Attitudes toward legalization of marijuana in the United States, 1986-2016: Changes in determinants of public opinion

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ABSTRACT

Background: Based on recent research in political science, which has conceptualized political party affiliation as a form of social identity, the present study examined political ideology, party affiliation, and associated control measures as determinants of attitudes toward marijuana legalization. The research, which examined attitudes at 16 points in time across a 30-year period, anticipated an increasingly important role for party affiliation, given increased partisanship in the United States.

Methods: Drawing on data gathered in the General Social Survey, the study used binary logistic regression analysis to test the explanatory effects of ideology, affiliation and control measures on support for marijuana legalization.

Results: As anticipated, political ideology showed significance as an explanatory measure across the 30-year period, but party affiliation did not become a consistent, statistically controlled determinant until 2004, when Republicans began to express significantly less support than Democrats and Independents. In terms of demographic control measures, the study found males and younger respondents to express greater support for legalization. In recent periods of study, White and Black respondents expressed greater support than minorities apart from African Americans, while education level and region of the country showed sporadic explanatory significance.

Conclusion: While political ideology, conceived as a form of personal identity, predicted attitudes toward marijuana legalization across 30 years of analysis, party affiliation, conceived as a form of group identity, became a consistently significant predictor in the 21st century. This finding suggests increases in partisanship and group identity, which in turn suggest potential increases in the politicization of drug policy. The article concludes with limitations and recommendations for future research.

Data gathered in public opinion polls reveal that more than 60 percent of Americans favor legalizing marijuana (Swift, 2016), with more than 90 percent approving its use for medical purposes (Malloy, 2017). Medically, the substance has proven useful in treatments of seizures associated with severe forms of epilepsy (Friedman & Devinsky, 2015), nausea resulting from cancer chemotherapy (Birdsall, Birdsall, & Tims, 2016), spasticity associated with multiple sclerosis (Kramer, 2015), and additional medical conditions (see Hill, 2015; Mücke, Phillips, Radbruch, Petzke, & Häuser, 2018; National Academies of Sciences, Engineering, & Medicine, 2017; Reinarman, Nunberg, Lanthier, & Heddleston, 2011; Rhyne, Anderson, Gedde, & Borgelt, 2016). But researchers have also expressed concerns about legalization, including possible increases in use among adolescents and young adults (Chu, 2014; Hopfer, 2014; Miech et al., 2015; Miech, Patrick, O'Malley, & Johnston, 2017; Palamar, Ompad, & Petkova,

2014; Wang, Davies, Halmo, Sass, & Mistry, 2018; Wen, Hockenberry, & Druss, 2018), potential for dependence (Cerda, Wall, Keyes, Galea, & Hasin, 2012; Sobesky & Gorgens, 2016), cognitive impairment (Hall & Lynskey, 2016; Volkow, Baler, Compton, & Weiss, 2014), and driving under the influence (McGinty et al., 2016; McGinty, Niederdeppe, Heley, & Barry, 2017). Marijuana has been cited as a "gateway" drug (Volkow et al., 2014), and behavioral scientists have used the term *cannabis amotivational syndrome* to characterize increased apathy experienced by some users (Volkow et al., 2016). Thus, although the substance has proven useful in medical contexts, legalization of marijuana for recreational use remains a point of debate (see Collingwood, O'Brien, & Dreier, 2018).

While scholars have examined trends in public opinion surrounding marijuana legalization (Schnabel & Sevell, 2017; Schwadel & Ellison, 2017), few analyses have included data from 2016, arguably one of the

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most partisan election years in United States history (Abramowitz & Webster, 2018). This study examines attitudes toward legalization at 16 points in time, beginning with General Social Survey (GSS) data collected in 1986 and concluding with GSS data gathered in 2016. The study includes political ideology, party identification and associated control measures as explanatory variables, anticipating an increasingly important role for affiliation given increases in partisanship and group identity (Twenge, Honeycutt, Prislin, & Sherman, 2016).

Conceptual framework

Social identity theory suggests that individuals identify with certain social groups as a means of developing both positive self-esteem and a sense of belonging (Tajfel & Turner, 1986). In political science, researchers have conceptualized party affiliation as a form of social identity, with partisanship conceived as both a social and political group phenomenon (Iyengar & Westwood, 2014; Theodoridis, 2017). Iyengar and Westwood (2014) posited that an increase in affective polarization in the United States has led individuals identifying as Democrats and Republicans to view opposing partisans in an increasingly negative manner, with partisan affect influencing political as well as nonpolitical judgments. Abramowitz and Webster (2018) defined "negative partisanship" as a "phenomenon whereby Americans largely align *against* one party instead of affiliating *with* the other" (p. 119).

On a theoretical level, self-categorization (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) extends the social identity model by suggesting that individuals define themselves on three levels. At the superordinate, or interspecies, level, humans observe themselves as distinct from other living beings, and at the intermediate level, individuals define themselves based on the social (or political) groups to which they belong. At the subordinate level, individuals define themselves according to unique personal attributes. Importantly, the self-categorization model recognizes that identity expression tends to vary based on circumstance. For example, at certain points in time, individuals may regard political party identification as relatively insignificant, but at other times (e.g., times of intense partisanship) party affiliation may be a key indicator of social identity (see, for discussion, Bolstad & Dinas, 2017; Groenendyk, 2018; Iyengar & Krupenkin, 2018; Twenge et al., 2016).

The self-categorization model offers insight into potential differences between political ideology and party affiliation as attitudinal determinants. At the *subordinate* level, Carney, Jost, Gosling, and Potter (2008) observed that liberalism and conservatism, as ideologies, may be rooted in basic personality dispositions, or "stable individual differences in psychological needs, motives, and orientations toward the world" (p. 807). Graham, Haidt, and Nosek (2009) found that liberals and conservatives tend to rely on different sets of moral foundations, and Jost, Federico, and Napier (2009) discussed associations between ideologies and cognitions. At the *intermediate* level, individuals may define themselves, to some extent, based on the political party with which they are affiliated. As indicated, research (Iyengar & Westwood, 2014) has suggested that increases in affective polarization have led opposing groups to view each other in an increasingly hostile manner.

Giles and Hertz (1997) linked partisanship with power theory, positing that relationships among groups reflect their competitive positions on economic, political, and social issues. When a minority group is perceived to pose a threat, the majority may become increasingly hostile toward it. As an example, Tesler (2013) examined partisanship during the presidency of Barack Obama, finding White partisans to express increased opposition to interracial dating in 2009; such an association had not emerged in 12 previous surveys. Tesler (2012) also observed that racial attitudes had a stronger impact on healthcare opinions during the early Obama years than they had in cross-sectional surveys across the previous two decades. When President Obama became the face of healthcare policy, Tesler (2012) wrote, public opinion changed. Indeed, as Twenge et al. (2016) observed, "Polarized political

elites dominating the frame of reference aid and abet polarization of the populace. In tandem, individuals then use elites as a reference or role model for 'party line' positions to adopt and defend. ." (p.1380).

On the issue of marijuana legalization, individuals characterizing themselves as liberal tend to express greater support for legalization than those who consider themselves conservative (Caulkins, Coulson, Farber, & Vesely, 2012). When partisanship is not prevalent in society, individuals may express a personal opinion, giving little thought to party affiliation and party stance (Dalton & Wattenberg, 2000). But when partisanship becomes more intense at the societal level, individuals may be inclined to support the political party – the group – to which they belong. In moments of intense partisanship, they may support a party in order to distance themselves from another. If liberals and conservatives gravitate toward the Democratic and Republican parties, respectively, then one might expect to observe greater support for marijuana legalization among Democrats and greater opposition among Republicans (Mason & Wronski, 2018). Scholarship addressing the United States "war on drugs" supports this expectation.

Republican President Richard Nixon declared war on drugs in 1971, and in the 1980s, President Ronald Reagan extended the Nixon drug war by signing the Anti-Drug Abuse Acts of 1986 and 1988 (see, for discussion, Inciardi, 2002; Meier, 1994; Musto, 1999). The Reagan antidrug policies led to disproportionate rates of incarceration for individuals from disadvantaged communities, especially people of color (Alexander, 2010; Belenko, 1993; Jensen, Gerber, & Mosher, 2004). In many instances, non-violent drug offenders received lengthy prison sentences, which left large numbers of individuals from minority communities disenfranchised (Hull, 2006). Recognizing disproportion and the economic costs of mass incarceration, some states decriminalized, even legalized, substances such as marijuana (Felson, Adamczyk, & Thomas, 2019).

Favored by those who recognized disproportionate incarceration patterns in the war on drugs (Collingwood et al., 2018), ongoing efforts to decriminalize and legalize marijuana have likely impacted attitudes toward the substance. In a partisan political environment, one might expect Republicans to stress their objection to such policies, while Democratic partisans may express support. Again, the "party line" and intermediate-level identification may take precedence over – or beyond – subordinate-level identification. In U.S. politics, expression of attitudinal differences may have appeared especially pronounced in campaigns leading up to the presidential election of 2016, where getting "tough on crime" appeared especially salient among Republicans candidates (Koch, Lee, & Lee, 2016).

Based on social identity and self-categorization theories, then, the current study anticipates that party affiliation will become increasingly central to marijuana attitudes across time, reflective of increased partisanship in the United States. Democrats can be expected to show greater support for marijuana legalization, as can those who characterize themselves as politically liberal. Regarding demographic measures, Schwadel and Ellison (2017) found less support for legalization of marijuana among females and those without a high school diploma, and the current study anticipates similar patterns. Additionally, across time, the study expects to observe less support for marijuana legalization in the Southern states (Saad, 2014) and among minorities apart from African Americans (Motel, 2015). The section below describes the methods used to study attitudes toward the legalization of marijuana.

Methods

Data

This study is based on 16 datasets collected across three decades in the General Social Survey (Smith et al., 2016), a full-probability survey that has monitored social trends in the United States since 1972. Data and a GSS codebook were gathered from the website of the National

Opinion Research Center (NORC) at the University of Chicago (see gss.norc.org). From 1986 to 2016, datasets appeared every two years, with the exception of 1992; the current study used 1991 data as a substitute. In the present study, GSS datasets ranged in size from 728 to 1,705, with an average of 1207 respondents.[1]

Variables

For the response measure in binary logistic regression equations, the current study used a longstanding GSS item that asked respondents, "Do you think the use of marijuana should be made legal or not?" The two response options included legalize and do not legalize, in that order. For its seven explanatory measures, the study first included a dichotomous sex variable as well as a race measure classifying respondents as White, Black, or a minority apart from African Americans. Age was measured on an interval scale, in years, and level of education was based on the highest degree earned: Less than high school, high school, associate / junior college, bachelor's, and graduate. Lastly, among demographic measures, the study included a GSS variable indicating the region in which respondents lived at age 16: New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific.

Regarding political ideology, the General Social Survey contained the following question, measured on a seven-point scale: "We hear a lot of talk these days about liberals and conservatives. I'm going to show you a seven-point scale on which the political views that people might hold are arranged from extremely liberal – point 1 – to extremely conservative – point 7. Where would you place yourself on this scale?" Respondents then selected a number corresponding to their ideology. For political party identification, the GSS asked respondents to indicate the group to which they belonged: "Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or what?" Ordered categories included strong Democrat, not very strong Democrat, Independent / close to Democrat, Independent, Independent / close to Republican, not very strong Republican, and strong Republican. To maintain ordinality, the current study omitted "Other" as the last response option in party identification. Few individuals answered "Other," and their responses were indeterminate of political direction. With the exception of age, each explanatory variable was entered as a categorical factor in regression models.

Analytic strategy

This study anticipated increased partisanship across 16 periods of analysis, with conservative individuals gravitating more to the Republican party and liberal respondents to the Democratic. To test this premise, ordinal correlation measures indicated associations between (a) political ideology and party identification, (b) ideology and attitudes toward marijuana legalization, and (c) identification and legalization of marijuana. Correlation results are reported in figure form and discussed in text.

Beyond bivariate associations, the study used three-step binary logistic regression analyses to test the effects of (a) five demographic

measures, (b) five demographic measures and political ideology, and (c) all seven determinants on attitudes toward the legalization of marijuana. The binary model, which is appropriate when a response measure contains two categories (Menard, 2002), estimates the probability of a dependent variable given a success (or occurrence) relative to a non-success (or non-occurrence) as a function of one or more explanatory variables. In the present study, a success, or occurrence, referred to an expression of opposition to legalization. Reference categories among determinants included females, minorities apart from African Americans, individuals who did not graduate from high school, Pacific region, extremely liberal, and strong Democrat.

At each step of the regression equations, the study recorded -2 log likelihood values, testing whether (a) a model containing demographics and ideology showed significance beyond the demographic model, and (b) whether a model containing all seven determinants showed significance beyond the demographic and ideology model. The study includes statistics associated with area under the curve (AUROC) as well as Cox and Snell R^2 values for each model in each year. In addition, the study includes odds ratios for each predictor in each time period. If partisanship had increased, one would expect to observe differences in odds ratios across levels of Democrats and Republicans as time periods moved forward. Conceptually, such differences would indicate that attitudes toward marijuana legalization could be explained at *both* the subordinate and intermediate levels of the self-categorization model. The study used IBM SPSS for Windows 23.0 for all of its statistical analyses, initially verifying full sets of observations and exploring frequency patterns before inferential analyses. The following section contains quantitative results.

Results

Descriptive report

Table 1 contains frequencies and descriptive statistics for seven determinants of attitudes toward marijuana legalization across 16 periods of study. Determinants include sex, race, highest degree earned, region of the country, political ideology, political party identification, and age. The table shows relative stability in category percentages over time, although sample sizes did vary.

Fig. 1 displays percentage support for marijuana legalization, and as illustrated, support increased steadily across 30 years. In 1986, approximately 20 percent of all respondents favored legalization, and by 2016, percentage support exceeded 60. Percentages shown in Fig. 1 are consistent with percentages reported by Pew and Gallup (Hartig & Geiger, 2018; Swift, 2016).

Correlations

Fig. 2 displays three sets of ordinal correlations, beginning with associations between ideology and political party identification (in green). As shown in the figure, values increased from the middle 0.2 range in the first four periods to 0.4 or higher in the last four years. Thus, allowing for the fact that all associations were statistically significant (partially a result of sample size), correlation values for ideology and identification did increase across time, as anticipated.

The second line in Fig. 2, in blue, shows correlations between ideology and attitudes toward legalization of marijuana. Associations showed slight increases across the 30-year period, but values generally ranged between 0.1 and 0.25; again, all were significant. Lastly, the figure displays, in yellow, correlations between party identification and support for marijuana legalization. Correlations in 1986, 1988, and 1991 were not statistically significant, but over time, values did increase, ending at 0.152 in 2016. To a certain extent, then, party identification became stronger as a correlate of marijuana attitudes, although correlation values were not as high as those related to ideology and legalization attitudes.

Table 1
Frequencies and descriptive statistics.

		1986		1988		1990		1991	
Variables	Categories	N	Pct	N	Pct	N	Pct	N	Pct
Sex	Male	561	43.2	384	43.9	350	44.8	377	42.1
	Female	737	56.8	491	56.1	432	55.2	518	57.9
Race	White	1124	86.6	749	85.6	664	84.9	764	85.4
	Black	151	11.6	100	11.4	88	11.3	114	12.7
	Other	23	1.8	26	3.0	30	3.8	17	1.9
Education	Less than high school	320	24.7	196	22.4	156	19.9	171	19.1
	High school	692	53.3	487	55.7	425	54.3	496	55.4
	Junior college	44	3.4	39	4.5	43	5.5	46	5.1
	Bachelor	170	13.1	112	12.8	114	14.6	142	15.9
	Graduate	72	5.5	41	4.7	44	5.6	40	4.5
Region	New England	79	6.1	54	6.2	45	5.8	57	6.4
	Middle Atlantic	213	16.4	134	15.3	119	15.2	156	17.4
	East North Central	291	22.4	178	20.3	166	21.2	177	19.8
	West North Central	132	10.2	100	11.4	79	10.1	79	8.8
	South Atlantic	184	14.2	140	16.0	121	15.5	137	15.3
	East South Central	113	8.7	68	7.8	68	8.7	79	8.8
	West South Central	107	8.2	80	9.1	63	8.1	73	8.2
	Mountain	68	5.2	41	4.7	41	5.2	45	5.0
	Pacific	111	8.6	80	9.1	80	10.2	92	10.3
Political Ideology	Extremely liberal	24	1.8	15	1.7	20	2.6	21	2.3
	Liberal	120	9.2	107	12.2	77	9.8	80	8.9
	Slightly liberal	163	12.6	108	12.3	111	14.2	139	15.5
	Moderate	528	40.7	309	35.3	270	34.5	357	39.9
	Slightly conservative	231	17.8	171	19.5	151	19.3	139	15.5
	Conservative	195	15	142	16.2	119	15.2	136	15.2
	Extremely conservative	37	2.9	23	2.6	34	4.3	23	2.6
Political Party	Strong Democrat	212	16.3	145	16.6	104	13.3	130	14.5
	Not strong Democrat	292	22.5	192	21.9	187	23.9	198	22.1
	Ind near Democrat	146	11.2	92	10.5	78	10.0	79	8.8
	Independent	150	11.6	89	10.2	80	10.2	95	10.6
	Ind near Republican	137	10.6	88	10.1	81	10.4	98	10.9
	Not strong Republican	231	17.8	180	20.6	161	20.6	170	19.0
	Strong Republican	130	10.0	89	10.2	91	11.6	125	14.0
Totals	Sample	1,298		875		782		895	
Age	Mean	45.01		45.73		45.79		44.95	
	Standard deviation	17.517		17.993		17.690		17.562	

		1994		1996		1998		2000	
Variables	Categories	N	Pct	N	Pct	N	Pct	N	Pct
Sex	Male	756	44.3	714	44.8	713	45.8	685	45.2
	Female	949	55.7	881	55.2	845	54.2	831	54.8
Race	White	1460	85.6	1347	84.5	1263	81.1	1243	82.0
	Black	207	12.1	199	12.5	227	14.6	210	13.9
	Other	38	2.2	49	3.1	68	4.4	63	4.2
Education	Less than high school	266	15.6	217	13.6	237	15.2	208	13.7
	High school	937	55.0	891	55.9	856	54.9	810	53.4
	Junior college	95	5.6	111	7.0	119	7.6	124	8.2
	Bachelor	299	17.5	268	16.8	249	16.0	246	16.2
	Graduate	108	6.3	108	6.8	97	6.2	128	8.4
Region	New England	86	5.0	108	6.8	85	5.5	77	5.1
	Middle Atlantic	283	16.6	257	16.1	264	16.9	261	17.2
	East North Central	307	18.0	336	21.1	303	19.4	296	19.5
	West North Central	153	9.0	118	7.4	131	8.4	119	7.8
	South Atlantic	286	16.8	240	15.0	252	16.2	225	14.8
	East South Central	135	7.9	126	7.9	127	8.2	117	7.7
	West South Central	177	10.4	134	8.4	152	9.8	161	10.6
	Mountain	83	4.9	91	5.7	80	5.1	86	5.7
	Pacific	195	11.4	185	11.6	164	10.5	174	11.5
Political Ideology	Extremely liberal	36	2.1	32	2.0	36	2.3	56	3.7
	Liberal	159	9.3	162	10.2	181	11.6	178	11.7
	Slightly liberal	224	13.1	193	12.1	193	12.4	155	10.2
	Moderate	641	37.6	612	38.4	582	37.4	588	38.8
	Slightly conservative	285	16.7	278	17.4	267	17.1	225	14.8
	Conservative	308	18.1	257	16.1	237	15.2	259	17.1
	Extremely conservative	52	3.0	61	3.8	62	4.0	55	3.6
Political Party	Strong Democrat	240	14.1	218	13.7	205	13.2	220	14.5
	Not strong Democrat	386	22.6	317	19.9	326	20.9	267	17.6
	Ind near Democrat	202	11.8	207	13.0	201	12.9	187	12.3
	Independent	177	10.4	231	14.5	224	14.4	255	16.8
	Ind near Republican	168	9.9	156	9.8	146	9.4	155	10.2

Table 1 (*continued*)

Variables	Categories	1994		1996		1998		2000	
		N	Pct	N	Pct	N	Pct	N	Pct
	Not strong Republican	322	18.9	272	17.1	307	19.7	255	16.8
	Strong Republican	210	12.3	194	12.2	149	9.6	177	11.7
Totals	Sample	1,705		1,595		1,558		1,516	
Age	Mean	45.68		45.01		45.90		45.56	
	Standard deviation	16.665		17.015		17.506		17.144	

Variables	Categories	2002		2004		2006		2008	
		N	Pct	N	Pct	N	Pct	N	Pct
Sex	Male	339	44.1	343	47.1	672	43.0	476	44.9
	Female	430	55.9	385	52.9	892	57.0	585	55.1
Race	White	633	82.3	605	83.1	1222	78.1	847	79.8
	Black	104	13.5	85	11.7	225	14.4	149	14.0
	Other	32	4.2	38	5.2	117	7.5	65	6.1
Education	Less than high school	99	12.9	98	13.5	193	12.3	134	12.6
	High school	419	54.5	382	52.5	813	52.0	539	50.8
	Junior college	53	6.9	66	9.1	149	9.5	89	8.4
	Bachelor	131	17.0	115	15.8	272	17.4	205	19.3
	Graduate	67	8.7	67	9.2	137	8.8	94	8.9
Region	New England	43	5.6	30	4.1	62	4.0	49	4.6
	Middle Atlantic	132	17.2	103	14.1	224	14.3	169	15.9
	East North Central	163	21.2	146	20.1	317	20.3	208	19.6
	West North Central	72	9.4	56	7.7	112	7.2	89	8.4
	South Atlantic	125	16.3	140	19.2	312	19.9	177	16.7
	East South Central	60	7.8	37	5.1	90	5.8	50	4.7
	West South Central	65	8.5	83	11.4	155	9.9	102	9.6
	Mountain	33	4.3	57	7.8	97	6.2	63	5.9
	Pacific	76	9.9	76	10.4	195	12.5	154	14.5
Political Ideology	Extremely liberal	24	3.1	28	3.8	46	2.9	37	3.5
	Liberal	83	10.8	63	8.7	182	11.6	117	11.0
	Slightly liberal	96	12.5	74	10.2	197	12.6	130	12.3
	Moderate	300	39.0	273	37.5	573	36.6	398	37.5
	Slightly conservative	122	15.9	120	16.5	244	15.6	158	14.9
	Conservative	120	15.6	137	18.8	260	16.6	185	17.4
	Extremely conservative	24	3.1	33	4.5	62	4.0	36	3.4
Political Party	Strong Democrat	106	13.8	120	16.5	246	15.7	226	21.3
	Not strong Democrat	162	21.1	134	18.4	251	16.0	186	17.5
	Ind near Democrat	94	12.2	85	11.7	176	11.3	125	11.8
	Independent	132	17.2	97	13.3	294	18.8	144	13.6
	Ind near Republican	64	8.3	73	10.0	133	8.5	91	8.6
	Not strong Republican	131	17.0	118	16.2	266	17.0	166	15.6
	Strong Republican	80	10.4	101	13.9	198	12.7	123	11.6
Totals	Sample	769		728		1,564		1,061	
Age	Mean	46.86		46.24		47.40		47.97	
	Standard deviation	17.293		17.322		17.366		17.262	

Variables	Categories	2010		2012		2014		2016	
		N	Pct	N	Pct	N	Pct	N	Pct
Sex	Male	458	42.7	451	44.7	585	44.7	708	44.8
	Female	615	57.3	559	55.3	724	55.3	871	55.2
Race	White	842	78.5	780	77.2	1022	78.1	1192	75.5
	Black	163	15.2	166	16.4	196	15.0	272	17.2
	Other	68	6.3	64	6.3	91	7.0	115	7.3
Education	Less than high school	125	11.6	124	12.3	144	11.0	149	9.4
	High school	554	51.6	505	50.0	684	52.3	840	53.2
	Junior college	70	6.5	87	8.6	96	7.3	113	7.2
	Bachelor	209	19.5	200	19.8	244	18.6	310	19.6
	Graduate	115	10.7	94	9.3	141	10.8	167	10.6
Region	New England	42	3.9	57	5.6	64	4.9	94	6.0
	Middle Atlantic	161	15.0	145	14.4	212	16.2	232	14.7
	East North Central	209	19.5	190	18.8	241	18.4	326	20.6
	West North Central	80	7.5	79	7.8	98	7.5	110	7.0
	South Atlantic	185	17.2	190	18.8	226	17.3	273	17.3
	East South Central	76	7.1	59	5.8	87	6.6	101	6.4
	West South Central	100	9.3	93	9.2	131	10.0	148	9.4
	Mountain	59	5.5	62	6.1	77	5.9	97	6.1
	Pacific	161	15.0	135	13.4	173	13.2	198	12.5
Political Ideology	Extremely liberal	48	4.5	47	4.7	55	4.2	69	4.4
	Liberal	150	14.0	121	12.0	158	12.1	214	13.6
	Slightly liberal	123	11.5	114	11.3	142	10.8	181	11.5
	Moderate	404	37.7	377	37.3	517	39.5	580	36.7

Table 1 (*continued*)

| Variables	Categories	2010		2012		2014		2016	
		N	Pct	N	Pct	N	Pct	N	Pct
Political Party	Slightly conservative	142	13.2	157	15.5	182	13.9	218	13.8
	Conservative	163	15.2	154	15.2	190	14.5	252	16.0
	Extremely conservative	43	4.0	40	4.0	65	5.0	65	4.1
	Strong Democrat	192	17.9	199	19.7	223	17.0	271	17.2
	Not strong Democrat	199	18.5	183	18.1	211	16.1	274	17.4
	Ind near Democrat	140	13.0	128	12.7	188	14.4	250	15.8
	Independent	176	16.4	153	15.1	231	17.6	239	15.1
	Ind near Republican	105	9.8	91	9.0	142	10.8	180	11.4
	Not strong Republican	158	14.7	150	14.9	173	13.2	206	13.0
	Strong Republican	103	9.6	106	10.5	141	10.8	159	10.1
Totals	Sample	1,073		1,010		1.309		1,579	
Age	Mean	47.75		48.72		49.45		48.68	
	Standard deviation	18.062		17.859		17.588		17.716	
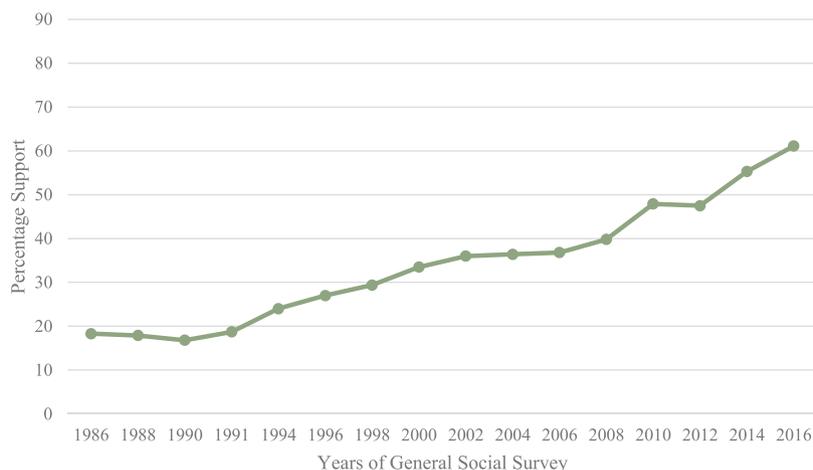
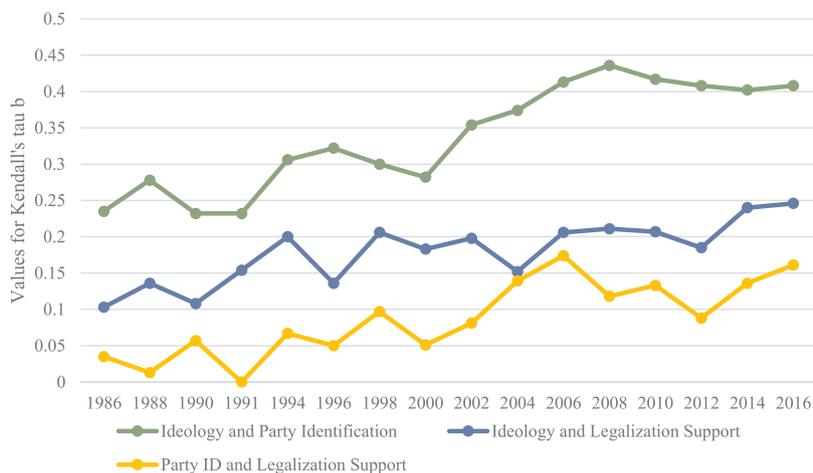**Fig. 1.** Percentage support for marijuana legalization.

Fig. 2. Display of ordinal correlation values.

Logistic regression analyses

Table 2 contains information associated with 16 stepwise logistic regression models. This information includes the variables present in a given model, statistics associated with area-under-the-curve (AUROC) tests, Cox and Snell R² values, and -2 log-likelihood information.

Examining the table, all models improved on chance expectations, with values ranging between 0.614 and .744. Regarding -2 log-likelihood values, while political ideology added significantly to basic demographic models, party identification did not show significance in three of the first periods studied. Significance for models including party identification became more consistent in 1994, although it should be noted that significance did not emerge in every case. Notably, in the six instances in which models including party identification did not show significance, five occurred during mid-term (i.e., non-presidential) election years. In examining Cox and Snell R² values, party identification made some of its strongest, independent contributions in 2008, 2012, and 2016. While Cox and Snell R² values are not directly comparable to R² values in ordinary least squares regression, the values shown in Table 2 are consistent with increases in the importance of

Table 2

Model statistics for binary logistic regression analyses.

Year	Model	Variables Included in Models	ROC Area	Curve SE	Sig.	95% CI Lower	Upper	Cox & Snell R^2	−2 Log Likelihood	Sig.
1986	1	Sex + Race + Age + Education + Region	.658	.017	***	.625	.691	.042	1190.462	
	2	Sex + Race + Age + Education + Region + Ideology	.681	.017	***	.648	.714	.066	1157.842	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.690	.017	***	.657	.723	.074	1146.666	
1988	1	Sex + Race + Age + Education + Region	.651	.022	***	.607	.694	.044	784.683	
	2	Sex + Race + Age + Education + Region + Ideology	.689	.022	***	.646	.731	.070	760.387	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.700	.021	***	.658	.741	.083	747.814	*
1990	1	Sex + Race + Age + Education + Region	.644	.025	***	.595	.692	.033	657.723	
	2	Sex + Race + Age + Education + Region + Ideology	.676	.024	***	.630	.723	.060	635.089	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.681	.024	***	.634	.727	.069	627.482	
1991	1	Sex + Race + Age + Education + Region	.676	.021	***	.636	.717	.052	813.870	
	2	Sex + Race + Age + Education + Region + Ideology	.705	.020	***	.665	.745	.082	784.427	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.713	.021	***	.672	.754	.092	774.852	
1994	1	Sex + Race + Age + Education + Region	.634	.014	***	.606	.662	.042	1780.112	
	2	Sex + Race + Age + Education + Region + Ideology	.688	.014	***	.661	.715	.083	1705.131	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.698	.014	***	.671	.726	.093	1687.279	**
1996	1	Sex + Race + Age + Education + Region	.628	.014	***	.600	.656	.042	1777.085	
	2	Sex + Race + Age + Education + Region + Ideology	.655	.015	***	.625	.685	.072	1727.120	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.679	.014	***	.651	.707	.090	1694.822	***
1998	1	Sex + Race + Age + Education + Region	.642	.013	***	.615	.668	.048	1790.194	
	2	Sex + Race + Age + Education + Region + Ideology	.659	.014	***	.631	.687	.104	1697.640	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.711	.013	***	.685	.737	.118	1672.844	***
2000	1	Sex + Race + Age + Education + Region	.658	.013	***	.632	.684	.063	1844.046	
	2	Sex + Race + Age + Education + Region + Ideology	.700	.013	***	.675	.726	.101	1781.784	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.705	.013	***	.679	.731	.117	1754.232	***
Year	Model	Variables Included in Models	ROC Area	Curve SE	Sig.	95% CI Lower	Upper	Cox & Snell R^2	−2 Log Likelihood	Sig.
2002	1	Sex + Race + Age + Education + Region	.683	.018	***	.648	.719	.088	900.518	
	2	Sex + Race + Age + Education + Region + Ideology	.724	.018	***	.690	.759	.128	867.467	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.734	.018	***	.699	.768	.144	853.286	*
2004	1	Sex + Race + Age + Education + Region	.650	.022	***	.608	.693	.050	910.365	
	2	Sex + Race + Age + Education + Region + Ideology	.679	.022	***	.636	.722	.094	876.316	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.704	.021	***	.662	.746	.115	859.014	
2006	1	Sex + Race + Age + Education + Region	.616	.015	***	.587	.645	.044	2009.136	
	2	Sex + Race + Age + Education + Region + Ideology	.697	.014	***	.669	.724	.101	1913.430	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.714	.014	***	.687	.741	.123	1873.703	***
2008	1	Sex + Race + Age + Education + Region	.614	.018	***	.578	.649	.043	1367.699	
	2	Sex + Race + Age + Education + Region + Ideology	.678	.018	***	.643	.712	.095	1308.408	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.698	.017	***	.664	.733	.116	1283.846	***
2010	1	Sex + Race + Age + Education + Region	.640	.017	***	.607	.673	.055	1411.840	
	2	Sex + Race + Age + Education + Region + Ideology	.701	.016	***	.669	.733	.122	1334.491	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.714	.016	***	.682	.746	.132	1322.442	
2012	1	Sex + Race + Age + Education + Region	.638	.017	***	.605	.671	.055	1314.644	
	2	Sex + Race + Age + Education + Region + Ideology	.688	.017	***	.655	.721	.103	1264.042	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.706	.017	***	.673	.738	.125	1242.153	***
2014	1	Sex + Race + Age + Education + Region	.656	.016	***	.625	.686	.079	1650.977	
	2	Sex + Race + Age + Education + Region + Ideology	.726	.015	***	.697	.755	.157	1536.130	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.737	.015	***	.708	.766	.164	1525.542	
2016	1	Sex + Race + Age + Education + Region	.655	.014	***	.626	.683	.070	1966.872	
	2	Sex + Race + Age + Education + Region + Ideology	.729	.014	***	.702	.755	.145	1835.191	***
	3	Sex + Race + Age + Education + Region + Ideology + Party	.744	.013	***	.718	.771	.160	1807.326	***

*** $p < .001$, ** $p < .01$, * $p < .05$.

political party identification.

Table 3 contains exponentiated parameter estimates (i.e., odds ratios), significance levels, and confidence intervals associated with 16 stepwise logistic regression models. Estimates in the table reflect the third and final stepwise model for each period and include all determinants of marijuana attitudes. Looking across the table, males and

younger respondents tended to support legalization at higher levels than females and older respondents, and in 2002, race became a significant determinant. At that point, White and Black respondents began to differ periodically from minorities apart from African Americans. Highest degree earned did not function as a consistent determinant, although in some instances college graduates did support legalization

Table 3

Parameter estimates and confidence intervals for determinants of attitudes toward legalization of marijuana.

Determinants	1986 Exp(B)	95% CI Lower	Upper	1988 Exp(B)	95% CI Lower	Upper	1990 Exp(B)	95% CI Lower	Upper	1991 Exp(B)	95% CI Lower	Upper
Male	.527***	.390	.756	.526***	.360	.768	.808	.537	1.216	.580**	.400	.842
Race												
White	.778	.238	2.543	.586	.182	1.883	.213*	.048	.936	.528	.131	2.129
Black	.637	.185	2.198	.546	.151	1.976	.374	.075	1.869	.707	.164	3.052
Age	1.017***	1.007	1.028	1.014*	1.002	1.027	1.009	.996	1.023	1.015*	1.003	1.028
Education												
High school	.803	.532	1.211	1.161	.706	1.910	1.340	.765	2.347	1.254	.739	2.128
Junior college	.747	.326	1.711	1.165	.456	2.977	2.252	.715	7.093	1.494	.587	3.802
College	.578*	.337	.991	1.035	.532	2.010	1.034	.505	2.116	.756	.398	1.435
Graduate school	.558	.278	1.120	1.200	.472	3.053	1.036	.406	2.642	.774	.315	1.903
Region												
New England	.711	.352	1.435	.896	.400	2.008	2.850	.967	8.397	2.091	.870	5.026
Middle Atlantic	1.287	.718	2.305	1.923	.956	3.869	2.875**	1.325	6.237	2.419*	1.225	4.778
East North Central	.992	.573	1.715	1.777	.920	3.431	1.689	.867	3.290	1.699	.905	3.190
West North Central	1.617	.800	3.267	1.215	.584	2.526	2.555*	1.043	6.262	3.838**	1.554	9.479
South Atlantic	1.382	.745	2.563	3.150**	1.454	6.821	2.787**	1.281	6.062	1.299	.689	2.451
East South Central	1.206	.583	2.495	3.654**	1.393	9.583	2.770*	1.084	7.080	2.654*	1.132	6.226
West South Central	1.187	.591	2.387	2.252	.969	5.230	3.063*	1.149	8.168	3.697**	1.500	9.109
Mountain	1.831	.742	4.520	1.761	.653	4.754	1.323	.511	3.428	1.345	.556	3.251
Political ideology												
Liberal	4.184**	1.592	10.997	2.874	.888	9.304	1.944	.653	5.786	2.737	.929	8.066
Slightly liberal	5.288***	2.026	13.805	4.983**	1.502	16.531	2.755	.935	8.117	2.340	.838	6.532
Moderate	7.611***	3.051	18.986	7.492***	2.371	23.679	5.627***	1.998	15.845	4.362**	1.605	11.855
Slightly conservative	8.347***	3.179	21.915	8.254***	2.488	27.381	3.345*	1.143	9.783	5.023**	1.715	14.713
Conservative	8.513***	3.170	22.861	11.050***	3.246	37.619	5.473**	1.721	17.407	8.751***	2.839	26.973
Extremely conservative	4.689*	1.375	15.990	11.393**	1.888	68.746	3.254	.851	12.440	7.106*	1.259	40.119
Party ID												
Not strong Democrat	.946	.571	1.569	.603	.314	1.158	1.043	.535	2.034	.610	.307	1.210
Ind near Democrat	.606	.345	1.066	1.095	.488	2.454	1.521	.656	3.528	.456	.204	1.018
Independent	.740	.413	1.325	.418*	.195	.893	.944	.409	2.179	.502	.230	1.095
Ind near Republican	1.234	.648	2.351	.428*	.196	.932	1.425	.605	3.354	.804	.351	1.840
Not strong Republican	1.317	.734	2.363	.630	.310	1.280	2.090	.967	4.516	.505	.246	1.038
Strong Republican	1.216	.611	2.421	1.031	.423	2.509	1.885	.768	4.624	1.025	.442	2.376
Constant	2.128*			3.417***			6.173***			3.921***		

Determinants	1994 Exp(B)	95% CI Lower	Upper	1996 Exp(B)	95% CI Lower	Upper	1998 Exp(B)	95% CI Lower	Upper	2000 Exp(B)	95% CI Lower	Upper
Male	.740*	.582	.940	.610***	.481	.775	.579***	.456	.736	.737**	.584	.930
Race												
White	1.078	.517	2.247	.720	.373	1.392	.781	.445	1.370	.968	.556	1.685
Black	.919	.407	2.074	.951	.453	1.997	.983	.517	1.870	1.160	.614	2.193
Age	1.017***	1.009	1.025	1.024***	1.016	1.032	1.014***	1.007	1.022	1.023***	1.015	1.030
Education												
High school	1.117	.783	1.594	1.047	.722	1.518	.918	.638	1.320	.840	.581	1.214
Junior college	1.104	.614	1.985	.880	.507	1.526	.719	.427	1.211	.755	.451	1.262
College	1.046	.672	1.627	.891	.565	1.405	.539**	.347	.837	.777	.498	1.212
Graduate school	.700	.403	1.217	.841	.481	1.473	.805	.449	1.440	.468	.281	.778
Region												
New England	1.563	.874	2.795	1.212	.712	2.061	1.138	.625	2.071	.976	.541	1.759
Middle Atlantic	2.154***	1.387	3.344	1.262	.818	1.947	1.090	.703	1.689	1.213	.799	1.842
East North Central	2.078***	1.348	3.205	1.346	.895	2.025	1.019	.663	1.567	1.177	.783	1.770
West North Central	1.920*	1.141	3.230	1.681	.967	2.922	1.703	.967	3.000	1.930*	1.117	3.335
South Atlantic	1.944**	1.255	3.011	1.394	.894	2.174	1.524	.956	2.431	1.564	.992	2.465
East South Central	2.002*	1.147	3.494	1.061	.617	1.823	1.156	.660	2.025	1.533	.893	2.631
West South Central	1.984**	1.198	3.285	1.678	.983	2.864	2.057**	1.189	3.557	2.071**	1.256	3.416
Mountain	2.003*	1.073	3.739	1.581	.893	2.798	1.083	.601	1.952	.685	.399	1.179
Political ideology												
Liberal	2.004	.935	4.296	.708	.313	1.601	1.520	.687	3.363	1.207	.631	2.311
Slightly liberal	3.355***	1.591	7.071	1.155	.517	2.579	2.691*	1.221	5.931	2.128*	1.095	4.134
Moderate	4.424***	2.159	9.065	1.596	.738	3.452	3.894***	1.840	8.243	2.628**	1.446	4.779
Slightly conservative	4.864***	2.275	10.399	2.451*	1.089	5.521	4.716***	2.138	10.406	2.963***	1.545	5.682
Conservative	7.351***	3.368	16.042	1.410	.621	3.201	8.281***	3.612	18.983	5.045***	2.589	9.830
Extremely conservative	39.582***	7.000	223.831	4.033*	1.300	12.516	4.707**	1.766	12.545	3.022*	1.285	7.110
Party ID												
Not strong Democrat	.849	.558	1.292	1.467	.946	2.274	1.300	.851	1.987	.763	.495	1.176
Ind near Democrat	.540**	.341	.853	.595*	.377	.939	.751	.477	1.183	.414***	.262	.655
Independent	.731	.444	1.203	1.072	.676	1.701	.991	.629	1.562	.857	.549	1.338
Ind near Republican	.615	.371	1.019	1.274	.761	2.132	1.613	.940	2.768	.942	.570	1.556

Table 3 (*continued*)

Determinants	1994 Exp(B)	95% CI Lower	Upper	1996 Exp(B)	95% CI Lower	Upper	1998 Exp(B)	95% CI Lower	Upper	2000 Exp(B)	95% CI Lower	Upper
Not strong Republican	1.156	.714	1.873	1.354	.843	2.176	1.930**	1.207	3.084	1.149	.723	1.828
Strong Republican	1.109	.641	1.921	2.260**	1.265	4.039	1.688	.941	3.029	.698	.419	1.164
Constant	1.644			1.535			1.600*			.736		

Determinants	2002 Exp(B)	95% CI Lower	Upper	2004 Exp(B)	95% CI Lower	Upper	2006 Exp(B)	95% CI Lower	Upper	2008 Exp(B)	95% CI Lower	Upper
Male	.700*	.501	.918	.764	.545	1.070	.633***	.506	.791	.633***	.483	.828
Race												
White	1.057	.474	2.354	.317**	.153	.660	.581**	.385	.877	.336***	.189	.598
Black	2.910*	1.096	7.728	.637	.264	1.539	1.092	.654	1.822	.602	.308	1.178
Age	1.029***	1.018	1.040	1.011*	1.000	1.022	1.010**	1.003	1.017	1.011*	1.003	1.020
Education												
High school	.864	.499	1.497	.572	.324	1.008	.682*	.470	.989	.978	.637	1.503
Junior college	.670	.302	1.485	.451*	.214	.951	.988	.598	1.631	1.304	.712	2.390
College	.986	.508	1.915	.468*	.239	.919	.703	.453	1.090	.884	.533	1.467
Graduate school	.559	.266	1.175	.548	.254	1.184	.634	.381	1.055	1.006	.558	1.815
Region												
New England	1.382	.575	3.321	.386*	.160	.930	.656	.360	1.194	1.054	.525	2.119
Middle Atlantic	1.371	.710	2.645	.811	.431	1.525	1.481	.971	2.259	1.127	.701	1.810
East North Central	.817	.444	1.505	1.235	.654	2.333	1.353	.914	2.005	1.585*	1.004	2.501
West North Central	1.350	.622	2.930	1.687	.749	3.802	1.193	.699	2.036	1.879*	1.040	3.392
South Atlantic	1.100	.557	2.172	1.045	.552	1.978	1.224	.815	1.837	1.609	.996	2.599
East South Central	1.995	.815	4.881	1.862	.714	4.860	1.164	.664	2.041	2.231*	1.026	4.850
West South Central	1.142	.537	2.431	.844	.421	1.690	2.682***	1.602	4.489	1.675	.958	2.926
Mountain	.987	.387	2.520	1.549	.708	3.390	.879`	.515	1.501	2.175*	1.104	4.286
Political ideology												
Liberal	3.014	.947	9.586	5.119*	1.353	19.367	.927	.454	1.894	.837	.359	1.950
Slightly liberal	1.994	.628	6.338	7.617**	2.044	28.379	1.158	.569	2.355	1.134	.486	2.646
Moderate	4.786**	1.602	14.298	6.721**	1.918	23.557	1.542	.787	3.024	1.503	.681	3.315
Slightly conservative	3.438*	1.086	10.890	7.345**	1.993	27.066	1.492	.733	3.038	2.183	.939	5.078
Conservative	5.664**	1.770	18.128	8.760***	2.370	32.371	3.217**	1.520	6.810	2.769*	1.152	6.658
Extremely conservative	15.832**	2.654	94.464	15.233***	3.277	70.818	2.517	.973	6.510	1.624	.559	4.715
Party ID												
Not strong Democrat	1.428	.796	2.564	1.980*	1.126	3.482	.994	.671	1.471	1.373	.883	2.136
Ind near Democrat	.672	.348	1.299	2.015*	1.040	3.907	1.021	.659	1.584	.918	.562	1.500
Independent	1.208	.648	2.254	1.683	.899	3.150	1.335	.890	2.002	.863	.536	1.390
Ind near Republican	1.115	.523	2.374	2.667**	1.326	5.364	1.587	.966	2.607	1.289	.722	2.300
Not strong Republican	2.099*	1.078	4.087	3.018***	1.588	5.737	2.614***	1.688	4.048	2.450***	1.457	4.121
Strong Republican	1.354	.622	2.948	3.630***	1.766	7.464	3.004***	1.764	5.114	2.286**	1.252	4.175
Constant	.677			1.794			1.759**			1.768*		

Determinants	2010 Exp(B)	95% CI Lower	Upper	2012 Exp(B)	95% CI Lower	Upper	2014 Exp(B)	95% CI Lower	Upper	2016 Exp(B)	95% CI Lower	Upper
Male	.492***	.376	.644	.574***	.436	.754	.551***	.428	.708	.642***	.510	.810
Race												
White	.488**	.283	.842	.536*	.315	.912	.578*	.362	.925	.334***	.216	.515
Black	.451*	.239	.849	.801	.419	1.528	.485*	.274	.856	.430***	.262	.706
Age	1.014***	1.006	1.022	1.017***	1.008	1.025	1.020***	1.011	1.027	1.022***	1.015	1.029
Education												
High school	.649*	.423	.996	.836	.543	1.289	.623*	.410	.947	.530***	.361	.779
Junior college	.595	.311	1.135	.745	.410	1.351	.528*	.289	.962	.664	.387	1.142
College	.651	.395	1.073	.753	.457	1.239	.474**	.289	.779	.561*	.359	.875
Graduate school	.547*	.305	.980	.598	.324	1.104	.917`	.529	1.591	.708	.428	1.172
Region												
New England	.933	.438	1.985	.992	.498	1.978	1.419	.744	2.705	1.238	.700	2.189
Middle Atlantic	1.464	.901	2.380	1.177	.708	1.957	.856	.534	1.373	.748	.482	1.163
East North Central	1.287	.809	2.048	.978	.606	1.578	.953	.610	1.487	1.296	.866	1.941
West North Central	1.771	.961	3.264	1.393	.757	2.565	1.143	.664	1.969	1.393	.828	2.344
South Atlantic	1.541	.960	2.473	1.347	.822	2.209	1.225	.785	1.914	1.113	.739	1.676
East South Central	2.708**	1.446	5.075	.814	.403	1.644	1.832	.998	3.364	1.339	.762	2.354
West South Central	1.499	.865	2.597	1.209	.687	2.125	1.819*	1.107	2.988	.938	.581	1.515
Mountain	1.204	.614	2.362	1.258	.662	2.391	.731	.393	1.358	.805	.454	1.430
Political ideology												
Liberal	1.562	.702	3.474	1.430	.637	3.208	1.151	.460	2.880	.643	.311	1.328
Slightly liberal	2.445*	1.105	5.410	2.274*	1.019	5.073	2.245	.913	5.519	1.173	.886	3.548
Moderate	2.940**	1.400	6.173	2.334*	1.109	4.910	3.719**	1.595	8.671	1.479	.776	2.821
Slightly conservative	3.271**	1.453	7.360	3.443**	1.562	7.591	3.266**	1.348	7.914	2.585**	1.303	5.127
Conservative	6.447***	2.850	14.586	3.624**	1.602	8.196	8.060***	3.263	19.913	3.484***	1.752	6.928
Extremely conservative	6.999***	2.501	19.589	10.359***	3.151	34.052	7.129***	2.573	19.751	3.451**	1.506	7.909

Table 3 (*continued*)

Determinants	2010 Exp(B)	95% CI Lower	Upper	2012 Exp(B)	95% CI Lower	Upper	2014 Exp(B)	95% CI Lower	Upper	2016 Exp(B)	95% CI Lower	Upper
Party ID												
Not strong Democrat	1.299	.813	2.076	1.077	.669	1.733	1.200	.754	1.909	1.612*	1.070	2.427
Ind near Democrat	.929	.559	1.545	.695	.415	1.163	1.216	.746	1.983	1.288	.831	1.996
Independent	1.452	.884	2.383	.530*	.314	.895	1.098	.681	1.769	1.387	.891	2.159
Ind near Republican	1.932*	1.094	3.412	.847	.462	1.552	1.313	.776	2.221	1.712*	1.063	2.755
Not strong Republican	1.878*	1.128	3.127	1.427	.824	2.471	1.730*	1.032	2.900	1.899**	1.194	3.018
Strong Republican	1.712	.916	3.201	1.523	.796	2.914	2.200**	1.238	3.907	3.620***	2.167	6.047
Constant	.792			.765			.380***			.414***		

Note: Odds ratios greater than 1.0 reflect an increase in the odds of being against legalization. Reference categories among determinants included females, minorities apart from African Americans, individuals who did not graduate from high school, Pacific region, extremely liberal, and strong Democrat.

more than individuals who did not graduate from high school. Region of the country showed sporadic significance across 16 periods of study, with individuals in the South Atlantic and Southern states less supportive of marijuana legalization. Statistically, the region measure became less important over time.

As anticipated, political ideology appeared significant and relatively stable as a determinant of attitudes toward marijuana legalization. Odds ratios in Table 3 indicate that conservatives expressed less support for legalization, beginning in 1986. That year, the odds of those who characterized themselves as slightly conservative or conservative opposing legalization were more than eight times the odds of extremely liberal respondents expressing opposition. Looking across Table 3, similar results appear among corresponding odds ratios, with results generally supportive of ideology – a subordinate-level indicator of identity – as a determinant of attitudes toward marijuana legalization.

In contrast to the consistency of political ideology as a determinant of marijuana attitudes, party identification showed sporadic influence for the first 16 years of study. In general, Republicans expressed slightly less support for legalization, but statistical patterns did not become consistent until 2004. At that point, the odds of strong Republicans opposing legalization were 3.630 times the odds of strong Democrats indicating the same. In 2006 and 2008, odds ratios for strong Republicans were 3.004 and 2.286, respectively. While odds ratios for Republicans were not statistically significant in every case following 2008, they suggest an overall pattern of increased partisanship. By 2016, odds ratios for each Republican category differed significantly from the odds of strong Democrats.

Fig. 3 illustrates increasing differences between Democrats and Republicans on attitudes toward marijuana legalization. Specifically, the figure displays percentage support for legalization among those who characterized themselves as strong Democrats, not very strong Democrats, not very strong Republicans, and strong Republicans. This figure shows a relative lack of partisanship from 1986 through 2002. In 2004, strong Democrats and strong Republicans began to differ more than they did in previous years, eventually reaching a difference of nearly 37 percentage points in 2016. In 1986, the difference between strong Democrats and strong Republicans did not exceed five percentage points. Partisanship on the marijuana issue thus appeared to increase over time.

Discussion

Social identity theory suggests that individuals identify with certain social groups as a means of developing both positive self-esteem and a sense of belonging (Tajfel & Turner, 1986). Recent research has conceptualized political party affiliation as a form of social identity, with scholars suggesting that increases in affective polarization have led Democrats and Republicans to view opposing partisans in an increasingly negative manner (Iyengar & Westwood, 2014; Theodoridis, 2017). Iyengar and Westwood posited that partisan affect can influence political as well as nonpolitical judgments, and the current study anticipated increased partisanship on judgments about marijuana legalization. At the subordinate level of the self-categorization model (Turner et al., 1987), liberal and conservative individuals have shown consistent attitudinal differences over time, and the study anticipated increases in attitudinal differences at the intermediate, or group, level.

In general, the study found support for expected patterns, as party identification became a more consistent predictor of marijuana attitudes (and a stronger correlate of political ideology) across 30 years of study. Consistent with recent scholarship from Twenge et al. (2016), both Baumer and Gold (2007) and Hetherington (2001) attributed resurging partisanship to elite-level polarization. Partisan attitudes among elites, the authors suggested, flowed to members of the electorate, increasing intermediate, or group-level, identity in the process. As
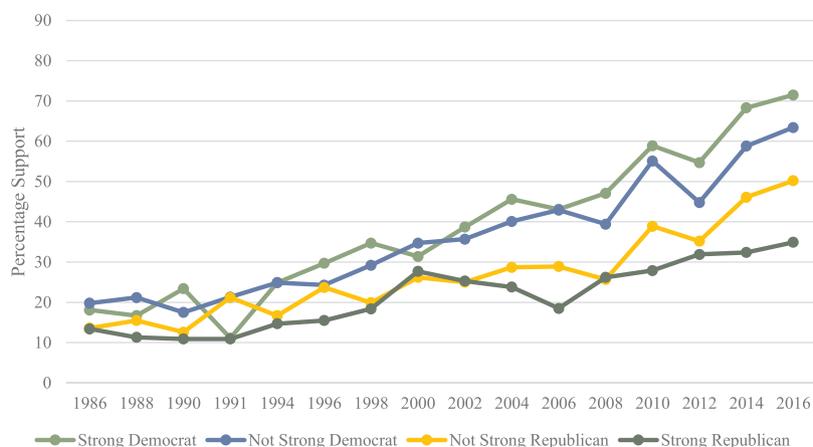

Fig. 3. Percentage support for marijuana legalization based on party affiliation.

shown in Fig. 3Fig. 2, attitudinal percentage differences between Democrats and Republicans reached their highest levels in 2016, an especially partisan election year in the United States (Jacobson, 2017). In such an environment, individuals who may be indifferent to issues such as the legalization of marijuana may nevertheless adopt the "party line," or a group-level oppositional stance. As Tesler (2012); Tesler, 2013 found in studying partisanship during the presidency of Barack Obama, White partisans disapproved of interracial marriage and healthcare policies at higher levels than they had in two decades. In the current study, (some) Republican partisans may have opposed marijuana legalization as a means of opposing Democrats.

From the standpoint of drug policy, partisan opposition stands to prevent individuals who might benefit from medical marijuana from doing so, and it also helps to keep inconsistent policies in place. In the United States, the federal government continues to classify marijuana as a Schedule I Controlled Substance (Hughes, Wiessing, Des Jarlais, & Griffiths, 2018), a designation for drugs "with no currently accepted medical use and a high potential for abuse."[2] Yet, in 2017, a report by the National Academies of Sciences, Engineering, and Medicine concluded that cannabis and cannabinoids can be effective in the treatment of chronic pain as well as nausea and vomiting associated with cancer chemotherapy. Cannabis has also helped to control spasticity symptoms associated with multiple sclerosis. Recognizing legitimate indications, more than 60 percent of states in the U.S. have approved medical marijuana programs, and a recent study (Boehnke, Gangopadhyay, Clauw, & Haffajee, 2019) found that 85.5% of patient-reported qualifying conditions were backed by evidence of therapeutic efficacy.

Partisanship, fear of political repercussions, and "the shifting winds of political opportunism" (McLean, 2018, p. 117) likely account for much of the inconsistency between federal and state policies. Inconsistencies may also be attributable to funded research on cannabis, which has focused largely on its potential harms rather than its therapeutic properties (National Academies of Sciences, Engineering, & Medicine, 2017). Additionally, advocacy efforts have varied regionally, and some states have added qualifying conditions based on scant medical evidence. But as Boehnke et al. (2019) noted, advocacy groups have helped to generate funds for additional research on efficacy, potentially helping to increase the knowledge base on the therapeutic properties of cannabis.

In this study, demographic variables associated with attitudes toward marijuana in the directions anticipated. Males and younger respondents tended to support legalization in higher numbers, and in more recent periods of analysis, White and Black respondents indicated greater support than minorities apart from African Americans. On the race measure, White and Black respondents may have supported legalization for different reasons. For example, White respondents may have observed the medicinal effects of cannabis, while Black respondents may have recognized disproportionate incarceration rates for individuals from disadvantaged communities and members of minority races. Changing attitudes observed among White and Black respondents also may have reflected an awareness of opioid abuse in the United States; press coverage has consistently examined the potential of marijuana to function as an opioid substitute (Barry, 2016; Leonard, 2016; Miller, 2016).

While education did not prove consistent as a determinant of attitudes toward marijuana, analyses showed that, in recent years, those who had graduated from college appeared to support legalization at significantly higher levels than individuals who had not received a high school diploma. Conceivably, college graduates pay more attention to news and therefore recognize the medical uses of cannabis as well as patterns of decriminalization and legalization in some states. College graduates also may recognize the economic costs of incarcerating non-

violent drug offenders. Public opinion polls suggest that education level is becoming a consistent indicator of party identification, as those with college and graduate degrees tend to identify more frequently as Democrats (see Pew Research Center, 2018). Future research might test interactions between education level and party affiliation as determinants of marijuana attitudes.

Regarding the final demographic measure, region of the country, the measure showed significance primarily in the earliest periods of study, with individuals in the South Atlantic and Southern states opposing legalization in higher numbers. In 1988 and 1990, GSS respondents may have been more likely to live in the region they did at 16 years old; that is, society may have been less transient and individuals who came from conservative areas may have been more likely to remain in those regions. With support for marijuana legalization now exceeding 60 percent nationally, regional differences may continue to dissipate.

One limitation of this research is that it was unable to distinguish between support for medical marijuana and support for recreational use. The General Social Survey asked respondents whether or not marijuana should be legalized, and the GSS began asking this question long before discussions about medical marijuana became commonplace. Future research thus might ask explicitly about medical marijuana and marijuana used for recreational purposes, and then examine the explanatory effects of ideology and party identification. Research also might consider statistical aberrations, such as those observed in 2012. In that election year, party identification associated less with marijuana attitudes than one may have expected based on quantitative trends. As it happened, Colorado and Washington both legalized marijuana for recreational use that year, and perhaps press coverage and discussion of those policy changes affected respondent attitudes.

As part of this Discussion, it should also be noted that samples sizes varied considerably across 30 years of analyses. Number of respondents did not increase or decrease in a chronological pattern, but differences nevertheless appeared in the data. Ideally, sample sizes would have appeared consistent in number, such that levels of statistical significance could be compared without qualification. Still, the smallest samples used in the current study contained hundreds of respondents and findings can be generalized to larger U.S. populations.

Conclusion

While scholars have examined trends in public opinion surrounding marijuana legalization, few analyses have included data from 2016, arguably one of the most partisan election years in United States history. In this study, political ideology, conceived as a form of personal identity, predicted attitudes toward marijuana legalization across 30 years of analysis. Party affiliation, conceived as a form of group identity, became a consistently significant predictor in the 21st century, suggesting increases in partisanship and group identity. These increases in turn suggest increases in the politicization of drug policy, potentially affecting the capacity of individuals who might benefit from medical marijuana from doing so.

Declaration of Competing Interest

I do not have any conflicts of interest to report.

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[2] Information on drug scheduling is available on the website of the U.S. Drug Enforcement Administration (dea.gov/drug-scheduling).

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