State Legislators’ Roll-Call Votes on Farm Animal Protection Bills: The Agricultural Connection

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Abstract
Nonhuman animal studies scholars have extensively investigated attitudes on animal welfare in general and farm animal welfare in particular. Thus far, this research has focused mainly on public opinion, but there has been minimal research seeking to explain the influences on actual policymakers when they vote on farm animal welfare legislation. This paper contributes to this literature by quantitatively analyzing 216 state legislators’ votes on two farm animal welfare bills. It hypothesizes that the representatives’ personal and representational connections with agriculture best explain their votes on these farm animal protection bills. This research also includes three control variables: each legislator’s gender, race/ethnicity, and political party. Logistic regression revealed that the legislators’ personal and representational connections with agriculture are significant, but political party is the strongest independent variable explaining state legislators’ farm animal welfare votes. An interaction model revealed mixed evidence that political party moderates the influence of agriculture.

Keywords
agriculture, animal activism, farm animal welfare, state legislatures

Introduction
Since the 1970s, the modern animal welfare movement has sought to improve the conditions of nonhuman animals, and chief among the movement’s concerns has been the treatment of farm animals. By the 1980s, public awareness of farm animal welfare grew gradually, and activists began to intensify their political activities with the intention of improving the treatment of farm animals. These political campaigns focused on influencing public opinion, sponsoring ballot initiatives, and litigating court cases, but one key strategy for farm animal welfare activists has been lobbying state legislatures.

Since the 1980s, animal activist organizations, such as the Humane Society of the United States, have strengthened their efforts to lobby state legislatures to pass laws that provide farm animals with meaningful protection from undue
suffering. Simultaneously, the agricultural industry and conservatives resistant to government intervention in agriculture have mounted counteroffensives against many of these bills, arguing that farm animal welfare laws would dramatically increase food prices and result in job losses (Finsen & Finsen, 1994, pp. 154-157; Garner, 1993; McKinney & Woodward, 2007; Stallman, 2007).

During the 1980s and 1990s, this opposition lobby prevented the passage of meaningful farm animal welfare legislation in the United States, despite animal activists’ success in Europe (Rollin, 1990). However, since the early 2000s, supporters of farm animal protection policies achieved consequential victories when some states passed laws that prohibit the force-feeding of farm animals, ban the killing of equines for human consumption, and/or prevent tethering and confining certain farm animals in cages (Animal Legal and Historic Center, 2010; Animal Law Coalition, 2010; “House Passes Farm Bill,” 2009; Humane Society of the United States, 2009; McKinney & Woodward, 2007).

A New Direction for Farm Animal Welfare Policymaking Research

As a result of this increased political attention on animal welfare, the animal studies field has researched public attitudes toward animal welfare issues. Much of this research demonstrated the relationship between individuals’ support of animal welfare policies and traditional attitudinal, socioeconomic, and political variables, including gender (Broida, Tingley, Kimball, & Miele, 1993; Einwohner, 1999; Heleski, Mertig, & Zanella, 2006; Herzog, 2007; Jamison & Lunch, 1992; Jerolmack, 2003; Kruse, 1999; Lusk & Norwood, 2008; Nibert, 1994; Peek, Bell, & Dunham, 1996), political party identification and ideology (Allen, 2003; Broida et al., 1993; Heleski et al., 2006; Jamison & Lunch, 1992; Peek et al., 1996), race and ethnicity (Jamison & Lunch, 1992; Jerolmack, 2003; Lusk & Norwood, 2008), and geography (Allen, 2005; Jamison & Lunch, 1992).

This vibrant literature has enhanced our understanding of animal welfare, but it is incomplete because it has only studied the attitudes of people in general. Mass attitudes are undoubtedly important because public opinion indirectly influences policymaking through representative government and elections (Jewell, 1982; Pitkin, 1967), and occasionally the public directly votes on animal welfare policies through referenda or state constitutional amendments (Allen, 2003). Nevertheless, in American politics the public rarely directly makes public policy; elected representatives, especially legislatures, do, and this principle applies to farm animal welfare policy (Animal Legal and Historic Center 2010; Animal Law Coalition 2010; “House Passes Farm Bill,” 2009; Humane Society of the United States, 2009; McKinney &
Woodward, 2007). Despite the fact that legislatures exert a tremendous amount of control over farm animal welfare policy, there have been no systematic analyses explaining what factors influence elected representatives when they actually vote on farm animal welfare laws.

Garner (1999) is the only study that has addressed the relationship of legislators’ background characteristics and support for animal welfare. However, it covered a wide scope of animal protection issues; it does not only focus on farm animal welfare. Additionally, Garner examined national legislators (members of the English Parliament and the U.S. House of Representatives), but as mentioned earlier, much of the action in farm animal welfare legislation takes place at the state level. It is also important to note that Garner examined the extent that legislators sponsored or cosponsored animal welfare bills and discussed animal welfare during debate, but he did not examine the actual votes on animal welfare bills. Furthermore, Garner studied different background characteristics (age, gender, geography, and party) in isolation of one another, without testing for controls in a multivariate model. Finally, Garner’s analysis was conducted through the middle 1990s, and given the surge of farm animal welfare legislative activity since the early 2000s, there needs to be an update. Expanding upon Garner’s initial study would enhance theoretical understanding of animal welfare policymaking in general and farm animal welfare policymaking in particular.

Additionally, the extant literature on animal welfare attitudes is limited because it generally relies on survey research. Heleski et al. (2006, p. 305) appropriately recognized the importance of surveys in the animal studies field. However, surveys are not the only method for understanding animal welfare policymaking, and, more importantly, surveys present methodological problems. Difficulties in generating representative samples create bias. Many of the surveys cited above examined only a small segment of the American adult population. Jamison and Lunch (1992) and Einwohner (1999) focus only on animal welfare/rights supporters; Nibert (1994) surveys solely Clark County, Ohio; and Broida et al.’s (1993) study was limited to college students in introductory psychology courses.

Surveys also suffer from low response rates, which can also generate sample bias. According, to Babbie (1990, p. 182) a survey’s response rate should be at least 50% to be considered “adequate.” Many of the surveys cited above did not report response rates, and Heleski et al. and Lusk and Norwood (2008) had response rates below 50%. Furthermore, much of the aforementioned research (Jerolmack, 2003; Kruse, 1999; Peek et al., 1996) relied on the already existing General Social Survey, which avoids the sample bias problems, but the researchers were forced to use that survey’s imprecise questions on animal
welfare policy. They were unable to develop their own, narrowly-tailored questions that address issues of specific concern to animal welfare scholars. Finally, surveys can be problematic because there is no way to guarantee the veracity of respondents’ answers, especially on controversial issues (Carlson & Hyde, 2003, p. 245).

Pointing out the drawbacks of survey research is not intended to discount the usefulness of those surveys; rather, it is meant to establish the importance of employing alternative methods. Document analysis is an alternative method that avoids the problems associated with survey research because it relies on officially published governmental data, including legislators’ recorded votes on bills (Johnson & Reynolds, 2005, pp. 206-237). One can study an entire population of legislators’ official votes on bills, which precludes the sampling bias and low response rates associated with surveys. Moreover, because the recorded votes reflect the clear expression of the legislators’ views, there is no concern over invalid data stemming from dishonest responses.

Another shortcoming with the extant literature on attitudes toward farm animal welfare policy is that scholars have underemphasized the relevance of the agricultural connection. People whose living depends on agriculture are likely to view farm animal protection legislation as a threat to their economic livelihood, which would cause them to disapprove of those policies. The notion of the agricultural connection stems from the concept of materialist versus post-materialist societies (Inglehart, 1971, 1981). Materialist societies are economically and technologically undeveloped and thus emphasize the necessities (i.e., food, clothing, and shelter). Conversely, post-materialist societies are more economically and technologically developed; therefore, they do not need to worry about the basics and are free to address moral and ethical issues, such as environmentalism, equality, and civil liberties.

Although this materialist/post-materialist characterization generally applies to nation states, Allen (2003) showed that it is also relevant for the domestic issue of animal welfare policy. People who rely economically on agriculture adopt a materialistic view of animal welfare and, accordingly, consider legislative attempts to protect farm animals as a direct threat to their livelihoods. Conversely, people who do not rely directly on agriculture possess a post-materialistic view of farm animal protection legislation because they are free to be concerned about the ethical treatment of farm animals.

Rollin (1990) demonstrated that when Western European legislatures (the epitome of post-materialistic societies) passed farm animal welfare legislation, supporters emphasized the moral aspects of animal welfare over the economic impact on farmers and consumers. Allen provided empirical evidence of an inverse relationship between the percentage of farm employment and the vote
in favor of animal welfare ballot initiatives in California counties. Using states as a unit of analysis, Lutz and Lutz (2011) found a relationship between the percentage employed in agriculture and the state’s ranking on the Animal Rights Index.

Studying the influences on legislators’ votes on farm animal protection bills is an ideal way to ascertain the significance of the agricultural connection in shaping farm animal welfare policy. First, one can test whether an individual legislator’s personal connection with agriculture influences his or her votes on farm animal welfare bills. I hypothesize that legislators with personal experience or an occupational interest in agriculture would be less likely to vote for farm animal protection bills than would a legislator who does not have a personal or occupational background in agriculture. Second, because many representatives advocate on behalf of their constituency regardless of their personal views (Jewell, 1982; Pitkin, 1967), the importance of the agriculture industry in legislators’ districts should impact how they vote on farm animal welfare bills. I hypothesize that there is an inverse relationship between the presence of the agriculture employment in a constituency and its representative’s support for farm animal welfare legislation.

In sum, this paper identifies three shortcomings with the existing farm animal welfare literature: (1) the study of the influences on the actual policymakers themselves has been extremely limited; (2) survey research suffers from sample and validity problems; and (3) the role of the agricultural connection has been underemphasized. This paper addresses these gaps in the literature by analyzing roll-call votes of state legislators on two important farm animal welfare bills.

Methods

Roll-call analysis is a form of document analysis that examines legislators’ votes on the final passage of actual bills. It is a useful way to ascertain the influences on legislators’ votes because scholars can locate the votes, information on the legislators’ backgrounds (e.g., gender, race, and political party), and characteristics of the legislators’ constituencies. Moreover, the legislators’ actual votes are an important expression of their policy preferences. Garner (1999) scored legislators based on the extent that they introduced animal welfare legislation and discussed it in debate, which is important, but ignores the final act of legislating, voting for or against the bill on the floor. Therefore, as an alternative to Garner’s analysis, this paper conducts a roll-call analysis on state legislators’ final votes on farm animal welfare bills.
A limitation of roll-call analysis is that by relying on final votes, it overlooks the battles that ensued during the bill formation. For example, in farm animal welfare bills, the animal welfare groups and/or the agriculture industry often work with legislators and committees drafting and amending the bills to ensure that the final product meets their goals. Consequently, significant action concerning the outcomes of bills takes place before the final vote. Despite this drawback, the aforementioned advantages of roll-call analysis still render this study worthwhile, and, as discussed below, this article’s methodology alleviates some of the drawbacks with roll-call analysis.

Before proceeding to a specific discussion of the data, it is first necessary to justify the use of state legislatures because casual observers of American politics tend to focus predominately on the United States Congress. However, political scientists show that state legislatures in general control “the vast majority of laws that affect the daily lives of Americans” (Little & Ogle, 2006, p. 2). In particular, state governments exert significant authority over farm animal welfare policy, and over the past decade, state legislatures have been extremely active in the farm animal protection arena (Animal Legal and Historic Center, 2010; Animal Law Coalition, 2010; Humane Society of the United States, 2009; “House Passes Farm Bill,” 2009; McKinney & Woodward, 2007).

Consequently, this research’s focus on state legislators will complement Garner’s (1999) focus on national legislators. Because there have been no prior roll-call analyses of animal welfare legislation, the specific methods driving this research are drawn from various strategies employed in studies of state legislators’ roll-call votes on other controversial social issues, such as race (Bullock & MacManus, 1981; Herring, 1990; Menifield & Shaffer, 2005) and abortion (Day, 1994; Schecter, 2001; Witt & Moncrief, 1993; Yamane & Oldmixon, 2006).

Data

Several important criteria had to be met when bills were selected to be included in this analysis. First, a bill had to be controversial enough to generate sufficient variation among the votes. Roll-call analysis generally required a minimum of 10% variation in votes (Herring, 1990, p. 743). In order to locate bills with sufficient variation, I searched for controversial bills that generated clashes between stakeholder groups—animal advocacy organizations on one side and the agriculture industry on the other. Furthermore, to test the hypothesized independent variables, there had to be sufficient variation in race, gender, and political party among the members of the institution. Moreover, given the focus of this study, it was especially important that a state enjoyed a balance between agricultural and non-agricultural districts, and there had to
be sufficient variation in the representatives’ agricultural versus non-agricultural occupations.

Furthermore, because state legislatures experience considerable turnover (mainly because of term limits), it was important to select recent bills. Otherwise, it would have been difficult to locate information on legislators’ backgrounds. Finally, the selected bills were required to have originated in the legislature. The legislature could not be implementing a farm animal welfare policy that was initiated through a referendum or a popularly-enacted constitutional amendment, because in those instances the lawmakers were likely to be motivated by the legal requirement that they enact the policy approved in the plebiscite and not by genuine interest in or opposition to farm animal welfare.

To locate possible animal protection bills, I consulted the Animal Law Coalition Website (Animal Law Coalition, 2010) and the Animal Legal and Historical Center Website (Animal Legal and Historical Center, 2010), both of which contain a section that reports recent animal protection laws passed in different states. After locating several potential farm animal protection bills, I consulted the relevant state legislative websites to determine whether the aforementioned conditions were met. I ultimately found two bills that were ideal for testing my hypotheses: Michigan’s HB 5127 (2009) and Illinois’s HB 1711 (2007). I combined the individual legislators’ votes on the two bills into a single database.

Michigan’s HB 5127 bans tethering and confining pregnant pigs, veal calves, and egg-laying hens. Although many activists prefer a complete ban on using these animals for food (e.g., Francione, 1995; Regan, 1983; Singer, 1975), leading animal advocacy groups, such as the Humane Society of the United States, vigorously promoted this bill (“House Passes Farm Bill,” 2009; Humane Society of the United States, 2009). The bill passed in the Michigan House of Representatives by an 86 to 22 vote (State of Michigan, 2009), but because it passed unanimously in the Michigan Senate, this analysis only considers the House vote. It is important to note that this bill was the product of compromise between the agricultural industry and animal welfare groups, and the final product was supported by leading groups on both sides (“Humane Society of the United States,” 2009). Nevertheless, it is equally important to recognize that all of the 22 (20.4% of the voting members) representatives who voted “no” on the bill are Republicans (State of Michigan, 2009). Consequently, despite the compromise, there is sufficient evidence that there was conservative opposition to this bill.

Illinois’ HB 1711 bans the slaughter of horses for human consumption. Animal welfare groups lobbied extensively for this bill as a significant step toward humane treatment of horses, whereas the agriculture industry opposed the bill, arguing that it would result in job losses (McKinney & Woodward,
The bill passed in the Illinois House by a 74 to 41 vote (Illinois General Assembly, 2007). To keep the analysis synchronous between the two states, this research does not consider the votes from the Illinois State Senate.

**Variables**

The dependent variable was each legislator’s vote, and it was coded with 1 for votes in favor of the bill and a 0 for votes against the bill. The official information on the votes for Michigan HB 5127 came from the Michigan Legislature’s website (State of Michigan, 2009), and the official information on the votes for Illinois HB 1711 came from the Illinois Legislature’s website (Illinois General Assembly, 2007). I excluded from the analysis any legislator who abstained or failed to cast a vote.

The primary independent variables reflected the agricultural connection. One variable focused on representatives’ occupational backgrounds, specifically whether the legislator had ever worked in the agricultural industry or whether the legislator grew up on a farm. As stated previously, I hypothesized that because people with an agricultural background rely on the use of farm animals and because the agricultural industry generally opposes farm animal welfare legislation, legislators with an occupational or personal background in agriculture would be less likely to vote yes compared to legislators without an occupational or personal background in agriculture. I obtained the data for this variable from the legislators’ personal biographies included on their official websites (Illinois General Assembly, 2009; Michigan General Assembly, 2009). Although this information relied on self-reports, both institutions allowed representatives to list as much information on their occupational backgrounds as desired; therefore, this measure was the optimal way to capture the full historical account of representatives’ backgrounds. I coded legislators with an agricultural background with a 0 and legislators without an agricultural background with a 1.

The second agricultural connection variable focused on the presence of agriculture in the legislator’s constituency because state legislators typically represent the views of their constituencies, regardless of their personal experiences and philosophies (Jewell, 1982; Pitkin, 1967). This variable initially registered the percentage of people in the county (or counties) the legislator represented who were employed in the agricultural industry. These data came from the United States Census (United States Census Bureau, 2010), and the results revealed that each county involved in this study had anywhere between 0 to 8.4% of its population employed in the agricultural industry.
Because that level of detail is not necessary to distinguish among different levels of the agriculture industry’s influence, I collapsed these figures into a dichotomous ordinal variable. Specifically, legislators representing districts with 1.5% or more of the population employed in agriculture—high-agriculture districts—were coded with a 0, and legislators representing districts with less than 1.5% employed in agriculture—low-agriculture districts—were coded with a 1. I hypothesized that this variable would be positively associated with votes in favor of the animal protection bills.

Although it creates a loss of precision, collapsing this variable was advantageous because it allowed for better comparisons between two categories of agricultural influence in the constituency. It bears mentioning that 1.5 might seem like a low threshold, considering that the maximum value was over 8%. However, as Figure 1 demonstrates, many districts had less than 1% of their populations employed in agriculture, and few districts had agricultural employment above 2%. Given this skewed distribution, it was preferable to consider 1.5% as a threshold between a high versus a low agricultural district.

Figure 1. Distribution of the percentages of districts employed in agriculture.
This research employed three control variables (each legislator's gender, race, and political party). As with the agriculture occupational/background variable, I located the data for the control variables on the legislators’ personal biographies incorporated on their official websites (Illinois General Assembly, 2009; Michigan General Assembly, 2009).

Similar to previous studies that use political party as a variable capturing the influence of ideology in explaining legislators’ roll-call votes on controversial social issues (Day, 1994; Schecter, 2001; Witt & Moncrief, 1993; Yamane & Oldmixon, 2006), this study included a political party variable. Although Lusk and Norwood (2008) found no relationship between political party and views on whether farm animal welfare questions should be decided according to scientific values or moral and ethical values, a considerable amount of research has demonstrated that supporters of animal protection tend to be liberal and identify with the Democratic Party (Allen, 2003; Broida et al., 1993; Heleski et al., 2006; Jamison & Lunch, 1992; Peek et al., 1996; Silverstein, 1996, pp. 36-37). Additionally, Garner (1999) showed that Democratic representatives were more likely than Republican representatives to be interested in animal welfare legislation. Therefore, I hypothesized that Democratic state legislators would be more likely than Republican state legislators to vote in favor of the farm animal protection bills. I coded Democratic legislators with a 1 and Republican legislators with a 0.5

Based on the notion that women empathize more with animal suffering than men do, gender is another important control variable that should explain legislators’ votes on animal welfare bills. Research has demonstrated that women are more likely than men to support animal rights in general (Broida et al., 1993; Einwohner, 1999; Herzog, 2007; Jamison & Lunch, 1992; Jerolmack, 2003; Kruse, 1999; Nibert, 1994; Peek, et al., 1996) and farm animal welfare in particular (Heleski et al., 2006; Lusk & Norwood, 2008). However, Garner (1999) found no relationship between gender and legislators’ interest in animal protection legislation. Nevertheless, I still hypothesized that female state legislators would be more likely than male legislators to vote for the animal protection bills. I coded female state legislators with a 1 and male legislators with a 0.

Race was another control variable included in this model. Racial and ethnic minorities in state legislatures are more likely than white legislators to support civil rights bills and other progressive legislation (Bratton & Haynie, 1999; Menifield & Shaffer, 2005). However, race may not similarly influence votes on animal protection bills. Nibert (1994) found that there was no relationship between a person’s race and support for animal rights, but his study was limited to Clark County, Ohio. Jamison and Lunch (1992) and Lusk and
Norwood (2008) showed that that people who supported moral views over science when considering animal welfare issues tended to be overwhelmingly white. Jerolmack (2003) focused more directly on attitudes toward animal welfare and demonstrated that non-whites were more likely than whites to support animal welfare policies. Based on Jerolmack’s findings, this model hypothesized that non-white state legislators would be more likely than white state legislators to vote for the animal protection bills. I coded non-white legislators with a 1 and white legislators with a 0.

**Statistical Techniques**

Combining the legislators’ votes on the two farm animal welfare bills, this research included a total of 2167 cases, which I analyzed with IBM-SPSS VERSION 19.0. Table 1 reports the measurements and frequencies of the dependent variable and independent variables. Because the dependent variable was dichotomous, I analyzed the model with a multivariate binary logistic regression (Menard, 1995). Additionally, this research employed an interaction model to test the extent that political party moderated the influence of each agricultural connection variable and vice versa (Hardy, 1993, pp. 35-48).

<table>
<thead>
<tr>
<th>Table 1. Variables, their measurement, and their frequencies.</th>
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<tbody>
<tr>
<td>Variables</td>
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<tr>
<td><strong>DEPENDENT VARIABLE</strong></td>
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<tr>
<td>Outcome of the case</td>
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<tr>
<td><strong>AGRICULTURAL INDEPENDENT VARIABLES</strong></td>
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<tr>
<td>Background/Occupation</td>
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<tr>
<td>Agricultural Employment</td>
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<td></td>
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<tr>
<td><strong>CONTROL INDEPENDENT VARIABLES</strong></td>
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<tr>
<td>Political Party</td>
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<tr>
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<tr>
<td>Gender</td>
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<td>Race</td>
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Table 2. Logistic regression on state legislators’ votes on farm animal protection bills ($N = 216$).

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>$B$ (Log-Odds)</th>
<th>Odds Ratioa</th>
<th>Log-Odds/SE</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>−2.228</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
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<tr>
<td>AGRICULTURAL VARIABLES</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Background/Occupation</td>
<td>1.451</td>
<td>4.268</td>
<td>1.985</td>
<td>0.047*</td>
</tr>
<tr>
<td>Agricultural Employment</td>
<td>1.266</td>
<td>3.545</td>
<td>3.157</td>
<td>0.002**</td>
</tr>
<tr>
<td>CONTROL VARIABLES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Party</td>
<td>2.016</td>
<td>7.511</td>
<td>4.823</td>
<td>0.000***</td>
</tr>
<tr>
<td>Gender</td>
<td>0.505</td>
<td>1.656</td>
<td>1.031</td>
<td>0.303ns</td>
</tr>
<tr>
<td>Race</td>
<td>1.201</td>
<td>3.324</td>
<td>1.112</td>
<td>0.266ns</td>
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<tr>
<td>MODEL STATISTICS</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Percentage Classified Correctly</td>
<td>80.6%</td>
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<tr>
<td>Proportional Reduction of Error $b$</td>
<td>28.9%</td>
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<tr>
<td>Model Chi-Square $c$</td>
<td>78.944***</td>
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<tr>
<td>Nagelkerke $R$-Square</td>
<td>0.443</td>
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</table>

*a Computed by taking the antilog of the log-odds ($B$). b Because SPSS does not report the reduction of error, I calculated it by hand with the following formula: $100 \times \left(\frac{\% \text{ classified correctly} - \% \text{ in modal category}}{100\% - \% \text{ in modal category}}\right)$. c $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Results

Table 2 reports the results of the logistic regression. The model chi-square was significant at the $p < 0.001$ level; the Nagelkerke $R$-Square (Nagelkerke, 1991) was 0.44; and the proportional reduction of error was 28.9%. Consequently, the model as a whole sufficiently explains the variance in state legislators’ votes on animal protection bills.

Both agricultural connection variables were significant. Legislators without personal or occupational experience in agriculture were 4.268 times more likely than legislators with personal or occupational experience in agriculture to vote for the farm animal protection bills. The agricultural district variable was also significant. Legislators representing low-agriculture districts were 3.545 times more likely than legislators representing high-agriculture districts to vote in favor of farm animal protection. These results confirmed my hypothesis that state legislators’ personal connections with agriculture and the extent of agricultural employment in their constituencies would influence their votes on farm animal protection bills.
Political party was the only significant control variable. Democratic state legislators were 7.511 times more likely than Republican state legislators to vote in favor of animal protection bills. In fact, political party exerted a stronger influence on legislators’ farm animal welfare votes than either agricultural connection variable. Political party was the most salient influence on farm animal welfare votes. The other two control variables—race and gender—were not significant. Given that there is mixed evidence that race influences animal welfare attitudes in general, this result was not surprising. Considering the overwhelming evidence that women are more likely than men to identify with animal welfare issues in general, the finding that gender does not influence state legislators’ votes on farm animal protection bills was more unexpected, but it does concur with Garner’s (1999) finding that gender does not affect national legislators’ interest in animal welfare legislation.

In addition to the fact that political party is by itself a significant variable, there is also a possibility that political party moderates the influence of the two agricultural connection variables. That is to say, perhaps the influence of the legislators’ occupational or personal experience with agriculture and the influence of agricultural employment in the legislators’ districts change depending on whether the legislator is a Republican or a Democrat. I tested this proposition by creating an interaction model (Hardy, 1993, pp. 35-48), which added two multiplicative variables to the logistic regression model: one representing a hypothesized interaction between political party and the agricultural occupation/background variable and one representing a hypothesized interaction between political party and the agricultural employment in the district variable.

The interaction model revealed evidence that political party moderated the influences of the two agricultural connection variables (results reported in Table 3). The addition of the multiplicative variables raised the Nagelkerke R-Square by 0.013 ($F_{2,208} = 9.94$ and $p < 0.001$), which demonstrates the existence of an interaction effect (Hardy, 1993, p. 35). Moreover, the odds ratios in the interaction model revealed that political party does moderate the impact of each agricultural connection variable. In the interaction model, the odds ratios for the agricultural connection variables reported each variable’s impact only when the political party variable was set at 0 (Hardy, 1993, pp. 35-36); that is, only for Republicans. In this situation, the odds ratio for agricultural occupational/background variable was 8.719, which was considerably higher than it was in the non-interaction model (4.268). In other words, among Republican legislators, the influence of the agricultural background/occupation variable was almost twice as powerful as it was for the “typical” legislator in terms of political party.

The interaction effect was less pronounced with the agricultural employment in the district variable. In the interaction model, the odds ratio for this
variable was 2.594, compared to an odds ratio of 3.545 in the non-interaction model. This meant that whether a legislator represented a high-agricultural district meant slightly less for Republican legislators than it did for the “typical” legislator in terms of political party. Finally, the coefficient for the political party variable in the interaction model reflected the influence of party when both agricultural connection variables were set at 0; that is, legislators with a personal or occupational background in agriculture who also represented high-agricultural districts. In this situation, the odds ratio for the political party variable was increased to 30.92, compared to only 7.511 in the non-interaction model. In other words, among legislators with a personal or occupational background in agriculture who represented high-agricultural districts, Democrats were about 31 times more likely than Republicans to support farm animal welfare bills.

Although the interaction model indicates that political party moderates the influence of both agricultural connection variables (especially the agricultural occupation/background variable) and vise versa, there is also evidence suggesting that this interaction effect is limited. The multiplicative terms themselves, which measure the differential effect of political party by each agricultural connection variable, should be significant. However, neither multiplicative variable was significant at the $p < 0.05$ level. In short, the evidence of interactions between legislators’ political parties and their agricultural connections is mixed.

**Discussion**

This research contributes to the animal welfare discipline because it offers the first systematic analysis of farm animal welfare policymakers. Over the past decade, farm animal welfare has become an increasingly more controversial political issue. On the one hand, animal welfare activists have extensively lobbied state legislatures to enact meaningful farm animal welfare policies. Conversely, the agriculture industry and conservatives resistant to government intervention in agriculture have vigorously opposed these bills. Recognizing the significance of the debates over animal welfare policies, animal studies scholars have extensively researched public attitudes on animal welfare in general (Allen, 2003; 2005; Broida et al., 1993; Einwohner, 1999; Herzog, 2007; Jamison & Lunch, 1992; Jerolmack, 2003; Kruse, 1999; Nibert, 1994; Peek et al., 1996) and farm animal welfare in particular (Heleski, et al., 2006; Lusk & Norwood, 2008).

Garner (1999) examined influences on national legislators’ interest in animal welfare legislation in general, including but not limited to farm animal
Table 3. Logistic regression on state legislators’ votes on animal protection bills, interaction model (n = 216).

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>B (Log-Odds)</th>
<th>Odds Ratioa</th>
<th>Log-Odds/SE</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>−2.741</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>AGRICULTURAL VARIABLES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Background/Occupation</td>
<td>2.166</td>
<td>8.719</td>
<td>1.989</td>
<td>0.047*</td>
</tr>
<tr>
<td>Agricultural Employment</td>
<td>.953</td>
<td>2.594</td>
<td>2.036</td>
<td>0.042*</td>
</tr>
<tr>
<td>CONTROL VARIABLES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Party</td>
<td>3.431</td>
<td>30.923</td>
<td>2.110</td>
<td>0.036*</td>
</tr>
<tr>
<td>Gender</td>
<td>0.411</td>
<td>1.509</td>
<td>0.830</td>
<td>0.406ns</td>
</tr>
<tr>
<td>Race</td>
<td>0.002</td>
<td>1.002</td>
<td>0.002</td>
<td>0.998ns</td>
</tr>
<tr>
<td>MULTIPLICATIVE VARIABLES</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Background/Occ. × Pol. Party</td>
<td>−2.275</td>
<td>0.103</td>
<td>1.326</td>
<td>0.185ns</td>
</tr>
<tr>
<td>Agri. Employment × Pol. Party</td>
<td>1.550</td>
<td>4.711</td>
<td>1.744</td>
<td>0.081ns</td>
</tr>
<tr>
<td>MODEL STATISTICS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percentage Classified Correctly = 81.0%; Proportional Reduction of Errorb = 30.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Chi-Square = 81.636***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke R-Square = 0.456</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nagelkerke R-Square Change from Non-Interactive Model = 0.013</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F (change in Nagelkerke R-Square) = 9.941***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Occ. = occupation; Agri. = agricultural; Pol. = political.

issues, but he did not investigate actual votes on bills. Moreover, his study was conducted prior to the intensification of farm animal protection battles since the 2000s. The animal studies field is obviously interested in farm animal welfare policymaking, but until now there has been no systematic explanation of the factors that impact farm animal welfare policy outcomes in particular. By examining the influences on state legislators’ farm animal welfare legislation votes, this study provides a needed, in-depth, systematic analysis of farm animal welfare policymaking.
Moreover, this paper showed animal studies scholars that there are alternatives to employing survey research methodology to ascertain animal welfare attitudes. Even the surveys with the best designs suffer from validity problems stemming from sample bias and potentially dishonest responses (especially with controversial issues, such as farm animal welfare). This research utilizes a document analysis—specifically a roll-call analysis—mode of observation, which relies on officially published governmental sources. Although document analysis can present methodological problems, it does avoid the aforementioned problems associated with survey research (Johnson & Reynolds, 2005, pp. 206-237). I do not advocate completely replacing survey research with roll-call analysis, but it is important that the animal studies field recognizes roll-call analysis as a complement to survey research.

In addition to these general contributions, the specific findings in this paper should also add to our understanding of animal welfare issues. Obviously the animal studies literature, especially farm animal research, demonstrates an understanding of the significance of agriculture in shaping animal welfare. However, previous farm animal welfare studies have not specified variables that reflect how agriculture influences animal welfare policymakers. This paper specified two agricultural connection variables: (1) whether a legislator has occupational or personal experience with agriculture and (2) the extent of agricultural employment in a legislator’s district.

Both variables are significant in the multivariate model analyzing state legislators’ farm animal welfare votes. Accordingly, this research breaks new ground by providing empirical evidence that legislators with personal/occupational backgrounds in agriculture are less likely than legislators without agricultural backgrounds to vote for farm animal welfare bills, and legislators who represent high-agricultural employment districts are less likely than representatives who represent low-agricultural employment districts to vote for farm animal protection bills.

The significance of the agricultural connection variables also demonstrates the relevance of the materialist/post-materialist framework for understanding animal advocacy politics. Consistent with Allen (2003), this research demonstrates that the materialist/post-materialist distinction applies to animal welfare issues because legislators with a personal and representative connection to agriculture are less likely than those without that connection to support farm animal welfare. The importance of the materialist/post-materialist framework can also advance the philosophical discourse concerning animal welfare, which largely focuses on the debate between the rights view versus the utilitarian view.

The rights-based approach has argued that nonhuman animals should have legal rights to be free from mistreatment (e.g., Regan 1983; Wise 2000), whereas the utilitarian view has argued that using animals can be justified if
human needs outweigh the suffering animals endure (Singer, 1975). Although Singer’s calculation of the costs and benefits of animal use results in humane policies, such as ending factory farming, a utilitarian philosophy could justify animal mistreatment if the human needs are weighted higher and the animal suffering is weighed lower. The relevance of the materialist/post-materialist distinction will enhance this discussion because it demonstrates that people with a connection to agriculture will view the utilitarian calculus in a way that justifies animal abuse in order to pursue agricultural endeavors.

Another key finding was that the legislators’ gender was not a significant variable, which is interesting because there is overwhelming evidence that among the general public, women support animal welfare more than men do. Further research should explore in more detail why gender is not a factor among state legislators voting on farm animal welfare policies. One possibility is that the studies showing a significant relationship between gender and support for animal protection issues have not carefully controlled for political party/ideology and the agricultural connection, whereas this study did. Additionally, given Garner’s (1999) similar finding, perhaps women in legislative institutions view animal welfare issues differently than women in the general public. Further research could explore whether masculinism in legislative institutions causes female legislators’ voting behavior on animal protection issues to differ from general female attitudes on animal protection. The impact of masculinism has been studied in the corporate world (Kanter, 1977) and political institutions in general (Dodson, 1996; Kenney, 1993). Perhaps it is also relevant for farm animal welfare policymaking in particular.

Arguably, the most significant finding is that political party is the strongest factor explaining legislators’ votes, with Democrats much more likely than Republicans to vote for the farm animal welfare bills. This means that contrary to my hypothesis, the agricultural connection is not the most salient factor explaining state legislators’ farm animal welfare votes. Additionally, the interaction model shows that the magnitude of political party is extremely strong among legislators who are most connected with agriculture—having personal or occupational experience in agriculture and representing high-agriculture employment districts. Moreover, the interaction model demonstrated that the impact of the legislators’ personal or occupational connection with agriculture was much more salient among Republicans, whereas the influence of agriculture employment in the district variable was slightly less salient among Republicans.

The relevance of political party offers great insight into the study of farm animal welfare. There is some anecdotal evidence that animal welfare is different than other controversial social issues, such as civil rights and abortion, because conservatives and Republicans have supported the goals of the animal
welfare movement (e.g., Hopper, 2009; Scully, 2010). Additionally, Lusk and Norwood (2008) found no relationship between political party and views on whether farm animal welfare should be decided according to scientific values or moral values; however, they did not test the influence of political party on direct attitudes toward animal welfare. Accordingly, the finding here that political party is such a strong, isolated, and moderating force demonstrates that the farm animal welfare issue cleaves along partisan lines, similar to other controversial social issues.

In sum, this paper justifies continued scholarly focus on farm animal welfare policymaking. That said, there are several ways that future studies can expand on this research. Scholars interested in this subject should investigate the fate of farm animal protection bills prior to roll-call votes. Agenda setting—the process of getting the attention of policymakers and bringing issues to legislative institutions for votes—is absolutely crucial to the policymaking process, especially for state legislative policymaking on controversial social issues (Bratton & Haynie, 1999; Menifield & Shaffer, 2005). Consequently, future research should examine in detail the agenda-setting process for farm animal welfare legislation. Furthermore, because much of the work in state legislatures is conducted in committees (Morehouse & Jewell, 2003, pp. 224-226), future research should examine systematically how farm animal welfare policy is formed, changed, and blocked in legislative committees.

As discussed earlier, the final version of Michigan HB 5127 was the product of a compromise between animal welfare and agriculture industry groups; therefore, further investigation into the nature of these compromises will enhance this research. Finally, although state legislatures are the most significant venue for making farm animal welfare policy, other institutions, such as governors, the United States Congress, administrators, and law enforcement should be systematically examined. Farm animal welfare is also an important issue internationally, especially in Europe (Garner, 1999; Rollin, 1990); therefore, similar analyses should also be performed on non-American policymaking institutions. In closing, this future research along with the findings in this paper will enhance the animal studies field by emphasizing the importance of understanding the animal welfare policymakers and policymaking processes.

Acknowledgments

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Meeting of the Northeast Political Science Association, Boston, Massachusetts, November 11 to 13, 2010.

Notes

1. Some of the Illinois House members who voted for the bill in 2007 were no longer in the legislature in 2010 when the data were collected. In some cases, I could still find the legislator’s information on the Illinois General Assembly website, especially if he or she moved to the Illinois State Senate. I located information on Aaron Schock, who was a state representative in 2007 but was elected to the U.S. House of Representatives in 2008, from his U.S. House website biography, http://schock.house.gov/#. If I could not find a legislator’s relevant information, then I dropped that individual from my analysis.

2. If a legislator represented more than one county, then I averaged the percentages among the counties that the legislator represented.

3. These census figures also include employees in the forestry, fishing, hunting, and mining industries, and unfortunately, the U.S. Census does not disaggregate these different industries. Nevertheless, accounts of animal welfare debates have shown that the hunting industry (Finsen & Finsen, 1994, pp. 157-161), commercial fisheries (Manning, 1989), and the mining and forestry industries (Hudak, 2007) have opposed animal protection legislation in general. Therefore, using this figure still captures the extent of industry opposition in representatives’ districts.

4. Upon first glance, one might think it’s preferable to code this variable by assigning a 0 to the low-agricultural employment districts and a 1 to the high-agricultural employment districts. However, the other independent variables are coded by assigning the higher value to the outcome more likely to cause a yes vote and the lower value to the outcome more likely to cause a no vote. In order to keep this variable consistent with the other independent variables, it was necessary to code the legislators representing low-agricultural districts (who I hypothesized were likely to vote yes) with a 1 and the legislators representing high-agricultural districts (who I hypothesized were likely to vote no) with a 0. Consequently, keeping the variables consistent aided in interpretation, especially with the interaction model.

5. All legislators included in this study were either Democrats or Republicans. There were no independents or members of minor parties.

6. There were no Asian American or Native American legislators in this study; therefore, all legislators classified as non-white were African American or Latino.

7. The Michigan House of Representatives contains 120 members, and the Illinois House of Representatives contains 118 members, but there were two vacancies in 2007. Therefore, there was a total of 120 + 116, or 236 cases to evaluate. However, because of missed votes and missing data, I was forced to drop 20 cases from this analysis.

8. Because SPSS does not compute tolerances for logistic regression, I tested for multicollinearity by running an Ordinary Least Squares regression with the same independent and dependent variables I used in my logistic regression (Menard, 1995, p. 66). Then, SPSS computed the tolerance figures for each independent variable, and all of the tolerance figures were above 0.8. Because any tolerance figure below 0.2 is a conservative threshold of the existence of multicollinearity, there is clearly no evidence that multicollinearity was a problem with this model.

9. According to Hardy (1993, pp. 24, 35), the formula for the $F$-test statistic is:

$$F_{2, 208} = \frac{(R^2_{\text{interaction model}} - R^2_{\text{initial model}}) / (k_{\text{interaction model}} - k_{\text{initial model}})}{(1 - R^2_{\text{interaction model}}) / (N - k_{\text{interaction model}} - 1)}$$
References


