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# Understanding a Cultural Identity: The Confluence of Education, Politics, and Religion within the American Concept of Biblical Literalism

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Almost 25 percent of Americans self-identify as biblical literalists and the concept has long been used in research. Studies of Bible views and their relationship with other social outcomes remain popular today; however, the measure is operationalized differently amongst these studies. This study describes how to best use categorical measures of biblical literalism. This is accomplished through a two-part analysis. First, the three most frequently used forms of Bible views are used as predictors to compare their similarity or dissimilarity in various models with identical controls. Second, we use generalized multinomial logistic regression to explore the differences between the response categories of a three-category nominal Bible view measure and various social and religious exogenous measures. We argue that biblical literalism should be operationalized as a nominal system of dummy variables, referred to here as received, active, and unreliable Bible views, and coding systems that do not do this may obscure important differences between the response groups.

Key words: biblical literalism; politics; education; conceptualization; religion; Bible views.

Despite apparent claims otherwise, biblical literalists read the Bible like everyone else—by interpreting and inferring meaning to the text (Bartkowski 1996; Boone 1989; Franzen 2013; Malley 2004). This meaning inferred to the text, however, will tend to have social and cultural correlates (Franzen 2013) and these correlates will, in turn, coalesce around Bible views (Bartkowski 1996). In this study, we find that properly operationalizing different views of the Bible as a nominal system of dummy variables best reflects the cultural and social correlates that inform different views of the Bible. These different views of the Bible are important and warrant judicious operationalization because they are significantly

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related to a variety of social outcomes, including those of political views, education, gender, and the family (Glass et al. 2010; Hoffmann and Bartkowski 2008; Sherkat 2010; Sherkat and Ellison 2007; Stroope 2011a).

Over the years, there has been increased interest in the concept of Bible views and many large, national survey instruments such as the General Social Survey, International Social Survey, Baylor Religion Survey (BRS), National Election Study, and the U.S. Congregational Life Survey now measure these views. While studies define "biblical literalism" as having to do with those who believe the Bible ought to be read literally, word for word (Hoffmann and Bartkowski 2008; Stroope 2011a), biblical literalism has also come to be associated with a certain network or type of religious group in contemporary society that has undesirable connotations to many nonliteralists (Crapanzano 2000). As a result, to claim a literalist view of the Bible is in some way to lay claim to the perceived identity of that group of believers.

The purpose of this study is to describe how to best use the categorical measure for Bible views, a relatively common survey measure. First, we use Bible views as a predictor, comparing the different operationalizations of the measure commonly utilized in research. We find that even with the same set of controls, the results vary depending on how biblical literalism is operationalized. Second, with Bible views as a dependent variable, we explore the differences/distinctions between the response categories and various social and religious exogenous measures. We find that Bible views are not simply a measure of religiosity, but a reflection of one's specific socio-political-religious identity. That is, the distinction between what we refer to as received Bible views and active Bible views is primarily one of education and politics, not religion, while unreliable Bible views are primarily a proxy for low religiosity. With this in mind, we argue that coding systems that do not consider Bible views as a nominal series of dummy variables may miss or obscure important differences between the response groups.

#### BACKGROUND

The study of religious attitudes is increasingly prominent amongst both sociologists and political scientists. Past studies often focus on conservative Protestants, in particular targeting fundamentalists and evangelicals in an attempt to understand religious attitudes. The interest in conservative Protestantism has revolved around the nature of scriptural interpretations (Ammerman 1982, 1987; Barnhart 1993; Barr 1981; Bartkowski 1996; Boone 1989; Dixon et al. 1992; Jelen 1989), and the effect this has on various attitudes and beliefs.

#### Conservative Protestants and Biblical Literalism

Defining conservative Protestantism is difficult due to the mix of denominations, movements, and beliefs incorporated in this idea, for they do not agree on one set label or a set of beliefs (Dayton and Johnston 1991; Kellstedt et al. 1996;

Marsden 1987). The idea of religious conservatism, as a result, is not always clear. Many use this phrase to connote one who is more traditional in their beliefs and behaviors. Contemporary sociological research has not done a good job differentiating between the different groups of conservative Protestants (Woodberry and Smith 1998), and often the religious factors amongst this group are poorly measured (Hart 1996; Kellstedt et al. 1996; Larson et al. 1994; Thomas and Cornwall 1990). The most common measures of conservative Protestantism have become denomination, beliefs, and self-identification (Woodberry and Smith 1998). To gauge one's beliefs, biblical literalism is the most common belief measured to identify conservative Protestants.

The use of biblical literalism began as a way to place conservative Protestants into different groups, whether these were evangelicals or fundamentalists. The debate between Hunter (1981) and Ammerman (1982) over what "evangelical" means made various groups' view of the bible of central importance. Ammerman (1982) found a split within conservative Protestants between the evangelicals and the fundamentalists based on their interpretation or view of the Bible. Ammerman argued that a person's commitment to the Bible's authority, measured on a survey by their commitment to biblical literalism, is the best way to distinguish between different types of religious conservatives (see also Hood et al. 2005).

The concept "biblical literalism" is often defined as one who takes the Bible literally, word-for-word while at the same time is conceptually discussed in terms other than how it may drive one's interpretation or reading of the Bible (e.g., Hoffmann and Bartkowski 2008). In a small number of cases, literalism is also conceptualized as a proxy for "dogmatism" (Owen and Wagner 2006). Discussion of literalism as a proxy or reflection of one's social group indicates that some researchers primarily think of it as signifying something other than merely a method for reading the Bible or a belief about the Bible. While it has been commonly used to denote whether or not the respondent is a religious fundamentalist, even this use has been questioned (Dixon et al. 1992; Malley 2004) because not only fundamentalists are literalists. Malley (2004) explicitly argues that biblical literalism is not a hermeneutical method, but is primarily an identity claim indicating a specific theological or religious identity (see also Bielo 2009). Indeed, elsewhere it has been said that conservative Protestants have a rather specific confluence of beliefs and values, of which biblical literalism is a central indicator (Bartkowski 2001, 2004). Specifically, this identity is made up of "a unique epistemology (assumptions about knowledge and truth), ontology (prescriptions about human nature and the nature of the world), and soteriology (assumptions about the prerequisites for salvation)" (Hempel and Bartkowski 2008:1649). Being an important piece of this unique identity, views about the Bible also align with different "interpretive communities," so that the belief is not merely a personal belief but is linked to a somewhat specific community (Bartkowski 1996; Boone 1989; Trembath 1987). Some studies demonstrate that doctrinal conservatives are likely to select the most authoritative option presented to them, without concern over whether that option implies literalism or inerrancy (Jelen 1989). Later studies, however, found that respondents are able to "choose between [literalism and inerrancy] measures in ways that seem meaningful" (Jelen et al. 1990:312).

#### BIBLICAL LITERALISM IN STUDIES TODAY

Studies accounting for biblical literalism remain prevalent today due to its strong relationship with various attitudes and social issues. This ongoing research shows an enduring effect of Bible views on a very wide range of social domains such as politics and political intolerance (Froese et al. 2008; McDaniel and Ellison 2008; Pyle 1993; Sherkat and Ellison 2007), divorce (Stokes and Ellison 2010), family life and involvement (Burdette et al. 2007; Civettini and Glass 2008; Ellison and Bartkowski 2002; Glass et al. 2010; Sherkat 2000), marital decision-making (Denton 2004), pornography (Sherkat and Ellison 1997), homosexuality (Burdette et al. 2005; Hill et al. 2004; Whitehead 2010), gender (Bartkowski 1996; Hoffmann and Bartkowski 2008), capital punishment (Unnever and Cullen 2006), corporal punishment and child discipline (Bartkowski and Wilcox 2000; Dupper and Dingus 2008; Ellison and Bradshaw 2009; Ellison and Sherkat 1993), educational attainment (Darnell and Sherkat 1997; Keysar and Kosmin 1995; McFarland et al. 2011; Sherkat 2010; Sherkat and Darnell 1999; Stroope 2011a), and views of science (Ellison and Musick 1995).

While biblical literalism is used to capture conservative Protestantism in all these studies, how the concept is operationalized differs between them. The majority use biblical literalism as a dichotomized variable. This juxtaposes the most literal views with everyone else, implying that both the "literalists" and "others" groupings are acceptably monolithic and distinct from one another. Studies using this method have found sizeable effects (Burdette et al. 2005; Ellison and Bradshaw 2009; Hoffmann and Bartkowski 2008; Sherkat and Darnell 1999; Sherkat and Ellison 1997; Unnever and Cullen 2006), but interestingly, Denton (2004) juxtaposes both the literalist view and the nonliteralist but Bible believing view compared with all others. Studies using biblical literalism as an ordinal ranking, where the level of literalism increases, also show significant effects (Davis and Robinson 1996; Hempel and Bartkowski 2008; Pyle 1993). Finally, some recent studies include views of the Bible as a system of dummy variables, although not all identical to one another, again showing statistically significant effects (Baker 2013; Baker and Draper 2010; Burdette et al. 2007; Perry 2013; Schieman 2010; Stokes and Ellison 2010; Zigerell 2012). With so much variation, it is unclear in each study what the concept of biblical literalism reflects, how this relates to conservative Protestantism, and how each study can be compared with other related studies.

Though Bible views are often a proxy for religious conservatism and an item concerning the Bible's authority has become a standard feature of many national surveys, a standard operational form of this measure has yet to emerge. This

analysis is a step in this direction, showing there are nonuniform and nonlinear patterns to how Bible views relate to various key demographic and religious measures. First, we compare different operationalizations of Bible views and their relationship with a variety of social issues literalism has been shown to affect. Next, we look at Bible views as a dependent variable to determine what social and religious correlates predict which response category one will choose.

#### DATA AND METHODS

The data used in this study are from wave two of the BRS (2007). The BRS allows us to have access to both a wide range of religion responses and various demographic, moral, and political beliefs that help evaluate the concept of biblical literalism. The BRS is a national random sample of 1648 noninstitutionalized respondents in the United States at least 18 years old. Our analytic sample does not include those who are categorized as Jewish, "other," or "none" in terms of religious affiliation. The survey was administered and collected by the Gallup Organization using a mixed-mode design that included both phone interviews and mailed, selfadministered questionnaires. All analyses use weights provided by the Gallup Organization. For a detailed description of the methodology behind the BRS, see Bader et al. (2007).

#### **Analytic Plan**

We have included two sets of models. The first (table 2) uses the three most common literalist operational techniques discussed above as independent variables. The purpose of these models is to show that one's story and findings change depending on how biblical literalism is operationalized. Here we are interested in the significance of the various literalism measures, the relative distance between them as well as the estimate direction. All but two of these models use binary logistic regressions because the endogenous variable is categorical and violates the proportional odds assumption of cumulative logistic regressions. The two models that are not binary logistic regressions are ordinary least squares (OLS) regressions because they are a combination of two variables (see below). It is more desirable to maintain their greater variation than to collapse them into a single dummy variable, thereby losing greater specificity (MacCallum et al. 2002; Royston et al. 2006; Streiner 2002). In order to help assess and compare model fit, we have included an adjusted  $R^2$  for the OLS regressions, and Tjur  $R^2$  and Nagelkerke  $R^2$  measures for the logistic regressions (denoted as  $R_T^2$  and  $R_N^2$ , respectively, in tables 2 and 3). The Tjur  $R^2$  coefficient of discrimination is helpful because it has a relatively simple definition, being based on the outcome predicted probabilities, and for our cases offers an alternative approximation for model fit as it is not based on a maximization of the likelihood function like other logistic  $R^2$ measures (Allison 2012; Tjur 2009). We used the Nagelkerke  $R^2$  because, unlike the unadjusted geometric mean  $R^2$  (Cox and Snell 1989), the  $R_N^2$  does allow for a value of one when model fit is perfect, making interpretation somewhat simpler and more universal (Menard 2002, 2010; Nagelkerke 1991).

After showing that the results of the different literalist measures are inconsistent across different moral and political views, we regress Bible views on key sociodemographic measures and three common religion measures—affiliation, beliefs, and practice (table 3). The purpose of these models is to assess what religious and nonreligious variables are related to each literalist category, while controlling for other covariates. We used generalized logistic regressions, allowing us to make multinomial comparisons of the three nominal Bible view categories—"received Bible views," "active Bible views," and "unreliable Bible views" (explained further below). In order to show all relationships, we use both the received category and the active category as the comparison group.

#### Variables Included

Morality and politics. In this study, we look at the association of Bible views with various moral and political outcomes regressed on a system of dummy variables, an ordinal ranking, and a single dummy variable. We are looking for trends in how literalism impacts views on divorce (Stokes and Ellison 2010), redistribution of wealth (Felson and Kindell 2007; Todd and Allen 2010), same-sex marriage and causes of homosexuality (Whitehead 2010), capital punishment (Unnever and Cullen 2006), environmentalism (Greeley 1993; Guth et al. 1993, 1995), and abortion and stem cells (Jensen and Weasel 2006). Two questions from the BRS were used to measure attitudes toward divorce. Both start with the question, "How do you feel about the morality of the following," with four possible responses ranging from "always wrong" to "not at all wrong." The first asked whether or not divorce is acceptable when the couple has children and the second asked about cases when there were no children. The two were combined into a single index reflecting increasing opposition to divorce. Two questions about abortion were also included and had the same lead question as divorce. The first asked about the acceptability of abortion in cases when the pregnancy is the result of rape and when the family cannot afford the child. These were also combined into a single index reflecting increasing opposition to abortion. The measure regarding the acceptability of embryonic stem cell research again had the same lead question. This was then transformed into a dummy variable reflecting the belief that it was either wrong or not wrong.

The next few measures began with a lead question asking the respondent how much they think the federal government should take action on a given topic, with response options ranging from "strongly agree" to "strongly disagree" and those responding with "undecided" were excluded. We included a measure asking the respondent whether the government should "abolish the death penalty," "expand its authority to fight terrorism," and "distribute wealth more evenly." These were transformed into a dummy variable reflecting either agreement or disagreement. Related to the question about the redistribution of wealth, we included a question asking about government spending on welfare.

The lead question asked respondents how they feel about current government spending on a few different topics, with responses being "too little," "just about right," and "too much." The question about the environment also used this lead, asking about "improving and protecting the environment." Both were transformed into a dummy variable reflecting too much spending. Related to spending on environmental problems, we included a measure that asked respondents whether or not they agreed with the statement, "if we do not change things dramatically, global climate change will have disastrous effects." This was transformed into a dummy variable reflecting disagreement. Finally, we included two different questions regarding same-sex relationships. The first asked whether or not "homosexuals should be allowed to marry" and the second asking whether "people choose to be homosexual." These were transformed into dummy variables reflecting opposition to same-sex marriage and agreement with homosexuality being a choice. Apart from divorce and abortion, these variables were transformed into dichotomous variables primarily because the ordinal form violated the proportional odds assumption in the cumulative logistic models.

Biblical literalism. The BRS asks "Which one statement comes closest to your personal beliefs about the Bible?" There were five possible responses: "The Bible means exactly what it says. It should be taken literally, word-for-word, on all subjects"; "The Bible is perfectly true, but it should not be taken literally, word-for-word. We must interpret its meaning"; "The Bible contains some human error"; "The Bible is an ancient book of history and legends"; "I don't know." As mentioned above, three different forms of literalist measures were created after dropping those who answered they "didn't know." For the system of dummy variables, we combined the third and fourth responses into a single variable reflecting the belief that the Bible is not reliable in some way—"unreliable Bible views." We call the second response above the "active Bible views" as they clearly have a high regard for the Bible, but see the reader as taking an active role in the interpretation of its meaning. The first response option is the literalist response, which we are calling "received Bible views" as the respondent thinks the Bible ought to be taken as-is. Again, these are treated as nonordered nominal categories. The single dichotomous measure follows most previous work, with literalists compared with all others. Finally, the ordinal ranking ranges from 0 to 4 with literalists retaining the high score (table 1).

Religion measures. Religion is generally measured in three primary ways: religious affiliation, religious practices, and religious beliefs. All of these tend to tap different facets of what it means to be "religious." As such, we have included general and common variables that reflect each of these three dimensions of religiosity. To measure religious practices, we combined three measures into an

<sup>&</sup>lt;sup>1</sup>While other measures, such as a belief in the rapture, may indeed have a relationship with literalism, we are testing general beliefs that are found across all Christian traditions in order to compare "religiousness." In other words, we are interested in general effects and not necessarily more highly specified effects that surely are also present.

TABLE 1 Descriptives by Bible Views

		Receiv	ed views	Active	views	Unreliable views		
	Range	Mean (%)	Std dev	Mean (%)	Std dev	Mean (%)	Std dev	
Indep./control variables								
South	0 - 1	(46)	0.50	(33)	0.47	(23)	0.42	
Liberal politics	1 - 7	2.69	1.38	3.42	1.42	4.29	1.54	
Age	18-96	51.98	16.17	51.48	16.50	51.73	16.30	
Education	1 - 7	4.10	1.54	4.62	1.57	4.94	1.64	
Income	1 - 7	3.93	1.56	4.47	1.39	4.63	1.48	
White	0 - 1	(80)	0.40	(91)	0.29	(94)	0.24	
Male	0 - 1	(35)	0.48	(44)	0.50	(47)	0.50	
Married	0 - 1	(66)	0.47	(67)	0.47	(65)	0.48	
Engaged God	7 - 35	27.77	2.98	25.69	3.69	19.73	5.53	
Judgmental God	6-30	20.38	6.47	17.62	5.87	14.26	5.66	
Belief index	4 - 14	13.49	0.86	12.86	1.30	10.07	2.69	
Practices index	4-13	13.05	3.97	10.46	4.18	6.31	4.00	
Black Protestant	0 - 1	(9)	0.29	(4)	0.19	(2)	0.15	
Catholic	0 - 1	(11)	0.31	(33)	0.47	(37)	0.48	
Mainline	0 - 1	(11)	0.32	(28)	0.45	(35)	0.48	
Evangelical	0 - 1	(67)	0.47	(34)	0.47	(20)	0.40	
Dependent variables								
Homosexual marriage	0 - 1	(93)	0.25	(78)	0.41	(39)	0.49	
Homosexuals choose	0 - 1	(72)	0.45	(49)	0.50	(24)	0.43	
Climate change	0 - 1	(43)	0.50	(27)	0.45	(18)	0.38	
Death penalty	0 - 1	(19)	0.39	(21)	0.41	(34)	0.47	
Distribution of wealth	0 - 1	(50)	0.50	(53)	0.50	(46)	0.50	
Terrorism	0 - 1	(15)	0.36	(28)	0.45	(47)	0.50	
Environmental spending	0-1	(21)	0.41	(10)	0.30	(4)	0.19	
Welfare spending	0 - 1	(51)	0.50	(53)	0.50	(44)	0.50	
Abortion	2 - 8	6.62	1.76	5.33	2.04	3.45	1.66	
Divorce	2 - 8	5.90	2.01	4.42	2.03	3.15	1.45	
Stem cells	0 - 1	(69)	0.46	(35)	0.48	(8)	0.28	
N		319		545		429		

Source: BRS (2007).

index: church attendance, prayer, and reading the Bible independently. Attendance ranges from "never" (0) to "several times a week" (8). For prayer, the question states, "about how often do you pray or meditate outside of religious services?" The response options range from "never" (0) to "several times a day"

TABLE 2 Various Moral/Political Views Regressed on Different Operationalizations of Literalism

variables S	Literalist measure															
	System of dummies (2 models)							Ordinal			Dichotomous					
	Unreliable ar	nd active	Unreliable vs. active			Biblical literalism			Biblical literalist							
	Unreliable		Active		•											
	OR/(b)	St. error	OR/(b)	St. erro	or OR/(b)	St. error	r R <sub>T</sub> <sup>2</sup>	$R_{\rm N}^2/R^2$	OR/(b)	St. erro	r R <sub>T</sub> <sup>2</sup>	$R_{\rm N}^2/R^2$	OR/(b)	St. erro	r R <sub>T</sub> <sup>2</sup>	$R_{\rm N}^2/R^2$
Homosexual marriage	0.145***	0.379	0.399*	0.363	0.363***	0.207	0.438	0.553	1.589***	0.076	0.443	0.553	3.532***	0.356	0.413	0.532
Choose to be homosexual	0.544*	0.251	0.839	0.203	0.446*	0.191	0.267	0.344	1.208**	0.068	0.268	0.345	1.304	0.200	0.261	0.339
Climate change	0.559*	0.267	0.610*	0.208	0.918	0.217	0.271	0.349	1.136	0.076	0.269	0.345	1.670*	0.203	0.271	0.349
Death penalty	1.801*	0.283	0.793	0.242	2.272***	0.210	0.202	0.277	0.767***	0.074	0.202	0.274	1.039	0.233	0.190	0.259
Distribute wealth	1.664*	0.247	1.373	0.200	1.212	0.185	0.260	0.349	0.898	0.065	0.258	0.348	0.702	0.196	0.260	0.348
Fight terror	2.753***	0.263	1.330	0.225	2.070***	0.186	0.221	0.284	0.771***	0.066	0.220	0.280	0.639*	0.219	0.208	0.268
Environmental spending	0.299**	0.405	0.661	0.258	0.453*	0.372	0.121	0.243	1.333*	0.118	0.118	0.237	1.742*	0.255	0.119	0.234
Welfare spending	1.385	0.233	1.450*	0.186	0.955	0.178	0.166	0.224	0.914	0.062	0.164	0.222	0.696*	0.183	0.166	0.224
Abortion <sup>a</sup>	(-1.003)***	0.160	(-0.292)*	0.130	(-0.711)***	0.122		(0.468)	(0.318)***	* 0.043		(0.473)	(0.439)***	* 0.129		(0.453)
Divorce <sup>a</sup>	(-1.101)***	0.175	(-0.748)**	* 0.143	(-0.353)**	0.133		(0.345)	(0.281)***	0.047		(0.342)	(0.822)***	* 0.140		(0.342)
Stem cell	0.257**	0.249	0.644*	0.186	0.399***	0.208	0.334	0.425	1.571***	0.076	0.337	0.430	1.874***	0.183	0.323	0.409

2007 BRS; a OLS regressions, all others are logistic regressions; all models control for attendance, prayer, Bible reading, RELTRAD, living in the south, political ideology, age, education, income, race, sex, and marital status. \*p < .05; \*\*p < .01; \*\*\*p < .001.

TABLE 3 Multinomial Generalized Logistic Regressions of Biblical Literalism

	Active vs. r	eceived		Unreliable v	vs. received		Unreliable vs. active			
	Odds ratio	Stand. error	β	Odds ratio	Stand. error	β	Odds ratio	Stand. error	β	
South	1.068	0.189	0.017	0.943	0.254	-0.015	0.883	0.209	-0.033	
Liberal politics	1.408***	0.075	0.297	1.576***	0.091	0.395	1.120	0.066	0.098	
Age	0.995	0.006	-0.041	1.004	0.008	0.037	1.009	0.006	0.079	
Education	1.201**	0.070	0.151	1.157	0.088	0.121	0.964	0.067	-0.031	
Income	1.131	0.071	0.103	1.154	0.092	0.120	1.020	0.072	0.017	
White	2.988**	0.382	0.184	1.768	0.473	0.096	0.592	0.410	-0.088	
Male	1.495*	0.193	0.111	1.070	0.251	0.019	0.716	0.198	-0.092	
Married	0.878	0.213	-0.034	1.144	0.274	0.035	1.303	0.214	0.070	
Affiliation <sup>a</sup>										
Black Protestant	1.596	0.485	0.058	1.180	0.666	0.020	0.740	0.614	-0.037	
Catholic	4.503***	0.271	0.369	4.765***	0.325	0.383	1.058	0.232	0.014	
Mainline	2.752***	0.259	0.242	2.683**	0.320	0.236	0.975	0.242	-0.006	
Practices index	0.878*	0.06	-0.176	0.833*	0.073	-0.246	0.950	0.055	-0.070	
Beliefs index	0.852	0.122	-0.168	0.506***	0.133	-0.712	0.594***	0.081	-0.544	
Engaged God	0.918*	0.035	-0.242	0.817***	0.039	-0.575	0.889***	0.026	-0.333	
Judgmental God	0.979	0.016	-0.073	0.925***	0.021	-0.269	0.945**	0.017	-0.196	
$R_N^2$					0.56					
n					1032					

BRS (2007); <sup>a</sup>Evangelical is contrast category. \*\*\*p < .001; \*\*p < .01; \*p < .05.

(5). Finally, frequency of Bible reading was measured by asking, "Outside of attending religious services, about how often do you read the Bible, Koran, Torah or other sacred book?" The responses were coded to range from "never" (0) to "several times a week or more often" (4). All of these responses were standardized because they were measured with different metrics.

We used McDonald's  $\omega$  (McDonald 1978) instead of Cronbach's  $\alpha$  to indicate scale reliability because, unlike  $\alpha$  scores,  $\omega$  does not assume that each measure equally contributes to the practices scale and that the item errors are uncorrelated with one another (Yang and Green 2011). However, when  $\tau$  equivalence is present,  $\omega$  is equal to  $\alpha$  (Zinbarg et al. 2005). Finally, unlike  $\alpha$ ,  $\omega$  is based upon the item factor loadings, allowing us to exclude item contributions not in common with the final index (Schweizer 2011) and is preferable in all but a few circumstances (Revelle and Zinbarg 2009; Zinbarg et al. 2005). The McDonald's  $\omega$  for our practices index is 0.813.

For religious affiliation, we have included a modified system of dummy variables (Dougherty et al. 2007) based on the Steensland et al. (2000) reltrad classification. While it has been noted that an acceptable amount of variation in literalist views is present in some non-Christian religious traditions (Davis and Robinson 1996, 1999), we have removed those whose affiliation is classified as "other," "Jewish," or "none." Three variables reflecting religious beliefs were included, two of which tap a more global disposition of the individual. The first measure is a belief index composed of three measures. The first is the strength of the individual's belief in God, which ranges from "I have no doubts that God exists" (6) to "I am an atheist" (1). The second belief measure is how certain the respondent is that heaven exists. The response options range from "absolutely" (4) to "absolutely not" (1). We next included how religious the respondent claims to be, with response options ranging from "not at all religious" (1) to "very religious" (5). Similar to the practices, these belief measures were standardized. The McDonald's  $\omega$  for the belief index is 0.896. Finally, the two belief measures that we regard as being more global in scope are image of God measures following Froese and Bader (2010). We included both the engaged God index ( $\omega = 0.831$ ) as well as the judgmental God index ( $\omega = 0.853$ ) as they have been shown to strongly predict religion outcomes, including biblical literalism (Froese and Bader 2007).

Socio-demographics. Previous research shows that various socio-demographic factors impact biblical literalism (see e.g., Stroope 2011a). Region of the country typically relates to literalism and so we included a dummy variable reflecting whether or not the respondent lives in the South. In many instances, literalism is tightly linked to politics. We have included a measure of political ideology that asked "how would you describe yourself politically?" The response options ranged from "extremely conservative" to "extremely liberal," with liberal being higher on the scale. Education was measured by an ordinal scale with the following range: 8th grade or less, more than 8th grade but not diploma, high school, some college, technical or vocational school, college, and postgraduate. Income was also an ordinal scale, where respondents chose from one of the seven categories ranging

from \$10,000 or less up to \$150,000 or more. Beyond these measures, we have controlled for the respondent's age and whether they are white, male, or married.

#### **RESULTS**

#### Morality and Politics

Table 2 shows the results for the 11 moral and political variables we regressed on the three different operationalizations of literalism. Again, the purpose of this table is to show that researchers' stories about literalism depend on the form of the measure and are not consistent across the three different forms even when including identical controls. In table 2, each row displays a different dependent variable and the columns display the estimates for each of the three literalist measures. The first set is Bible views coded as a nominal system of dummy variables, with the results of two different models shown so as to display all possible comparisons. The second set is the ordinal scale while the third set is a dummy measure with the literalist response compared with all others.

Looking at the results pertaining to views of same-sex marriage, the dummy system shows that a received view of the Bible is related to the most conservative view of same-sex marriage with active and unreliable views being increasingly liberal when compared with the received Bible view. With this being the case, both the ordinal scale and the dummy measure are significant and in the expected direction. The same is not the case when looking at attitudes about whether or not people choose to be homosexual. There we see that unreliable Bible views are associated with lower odds of thinking it is a choice than both the received view and the active view. The active and received views, however, do not differ from one another in their relationship with thinking people choose to be homosexual. The ordinal scale is still significant and in the direction we would expect, and this makes some sense as the unreliable group is still at the bottom of that scale. The single dummy measure, on the other hand, is not significant and this may be because the variance of the unreliable view is conflated with that of the active view, thus diluting the differences that appear to be present.

The ways that literalism predicts of attitudes about climate change are different. Here we see that both unreliable and active Bible views are related with nearly the same odds ratio to thinking climate change is a problem in comparison to received Bible views, which is associated with higher odds of thinking climate change is not a problem. Interestingly, there is not a difference between unreliable Bible views and active Bible views on the topic of climate change. The ordinal scale is not significant, and the dummy measure shows that the received view is positively related to thinking there is not a problem. This makes sense because both unreliable and active views differ to nearly the same degree from the received views, to which they are compared in the dummy measure. Similar to the "attitudes about homosexuality as a choice" dependent variable, unreliable Bible views are associated with support for abolishing the death penalty, but

there is not a significant difference between the active views and received views. With that being the case, again we see that the ordinal scale is significant while the dummy measure, with the dissimilar unreliable and active views conflated to contrast with received views, is not significant.

The regression with attitudes about the redistribution of wealth as the outcome is interesting because unreliable views have higher odds of supporting redistribution when compared with received views and this is the only difference between the groups; there is no significant difference between active views and either the more "literal" or less "literal" views. As such, neither the ordinal scale nor the dummy measures are significant—again, this is likely because the variance is lost and muddied in these two coding schemes. The regression with attitudes about expanded authority to fight terrorism as the outcome shows that unreliable views have higher odds of opposition than both received views and active views while active and received views do not differ. Unlike past examples where only unreliable views were different from the other two Bible views, both the ordinal scale and the dummy measure are significant here with nearly the same odds ratio.

The next dependent variable is attitudes about whether or not the government spends too much money protecting the environment. We see that unreliable views differ from both received views and active views, with unreliable views having lower odds of agreeing with the statement in both cases, but there is no difference between active and received views. With this being the case, it is not surprising that the ordinal measure is significant, but the dummy measure is as well despite the conflated variance, with higher odds of agreement with more literalist responses in both cases. The models depicting attitudes about whether or not government spends too much money on welfare show that only active views and received views are different in their association with welfare spending. Here, potentially because the variance of active and unrealiable views are conflated together, the dummy measure is significant, but the ordinal measure is not significant.

Finally, looking at the last three outcomes, we first see that received views have attitudes that are more in opposition to abortion and divorce than do those with either active or unreliable views. This differential association with attitudes about abortion and divorce is reinforced by the fact that unreliable views are negatively related when compared with active views. So the picture we get is that the received views are most strongly in opposition to abortion and divorce, with active views next and finally unreliable views. This is supported by the significance of both the ordinal scale and the dummy measure. This same pattern is found when we look at whether or not embryonic stem cell research is acceptable. There are differences between all of the variables in the nominal measure, with increasing magnitude from unreliable views, to active views to received views, and again significant differences for both the ordinal scale and the dummy measure.

Table 2 also includes the Nagelkerke  $R^2$  and Tjur  $R^2$  for the logistic regression dependents and an adjusted R<sup>2</sup> value for the OLS regression dependents.

These measures help us adjudicate whether or not one form of the literalist measure is more effective in explaining the variance of the dependent variable or not. The majority of the dependent variables have better R<sup>2</sup> values for the nominal scale apart from three cases where the ordinal scale is marginally better (in one case only 0.001 higher) for the adjusted  $R^2$  and  $R_N^2$ , and three cases where the nominal system does not have the highest  $R_T^2$ . In only two cases, attitudes about whether or not homosexuality is a choice and stem cell views, do these higher R<sup>2</sup> values for an operationalization other than the nominal system converge on the same dependent variable. In two cases, the dummy measure has the same  $R_N^2$  value as the nominal measures. While the nominal measure has a higher  $R^2$  value in most cases, conclusions based solely upon this pattern must be qualified as the values in all cases are quite close. Table 2 shows that the ways the measure is operationalized matters and results depend on that decision. So while the fit measures for the nominal system are marginally higher, an ordinal measure only makes sense when there is increasingly more "literalism-ness" present and a binary dummy measure only makes sense if compatible and meaningful variance can be differentiated into two different categories. It is not clear that Bible views qualify for either the ordinal or dichotomous coding schemes.

#### Biblical Literalism as Dependent Variable

The purpose of table 3 is to see if different exogenous variables are associated with each Bible view merely with differing magnitudes as is assumed with an ordinal measure or whether each Bible view has its own, unique constellation of religious and demographic relationships as is the expectation with a nominal categorization.

This first comparison shown in table 3 is the relative likelihood of choosing the active Bible view rather than a received view of the Bible. There are both demographic as well as religious influences. First, holding a more liberal political ideology, having greater education, and being white and male are all associated with greater odds of choosing the active Bible view as opposed to the received Bible view. The religious affiliation measures show that respondents who are classified as both a Catholic and a mainline Protestant have higher odds of choosing the active Bible view as opposed to the received Bible view when compared with the evangelical religious tradition. These Bible views are also influenced by the practices index and the engaged God measure. Higher scores on the practices index and higher scores on the engaged God measure are associated with decreased odds of choosing the active Bible view as opposed to the received Bible view. The strongest of these influences is that of being affiliated with the Catholic religious tradition, having a more liberal political ideology and affiliation with the mainline Protestant tradition or having a more engaged image of God.

The second comparison in table 3 is the likelihood of choosing the unreliable Bible view as opposed to the received Bible view. Here, the only demographic influence is that of political ideology. Those with a more liberal political ideology have higher odds of choosing unreliable Bible views rather than a

received Bible view. Again we see that there are influences from the Catholic and mainline Protestant religious traditions when compared with the evangelical tradition, both being associated with higher odds of choosing unreliable Bible views as opposed to a received Bible view. In terms of the other religion measures, those with higher scores on the practices index, the belief index, higher scores on the engaged God measure, and higher scores on the judgmental God measure all have decreased odds of choosing the unreliable Bible view as opposed to a received Bible view. While none of the significant effects are trivial in terms of standardized effects, the belief scale is by far the strongest effect in the model with the engaged God measure close behind. All of the other significant measures also have strong effects, led by political ideology.

The third comparison in table 3 shows the likelihood of choosing the unreliable Bible view as opposed to the active Bible view. Most notable here is that, all else being equal, the demographic measures are not significant in terms of predicting a respondent's likelihood of choosing the unreliable Bible view or active Bible view. We know that demographic measures are strongly related to religiosity, so what we primarily see here is that the unreliable view is essentially a proxy for low religiosity: associations with the different belief measures are quite strong. Respondents with higher scores on the belief index, engaged God measure, and judgmental God measure all have decreased odds of choosing the unreliable Bible view as opposed to the active Bible view. The belief scale is the strongest effect in the model, with the engaged God measure close behind.

#### **DISCUSSION**

This analysis has demonstrated that one's Bible view reflects a unique intersection of religion, politics, and education. Simply put, the received Bible view tends to reflect a politically conservative, less educated, and highly religious individual. By contrast, the active Bible view tends to reflect a more politically liberal, more educated religious individual, while the unreliable Bible view tends to be a proxy for low religiosity. Having a better grasp of what the concept means has implications for how it is operationalized in research. It should not be used as either a dummy variable or an ordinal ranking as both mask substantively significant variation between groups. This point applies whether it is a focal measure or only a control variable in the model. Further, when operationalized as nominal response categories, one must think through which category is the logical comparison group as each reflects a distinct and unique constellation of relationships between education, political ideology, and religiosity.

As discussed in the literature review, there are generally two ways the Bible views concept is used in studies: as a dichotomized variable with literalists against all others, or as an ordinal ranking. When the variable is used as a dichotomous measure, the assumption is that literalists are different from all others or that nonnegligible group differences are not conflated together. But in this "all others"

category is included both the active views and the unreliable Bible views, two categories that are very different from one another leaving us with a variable that has significance but does not lend itself to clear interpretation. Creating a dummy measure by combining the received Bible views and the active Bible views is also problematic because while they have somewhat similar religious correlates, there are significant nonreligious differences between the two categories such as education and political views. The problem with an ordinal ranking is that one assumes the received views are the most religious of all response options, or the polar end of the concept, and that there are equal differences between all of the categories. Both of these assumptions are problematic and Bible views should be thought of and used as nominal categories. The past amorphous "literalism" concept has buried subtle nuances and complicated relationships that exist between religion and other social issues.

The results further show that, as would be expected, the unreliable category is strongly associated with a more liberal political ideology and inversely with the beliefs scale, engaged God measure, and judgmental God measure when compared with choosing received Bible views (table 3). The strength of this effect is quite large, as indicated by the standardized  $\beta$ s. Similarly, the religion measures also strongly predict lower odds of choosing the unreliable option compared with the active Bible view. Again, we see quite large standardized  $\beta$ s, especially when looking at the beliefs scale. These different relationships of our independent measures and the unreliable option compared with the received and active option are not really surprising beyond quantifying the associations. The diminished ability of these religion measures to predict differences between active Bible views and received views is more interesting.

While two of the religion indices are significant, their odds ratios show a somewhat weak relationship when predicting whether one will choose a received bible view when compared with an active Bible view (table 3). This is important because often the assumption about biblical literalists is that they are the most religious of people, as the measure was used to capture conservative Protestants. Additionally, those with a received Bible view and those with an active Bible view should not be conflated into a single category due to differences in various nonreligious measures such as politics (Cox 1995; Crapanzano 2000; Martin 1996) and education (Schwadel 2011; Sherkat 2010; Stroope 2011a). This is what we find here—some differences in practices and views about an engaged God but also education and political ideology differences (table 3).

Previous research provides some reasons why we may expect these unique relationships of the literalist categories to the religious and demographic measures in table 3. First, when the respondent chooses the "literalist" response, they are making a statement not only about their beliefs, but in doing so also identifying as part of a group (Bielo 2009; Boone 1989) with a relatively known worldview and beliefs about social and political issues (Crapanzano 2000). They are able to meaningfully choose and identify with specific response options (Jelen et al. 1990), likely because of communal discussions and values regarding the

text (Collins 2010; Fish 1976), that tie them to subcultural boundaries (Hempel and Bartkowski 2008:1667). Religious traditions affirming literalist views historically had a strong sense of losing ground to modernism and could easily cling to the clear claim of a literal Bible as a boundary marker in defiance of the Enlightenment's persistent march (Ahlstrom 2004; Crapanzano 2000; Marsden 1980). Stroope (2011b) makes this point, arguing that one's network closure predicts literalist Bible views. Additionally, when speaking about "biblicism" Smith says, "the more homogeneous a person's social network is, the more likely he or she is to take the characteristics and assumed viewpoints of the people in that social network for granted" (2011:61).

Second, there is likely to be some self-sorting present, with believers choosing what networks with which they want to associate (Vaisey and Lizardo 2010). Individual believers may already sort their selves religiously based on nonreligious factors such as political orientation (Putnam et al. 2010), and views of the Bible may not be too different. Thus, it is likely that there is a distillation effect where one's identity is deeply impacted by their networks (Vaisey 2009), which is compounded by some degree of network self-selection (Vaisey and Lizardo 2010). This mechanism may be present in groups such as fundamentalists or biblical literalitsts due to the connotations that being a member of such a group carries with it (Kellstedt and Smidt 1991; Steensland et al. 2000) possibly leading to enduring cognitive schemas (Vaisey 2009) for the received Bible views, active views, and unreliable views just in different ways.

This means that what the concept of "biblical literalism" means is primarily a question as to what falls within which community boundary. Politics, education, and some religion measures are associated with the differences between choosing the received category over the active category, and both politics and religion measures are strongly associated with the differences between choosing the received category over the unreliable category. When the respondent chooses the "active Bible view" category, they may in part be choosing what they are not as they, too, are religious although likely in different religious communities. As such, they tend to be more politically liberal and have greater education levels than those choosing a received view. Respondents choosing active Bible views are not, on the other hand, terribly unlike those choosing unreliable Bible views in terms of sociodemographic measures but are, however, more likely to be religious than those choosing the unreliable Bible views according to the measures included here. This last statement should be tempered with the knowledge that there are strong demographic relationships with religious belief even if many are washed out in the models comparing active and unreliable Bible views here.

#### CONCLUSION

The purpose of this paper was to describe how to best use categorical measures of Bible views. We first demonstrated that operationalization matters, emphasizing the need for a standard operationalization and understanding of Bible views in research so that findings of different studies are more comparable to one another. We also explored the religious and social antecedents for Bible view response categories. Religious measures minimally predict differences between received Bible views and active Bible views, but demographic measures are more strongly related to differences between the two. There are both significant religious and demographic differences between choosing unreliable Bible views when compared with both active and received Bible views, although here the religion measures explain the majority of the variance. This demonstrates that the concept biblical literalism and Bible views more generally are not simply a measure of religiosity, but a specific political—religious identity. As there are nonuniform and nonlinear patterns between Bible views and both demographic and religious measures, we argue that operationalizing Bible views as a nominal dummy system is best: received views, active views, and unreliable views.

Biblical literalism encapsulates two different domains as a concept—religious and social-political. When a person chooses the literalist category, they are not only declaring religious behaviors and beliefs, but also associating with an identity. Future research should not only further specify how the "received Bible view" identity is socially constructed and bounded, but the categories of "active Bible views" and "unreliable Bible views" as well. It may be possible that instead of respondents picking which category is most like them, they are primarily choosing what they are least like. They may know, for instance, that they are not a literalist but that they do think the Bible is somehow valid, and are then left with the "active Bible" option. Further analysis on causal relationships would also be helpful. It is theorized here that one's social context uniquely drives literalist views—an educated political moderate who is also religious is likely to hold "active Bible views" instead of "received Bible views," and thereby also an associated cultural identity, but it could be the case that changes in education drive both political ideology and Bible views. This study shows that researchers ought to be more cognizant of the nominal nature of literalist measures and that each category is uniquely related to both religious and sociodemographic measures.

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