity meant in a particular culture. Healthy development from an Eriksonian perspective meant a willingness and ability to take on adult roles and gain satisfaction from those roles, however those roles were defined in a particular social or cultural context. Thus, the successful resolution of an Eriksonian stage might look quite different in different cultures, but the underlying crisis was essentially the same.

Politics and Eriksonian development

The political implications of Erikson's developmental theory have been explored previously, although to our knowledge it has never been directly tied to political orientation. To explain intergroup violence, particularly between nation states, Erikson (1969) himself described a process he called pseudospeciation, in which the process of developing the self in relation to a community caused one to view members of that community as humans, while outgroup members were seen as subhuman or at least other than human. Smith (1976) argued that pseudospeciation, seen as a normal part of development, would be consistent with a conservative ideology favoring between-group hierarchy and an emphasis on group-cohering traditions. Our own view is that Erikson's emphasis on independent productivity (i.e., autonomy vs. shame, generativity vs. stagnation), whatever that meant within a given cultural context, would likely favor a conservative political orientation, at least in a Western context where the liberal or leftist orientation(s) more generally emphasized dependence and interdependence rather than independence.

A different theoretical role of psychosocial development in political orientation is suggested by Marcia's (1966) elaboration of Erikson's theory focusing on the late adolescent and adult stages of identity vs. diffusion, intimacy vs. isolation, generativity vs. stagnation, and integrity vs. despair. Marcia (1966; Marcia & Josselson, 2012) characterized the degree to which a person had achieved an integration of their identity at these stages as having four potential states: identity achievement, moratorium, foreclosure, and diffusion. Achievement essentially maps onto Erikson's concept of a successful resolution of a stage's crisis, with subsequent integration of new psychosocial skills into a person's identity. Identity moratorium refers to a delay in committing to a particular resolution of the crisis. Foreclosure refers to the acceptance of a default resolution given by important others, such as parents, rather than the authentic

resolution unique to a particular person's identity. Finally, diffusion represents unsuccessful resolution of conflicts, like outcomes at the less developed range of an Eriksonian stage.

This concept of identity development has been used as a lens to theorize about the psychological roots of terrorism. Schwartz, Waterman, and Dunkel (2009) have suggested that, along with many other predictors, a foreclosed or diffused identity is a contributor to the likelihood of engaging in terrorist activities. O'Brian (2010) used qualitative biographical data to argue that such identities may explain the existence of prominent terrorists who come from privileged backgrounds, who are otherwise largely anomalous from a perspective of terrorism as attracting alienated societal outsiders. In terms of political orientation or ideology, this perspective suggests that psychosocial development should be negatively correlated with political extremism rather than positively correlated with conservatism. In this view, extreme leftwing or rightwing views are associated with lower levels of psychosocial development, while moderate views are associated with higher levels of development.

The hypothesis that psychosocial development is associated with extremism implies a non-linear relationship with political orientation. Low psychosocial development, under this hypothesis, might be related to far left or far right views, while higher levels of psychosocial development would imply moderate views, or the middle of the scale. Therefore, the hypothesis implies a non-linear relationship between psychosocial development and political orientation. Alternatively, and following Jost et al. (2007), one could derive a measure of extremism by taking the absolute value or square of a mean-centered political orientation scale, which should be linearly related to psychosocial development. In a mean-centered scale of political orientation, the absolute value of the extreme ends of the scale would both be large and positive, while values

near the mean would all be near the lower end of the transformed scale, creating a variable linearly related to the original criterion variable.

Methods

Participants

All procedures were approved by the Institutional Review Board of the Kennesaw State University. Initially 335 people visited the survey website. The majority (N = 198) were recruited from the subject pool of a large public university in the American south, while the rest were recruited from two online websites that host psychological research: Social Psychology Network (<https://www.socialpsychology.org/expts.htm>) and Psychological Research on the Net (<https://psych.hanover.edu/research/exponnet.html>). Colleges and universities, particularly those lacking extensive research on their own campuses, use these websites to provide research participation experience to undergraduate students, but they are also open to the public and anyone with an internet connection and an interest in participating in psychological research can do so. Everyone participating through these sites was asked to indicate whether they were a college student or not, and if so, to enter the name of their school. Participants were removed if they took less than four minutes to complete the survey (N = 15), did not report being a college student (N = 30), or did not complete enough items to allow us to calculate scores on the MEPSI or Heath et al. (1994) scales (see below; N = 31). Therefore, there were 259 college students in the final sample. The sample consisted of 201 (77.6%) females and 56 (21.6%) males. Two respondents (0.8%) reporting another gender. The mean age was $M = 22.35$ years, $s = 8.84$ years, and included 33 (12.7 %) Hispanic/Latino, 58 (22.4 %) Black or African American, 25 (9.7 %) Asian American/Asian/Pacific Islander, 4 (1.5 %) Native American/Alaska Native, and 139 (53.7 %) White (non-Hispanic) participants.

Materials and procedure

Scales

The Modified Erikson Psychosocial Stage Inventory (MEPSI; Darling-Fisher & Leidy, 1988) is comprised of 80 items divided into 8 subscales assessing each stage of Erikson's theory of lifespan psychosocial development. Respondents rate how often each statement applies to them using a 5-point scale ranging from 1 = hardly ever true to 5 = almost always true. In addition to the 8 subscale scores, the MEPSI can be averaged to provide a single global score that characterizes the extent to which healthy development, as envisioned by Erikson's theory, has been achieved. The MEPSI produces robust reliability (Leidy & Darling-Fisher, 1995) and has been used quite successfully in research with adult populations (see Darling-Fisher, 2018, for a review). For example, Aron and Westbay (1996) found that resolution of intimacy vs. isolation as assessed by the MEPSI predicted ratings of the centrality of intimacy to love by young adults. Caton et al. (2005) found that higher scores on MEPSI were associated with shorter durations of homelessness among adults. Christian and Palkovitz (1998) found using the MEPSI that level of psychosocial development of identity (vs. confusion) and intimacy (vs. isolation), along with identification with the role of father, predicted generativity (vs. stagnation) for fathers. More recently Sekowski et al. (2024) showed that identity (vs. confusion) as measured by the MEPSI predicted suicidality in young adults, when other risk factors (depression, sex, age, physical health, economic condition, religious commitment, and pandemic-related stress) were controlled.

To measure political ideology, we used a scale developed by Heath, Evans, and Martin (1994; Evans, Heath & Lolljee, 1996). This scale has 32 items intended to assess two dimensions of political ideology, variously labeled Left-Right vs Libertarian-Authoritarian, social vs economic liberalism-conservatism, or liberal-conservative vs libertarian-authoritarian. Items are

rated on a 5-point Likert scale anchored at “strongly disagree” and “strongly agree”. The original scale included references to specifically British political entities (i.e., “Young people today don’t have enough respect for traditional British values.”), so we modified it for an international audience by removing such specific references from the items (i.e., “Young people today don’t have enough respect for traditional values.”).

The five personality dimensions of the Big Five theory of personality were measured with the Big Five Inventory (BFI) scale (John & Srivastava., 1999). This 44-item scale includes a global statement “I am a person who...” followed by a list of adjectives. Participants rate the degree to which each adjective completes the statement about themselves, using a 5-point Likert scale anchored by “strongly disagree” and “strongly agree”.

In addition to these measures, in Study 1 respondents filled out scales of political alienation (Olsen, 1969) and over-parenting (Bradly-Geist and Olson-Buchanan, 2014). Results from these scales are reported elsewhere (Martin et al., in preparation) and because they are irrelevant to the current report, we do not discuss them further here.

Data Analysis

Data were analyzed with SPSS 26 (IBM, Inc.). For cases with fewer than 5% missing data, mean imputation was used to replace missing data, while cases with >5% missing responses were excluded from analysis (N=31, detailed above).

For the Heath et al. (1994) scale and BFI we used exploratory factor analysis (EFA) to extract the latent variables of interest. These latent variables are linear combinations of items weighted by factor coefficients estimated to maximize the correlation between latent variables and observed items (Thurstone, 1934). These factor scores then served as predictor and criterion

variables in the analyses reported below. In particular, the factor scores of the latent variable that we labeled Economic Conservatism from the Heath et al. (1994) scale served as our criterion variable in the regression analysis reported below, with factor scores from the BFI factors of conscientiousness and openness to experience serving as predictors, along with the MEPSI global score. Relative to the traditional approach of composite scoring, and then reporting item reliability in the form of alpha or intra-class correlation, exploratory factor analysis has the advantage of minimizing measurement error by discarding unique variance in individual items (Cole & Preacher, 2014; Thurstone, 1931). To derive measures of social and economic liberalism-conservatism from the Heath et al. (1994) scale, we used exploratory factor analysis with principal components extraction of two components, followed by varimax rotation. Factors were then labelled according to item loadings, with the expectation that social items would load more heavily on one factor while economic items would load more heavily on the other factor. We adopted the convention of labeling based on the direction of factor loadings so that the label indicated higher scores. For example, if “liberal” items loaded positively and “conservative” items loaded negatively, we labeled the factor “liberalism”, while if the opposite loading signs obtained we labeled the factor “conservatism”. To derive measures of openness, conscientiousness, and agreeableness from the BFI, we similarly used principal components extraction limited to five components, followed by varimax rotation.

Orthogonal rotation was used for several reasons. First, we have no justification for correlated factors from previous literature on two-dimensional models. Heath et al. (1994) and Evans et al. (1996) reported EFAs of various versions of the scale we used with orthogonal factors. Fleishman (1988) used a two-step procedure in which an EFA was estimated with correlated factors, and a confirmatory factor analysis with uncorrelated factors was fit to the

covariation among factors, resulting in two uncorrelated second-order factors. Second, correlated factors would by definition share overlapping information, reducing the benefit of increasing the model complexity from a single dimensional model. Third, the interpretation of the factors as a two-factor model of political orientation would be complicated by the fact that factor coefficients of determination (square of the factor loadings) would no longer be constrained to sum to unity.

For the stages of the MEPSI, we did not take this approach for the eight stages, because unlike the theoretically orthogonal dimensions of economic and social Liberalism-Conservatism, Eriksonian stages are theoretically and empirically strongly positively correlated. We therefore followed the traditional method of calculating scale scores followed by averaging across the eight subscales to obtain the global MEPSI score according to the formulas given in Darling-Fisher and Leidy (2004). As an interesting comparison, the MEPSI global score calculated in this way correlated $r = 0.983$ with the first principal component of factoring all 80 MEPSI items.

Once these variables were estimated, we used a hierarchical regression to regress political conservatism-liberalism on the MEPSI global score, followed by conscientiousness and openness. We did not use age as a covariate, because age was not significantly correlated with conservatism (see Table 1 below). We then evaluated the model for collinearity by estimating the variance inflation factors, influential outliers by estimating leverage, and normality of residuals with a Kolmogorov-Smirnov test.

All data, including SPSS syntax, are available at [to be uploaded upon acceptance for publication].

Results

The mean for the MEPSI global score was $M = 3.65$, $s = 0.53$. Because the political orientation and personality scores are principle components, their means are all zero with unit

standard deviation. For the MEPSI global rating, Cronbach's alpha = 0.954, and the intraclass correlation coefficient (1-way random) was ICC = 0.946, indicating excellent internal consistency.

Table 1: Means and standard deviations for each study

Study	M _{age}	S _{age}	M _{MEPSI}	S _{MEPSI}
Study 1	21.97	6.6	3.65	0.53
Study 2	20.84	5.48	3.57	0.56
Study 3	21.88	9.3	2.73	0.39
Study 4	44.25	16.59	2.62	0.48

Note. M = mean, s = standard deviation, MEPSI = Modified Erikson Psychosocial Inventory global score. Higher MEPSI scores imply self-reported psychosocial development closer to the positive poles of Erikson's stages. Means and standard deviations for economic conservatism and personality traits are all 0 and 1, respectively, in units of standard deviation, because they are latent variables derived from factor analysis.

The factor loadings for the Heath et al. (1994) scale are presented in the first two columns of Table 2. To facilitate comparison across studies, the table includes factor loadings for these factors for all four studies, with color coding to indicate which items were intended for the Left-Right and Libertarian-Authoritarian scales.

The two factors accounted for a total of 25.79% of the variance in the items. Consistent with past research, the two factors that obtained appeared to split between social and economic issues. Items loading most heavily on the first factor were more related to economic issues, so we took this factor to represent economic conservatism, with higher scores indicating a more

conservative political orientation. The highest loading items on the second factor deal with freedom of association and protest. We labelled this factor social liberalism, although it could arguably be consistent with libertarianism as well.

Correlations are given for the main variables in Table 3. Psychosocial development correlated significantly and positively with economic conservatism, age, and conscientiousness. Consistent with past research, both conscientiousness and openness were significant predictors of political orientation, but in contrast to studies that described only a single continuum of political orientation, these personality traits predicted orthogonal dimensions of political orientation. Conscientiousness was positively associated with both economic conservatism and social liberalism, while openness was positively associated only with social liberalism.

Finally, the hierarchical regression is presented in Table 4. As expected from the correlation matrix, the MEPSI was a significant predictor of political orientation, with higher scores on the MEPSI predicted higher levels of conservatism. When conscientiousness and openness were added to the model, they significantly increased the variance accounted for, although only conscientiousness was a significant predictor. MEPSI uniquely accounted for approximately 14.5 percent of the variance in economic conservatism with these personality traits in the model.

There was no indication of collinearity between the MEPSI and the personality traits (all $VIF < 2.5$). There was no indication of influential observations inflating the correlations, with leverage values ranging from 0 – 0.068. However, the Kolmogorov-Smirnov test indicated a significant deviation of the residuals from normality, $D = 0.07$, $p = 0.004$. The residuals were left-skewed (skewness = -0.033) and leptokurtic (kurtosis = 1.507).

Table 2: Factor loadings of the Heath et al. (1994) political orientation scale

Item	Study 1		Study 2		Study 3		Study 4	
	Econ Conserv	Social Liberalism	Econ Conserv	Social Liberalism	Econ Conserv	Social Liberalism	Conservatism	Libertarianism
There is no need for strong trade unions to protect employees' working conditions and wages.	0.354	-0.329	0.392	-0.343	0.446	-0.375	0.690	-0.073
Homosexual relations are always wrong.	0.045	-0.475	0.244	-0.466	0.202	-0.473	0.652	-0.161
Trade unions should be banned in essential public services.	0.043	-0.424	0.465	-0.218	0.373	-0.547	0.637	-0.027
The less governments intervene in the economy the better.	0.480	0.002	0.661	0.153	0.675	0.012	0.627	-0.066
Private enterprise is the best way to solve the nation's economic problems.	0.660	-0.130	0.687	0.014	0.517	-0.289	0.592	0.111
The welfare state makes people nowadays less willing to look after themselves.	0.500	-0.151	0.586	-0.050	0.674	-0.084	0.578	0.005
Ordinary people get their fair share of the nation's wealth.	0.186	-0.184	0.536	-0.141	0.322	-0.458	0.563	0.078
Even political parties which wish to overthrow democracy should not be banned.	0.321	-0.490	0.313	-0.434	0.131	-0.565	0.557	0.075
Nationalized industries are rarely as efficient as private industries.	0.249	0.022	0.434	0.296	0.667	0.001	0.549	0.136
The law should always be obeyed even if a particular law is wrong.	-0.102	0.094	0.057	0.279	0.098	0.184	0.539	0.057
Many people who get social security don't really deserve any help.	0.624	-0.277	0.698	-0.155	0.396	-0.418	0.524	0.179
Most people who are unemployed could get themselves a job if they really wanted one.	0.224	-0.354	0.514	-0.163	0.312	-0.344	0.517	0.046
Censorship of films and magazines is necessary to uphold moral standards.	0.017	-0.530	0.225	-0.527	-0.020	-0.633	0.475	0.116
Young people today don't have enough respect for traditional values.	0.461	-0.260	0.449	-0.252	0.294	-0.535	0.462	0.091
Even if the majority vote for a strike, employees who want to should be able to go on working.	0.516	0.365	0.235	0.482	0.350	0.014	0.384	0.325
Children should be taught to obey authority.	0.585	-0.212	0.515	-0.275	0.226	-0.390	0.353	0.199
A good society is one where all kinds of different opinions and ways of life can flourish.	0.231	0.620	0.116	0.597	-0.088	0.488	-0.039	0.675
Workers should have a lot of say in running the places where they work.	-0.224	0.325	-0.295	0.180	-0.370	0.337	0.078	0.652
Big business benefits owners at the expense of workers.	-0.415	0.360	-0.492	0.310	-0.442	0.348	-0.058	0.649
People should be more tolerant of those who lead unconventional lives.	0.006	0.603	-0.208	0.463	-0.121	0.607	-0.098	0.630
People should be allowed to organize protest marches and demonstrations.	-0.083	0.752	-0.233	0.742	-0.087	0.636	0.031	0.571
People should be allowed to publish leaflets to protest against the government.	-0.538	0.189	-0.689	0.054	-0.563	0.228	0.093	0.539
Government should redistribute income from the better off to those who are less well off.	-0.075	0.640	-0.320	0.637	0.128	0.744	-0.068	0.539
Government planning is essential to safeguard the nation's economic resources.	-0.135	0.191	-0.054	0.211	-0.392	0.130	0.050	0.520
People should be allowed to organize public meetings to protest against the government.	0.016	0.746	-0.132	0.811	0.146	0.740	0.034	0.497
It is always wrong to cross a trade union picket line when there is a strike.	-0.327	0.321	-0.512	0.200	-0.251	0.377	0.215	0.475
There is one law for the rich and one for the poor.	-0.200	-0.089	-0.121	-0.125	-0.442	0.006	-0.059	0.473
It is more important for the law to protect the innocent than to convict the guilty.	-0.004	0.235	-0.068	0.269	0.070	0.297	0.245	0.458
Major public services and industries ought to be in state ownership.	-0.171	-0.071	-0.095	-0.085	-0.436	-0.072	0.270	0.399
The authorities have too much power to interfere in people's lives.	-0.100	0.443	-0.126	0.421	0.236	0.297	0.203	0.394
It is government's responsibility to provide a job for everyone.	-0.548	0.073	-0.490	-0.062	-0.472	-0.011	0.287	0.336
Ordinary people do not have enough say in how the country is run.	-0.174	0.313	-0.503	0.240	-0.133	0.290	0.208	0.318

Note. Exploratory factor analysis using principal components extraction of two factors and varimax rotation of the Heath et al. (1994) scale. For each item, the cell containing the stronger loading is color coded to indicate whether it is intended to be a Left-Right (gray) or Libertarian-Authoritarian (light blue) item according to Heath et al. Additionally, the four strongest loadings on each factor are bolded. Items are ordered by their relative loading strength in Study 4.

Table 3: Correlations among main variables in Study 1

	1. Economic Conservatism	2	3	4	5
2. Social Liberalism	0.000				
3. Age	0.091	-0.060			
4. MEPSI global	.241**	-0.039	.234**		
5. Conscientiousness	.342**	.222**	0.079	.461**	
6. Openness	-0.078	.263**	-0.055	0.11	0.000

Note. ** $p < 0.01$. MEPSI = Modified Erikson Psychosocial Inventory. Economic Conservatism and Social Liberalism have a null correlation because they are estimated from an orthogonal factor analysis. Higher scores on Economic Conservatism imply greater endorsement of items from the Heath et al. (1994) scale favoring free market capitalism and minimal welfare (see Table 2). Higher scores on Social Liberalism imply greater endorsement of items from the Heath et al. (1994) scale favoring protest rights and different lifestyle choices (see Table 2). Higher MEPSI scores imply self-reported psychosocial development closer to the positive poles of Erikson's stages. Higher scores on conscientiousness and openness to experience imply greater endorsement of BFI items related to those traits.

Table 4: Regression of economic conservatism on MEPSI and personality traits

	Step 1	Step 2
F	17.001	11.554
df	1 255	3 253
p	<0.0005	<0.0005
Adjusted R ²	0.065	0.129
ΔR^2		0.071
$S_{Y X}$	0.953	0.92
MEPSI $\beta(p)$	0.261(<0.001)	0.145(0.03)
Conscientiousness $\beta(p)$		0.275 (<0.001)
Openness $\beta(p)$		-.094(.109)

Note. Coefficients are standardized beta weights. $S_{Y|X}$ = standard error of the estimate.

Discussion

This exploratory analysis revealed a positive correlation between psychosocial development and political conservatism in a sample of mostly American college students. This relationship was not accounted for by the age of participants. Nevertheless, because we did not anticipate or predict this relationship, it may represent a spurious correlation. Although it is possible that another correlate of psychosocial development, unmeasured in this study, accounts for the relationship, that correlate does not appear to be the Big Five traits of conscientiousness and openness, both of which have been shown to predict political orientation in past research.

With few exceptions, our factoring of the Heath et al. (1994) scale resulted in two factors that matched their theoretical item categories, with most items from their Socialist/Laissez-Faire scale loading on the economic factor, and Libertarian/Authoritarian items loading on what we labeled the social liberalism factor. Most of the cross-over items (items that loaded more strongly on the “wrong” factor) had low communality and low factor loadings, but there was one notable exception. The item “Children should be taught to obey authority” loaded relatively heavily on the economic factor in the current data but is theoretically a Libertarian/Authoritarian item.

There was not a relationship between age and either economic or social conservatism. Although age did correlate positively with the MEPSI, it is likely that the restricted range of age in our sample attenuated correlations with other variables, including political orientation.

Study 2

By the time we had found this relationship in exploratory analyses of the data from Study 1, we had collected similar data in another study focused on endorsement of censorship and dogmatism. In order to see if the relationship would replicate, we used data from this independent sample to replicate the results of Study 1.

Methods

Participants

Participants were recruited from the undergraduate participant pool of a large American Southeast university, and the same two websites used in Study 1: Social Psychology Network (<https://www.socialpsychology.org/expts.htm>) and Psychological Research on the Net (<https://psych.hanover.edu/research/exponnet.html>). Thus this is a convenience sample of mainly college student volunteers. A total of 413 people visited the online survey. After removing those who did not consent (N = 61), those who took less than four minutes to complete the survey (N =

19), those who denied being students ($N = 37$), and those who did not answer enough items to compute one or more of the measures ($N = 24$), the final sample was composed of 272 college students.

Materials and procedures

As in Study 1, the MEPSI (Darling-Fisher & Leidy, 1988) was used to measure psychosocial development, and the global MEPSI score was computed as the average of the eight subscale scores. Similarly, political orientation was measured with the Heath et al. (1994) scale. In addition, in this study dogmatism was measured with Altemeyer's (2002) dogmatism scale, and individualism-collectivism was measured using the scale of Singelis, Triandis, Bhawuk, and Gelfand (1995). Because those scales are not relevant to the current analysis, they are not discussed further here.

Unlike Study 1, we did not measure traits of the Big Five factor model of personality. We had dropped this measure in order to keep the number of scales and total survey time down to a reasonable length with the dogmatism and individualism-collectivism scales.

Data Analysis

Data were analyzed with IBM SPSS 26. Cases with >5% missing responses were discarded, while mean imputation was used to replace missing responses for those with <5% missing. As in Study 1, measures of political orientation were derived by factoring the Heath et al. (1994) scale with principal components extraction of two factors followed by varimax rotation. The MEPSI global score was again calculated by averaging the eight subscale scores (Darling-Fisher & Leidy, 2004).

All data, including SPSS syntax, are available at [to be uploaded upon acceptance for publication].

Results

Means for the MEPSI and age are given in Table 1. The MEPSI scale had excellent internal consistency, Cronbach's alpha = .959, ICC = .951 (1-way random). For the social factor of the Heath et al. (1994) scale, Cronbach's alpha = .814, ICC = .761 (1-way random, absolute agreement). For the economic conservatism factor, Cronbach's alpha = .681, ICC = .57 (1-way random, absolute agreement).

The exploratory factor analysis of the Heath et al. (1994) scale is presented in Table 2. Once again items on the scale more or less cleanly split into a social and an economic factor, with a very similar structure to that seen in Study 1. The social factor again had positive loadings for "liberal" items and negative loadings for "conservative" items, so we labeled this factor social liberalism.

Table 5 presents the relevant correlations. Once again the MEPSI score was positively associated with economic conservatism but not social liberalism. Age was again unrelated to economic conservatism, although it was positively correlated with social liberalism in this sample. Also unlike Study 1, MEPSI scores did not correlate significantly with age in this sample.

Table 5: Correlations among main variables in Study 2

	1. Economic Conservatism	2	3
2. Social Liberalism	0.000		
3. MEPSI	.214**	0.015	
4. Age	-0.028	.125*	0.046

Note. Social Liberalism and Economic conservatism have a null correlation because they are latent factors estimated with exploratory factor analysis. Higher scores on Economic Conservatism imply greater endorsement of items from the Heath et al. (1994) scale favoring free market capitalism and minimal welfare (see Table 2). Higher scores on Social Liberalism imply greater endorsement of items from the Heath et al. (1994) scale favoring protest rights and different lifestyle choices (see Table 2). Higher MEPSI scores imply self-reported psychosocial development closer to the positive poles of Erikson's stages.

Discussion

We once again observed a positive correlation between economic conservatism and psychosocial development, in an independent sample of predominantly but not exclusively American college students. We were not able to replicate the analysis from Study 1 exactly, as personality traits had not been measured in this sample, but several patterns from Study 1 were replicated. Once again age was not related to economic conservatism in this sample, although it was related to social liberalism. This may reflect a restriction in the range of ages included in the sample. However, despite this restriction in range, there was a positive correlation between social liberalism and age in this sample, unlike in Study 1.

This replication increases our confidence that the association between psychosocial development and economic conservatism reflects a true relationship in the population, but once again this relationship was not predicted a priori, and our analyses were not planned. Therefore, we conducted Study 3 with pre-registration of sampling plan and analyses to further substantiate or refute the existence of this relationship.

Study 3

Having found an unexpected relationship between psychosocial development and economic conservatism in exploratory analyses of two independent but highly similar data sets, we elected to pre-register a replication study before reporting our finding (see below).

We tested the following hypothesis: Psychosocial development as measured by the MEPSI scale positively correlates with political conservatism as measured with the Heath et al.(1994) scale. This correlation is not accounted for by personality variables that predict political orientation (openness to experience and conscientiousness). It is also not accounted for by age (i.e., the phenomenon that older people tend to be more conservative).

Methods

Participants

Participants were recruited from two large universities, one in the American Southeast and one in the American Southwest, and two online websites that host links to psychological research: Social Psychology Network (<https://www.socialpsychology.org/expts.htm>) and Psychological Research on the Net (<https://psych.hanover.edu/research/exponnet.html>). A total of 308 people visited the informed consent page of the survey. After the application of exclusion criteria, the sample included 231 participants. Exclusion criteria included taking less than four minutes to complete the survey (N=28), failing to provide date of birth or being younger than 18 years (N=35), and failing to respond to more than four questions on any of the main scales of interest (MEPSI, Heath et al. scale, BFF; N = 14). We did not exclude non-students in this sample, in order to increase the generalizability of the sample. Ages ranged from 18-72 years, $M_{\text{age}} = 22.2$, $S_{\text{age}} = 9.38$. There were 61 (25.7%) males and 172 (72.6%) females, with four not answering. There were 127 (53.6%) White, 37 (15.6%) Black or African American, 23 (9.7%)

Hispanic, 21 (8.9%) Asian, 23 (9.7%) reported multiple ethnicities, and 5 (2.1%) preferred not to answer.

Despite dropping the college student requirement for participation, the majority of participants were college students ($N = 213$, 89.9%), while 23 (9.7%) reported not being enrolled in college, and one (0.4%) did not answer. There was a significant difference in ages between those who reported being university students ($M = 20.90$) and those who did not ($M = 33.09$), $t(234) = -6.538$, $p < 0.0005$.

Materials and procedures

As with the exploratory studies, we used the MEPSI, Heath et al. (1994) scale, and BFI (John & Srivastava, 1999) to measure psychosocial development, political ideology, and personality respectively.

In addition to the Heath et al. scale, we assessed political orientation using the simpler, more common, but less complete single item, “Overall, where would you place yourself on the following scale of liberalism-conservatism?” and the two adjunct items used by Carney et al. (2008), “In terms of social and cultural issues (e.g., abortion, separation of church and state, affirmative action), where would you place yourself on the following scale?” and “In terms of economic issues (e.g., taxation, welfare, privatization of social security), where would you place yourself on the following scale?” Each item was followed by a 7-point Likert scale anchored by “Extremely liberal” at 1 and “Extremely conservative” at 7, with 4 labeled “Moderate”. Throughout the rest of this report, we will refer to these three items as overall, social, and economic conservatism, respectively, keeping in mind that the Heath et al. scale is ideally measuring the same construct, albeit differently.

Finally, for more exploratory analysis, we included the State-trait inventory for cognitive and somatic anxiety (STICSA; Ree, French, MacLeod, & Locke, 2008). The STICSA is comprised of two identical sets of 21 items that assess cognitive and somatic manifestations of anxiety, one for current feelings (state) and one for chronic feelings (trait). Because results of this instrument are not relevant to the current report, we do not comment further on this scale.

This study was pre-registered with the Open Science Foundation website at <https://osf.io/j3swg> on August 14, 2019, prior to data collection. In that registration we laid out the analysis plan reported below.

Data Analysis

Data were analyzed with IBM SPSS 26. As in the previous studies, MEPSI global scores were calculated according to Darling-Fisher and Leidy (2004), and economic and social conservatism were estimated as latent factors using principal components extraction and varimax rotation of two factors of the Heath et al. (1994) scale. Personality traits were similarly estimated by principal components extraction of five factors from the BFI, followed by varimax rotation. Stepwise regression was then used to evaluate the relationship between economic conservatism and psychosocial development, with MEPSI entered in the first step, followed by conscientiousness and openness in the second step. Once again age was not entered into the regression, because it did not correlate significantly with economic conservatism (see below).

We also conducted exploratory analyses of the simpler and more common measures of political orientation, the three single items measuring conservatism, economic conservatism, and social conservatism. Specifically, we estimated correlations among these single items, the economic and social factors of the Heath et al. (1994) scale, and the MEPSI.

All data, including SPSS syntax, are available at [to be uploaded upon acceptance for publication].

Results

Descriptive statistics for age and MEPSI are given in Table 1. Once again MEPSI had excellent internal consistency, Cronbach's alpha = .955, ICC = .945 (1-way random, absolute agreement). For the political scale, items loading most heavily on the economic conservatism scale had Cronbach's alpha = .781, ICC = .709 (1-way random). The social liberalism scale had Cronbach's alpha = .826, ICC = .765 (1-way random, absolute agreement).

The factor loadings of the exploratory factor analysis of the Heath et al. (1994) scale are given in Table 2. Together these two factors accounted for 30.2% of the variance in the items.

The correlations among the main variables are given in Table 7. Once again MEPSI global scores were positively associated with economic conservatism. Unlike Studies 1 and 2, however, MEPSI was also significantly and negatively correlated with social liberalism in this sample. As in Study 1, but in contrast to Study 2, MEPSI scores were also positively correlated with age. As in Study 2, age did not correlate with economic conservatism, but was positively associated with social liberalism. Finally, replicating the pattern seen in Study 1, conscientiousness was positively correlated with economic conservatism, while openness was positively correlated with social liberalism.

The main regression is presented in Table 6. Evaluation of collinearity indicated no problems, with all variance inflation factors <2.5 (max = 1.262). Leverage values ranged between 0.0004 – 0.0504, indicating no unduly influential observations. A Kolmogorov-Smirnov test did detect significant deviation of the residuals from normality, $D = 0.112$, $p < 0.001$. The residuals were right skewed (0.676) and leptokurtic (2.84).

As predicted, MEPSI was a significant predictor of political ideology, and in the predicted direction. Despite the fact that conscientiousness was significantly correlated with economic conservatism, the addition of conscientiousness and openness to the equation did not result in significantly greater predictability, and neither personality trait was a significant predictor of economic conservatism.

Table 6: Regression of economic conservatism on MEPSI and personality traits

	Model 1	Model 2
F	10.72	3.83
df	1,229	3,227
p	0.001	0.011
Adjusted R ²	0.041	0.036
ΔR^2	0.045**	0.003
β_{MEPSI}	0.211 **	0.189 *
$\beta_{\text{Conscientiousness}}$		0.055
β_{Openness}		-.031

Note. * $p < 0.05$ ** $p < 0.01$. Coefficients are standardized beta weights. $S_{Y|X}$ = standard error of the estimate.

Finally, the correlations among the MEPSI, single-item measures, and Heath et al. (1994) factors are presented in Table 6. Psychosocial development is significantly correlated with each measure of political orientation, and in the predicted directions.

Table 7. Correlations among MEPSI and political orientation measures

	1.MEPSI	2	3	4	5
2. Conservatism	.182**				
3. Conservatism - social	.256**	.777**			
4. Conservatism - economic	.253**	.752**	.629**		
5. Heath et al - Social Liberalism	-.204**	-.454**	-.474**	-.373**	
6. Heath et al - Economic Conservatism	.228**	.506**	.434**	.525**	0.000

Note. * $p < 0.05$ ** $p < 0.01$. Items 2-4 are single-item measures. MEPSI = Modified Erikson Psychosocial Inventory. Economic Conservatism and Social Liberalism have a null correlation because they are estimated from an orthogonal factor analysis. Higher scores on Economic Conservatism imply greater endorsement of items from the Heath et al. (1994) scale favoring free market capitalism and minimal welfare (see Table 2). Higher scores on Social Liberalism imply greater endorsement of items from the Heath et al. (1994) scale favoring protest rights and different lifestyle choices (see Table 2). Higher MEPSI scores imply self-reported psychosocial development closer to the positive poles of Erikson's stages. Higher scores on conscientiousness and openness to experience imply greater endorsement of BFI items related to those traits.

Discussion

We replicated the exploratory finding that psychosocial development, as measured with the MEPSI, was positively associated with economic conservatism. This relationship was not accounted for by age, which itself was not significantly related to economic conservatism in this sample. It was also not collinear with the known relationships between political orientation and personality traits of conscientiousness and openness, although the suppression of conscientiousness in the regression suggests that psychosocial development and conscientiousness explain common variance in economic conservatism.

Study 4

Having confirmed a positive correlation between self-reported psychosocial development and political orientation in college students, observed in three independent samples, we were encouraged to test the generality of this result in a more representative sample of adults in the

United States. Study 4 tested the hypothesis that psychosocial development is positively related to economic conservatism in a sample obtained from a commercial research company's participant pool.

Methods

Participants

A quota sample (N=272) was obtained via Qualtrics, in which sampling from the Qualtrics participant pool was adjusted to mirror as closely as possible the U.S. census data for age, sex, education level, income, geographic region, and ethnicity. Age ranged from 18 to 81 years, $M_{\text{age}} = 44.25$. There were 126 males (46.3%), 145 females (53.3%), and one who declined to report their sex. Fourteen (5.15%) were Asian or Pacific Islander, 29 (10.66%) African American, 36 (13.24%) Hispanic or Latino/a, 174 (63.97%) White, one (.37%) Native American or Alaska Native, 16 (5.88%) who reported multiple ethnicities, and 2 who declined to answer. Education ranged from less than a high school diploma (N=12, 4.4%) to a doctorate or professional degree (N = 12, 4.4%), with a modal respondent having only a high school degree (N=98, 36%). Incomes ranged from less than \$10,000 annually (N = 16, 5.88%) to greater than \$150,000 per year (N = 34, 12.5%), with a median of \$60,000.

Materials and procedure

All procedures were approved by the IRB of Kennesaw State University. Informed consent was obtained at the first step of the online survey. This study was pre-registered at <https://osf.io/zmgan>. At the time of preregistration, no data had been collected.

Scales

Once again the MEPSI (Darling-Fisher & Leidy, 1988) was used to measure psychosocial development, and the Heath et al. (1994) scale to measure political orientation. In

addition to these measures, we also used the three items commonly used to measure political orientation more explicitly (see Carney et al. 2008).

The five personality dimensions of the Big Five theory were measured with the Ten-Item Personality Inventory or TIPI (Gosling, Rentfrow, & Swann, 2003). As the name suggests, the TIPI consists of ten items. Each item is a pair of near synonyms or phrases (i.e., reserved, quiet) that complete the prompt “I see myself as...” rated on a 7-point Likert scale anchored by “strongly disagree” and “strongly agree”. Each trait is tapped by two items, one positive and one negative for that trait. For example, for openness the two pairs of adjectives consist of “open to new experiences, complex” and “conventional, uncreative”. We chose this scale because the MEPSI and Heath et al. (1994) scales are relatively long, but the personality traits of Openness and Conscientiousness were desirable as covariates because of their known association with political orientation, and the TIPI, despite its brevity, reportedly had relatively strong construct validity and reliability.

Data Analysis

Data were analyzed with SPSS 28 (IBM, Inc.). For the Heath et al. (1994) scale we used exploratory factor analysis (EFA) to extract the latent variables of interest. The TIPI has too few items to effectively factor, so instead we averaged each pair of items associated with a Big Five trait, with appropriate recoding for items worded for each end of the theoretical dimension in question. For example, “open to new experiences, complex” was averaged with a reverse-coded “conventional, uncreative” to create openness to experience. The MEPSI was scored as in Studies 1 – 3.

To test the hypotheses, we used a hierarchical linear regression model. As a first step, we regressed conservatism on the previously known predictors of political orientation: age, Openness to Experience and Conscientiousness. Age was mean-centered by standardizing its distribution to avoid any potential problems with collinearity with psychosocial development. To test the hypothesis that psychosocial development is positively correlated with economic conservatism, we added the MEPSI global score. To test the hypothesis that psychosocial development was instead related to political extremism, we included a quadratic term by squaring the MEPSI global score. To avoid collinearity between these two predictors, we first mean-centered MEPSI by standardizing it, and this standardized MEPSI global score was squared to produce the quadratic term. We then evaluated the model for collinearity by estimating the variance inflation factors, influential outliers by estimating leverage, and normality of residuals with a Kolmogorov-Smirnov test.

All data, including SPSS syntax, are available at <https://osf.io/zmgan>.

Results

Scale reliabilities

Cronbach's alpha for the MEPSI global scale was $\alpha = .959$, intraclass correlation (1-way random) ICC = 0.957. For the Heath et al. (1994) scale, items loading on the social factor had $\alpha = 0.835$, ICC = 0.825, while items loading on the economic factor had $\alpha = 0.805$, ICC = 0.793. Finally, just as the TIPI has too few items to effectively factor, reliability of the five subscales are essentially bivariate correlations, which are given in Table 8.

As predicted, MEPSI was a significant predictor of political ideology, and in the predicted direction. Despite the fact that conscientiousness was significantly correlated with economic conservatism, the addition of conscientiousness and openness to the equation did not

result in significantly greater predictability, and neither personality trait was a significant predictor of economic conservatism.

Table 8: Correlations among the ten TIPI scale items.

	1	2	3	4	5	6	7	8	9
1.Extraverted, enthusiastic									
2. Critical, quarrelsome	0.107								
3.Dependable, self-disciplined	.383**	-.226**							
4.Anxious, easily upset	-.133*	.527**	-.238**						
5.Open to new experiences, complex	.511**	0.082	.453**	-0.058					
6. Reserved, quiet	-.149*	.205**	0.052	.282**	0.087				
7.Sympathetic, warm	.287**	-.168**	.460**	-0.116	.444**	.221**			
8. Disorganized, careless	-0.043	.533**	-.296**	.480**	-0.089	.159**	-.228**		
9.Calm, emotionally stable	.433**	-.153*	.455**	-.313**	.376**	0.100	.451**	-.199**	
10. Conventional, uncreative	-0.017	.279**	-0.118	.303**	-0.059	.300**	-0.108	.477**	0.059

Note. * $p < .05$, ** $p < .01$. Correlations between pairs representing personality traits are bolded. For each variable, higher scores correspond to stronger endorsement of the labels as descriptors of the self.

Correlations between the factors from the Heath et al. (1994) scale and the three single-item scales used by Carney et al. (2008) are given in Table 9. As might be expected given the above discussion of factor loadings, correlations with the conservatism factor were higher than with the libertarianism factor, although these differences in strength of correlation were not statistically significant.

Correlations among the main variables are given in Table 10. Note that the correlation between Conservatism and Libertarianism is 0.0 because these are varimax-rotated factors. Scatter plots for Conservatism as a function of MEPSI, and MEPSI, Conservatism, and Libertarianism as a function of age, are given in Figure 1. Unlike previous samples restricted to college students, psychosocial development as measured by the MEPSI was not significantly positively correlated with Conservatism in this representative sample. Psychosocial development was positively correlated with age, Conscientiousness, and Openness. Interestingly, age was also not correlated with Conservatism in this sample, although it was negatively correlated with Libertarianism. The scatter plots confirm the results of the regression diagnostics (see below) that indicate there are no unduly influential observations.

Table 9: Correlations between factors from the multi-item Heath et al. (1994) scale and single items measuring conservatism

	Conservatism	2	3	4
2. Libertarianism	0.000			
3. Overall	0.222**	-0.200**		
4. Social	0.294**	-0.263**	0.764**	
5. Economic	.262**	-0.152*	0.778**	.722**

Note. * $p < 0.05$ ** $p < 0.01$. Significant correlations are bolded. Conservatism and Libertarianism have a null correlation because they are orthogonal factors of the exploratory factor analysis of the Heath et al. (1994) scale. Higher scores for Conservatism imply greater endorsement of traditional norms and values (see Table 2), while higher scores on Libertarianism imply greater endorsement of social and economic freedom. Overall, Social, and Economic all refer to single item measures of conservatism, where the upper anchor was “Very Conservative” and the lower anchor was “Very Liberal”.

Table 10: Correlations among the main variables

	Conservatism	2	3	4	5
2. Libertarianism	0.000				
3. Age	0.036	-0.144*			
4. MEPSI global	-0.107	-0.001	0.410**		
5. Conscientiousness	-0.12*	0.027	0.394**	.668**	
6. Openness	-0.228	0.211**	0.023	0.476**	0.486**

Note. * $p < 0.05$ ** $p < 0.01$. Significant correlations are bolded. The correlation between Conservatism and Libertarianism is null because they are orthogonal factors of the exploratory factor analysis of the Heath et al. (1994) scale.

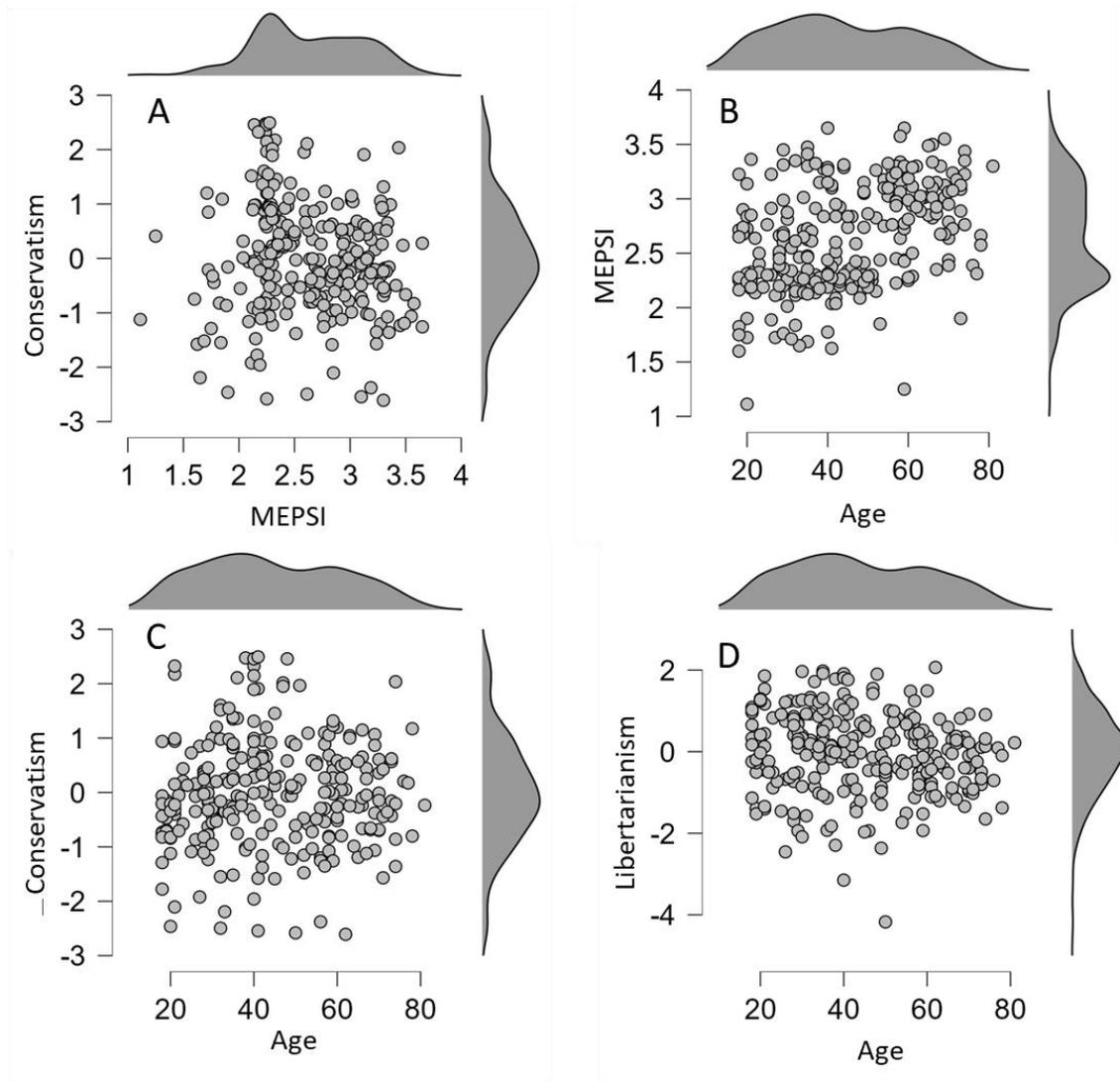


Figure 1. Scatter plots of selected key relationships, with density plotted opposite each axis.

Panel A: Conservatism as a function of MEPSI. Panels B – D: MEPSI, Conservatism, and Libertarianism as a function of age.

The regression is presented in Table 11. At the first step, only Openness to Experience was a significant predictor of Conservatism, and this relationship was maintained through each of the following steps. Interestingly, but predictably based on the correlations, age was not a significant predictor of Conservatism. At the second step, the positive relationship between

psychosocial development and economic conservatism, seen in multiple college samples, did not replicate. Instead, there was a non-significant negative slope for the MEPSI. At the final step, the quadratic MEPSI term explained significant unique variation in Conservatism.

There was no indication of collinearity between the MEPSI and the personality traits (all $VIF < 2.5$). There was no indication of influential observations inflating the correlations, with leverage values ranging from 0.003 – 0.237. There was also no significant deviation from normality of the residuals, $KS = 0.045$, $p = 0.2$.

Table 11: Linear regression predicting Conservatism

	Step 1	Step 2	Step 3
F	4.847	3.625	4.66
df	3,268	4,267	5,266
p	0.003	0.007	<0.001
Adjusted R ²	0.041	0.037	0.063
ΔR^2		0	0.029
$s_{Y X}$	0.979	0.981	0.968
Age $\beta(p)$.059	.061	.071
Conscientiousness $\beta(p)$	-.046	-.042	-.048
Openness $\beta(p)$	-.199**	-.196*	-.164*
MEPSI $\beta(p)$		-0.01	-.01
MEPSI ² $\beta(p)$			-0.142**

Note. * $p < .05$, ** $p < .01$. Significant predictors are bolded. Age, conscientiousness, and openness were entered at step 1, MEPSI at step 2, and the square of MEPSI at step 3.

The significance of the quadratic MEPSI term is consistent with the idea that psychosocial development is associated with extremism rather than conservatism. We further explored that idea by deriving a measure of extremism from the Conservatism factor. Following Jost et al. (2007), we derived a measure of extremism by taking the absolute value of Conservatism. Because this measure is a (rotated) principal component, it is already mean-centered, so that the absolute value creates a measure of distance from the mean. In this way, observations far below the mean (far left) and those far above the mean (far right) both wind up at the larger end of the scale. We then regressed this measure on age and MEPSI. The overall model was significant, $F(2,69) = 3.158$, $p = 0.044$, $R^2_{\text{adj}} = 0.016$, $S_{Y|X} = 0.626$. Although the association is relatively weak, MEPSI does have a negative relationship with extremism in this analysis, $\beta = -0.156$, $p = 0.019$. To illustrate this relationship, Figure 2 graphs the mean and 95% confidence intervals of extremism for a median split of the MEPSI global scale.

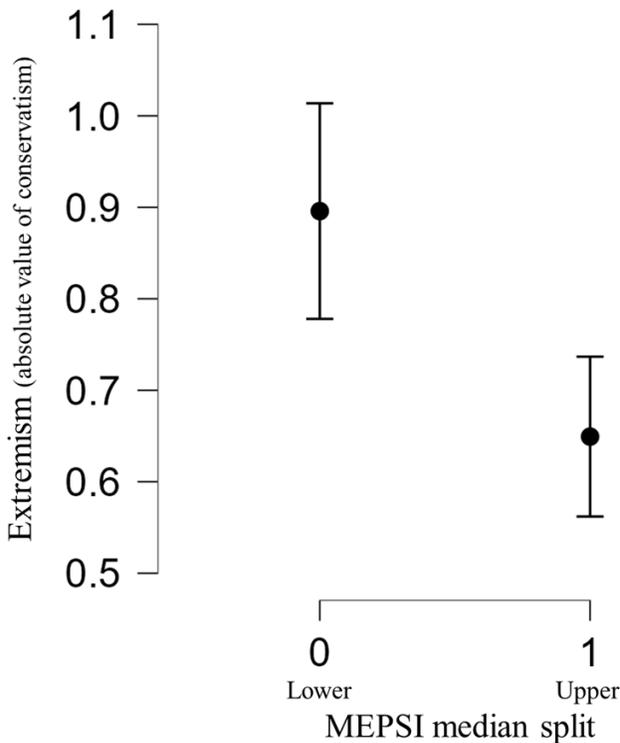


Figure 2: Mean political extremism of participants in the lower and upper halves of psychosocial development. Extremism is the absolute value of the Conservatism factor, which itself is mean centered, so that values farthest above and below the mean are at the extreme upper end of the absolute value scale. Error bars represent 95% confidence intervals.

We repeated the main regression analysis, replacing the conservatism factor from the Heath et al. (1994) scale with the single overall conservatism item more commonly used to measure political orientation. In this analysis, the overall model was significant, $F(5,256) = 4.813$, $p < 0.001$, but only age was a statistically significant predictor.

Discussion

In a sample of United States adults, we tested the hypothesis, based on multiple college samples, that psychosocial development was positively correlated with economic conservatism.

This hypothesis was theoretically defensible from a perspective that Eriksonian development, with its emphasis on accepting adult productive roles, would favor a conservative stance with respect to economic matters. In the more representative sample, this consistent college finding did not replicate, but instead the alternative hypothesis that psychosocial development was associated with extremism was supported.

The form of the relationship, an inverted-U function between MEPSI scores and conservatism, along with the straightforward positive correlation between psychosocial development and age, could in theory explain why we consistently observed a positive linear relationship in those college samples. Young adults, being less developed than older adults, exist mainly on the left half of the MEPSI-orientation curve, where increasing MEPSI scores locally have a linear positive relationship with conservatism. Unfortunately, this explanation does not accord with the actual mean MEPSI scores across samples. The three college samples had mean MEPSI scores of 3.65, 2.73, and 3.57 (See Table 1), while the more representative sample of Study 4 had a mean of 2.62 ($s = 0.48$), lower on average than any of the college samples.

We can therefore only speculate about the reason for this difference in relationship between college student samples and a more representative sample. One possibility is that there are one or more meaningful differences between the current college cohort and both age-matched non-student peers and older cohorts, which interacts with psychosocial development to change the nature of this relationship. For example, early stages of Eriksonian psychosocial development emphasize resolving crises to develop a sense of trust, autonomy and competence. Our original *post hoc* explanation for the discovery of a positive relationship between MEPSI scores and economic conservatism was that students with a sense of trust, autonomy, and competence would feel more at ease with free market capitalism, where entrepreneurship is risky and employment is

always uncertain, whereas those lacking these traits of positive resolution of Eriksonian stages would feel more need for economic redistribution and safety nets. Perhaps this relationship does not hold in the more representative sample because in non-student same-age peers and older cohorts these traits are compensated by more real-world experience, exposure to past education that emphasized capitalist values more so than recent curricula, or some other as-yet-unknown compensating trait or experience.

Table 1 presents the factoring results for all four studies, with color coding of the higher loading for each item. Grey indicates that an item was originally part of Heath et al.'s (1994) Left-Right scale, while light blue indicates that the item was from the Libertarian-Authoritarian scale. Items loading more strongly on the factor we labelled Economic Conservatism in Studies 1 – 3 tend to come from the Left-Right scale (11 of 17 items for Study 1, 13 of 18 in Study 2, and 11 of 13 in Study 3). A similar pattern necessarily obtained for the factor that we labelled social liberalism, with a preponderance of items from the Libertarian-Authoritarian scale. This was not the case for the general population sample (Study 4), where eight items from each scale loaded more heavily on each of the two factors.

Despite this difference in factoring between the college samples and the general population sample, the factoring is broadly similar. In most cases in which an item loaded more strongly on a different factor in the college vs. adult samples, the sign of the loading was also reversed, indicating that perhaps the economic-social dimension of the item was interpreted differently in the two kinds of sample. For example, the clearly social item “Homosexual relations are always wrong”, indicating a right-wing or conservative opinion, loaded negatively on the Social Liberalism factor of the college samples, but positively on the Conservatism factor of the general population sample. Another example was the item “Big business benefits owners

at the expense of workers.” This item loaded negatively on the economic conservatism factor of the college samples, but positively on the Libertarianism factor of the general population sample. Several items followed this pattern, where a factor loaded on one factor in the college samples but the other factor in the general population sample, but with reversed sign.

The finding of a curvilinear relationship between psychosocial development and conservatism is admittedly exploratory. Our only *a priori* hypothesis when the sample for Study 4 was taken was that the positive linear relationship between MEPSI and orientation would obtain. The Heath et al. (1994) scale factored somewhat differently in this broader sample than in previous college samples. Although the Conservatism dimension in Study 4 included a preponderance of economic items, several social items were mixed in, and some economic items, particularly microeconomic concepts related to capital-labor relations, heavily loaded on the “social” factor. Nevertheless, the Liberal-Conservative dimension that served as our primary criterion variable in Study 4 was similar enough to economic conservatism found in college samples for us to feel comfortable concluding that the relationship between psychosocial development and conservatism we observed in college samples is a restriction-of-range artifact. With much less restricted range on age, education, and other variables, psychosocial development has an inverted-U relationship with conservatism. Because of the exploratory nature of this finding, replication would be highly desirable.

The relationship between psychosocial development and political orientation is not explained by the well-known relationship with age (Feather, 1977; Pollak, 1943). Indeed, our results inform and complicate that relationship. Much of the complication may hinge on how political orientation is measured. The moderate correlations between the single-item ratings and the Heath et al. (1994) scale indicate that they are tapping overlapping yet distinct concepts. Age,

while significantly correlated with all three of the single item scales, was correlated only with the Libertarianism factor of the Heath et al. (1994) scale (see Table 9), which was not our criterion variable. This is consistent with Heath et al. (1994), who also reported a significant positive correlation only between libertarianism and age. At the same time, psychosocial development was not related to the single item scales in Study 4, but was significantly related by an inverse-U function to the conservatism factor of the Heath et al. (1994) scale. The single items may hinge to a greater degree on respondents' understanding of the political labels "liberal" and "conservative" (Conover & Feldman, 1981), whereas the multi-item scale does not use those terms at all, instead asking about specific political issues. From a classic measurement theory perspective, the multi-item method should be superior by canceling out some measurement error, but by not using the labels "liberal" and "conservative", this scale may miss some aspects of individual political thought that are efficiently tapped by the single items.

Another important pattern evident in Tables 7 and 9 is that the single items are all significantly correlated with each other, while the use of orthogonal rotation in the EFAs used to extract our main criterion variables constrained the two variables (factors) we extracted to be uncorrelated. At the same time, the correlations between these factors and the single items indicates that they do tap a distinction consistent with the labels of the single items. For example, in Table 7 the correlation between the factor we labeled "Economic Conservatism" and the single item measure of economic conservatism is higher ($r = .53$) than between that factor and the single item measure of social conservatism ($r = .43$), although this difference in correlations is not significant ($z = 1.28$). Similarly, the factor we labeled "Social Liberalism" has a stronger correlation with the single social conservatism factor ($r = -.47$) than economic conservatism ($r = -.37$), although again this difference is not significant ($z = 1.33$). The two single items themselves

are robustly correlated, $r = .63$. The pattern in Table 9 is somewhat more clear: the factor we labeled “Conservatism” is positively correlated with both the social ($r = .29$) and economic ($r = .26$) single items, while the factor we labeled “Libertarianism” is negatively correlated with both single items ($r = -.26$ for social and $r = -.15$ for economic conservatism), and both of these differences in correlation are statistically significant ($z = 6.6$ and $z = 4.89$ respectively). While the intricacies of measuring and modeling the structure of political orientation are beyond the scope of this report, and are only briefly reviewed in the introduction, the gist here is that the single items appear to combine, one might say conflate, elements of a more complex structure attainable by factoring multi-item measures such as the Heath et al. (1994) scale. On the other hand, as previously discussed, the single-item measures, by explicitly using the terms “liberal” and “conservative” in the anchors of their Likert scales, efficiently tap a respondent’s self concept while at the same time activating idiosyncratic understandings of those terms, a potentially serious source of measurement error (Conover & Feldman, 1981).

One important implication of the finding that psychosocial development is negatively related to political extremism is that social trends that inhibit psychosocial development are likely to be associated with growing political extremism. We certainly cannot make any causal claims: it might be the case that inhibited psychosocial development causes people to seek compensatory emotional regulation in extremist positions, but it is just as reasonable to suppose that political extremism, caused by some third variable, in turn inhibits (or even turns back) psychosocial development. The current results are consistent with the suggestion of O’Brien (2010) and Schartz et al. (2009) that psychosocial development is associated with terrorism, which combines ideological extremism with a willingness to harm others. To our knowledge, our study represents the most direct linkage between psychosocial development and extremism to

date. However, both O'Brien (2010) and Schartz et al. (2009) approached their hypotheses about terrorism from the perspective of Marcia's (1966) elaboration of Erikson's theory. Marcia (1966; Marcia & Josselson, 2012) was adamant that surveys were inadequate, or at the very least suboptimal, for measuring the state of development at each stage, preferring instead clinical interviews and coding of open-ended responses. Such methods would be impractical, or at least very expensive, to implement in a large representative sample.

A weakness of Study 4 is the low reliability of the TIPI measure (Table 7). This very brief scale was chosen to fit within a relatively long survey, and it filled that role as well as could be expected. However, a more psychometrically robust measure of Big-5 personality traits would likely have improved the regression model of Study 4, particularly with respect to the relationship between conscientiousness and political orientation. Nevertheless, we found the well known relationship between openness to experience and conservatism with the TIPI, similar to Gosling et al. (2003) who found similarly low reliability for this measure but similar correlations between openness and other variables as those found with more extensive Big-5 personality scales.

There are many potentially rich veins here for future research. One is the aforementioned issue of measurement with and without political labels, where questions of what each method captures and misses about political thinking in the general public and mass electorate could be clarified. Another is the role of specific stages or sets of stages of psychosocial development. In this report, we started with the global MEPSI score, which summarizes all the stages and provides an overall measure of the extent to which an individual has attained the positive emotional and social coping skills envisioned by Erikson (1950). There was plenty here that appeared novel to us after almost two years of pouring over the vast literatures of Eriksonian

development and political orientation, but our own preliminary explorations of these data indicate many complex patterns associated with the stages, some of which may represent Type I errors that can come from exploratory analyses, while others may represent genuine phenomena to be explained by future theory. A third potential direction is to follow up on the potential relationship between the states of individual stages, as described by Marcia (1966), and political extremism, although there are important measurement issues to be overcome first.

Conclusions

Psychosocial development was positively correlated with economic conservatism in three samples of college students, but in a more representative sample of adults it negatively but weakly correlated with political extremism. The reason for the discrepancy is not clear, but likely reflects some difference between recent college student cohorts and the general population. Although theoretically justifiable, this finding was exploratory, so it remains to be seen if it will be an enduring success or a garden path, but we believe it merits reporting and further investigation. If replicated, such a relationship would have implications for our understanding of broad sociopolitical trends, both currently and historically.

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